

**MONTANA  
ENVIRONMENTAL  
QUALITY COUNCIL**

**ANNUAL REPORT  
TWELFTH EDITION:**

**RESEARCH  
ISSUES**

**JUNE 1991**

This twelfth edition of the Montana Environmental Quality Council's annual report provides a summary of the natural resource issues studied by the Council during the 1989-1991 biennium.

For the past eighteen months, the EQC has conducted studies on solid waste management, ground water quality, forest management, rural development and log scaling.

The studies completed during the interim enable both the legislature and the public to make wise decisions on natural resource issues, with consideration of both the diverse population and the diverse physiography which make up our state.

The EQC meets several times a year to discuss current natural resource topics. We encourage your participation in the Council's activities during the interim.

Representative Bob Gilbert  
EQC Chairman

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**1989-1991**

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## Introduction

In 1971, with the rewriting of the Montana Constitution, the state enacted the Montana Environmental Policy Act (MEPA) to "... encourage the productive and enjoyable harmony between man and his environment ... [and to] ... enrich the understanding of the ecological systems and natural resources important to the state ...." The Act also provided for the establishment of the Montana Environmental Quality Council (EQC). The EQC is the agency responsible for reviewing state agency compliance with MEPA and for monitoring state programs and activities that effect Montana's natural, economic and social environments.

One of the duties of the EQC is to assist the legislature in policy development by conducting studies on natural resource issues during the interim. During past bienniums, the Council has completed studies on land use, water quality, forestry best management practices and hazardous materials management. The 1989 Legislature directed the EQC to undertake two major interim studies; one on solid waste management and regulation and the other on the protection and management of ground water quality. As a result of the solid waste study, the state

updated and expanded its solid waste program to promote waste reduction and recycling and the safe landfilling of solid and hazardous waste.

The EQC's study of ground water quality included: a review of existing ground water quality protection programs in Montana and other states; a review of legislation passed during the 1989 session regulating agricultural chemicals, underground storage tanks, on-site sewage disposal and septic systems and hard rock mining; an examination of potential methods for promoting ground water protection at the local level; and potential programs for funding and staffing state ground water protection programs.

Following through with earlier studies, the EQC evaluated voluntary application of best management practices (BMPs) for timber harvest activities; and monitored a number of hazardous materials management programs -- including the underground storage tank program, the waste-site cleanup at Livingston and the mini-Superfund program.

The EQC received funding from the 1989 Legislature to conduct public hearings on log-scaling (i.e., the

measurement and grading of logs). Individuals in the timber industry whose wages and financial returns are directly tied to the log scale have expressed concern about the accuracy of scaling. The public hearings have provided a forum for these concerns.

The Governor, as well as members of the legislature, requested that the EQC conduct a review of Montana's laws and regulations on high-density development in rural areas. This review included sewage disposal regulations, fallout shelter construction, unreviewed residential subdivision development, and geothermal resource development.

A summary of these studies and evaluations is contained in this report. More

information on the Council's studies is available in the following EQC publications.

*SJR 19 Interim Study of Solid Waste Management: Final Report to the 52nd Legislature*

*SJR 22 Interim Study on Ground Water Quality Protection and Management: Final Report to the 52nd Legislature*

*Water Policy: Final Report to the 52nd Legislature*

*Rural Development: Final Report to the 52nd Legislature*

*Log Scaling: Final Report to the 52nd Legislature*

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# Solid Waste Management

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## Introduction

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In August of 1988 the Environmental Protection Agency (EPA) proposed new regulations for the location, design, operation, cleanup and closure of solid waste landfills.

Proposed under authority of the 1976 Resource Conservation and Recovery Act, these "Subtitle D" regulations responded to general fears over the nation's environmental degradation and recent studies identifying the leaching of contaminated liquids from landfills as a major source of ground water pollution.

The new rules coordinate the use of new landfill design technology and strict requirements for landfill siting, operating and closing to reduce future risks to the nation's ground water resources.

Specifically, some of the provisions of the Subtitle D regulations call for ground water monitoring (on an ongoing basis and for thirty

years after closure), hazardous waste inspections, recordkeeping and financial assurance that landfill owners and operators have the necessary financial and technical abilities to comply with the new regulations.

Though Subtitle D has not been finalized (the expected date is now the spring of 1991), the regulations are certain to significantly affect the way solid waste is managed in Montana.

### Implications of Subtitle D for Montana

Two decades ago, more complex information and management techniques began emerging in the field of solid waste. Prior to 1970, decisions on landfill sitings were made because of convenience and accessibility rather than for environmental or safety considerations. As information became available on the potential health and environmental hazards associated with landfills, federal and state governments began developing legislation

to regulate and restrict them.

This new body of legislation, most recently, Subtitle D, requires the use of sophisticated equipment, inspections and monitoring systems which will dramatically increase the level of technical expertise necessary to manage solid waste, as well as the costs associated with doing so.

Historically, most of the state's landfills have been operated by small, rural communities with minimal financial or technical resources. In 1987, of the 140 landfills operating in Montana, only about a dozen had instituted ground water monitoring systems. As the Subtitle D regulations become mandatory, many small landfills operations are likely to close rather than meet the costs associated with complying with the new regulations.

These rules will thus accelerate the existing trend toward large, regional landfills in lieu of small, local operations. Twenty-five years ago, there were an estimated 500 landfills in Montana; the most recent estimate is 112. It is predicted by the Department of Health and Environmental Sciences (DHES) that within five to ten years of Subtitle D implementation, there will be thirty-five to fifty active landfills in the state, many of these serving a multi-county region.

As these landfills are developed, the state will need to find ways to assist local governments with the substantial financial

investments in equipment and monitoring the program regulations will require. New sources of funding and additional staff will also be necessary for the state to meet its program obligations.

Although increased costs and technical compliance will be a challenge for all states, the new EPA regulations will challenge Montana in some unique ways.

Landfills in many areas of the country are reaching capacity. Concurrently, new landfills are becoming harder to site. In the Midwest and Northeast, open space is limited. Throughout the nation, people are more reluctant to having landfills sited in their area because of environmental, aesthetic or safety concerns, i.e, ground water contamination, air pollution (from incinerators), disposal of hazardous and infectious wastes and the possibility of methane gas leakage or explosion.

Though the potential for environmental and health risks exists in Montana (ground water contamination from landfills has been detected in some areas), the state still has an abundance of open space and soils suitable for landfill siting. Montana has thus become a target for the importation of waste from out of state.

This session, the legislature will try to respond to these challenges from within and from outside the state as it considers a package of legislation designed to establish a long-term solid waste management policy for Montana.



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## Legislative Background

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Congressional approval of the 1976 Resource Conservation and Recovery Act (RCRA) established the first comprehensive federal approach to solid and hazardous waste management. Enactment of the RCRA completed a "triangle" of federal regulation, adding land disposal regulations to existing laws governing air and water. Predicated on "cradle to grave" management, the act was intended to regulate waste from its generation to disposal.

The following year, the Montana Legislature instituted its solid waste management program with passage of the Solid Waste Management Act. The act stated that the people of Montana were "being endangered by improperly operated solid waste management systems and by the improper and unregulated disposal of wastes." The state plan established an application and licensing procedure for solid waste systems, provided funding through the general account, and developed a classification system which directed certain types of waste to the disposal sites most capable of containing them.

In 1984, the EPA authorized the DHES to administer the state's waste management programs. To retain authorization, the DHES is required to keep current with regulatory changes at the federal level.

During the 51st Legislative session (1989), the state enacted a half dozen solid waste related bills, among them, a requirement for ground water monitoring at certain landfills, and a temporary moratorium (effective until October 1991) on the importation of waste from out of state.

Recognizing that many issues remained unresolved, and that the state lacked adequate information on many of these issues, the legislature also passed Senate Joint Resolution 19, directing the Environmental Quality Council to evaluate and develop recommendations for a state policy on solid waste management.

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## SJR 19 Study

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During the initial stage of the solid waste study, the Environmental Quality Council appointed a seventeen member advisory committee of solid waste experts from across the state to assist with the study's technical components. Membership of the Solid Waste Management Advisory Committee (SWMAC) was broad-based, and included participants from the private sector, local governments and environmental groups.

In December 1989, the SWMAC met for the first time and developed a list of issues it considered most important to address. After some modifications of the original study proposals, the advisory

committee focused on the following issues:

- \* integrated waste management;
- \* importation and interstate commerce;
- \* public vs. private systems;
- \* funding;
- \* local government assistance; and
- \* special wastes.

generated; for example, purchasing bulk items or biodegradable packaging;

- \* reuse - buying durable products with a longer lifetime or finding alternative uses;
- \* recycling - includes the collection, marketing and use of recycled products;
- \* composting of biodegradable wastes;
- \* landfilling and incineration.

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## Integrated Waste Management

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Federal policy places the responsibility for solid waste management with state and local governments. Since a variety of options for waste management exist, it is up to each state to decide which management program meets the needs of the local situation.

An integrated waste management program works from the premise that landfill space is limited and should be reserved for wastes that can not be treated any other way. It therefore coordinates the use of a combination of techniques and programs to reduce the amount of refuse that ultimately ends in landfills.

This program generally contains:

- \* source reduction - changing marketing, manufacturing and social practices to reduce the amount and toxicity of waste

At present, there is no formal integrated waste management program in the state. But innovative programs for waste reduction and recycling have been developed at the local level. Citizens groups, the commercial recycling industry, and in some instances, local government agencies have instituted a variety of programs, including curbside recycling and educational programs or local "Trash for Trees" projects. In almost all communities across the state, groups have formed to discuss solid waste issues and options.

Because a successful integrated waste management program requires citizen support, Council members were encouraged by the amount of community interest in waste reduction and recycling. They concluded that an integrated waste management program in Montana was both desirable and feasible.

The remaining question for the Council and the SWMAC to

consider was how involved the state should be in implementing and enforcing the program. Both concurred that the state should provide direction and leadership to local governments through technical assistance and program guidelines, but that at present, the program should be voluntary and phased in over the next five years.

Over the course of the three Council meetings in October, November and December, the EQC developed the following proposals on integrated waste management.

**Establish integrated waste management as state policy.**

**Update the 1981 state plan for solid waste to incorporate integrated waste management.**

**Direct the Department of Health and Environmental Sciences (DHES) to provide technical assistance to local governments, citizens groups and the private sector on the development of integrated waste management programs.**

**Require state agencies, the legislature and the university system to prepare and implement source reduction and recycling plans.**

**Require state government by 1992 to establish purchasing specifications for, and procure supplies and materials composed of, recycled material when technologically practical and economically feasible.**

**Establish a goal that by 1996, 95 percent of the paper and paper products used by state**

**agencies, universities and the legislature be composed of recycled rather than virgin material.**

**Establish a task force to recommend additional mechanisms for state government to develop markets for recycled products.**

**Establish Class E carrier authority for the transport of recyclable materials.**

**Establish a target of reducing the volume of the state's solid waste stream by 25 percent, to be achieved by the year 1996.**

**Direct the DHES to develop a procedure for measuring progress toward achieving the 25 percent waste reduction goal.**

### Legislative Action

**Passed**

House Bill 160

Montana Integrated Waste Management Act

\* Signed by Governor

House Bill 263

Class E Motor Carrier Authority for the Transportation of Recyclables

\* Signed by Governor

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## Importation and Interstate Commerce

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In the last year, proposals from other states for bringing waste to Montana for landfilling have begun to surface. Montana is being considered as a possible site for disposal of out-of-state wastes for several reasons, among them, the state's low population density, its abundance of environmentally desirable landfill sites and market conditions that may make it more profitable to ship waste to Montana for disposal.

As these proposals have surfaced, public debate surrounding the issue of waste importation has become both contentious and emotional. Proponents tout economic benefits to local communities and the state's ideal conditions for landfilling. Opponents, however, fear that the disposal of out-of-state waste in Montana will ruin the state's "Big Sky" image and will, in effect, make Montana a national garbage dump.

Waste importation has become a political issue throughout the country for both practical and economic reasons.

In some areas of the country, the lack of space available for waste disposal is creating a panic. Existing landfills are reaching capacity at a time when the siting of new ones is more difficult and more expensive. As the problem gets worse, the

option of shipping waste to another state for landfilling becomes more economically viable.

At present, disposal costs in Montana are significantly less than in many areas of the country. Due to limited disposal capacity, higher land values and often more stringent environmental standards for landfills, the cost of constructing and operating waste disposal systems in midwestern and northeastern regions of the country is generally greater than in Montana. Although this cost discrepancy will decrease as Montana implements Subtitle D regulations, it is likely that proposals to ship solid waste to Montana will continue. As part of the SJR 19 study, the Environmental Quality Council was directed to develop recommendations for a permanent policy on the importation of waste to replace the state's current moratorium.

This process was made more complex by the constitutional guidelines the state must follow when developing regulations on interstate commerce and imported waste. These requirements are stated in the Commerce Clause under Article I, Section 8 of the United States Constitution which states: "Congress shall have power ... to regulate commerce ... among the several states ...." Because solid waste is considered a commercial product, outright bans and moratoriums on imported waste have been ruled unconstitutional.

During the interim, the EQC studied less restrictive and

less direct strategies developed by other states for regulating interstate commerce that would withstand judicial scrutiny. They also heard considerable testimony from private citizens and businesses during Council meetings in March, October and November.

The Council concluded that waste importation could be most effectively regulated through a combination of strategies with a differential fee system as a base component. Differential fees have been used by several other states and are constitutional if properly designed. A differential fee system places higher rates on waste brought in from out of state. This system is based upon the premise that citizens within a state should not have to subsidize the regulation and disposal of out-of-state waste.

During the final months of 1990, the EQC refined this strategy and made the following recommendations for regulating imported waste.

**Establish an initial \$5 per ton surcharge (differential fee) on all out-of-state waste disposed of in Montana.**

**Direct the DHES to conduct an economic study to estimate the full costs to the state associated with disposal of out-of-state wastes. The study should provide a basis for determining more precisely a permanent surcharge that can be legally justified.**

**Institute a Mega-Landfill Siting Act (patterned after the Major Facility Siting Act) to regulate the development of landfills that receive 200,000 tons or more waste per year.**

The Act would include an application review process, criteria for evaluating the environmental effects of a mega-landfill and a requirement that the developer pay the full cost of an environmental review.

**Provide for a local government referendum on the development of a mega-landfill.**

Although this recommendation has potential legal problems (a referendum may be considered arbitrary and capricious and could constitute a barrier to interstate commerce if only landfills receiving out-of-state waste are disapproved), Council members felt strongly that the people living in the immediate vicinity of a mega-landfill should have the opportunity to either endorse or veto it.

**In the event a mega-landfill is developed, the DHES should be authorized to hire up to five additional staff, if necessary, to regulate the landfill's on-site operations.**

**Extend the existing moratorium on solid waste importation.**

After lengthy discussion, the Council decided to recommend that the existing moratorium on importation be extended for another two years for the following reasons:

\* additional time is needed to increase the staff and

capacity of the DHES to a level adequate to effectively regulate imported solid waste;

\* administrative rules to implement the Mega-Landfill Siting Act and surcharge on out-of-state waste must be promulgated; and

\* because the moratorium is a temporary, emergency measure intended to provide Montana with two years to develop an effective solid waste regulatory program, the state has some basis for defending itself against a Commerce Clause challenge.

#### Legislative Action

##### **Passed**

##### Senate Bill 346

Establish Solid Waste Management Fee on Waste Generated Out-of State

\* Signed by Governor

##### House Bill 139

Extension of Moratorium on Interstate Transport of Solid Waste

\* Signed by Governor

##### House Bill 377

Mega-landfill Siting Act

\* Signed by Governor

##### **Failed**

##### Senate Bill 114

Local Referendum on Siting of a Mega-landfill

\* Tabled in House Natural Resources Committee

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### **Public vs. Private Disposal Systems**

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Under current state law, there is some confusion and controversy over whether local governments or private solid waste contractors are given a preference in the development of new solid waste management systems. The 1977 Solid Waste Management Act states that private industry should be "... utilized to the maximum extent possible", but that local governments are "primarily responsible" for management of the state's solid waste.

The Council had two objectives in developing proposals on the issue of public vs. private disposal systems; to clarify existing statutes and to ensure that the issue was given adequate discussion at the beginning of the planning process for a new solid waste management system.

With these objectives in mind, the Council made the following recommendations on public vs. private disposal systems.

**Public notice should be required for proposed new solid waste systems.**

If interest is expressed in a privately-owned system, a public hearing should be held at the outset of the process.

The Department of Health and Environmental Sciences should develop a procedure and criteria to compare public and private proposals.

Preference should be given to private industry if costs and services are substantially equal.

### Legislative Action

#### **Failed**

#### Senate Bill 99

Provide a Preference for Privately Operated Solid Waste Management Systems

\* Failed House second reading 47-51.

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### **Funding for Solid Waste Management**

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Montana's solid waste management program is one of the few environmental programs in the state that receives no federal funding. Although the program was initiated, in part, with EPA funds in the 1970's, in 1981 this funding ended.

Since that time, the state has financed solid waste regulation and planning through the state general fund. But this funding has

been inadequate for the state to implement existing programs.

Due to lack of staff, legitimate regulatory control of landfills and other solid waste management systems is effectively non-existent. Reported violations of environmental standards go uninvestigated and unlicensed landfills remain open. Further, the DHES has not been able to process the growing number of applications for new facilities (among these are two proposals for mega-landfills and two license applications for infectious waste incinerators for out-of-state waste), just when prompt service is essential due to impending Subtitle D regulations. Additional staff and funding are necessary if the DHES is to maintain effective control of the state's solid waste program.

A budget proposed by the DHES and supported by the Council would provide additional staff to the department for the implementation of Subtitle D regulations, review and inspections of new and existing systems and for implementation of other solid waste programs being proposed by the Council, i.e., integrated waste and household hazardous waste management. This proposed budget would increase division staff from 3.41 to 13 at full implementation, and would require an additional \$429,000 above the current general fund amount of \$184,000.

The Solid Waste Management Advisory Committee considered

several options for funding the proposed increases, including permit and license fees, per ton fees on landfilled waste, disposal fees on special wastes (ex, waste tires), tipping fee surcharges or local option provisions which would allow local governments to use a combination of these methods.

To determine which of these revenue sources would be most appropriate for the state, the Council and the SWMAC agreed on some general guidelines:

- \* because solid waste management is a public health issue, some funding is the responsibility of all citizens;
- \* additional funds for the solid waste management program should come primarily from those receiving the service (user fees);
- \* fees should be proportioned to the volume of waste disposed;
- \* fees should reflect the cost incurred by the state in reviewing applications and completing the annual licensing process;
- \* fees should encourage waste reduction;
- \* fees should provide an incentive for the consolidation of smaller systems.

Using these guidelines, the EQC developed the following recommendations for funding the state solid waste management program.

The solid waste program should be funded by a combination of continued support from the General Fund and user fees.

**The user fee should be collected through a requirement for an operating license from the Department of Health and Environmental Sciences.** Licenses would be renewed annually to provide an ongoing source of revenue.

**The annual license fee should include:**

- \* a base component;
- \* a component based on the volume of waste being disposed; and
- \* a fee for review of new license applications.

**The recommended annual funding for the FY 92 and FY 93 solid waste program is \$614,000, with a total staff at full implementation of 13 FTE.**

#### Legislative Action

**Passed**

Senate Bill 209

Solid Waste Management System Application and License Fees

\* Signed by Governor



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## **Local Government Assistance**

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Although the state has overall regulatory responsibility for solid waste management, in many instances, local governments will be responsible for actual waste collection and disposal. The effectiveness of new state and federal solid waste management programs will therefore hinge on the cooperation and financial commitment of local governments in providing these services.

Currently, the authority of local governments to provide solid waste services and to obtain the funding necessary to do so is restricted by outdated and inconsistent local government solid waste laws. During the interim, the Council reviewed potential legislation which would clarify existing statutes to give local governments greater flexibility and authority in financing solid waste services, for example, providing them with the authority to issue bonds and to set fees that relate more closely to the cost of services and which would also promote the goals of the state's solid waste program, i.e., encourage regional services and relate state assistance to conformance with state policy.

The recommendations decided on by the Council for providing local government assistance are:

**Solid Waste Districts should be able to issue limited tax-backed revenue bonds.**

**Municipalities and counties should be provided clear authority to issue bonds.**

**The authority of local governments to determine the method of collecting fees should be more flexible.**

**Current statutory language relating Refuse Disposal Districts and Garbage and Ash Collection Districts should be consolidated and made consistent with the definitions and the use of the term "solid waste management" in public health statutes.**

**Statutes should be clarified to allow access to Board of Investment programs.**

### **Legislative Action**

#### **Passed**

#### **Senate Bill 189**

General Revision of Local Government Solid Waste Management Laws

\* Signed by Governor

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### **Special Wastes**

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The final issue on solid waste addressed by the Council was how the state should manage certain wastes

currently unregulated under state or federal law. Included in this part of the study were; infectious waste, household hazardous waste, and waste oil.

### Infectious Waste

The Environmental Protection Agency defines infectious waste as "waste capable of producing an infection." This type of waste is primarily generated by hospitals and clinics, and may include products such as blood, needles or cultures.

In the past several years, public concern over state and federal management of infectious waste has increased dramatically. These concerns have been raised because of reports in the press of careless disposal of medical wastes and increased public awareness of the risk of AIDS transmission.

The EPA has the authority to regulate infectious waste under the Resource Conservation and Recovery Act, but to date, the agency has issued only voluntary guidelines. Where federal regulation of infectious waste has been lacking, states have taken the initiative. Montana is currently one of only a few states which does not have an infectious waste management program.

Under the state's present waste classification system, hospital and medical wastes are classified as Class II mixed solid wastes and may be landfilled "providing that infectious medical wastes have been sterilized or safely contained to prevent the

danger of disease" (ARM 16.14.503). But, in practice, infectious waste that has not been sterilized or contained is often landfilled along with other municipal solid waste.

Producers of infectious waste generally dispose of these products in one of three ways; landfilling untreated waste, incineration or autoclaving prior to landfilling.

Incineration is the most common method of infectious waste treatment. Nationally, the EPA estimates that about 80 percent of all hospital waste is incinerated. This method has many of the advantages and disadvantages of incineration of municipal solid waste. The benefits are the reduction in the volume of waste and the need for minimal additional processing prior to landfilling. The disadvantages are the high cost and the risk of the release of toxic emissions.

Autoclaving is the process of steam sterilizing infectious waste prior to landfilling. Several factors influence the effectiveness of this method, including the volume and density of the material and the quality of equipment being used. Because it is difficult to judge if this waste has been properly sterilized, some landfills no longer accept autoclaved waste.

The greatest concern surrounding the disposal of untreated waste in landfills is the perceived and potential risk of injury, infection, or disease. According to the U.S. Department of Health and Human Services, the actual risk of

contracting an infectious disease from medical wastes is low. In order for a communicable disease to be infectious, four conditions must be present: a disease-causing agent of sufficient virulence; a quantity sufficient to cause infection; a susceptible host, i.e., someone with lowered resistance; and, an agent specific access point into the body.

After several meetings and presentations by infection control practitioners, Council members concurred that the actual health and environmental risks associated with infectious waste were minimal. But because of the perceived threat concerning infectious waste, and because lack of regulations may make the state vulnerable to infectious waste importation, the Council believed some mandatory regulations were necessary.

In developing infectious waste legislation, the EQC relied upon the recommendations of the Coalition for Infectious Waste Management. The Coalition is an industry-sponsored group, formed for the purpose of developing and implementing infectious waste policies that are reasonable, cost-effective, aesthetically pleasing and environmentally acceptable. The Council and Coalition agreed on the following recommendations for infectious waste management.

**Standards should be established for waste management, including separation, containment,**

**storage, transportation, handling and disposal.**

**Landfilling of untreated infectious waste should be prohibited in April of 1993.**

**Responsibility for the licensing and regulation of infectious waste producers should be placed with the respective boards or agencies that license professions, occupations, or health care facilities.**

### Legislative Action

**Passed**

House Bill 239

Infectious Waste Management Act

\* Signed by Governor

### Household Hazardous Waste

Household hazardous wastes are products discarded from homes that contain potentially toxic substances, for example; paints, solvents, herbicides, oil, antifreeze and a number of other products.

The disposal of household hazardous waste is currently unregulated under state or federal law. Household generators of hazardous waste are exempt from the disposal requirements and regulations that apply to other producers of hazardous waste. Further, small quantity generators -- those who produce less than 220 lbs. of hazardous waste a month -- are also unregulated.

At this time, it is difficult for private households to dispose of their

hazardous wastes safely. Information is not readily available on what steps may be taken to reduce the toxicity of household hazardous waste prior to landfilling. In addition, the state does not have a licensed hazardous waste disposal facility in which these wastes can be properly disposed; all hazardous waste produced in Montana is currently shipped out-of-state for disposal.

In lieu of any state directed method for household hazardous waste disposal, these wastes are generally disposed of by being poured down the drain, by being dumped on the ground or by being disposed of in landfills. Each of these methods has the potential of contaminating ground or surface water.

Initial discussions by the Council addressed how the state could make information available to communities, groups and individuals on methods to reduce the amount of household hazardous waste entering landfills. The Council also examined the possibility of developing a convenient and systematic household hazardous waste collection program, but decided, although one was needed, the program would be too expensive to fund at this time.

After reviewing information provided at the October and November 1990 Council meetings by Browning-Ferris Industries, the DHES, the Montana Solid Waste Contractors Association, Special Resource Management, and Waste Management, Inc., the Council developed the

following recommendations on household hazardous waste management.

**The DHES should develop a technical assistance program to aid local governments and the private sector in developing hazardous waste collection and exchange programs.**

**The DHES should serve as a clearinghouse for information on chemical compatibility and on alternatives to the use of products containing hazardous and toxic materials.**

**The DHES and the Office of Public Instruction should jointly develop a school curricula on hazardous waste reduction for grades K-12.**

#### Waste Oil

Waste oil is any oil that has been used and there-by contaminated with physical and chemical impurities. Examples of waste oils include spent automotive fluids, spent refrigerator oils, hydraulic oils and other used industrial oils.

According to the Hazardous Waste Treatment Council, there is a higher volume of waste oil produced in the United States than any other type of hazardous waste. In Montana, officials estimate that approximately 2.2 million gallons are produced annually.

The regulation of waste oil is currently in a state of flux. Since 1985, the EPA has been debating whether or not to list used oil as a hazardous waste. While no

action has yet been taken, in the future oil may be designated either a hazardous or special waste. Such a listing could significantly effect the costs and methods of disposal.

Under existing law, waste oil is regulated in some circumstances. Federal regulations govern the burning of waste fuel -- specifying the classes of oil that may be burned, the types of combustion equipment used and the emission standards which must followed. Federal regulations also prohibit the use of waste oil as a dust suppressant on roadways. Finally, state environmental regulations prohibit the contamination of surface and ground waters by oil.

Currently, waste oil is generally disposed of by recycling (both burning and re-refining) and landfilling. Because waste oil can be reclaimed with existing technology, it is one of the easier special wastes to recycle. About 45 percent of the waste oil generated in Montana is recycled by re-refining. This recycling process yields approximately 2.5 quarts of usable oil and 1.5 quarts of sludge by-product per gallon recycled. Approximately 22 percent of the waste oil generated in Montana is recycled through burning -- primarily in heating furnaces, and an estimated 11 percent is disposed of in landfills.

While disposal of small quantities of uncontaminated oil is legal, many landfills refuse to accept oils because they feel the risk of

pollution is too great. Landfills that do accept used oil typically require that the oil be mixed with sand, sawdust or vermiculite to remove all free liquids.

The Council considered recommending that the DHES develop an oil collection program at municipal landfills for do-it-yourself oil changers, then rejected this option because it decided that scarce financial and human resources could be better spent on other aspects of solid waste management. The recommendations the Council did adopt are intended to make it easier for people who wish to properly dispose of waste oil to do so. These recommendations are:

**Direct and fund (as funds become available) the DHES to develop an oil recycling awareness program.**

**Require oil retailers to visibly display, at a prominent place within the store, a sign indicating the location of the nearest waste oil collector. A general sign for this purpose is to be developed by the department as part of its recycling awareness program.**

#### Legislative Action

**Passed**

House Bill 145

Encourage Oil Recycling Through Sign Display by Retailers and Wholesalers

\* Signed by Governor

# Ground Water Quality Management

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## Introduction

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Public awareness of the importance and fragility of the state's ground water has increased dramatically in the last few years, due in part to the increased number of ground water contamination incidents in Montana and elsewhere. Also, as surface water supplies are becoming fully appropriated in a number of the state's river basins, the **use** of ground water is increasing for a variety of beneficial purposes, i.e., as a water supply source for industry and agriculture; to maintain water quality and quantity in rivers and streams; and as a source of drinking water for a major portion of the population.

In recognition of the importance of the state's ground water resource, the 51st Legislature (1989) passed several major ground water quality protection initiatives, including **HB 486**, requiring ground water monitoring at certain landfills and waste disposal sites; **HB 757**, creating an agricultural chemical ground water protection program; **SB**

**321** and **HB's 603 and 552**, regulating underground petroleum storage tanks and providing funds for clean up of tank leaks; and **HB 680**, regulating the use of cyanide by small mining operations. In addition, the legislature also approved **Senate Joint Resolution 22**, directing the Environmental Quality Council to evaluate state policies and programs for the protection and management of ground water quality.

## Background

State and federal agencies, private businesses and individuals have expressed concern that existing ground water management programs are not adequately protecting the state's ground water resources.

Ground water protection programs at the federal level consist of a variety of uncoordinated statutes which address only specific sources of potential ground water contamination, for example, the Resource Conservation and Recovery Act (RCRA), regulating solid and hazardous waste and the Federal Insecticide, Fungicide, and

Rodenticide Act (FIFRA),  
regulating pesticide use.

Programs and policies at  
the state level are also  
fragmented and administered by  
different agencies. These  
programs consist of:

- \* regulation of point and  
nonpoint sources of pollution;
- \* ground water quality  
standards;
- \* a state ground water  
classification system;
- \* a state nondegradation  
policy; and,
- \* state authority to require  
cleanup of contaminants.

Because of the lack of a  
comprehensive nation-wide  
ground water protection  
program, state governments  
have begun developing ground  
water protection programs at  
the state and local level.  
These programs generally  
include ground water studies  
and data collection -- to  
enable agencies and citizens  
to make appropriate decisions  
on ground water issues, and  
source specific legislation --  
to regulate the most  
significant sources of ground  
water contamination.

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### **SJR 22 Study**

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The Council included both a  
review of possible ground  
water data collection

programs, and a review of  
legislation on specific  
sources of ground water  
contamination in its 1989-1991  
SJR 22 study. This aspect of  
the study led to the  
endorsement of two programs:

- \* a proposed ground water  
monitoring program; and,
  - \* a proposed ground water  
characterization program;
- and the review of state  
legislation for:
- \* on-site sewage disposal and  
septic systems;
  - \* underground storage tanks;
  - \* hard rock mining; and,
  - \* agricultural chemicals.

The Council also reviewed  
potential methods for  
increasing ground water  
protection at the local level,  
discussed under:

- \* ground water management  
areas.

Lastly, the EQC reviewed  
methods for ensuring that  
ground water protection  
programs were funded and  
staffed at adequate levels.  
This aspect of the study is  
discussed in this report  
under:

- \* Water Quality Bureau  
staffing issues.

In the fall of 1989, the  
EQC appointed a fourteen-  
member task force to assist  
with the ground water study.  
The Ground Water Data Task

Force was comprised of representatives from state and federal agencies, the university system and local government agencies such as the Fort Peck Tribes and the Missoula City-County Health Department. The task force met five times between October 1989 and May 1990 and presented its findings to the EQC in June.

One immediate conclusion reached by the EQC and the Ground Water Data Task Force was that the state's ground water has not been systematically evaluated and that this lack of basic information is seriously hampering efforts to protect, manage, and develop the ground water resource. Decisions on water rights permitting and appropriations; prevention of ground water contamination; operation of public water supply systems; and water well drilling and irrigation all require adequate and reliable ground water information.

Although some specific ground water investigations have been done in Montana, the characteristics of aquifers in substantial portions of the state have not been previously studied, nor were past studies conducted with the idea of producing a comprehensive statewide ground water data base. Much of the information produced by previous ground water studies is not applicable to most ground water management and protection decisions for one or more of the following reasons:

.. the studies concentrated on problem situations such as saline seep and the behavior of contaminants in the subsurface rather than evaluation of the ground water resource;

.. the studies were done on a short-term, one-time basis and were not of sufficient duration to reflect year-to-year changes in aquifer flow and direction, or in some instances, seasonal changes;

.. only one aquifer was studied rather than all of the potentially usable aquifers in a particular study area;

.. study results are incompatible or difficult to compare due to differences in emphasis or because different parameters were assessed;

.. aquifers were not evaluated for regional variability;

.. the study results were either too site-specific or too regional in scale; and

.. shallow alluvial aquifers that are generally the most vulnerable to contamination were not considered.

The EQC and the Ground Water Data Task Force concluded that there is a significant need for a more comprehensive, long-term monitoring program to measure on-going changes in ground water quality and supply.

Based on this conclusion, the EQC recommended the creation of two ground water studies:



**The EQC recommends that a ground water monitoring program be established to record water chemistry and water levels on a long-term basis through a statewide network of observation wells.**

**The EQC recommends that a ground water characterization program be established to systematically assess Montana's ground water on a statewide basis.**

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### **Ground Water Monitoring Program**

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The goal of the proposed ground water monitoring and characterization programs is to establish a state-wide data base on Montana's ground water quality and quantity that will help government agencies, citizens and businesses improve ground water protection and management decisions over the long term.

The ground water monitoring program would consist of establishing a state-wide system of monitoring wells to measure the magnitude and frequency of changes in water levels and water quality in an aquifer. The Ground Water Data Task Force suggested an allocation of 730 monitoring wells among the major aquifer groups in the state. For the most part, the observation wells would be selected from existing wells where some previous monitoring had occurred. The program would concentrate on measurements of shallow aquifer systems, but

would also include some deeper aquifers that are widely used in Eastern Montana.

Water level measurements would be taken four times per year on each well, with continuous recorders installed on 10 percent of the wells. Water quality samples would be collected from ten percent of the wells (about 70 wells) annually. Water quality monitoring would include analyses of inorganic parameters (e.g., dissolved solids, chloride), and selected organic parameters (e.g., volatile organic compounds) for aquifers considered vulnerable to contamination.

The projected cost of the proposed ground water monitoring program is \$438,512 per biennium.

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### **Ground Water Characterization Program**

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The goal of the proposed ground water characterization program is to study all of Montana's major aquifers over the next twenty-one years, and to provide the information gathered through the program to all relevant agencies and interested citizens.

The proposed ground water characterization program would consist of studying all the major aquifer groups in the state to determine aquifer characteristics such as flow direction, recharge-discharge patterns, and cause-effect patterns related to water

withdrawal and surface-ground water interactions.

The Ground Water Data Task Force identified twenty-one potential study areas (see **Figure 1**) that would be evaluated under the proposed ground water characterization program. The task force chose these areas by matching drainage basin boundaries to county boundaries as closely as possible and by grouping geologically similar areas together.

The task force recommended that areas should be prioritized for study according to two primary criteria: 1) vulnerability to contamination and/or declining water supply; and 2) functional importance of the aquifer in terms of current and potential use.

The areas of Montana that are likely to receive highest priority for the first ground water assessments conducted under the program are the Western Montana basins and the Eastern Montana river valleys, primarily because these areas are where the most people live, where activities involving use of contaminant substances are greatest, and where aquifers tend to be generally shallow and most vulnerable to pollution.

Each of the twenty-one ground water assessments would require approximately three years to complete. Approximately one ground water assessment would be completed each year after initial program start-up, resulting in complete state-wide coverage in twenty-one years.

The estimated cost of this program is \$893,220 per biennium.

### Interagency Coordination

Interagency coordination is a critically important component of the proposed ground water programs. Some of the inadequacies of existing ground water data and problems hampering data access can be traced to the historic lack of interagency coordination of ground water programs.

To promote agency participation and interagency coordination, the EQC recommended the following.

**The EQC recommends that an interagency steering committee be established to guide the proposed ground water characterization and monitoring programs and to ensure that the work performed under the programs is fully coordinated with ground water-related projects that individual agencies may be conducting. Specific duties of the steering committee should include prioritizing aquifers for future ground water assessments and overseeing the selection of monitoring well sites. The steering committee should include representatives of the Department of Natural Resources and Conservation (DNRC), the Department of Health and Environmental**

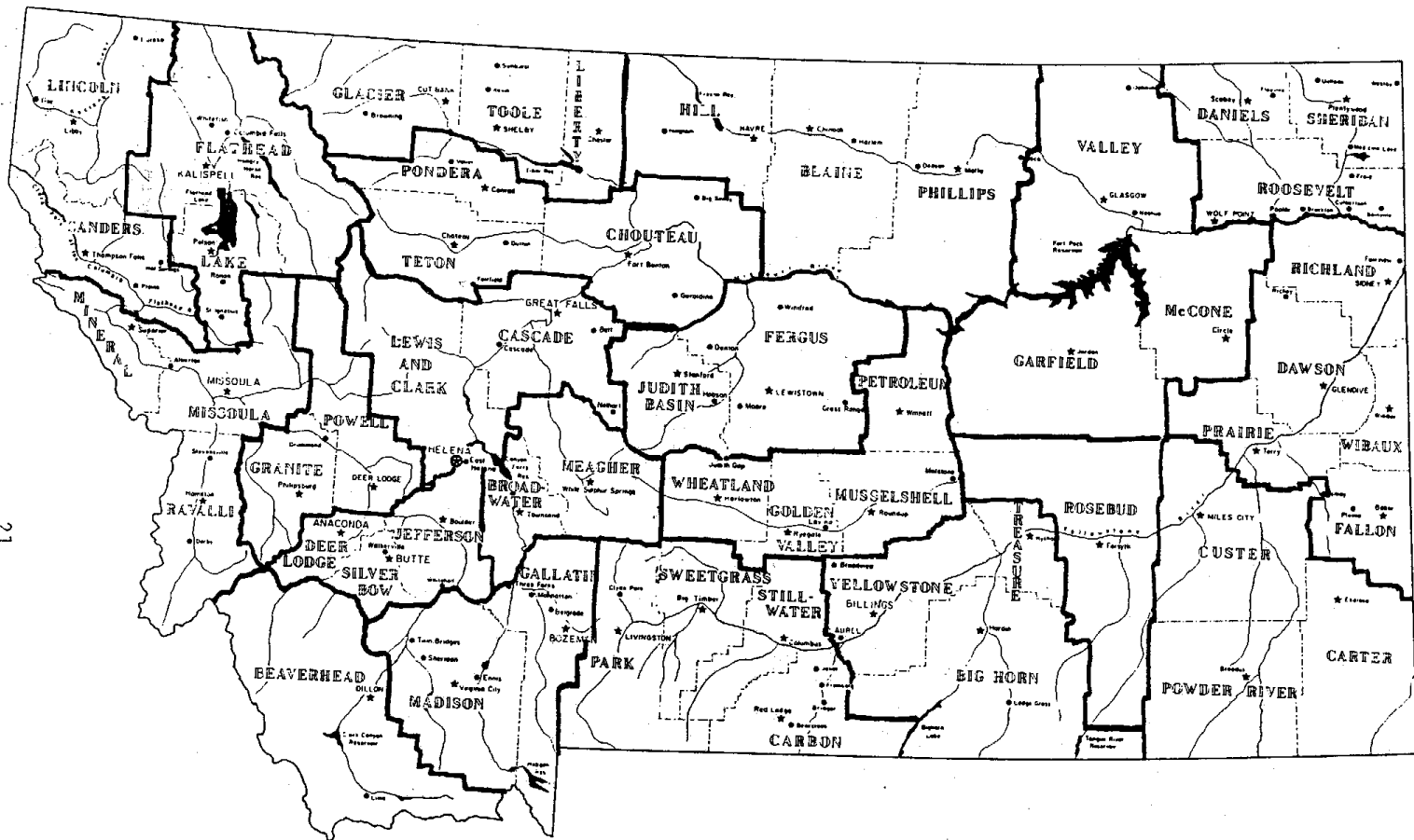


Figure 1: Ground Water Characterization Study Areas

Sciences, the Department of Agriculture, the Department of State Lands (DSL), and the Natural Resource Information System. EX-officio members may include representatives of the EQC, the Montana Bureau of Mines and Geology (MBMG), the university system, federal agencies such as the U.S. Geological Survey, the Bureau of Land Management (BLM), the U.S. Forest Service, the Soil Conservation Service, the Environmental Protection Agency and the Bureau of Reclamation, and local government, water users, industry and ecological protection organizations.

#### Program Administration

The Montana Bureau of Mines and Geology has current statutory responsibility for conducting studies, compiling statistics and publishing reports concerning Montana geology, including hydrology. The MBMG also houses the Ground Water Information Center and is a repository for a substantial portion of existing Montana ground water data. The EQC therefore recommended the following:

The EQC recommends that the MBMG be assigned primary administrative responsibility for the ground water characterization and monitoring programs, subject to the guidance provided by the interagency steering committee.

#### Data Management

Numerous problems have historically hampered user access to ground water data in Montana. Data management issues that need to be resolved include differences in map scales among various sets of data, loss of data accuracy through conversion to a computerized geographic information system, inconsistency in quality of ground water data, the need for uniform standards for ground water data collection, analysis and recording and the need to make existing data more computer-accessible to users.

To ensure that the data gathered from the proposed programs is consistent and readily available to any interested user, the EQC recommended the following:

The EQC recommends that if the 1991 Legislature approves the proposed ground water monitoring and characterization programs, the resulting information should be entered into a Geographic Information System. A data collection and management system that ensures a reliable data base and that is satisfactory to the steering committee should be implemented.

#### Public Education and Involvement

Development of strong working relationships with local governments, water user associations, conservation

districts, rural water districts, public water supply operators and other organizations with a special interest in ground water will be important to the success of individual ground water assessments and acceptance of the proposed ground water programs. Local support and recognition of threats to ground water quality and supply may also be significant factors influencing the selection of areas for future study. To promote public and local government involvement, the EQC made the following recommendations:

**The EQC recommends that the interagency ground water steering committee be responsible for identifying ways to heighten public awareness of ground water issues and improve government's efforts to educate the public about ground water. The task force also recommends that the MBMG provide technical support and information to existing ground water education programs.**

**If the proposed ground water characterization program is approved, the EQC recommends that local government involvement should be encouraged by the MBMG and the interagency ground water information steering committee to the fullest extent possible.**

**The EQC further recommends that the MBMG establish communication with the public in each area selected for ground water assessment under the characterization program.**

**Mechanisms should be established for a mutual exchange of information between state agencies and local people to identify citizen concerns and to explain the goals and process of the ground water assessment work.**

### **Funding Options**

The EQC and the Ground Water Data Task Force considered several factors when addressing funding options for the proposed ground water programs, among them, 1) the administrative expense of collecting revenue from any new funding mechanisms; 2) current uses of the funds raised by existing fees and taxes; 3) the likelihood of other proposals in the 1991 Legislature to raise the rates of existing funding mechanisms or creating new ones; 4) the political acceptability of raising the rates of any existing funding mechanisms or creating new ones; 5) the distribution and comparative rates of fees and taxes among the various sources of ground water contaminants; and 6) the volume of revenue some types of industry and businesses are already providing to support environmental and natural resource programs.

**After substantial debate and evaluation of the various funding alternatives, the EQC recommended that a portion of the proceeds of the resource indemnity trust tax be allocated in an amount sufficient to support the**

**proposed ground water monitoring and characterization programs.**

Cost share arrangements could be made with the USGS to conduct part of the ground water assessment work and potentially absorb up to 50 percent of some expenses. There is also a possibility of negotiating cost-share agreements with other federal agencies such as the BLM and the USFS, depending upon federal revenue availability for ground water programs.

**If the proposed ground water characterization and monitoring programs are approved, the EQC recommends that the MBMG devote immediate attention toward opening a dialogue with the USGS, the Bureau of Land Management, the Forest Service, the Soil Conservation Service, the Environmental Protection Agency, and the Bureau of Reclamation to specifically identify how their ground water programs and the federal funds targeted for Montana could be coordinated with the state's efforts.**

Based upon the level of attention that ground water is receiving nationally, the next two or three years may be an unprecedented opportunity for increasing ground water data collection and analysis in the state in partnership with federal agencies, particularly if Montana is willing to define its priorities and provide more support than in the past.

**Legislative Action**

**Passed**

SB 94

Establish and Fund the Ground Water Characterization and Monitoring Programs

\* Signed by Governor

**Failed**

HB 215

Increase Metal Mine License Tax to Fund Ground Water Assessment Programs

\* Tabled in House Taxation

HB 216

Appropriation for Ground Water Monitoring and Characterization Program

\* Tabled in House Taxation Committee

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**Ground Water Management Areas**

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Currently, a number of areas in Montana are threatened by ground water contamination and depletion. These threats particularly occur in areas where population centers are located over shallow aquifers and in areas with low recharge rates where large volume ground

water withdrawals are occurring or proposed. Portions of both the Missoula and Helena Valley aquifers are known to be contaminated by a variety of substances, including pesticides, bacteria, nutrients, petroleum products, organic compounds, and a variety of toxic contaminants that are leaking from landfills.

The state generally lacks programs designed to anticipate ground water protection needs and to prevent problems from occurring. Local governments in both the Missoula and Helena areas have concluded that an overall management strategy is needed to protect aquifers in their areas. Designation of special ground water management areas is one preventive approach the state could use to promote ground water protection.

The primary purpose for establishing a ground water management areas program is to identify areas where ground water is at risk due to contamination or decline in supply, and implement preventive strategies before problems occur or become critical. A variety of regulatory and land management strategies could be applied in a ground water management area. State agencies could impose special conditions on contaminant sources that are regulated under state programs. Also, water withdrawals could be restricted where there is concern about aquifer depletion. Local governments could restrict the siting of contaminant sources in

sensitive areas or restrict building density and traffic movement in sensitive areas to minimize the chance of contaminant spills.

Responsibility for ground water protection within a designated management area would generally be shared by state and local governments, and could also include federal agencies, water users, businesses, industry and citizens. The success of this type of program depends on leadership at the local level. Local sanitarians and health officers are often more familiar with site-specific ground water problems, and may be able to resolve local ground water protection issues more effectively than the state. However, local governments currently have inadequate authority and resources to implement ground water protection programs.

The state has authority under several different programs to manage ground water resources, but each of these programs is limited in its ability to provide comprehensive ground water protection.

**BNRC:**  
**Controlled Ground Water Areas**

The Board of Natural Resources and Conservation (BNRC) has the authority to designate a controlled ground water area by petition of the DNRC or local water users. In order for the BNRC to designate a controlled ground water area, the facts supporting a petition must show that ground water

supplies or ground water quality are at immediate risk.

The BNRC must hold a public hearing before it can designate a controlled ground water area. Once an area is designated, the BNRC may impose a number of corrective control provisions. The BNRC can close the area to further appropriations, limit total withdrawals among existing appropriators, impose a system of rotation of water use and other restrictions, give preference to water use for domestic purposes and livestock, and impose other provisions deemed necessary to protect public health, safety and welfare.

Although the controlled ground water area statute has been part of Montana law for nearly thirty years, only two areas have been designated. Water users may be hesitant to invite BNRC intervention into local water issues and thereby trigger state-level management decisions that could affect existing water rights.

Designation of a controlled ground water area is essentially a reactive response to problems rather than a tool to prevent problems from occurring. Also, the BNRC's authority is limited to water supply management and does not include management of land use practices that may be causing or contributing to adverse effects on both ground water supply and quality.

#### **DNRC:** **Water Permitting and Appropriations**

Under current state law, the DNRC has limited ability to prevent ground water supplies and quality from declining. Water management agencies in some other states have the authority to restrict long-term aquifer depletion, but the DNRC does not. The DNRC may consider water quality impacts when issuing permits for ground water appropriations greater than 4,000 acre-feet and 5.5 cubic feet per second, but the department conducts no evaluation of either water supply or water quality impacts for permits that do not belong in this category.

#### **Board of Water Well Contractors**

The Board of Water Well Contractors has adopted rules that include water well construction standards and provisions concerning proper abandonment of wells. Although the Board is sponsoring educational efforts to help prospective well owners ensure that their wells are properly installed, there is a need for better enforcement of the water well installation standards. There is also a substantial number of older wells that do not meet the standards. These wells may exacerbate water quality problems by serving as conduits for movement of contaminants and mixing of poorer quality water with higher quality water.



## DHES: Water Quality Bureau

The DHES, Water Quality Bureau, has the authority to enforce water quality standards for both public water supply systems and private water wells, but gives priority attention to larger public water supply systems. In the Missoula area, an estimated 20 percent of private water wells are contaminated, but the local health department lacks the funds, personnel and regulations to address the problem.

## EPA: Wellhead Protection

Based upon 1986 amendments to the federal Safe Drinking Water Act, Congress directed the EPA to create a wellhead protection program that would be implemented by the states. The purpose of the program is to prevent ground water pollution through special management of contaminant sources and land uses in areas surrounding water wells, especially public water supply wells. The EPA has only recently begun to make funds available to the states for wellhead protection, but approximately 30 states have submitted program applications to the EPA and four have been approved. The DHES has not yet submitted its wellhead program application due to lack of funding and staff; however, DHES expects to receive an EPA grant of about \$36,000 for this purpose.

## EQC Deliberations

The EQC decided that localized ground water problems could be addressed by allowing counties to create local water quality districts and by allowing units of local government, in addition to the DNRC and local water users, to petition the BNRC to designate controlled ground water areas.

The EQC also endorsed the option of incorporating new criteria into the water rights permitting process that would allow the DNRC to consider water quality impacts and impacts on long-term aquifer recharge capabilities.

Accordingly, the EQC approved the following final recommendations:

**The Environmental Quality Council endorses legislation to authorize county commissions to create local water quality districts, assess fees, and adopt local laws related to water quality protection, provided that the Board of Health and Environmental Sciences approves the local water quality program that would be administered in a local district.**

**The EQC endorses an amendment to Section 85-2-506(2), MCA, to allow units of local government, including counties, incorporated cities and towns, or a local water quality district, to petition the Board of Natural Resources and Conservation to designate a controlled ground water area.**

The EQC endorses legislation to authorize the DNRC to prevent adverse effects on water quality and to ensure that ground water withdrawals do not exceed long term aquifer recharge rates when the department approves new water rights permits. This recommendation is contingent upon the development of legislation that does not require applicants for water rights permits to provide the information necessary for the department to make these judgements.

### Legislative Action

#### **Passed**

##### SB 136

Provide for Establishment of Local Water Quality Districts

\* Signed by Governor

#### **Failed**

##### SB 303

Authorize that Effects of Water Use on Water Quality be Considered

\* Failed House third reading 48-49.

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## **On Site Sewage Disposal and Septic Systems**

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Approximately 300,000 people in Montana are served by an estimated 120,000

individual, on-site septic systems. Except where site conditions are inherently unfavorable (areas with high water tables, or porous or too tight soils), properly designed and installed septic systems can provide low cost, effective sewage treatment without contaminating ground water.

Ground water quality monitoring efforts in Montana have not been extensive enough to define the magnitude of septic system failures, but most professionals working on public health and water quality-related issues believe that improper sewage disposal is causing substantial, widespread water quality contamination.

Areas of the state where septic system failures have been documented include but are not limited to Evergreen, the Missoula Valley, Whitefish Lake, Seeley Lake, Sidney, Melrose, Baker, Troy, St. Regis, Stockett, and the Flathead Valley. The contaminants most often associated with sewage are coliform bacteria, other pathogens, nutrients and heavy metals. Problems are often initially discovered through routine well water sampling, but data are almost always insufficient to document the extent of contamination and to establish a direct causal link with specific failed septic systems.

### Background

Until 1961 there were no state restrictions on

subdivision development and septic system design or placement. The state's first subdivision regulations specified minimum lot sizes, minimum distances between water wells and septic systems and requirements relating to soil percolation characteristics. Septic system design requirements, including drainfield regulations, were established in 1970. The standards apply to systems classified as "public" (i.e., a system designed to serve ten or more families or 25 or more persons daily for a period of at least 60 days out of the calendar year) and to systems reviewed under the subdivision statutes.

There appears to be general consensus among public health officials and water quality specialists that most ground water problems caused by septic systems are associated with older systems that were installed prior to current regulations. Some of these systems essentially function as cesspools and provide virtually no treatment of wastes or removal of solids. However, it is important to point out that the state's minimum design standards do not apply to new septic systems serving individual residences except when the residences are located in subdivisions. Local boards of health **may** adopt regulations for the control and disposal of sewage from individual private and public buildings, but an estimated 20 counties have not done so. In summary, septic system design standards may adequately protect water

quality in most situations, but they are not applied to many individual residential systems.

A related problem is lack of staff within the DHES to properly enforce septic system regulations. The department primarily becomes involved in septic system investigations and enforcement actions in response to complaints or when water samples indicate elevated levels of contaminants. Enforcement efforts are generally hampered by a lack of ground water quality and hydrology data, especially for purposes of evaluating long-term, cumulative impacts of residential development. The state also evaluates new subdivisions primarily on a case by case basis. Thus the effects of residential development outside of subdivisions may not be considered. Follow-up investigations to evaluate drainfield performance and to determine whether effluent is reaching ground water are rare or nonexistent.

#### **Funding for New Sewer Projects**

The most obvious solution to septic system failure is to extend municipal sewers to unsewered areas or to construct new wastewater treatment facilities, but the cost of these services is high and funding sources are becoming more limited. The cost of providing adequate sewer and wastewater treatment facilities in Montana communities, including presently unsewered areas,

could easily run into the hundreds of millions of dollars.

In some cases the most cost-effective option for an unsewered community or area is to connect with an existing municipal sewage system. However, because sewer communities generally require annexation as a condition of providing sewer service to new areas, residents of unsewered areas often reject this option because of associated costs and for a variety of other reasons.

Lack of community support for new sewage disposal facilities is a significant problem. Many people do not believe that their septic systems are causing ground water problems and data are usually unavailable to conclusively prove otherwise. In cases where there is sufficient documentation to show that sewage effluent is adversely affecting water quality, county commissions can determine that a health hazard exists and override local opposition in order to proceed with a new sewer project. In this situation a county commission could create a special improvement district and impose new sewer fees or increase existing fees. However, commissioners are reluctant to use this authority in situations where there is broad-based opposition to a sewer project.

The Montana Water Quality Act authorizes the DHES to prevent pollution of state waters. The DHES has taken the position that proper documentation of the role of specific septic systems in

causing contamination is needed before cleanup orders can be issued. Because enforcement actions are expensive and time-consuming, the Water Quality Bureau has tended to encourage local control of septic system problems. It is not clear whether the DHES can direct cleanup orders to county commissions for action at a county-wide level rather than to individual septic system owners.

### EQC Deliberations

The EQC determined that it would be more desirable to authorize the DHES to issue cleanup orders to local boards of health and county commissions to address sewage contamination problems than to continue the past practice of only issuing cleanup orders for individual septic system failures. However, the EQC decided that cleanup orders should only be issued in instances where the local board or commission specifically authorized a waste discharge activity that the DHES has reason to believe is likely to cause pollution.

The EQC also decided that it is important to ensure that all new septic systems are properly designed and installed and that local governments are the most appropriate entity to implement regulations to accomplish this objective.

The local water quality districts legislation that the EQC endorsed under a separate section of the SJR 22 ground water study (see Ground Water

Management Areas) may also prove to be an effective mechanism for resolving improper sewage disposal problems. The recommendations implementing these EQC decisions are presented below.

**The Environmental Quality Council endorses legislation to clarify that the DHES may issue a clean-up order to a local board of health or a county commission in instances where the board or commission has approved a waste discharge activity that the department has reason to believe is likely to cause pollution of state waters.**

**The Environmental Quality Council endorses legislation to require the Board of Health and Environmental Sciences to adopt rules establishing minimum standards for all new septic and sewage disposal systems connected to individual public and private buildings, and to require local boards of health to adopt regulations for the control and disposal of sewage that are no less stringent than the state standards. Local governments should not be required to regulate sewage disposal systems that are reviewed and regulated by the DHES under the public water supply system and sanitation in subdivision statutes.**

## Legislative Action

### **Passed**

#### HB 161

Authorize DHES to Issue Cleanup Orders to Local Boards of Health

\* Signed by Governor

#### HB 162

Require Local Boards of Health to Regulate Septic and Sewer Systems

\* Signed by Governor

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## **Underground Storage Tanks**

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Leaking underground storage tanks (UST) are a major source of ground water contamination in Montana. As of August 1990, there were 21,384 UST systems registered with the DHES. Some officials estimate that there could be as many as 30,000 in the state. The DHES has identified approximately 350 leaking systems and is adding an average of 20 to 30 new leaking systems to its case load monthly. DHES staff expect this rate of new leak detections to continue for at least the next two or three years as more UST's are removed from service or fitted with leak detection systems in compliance with state and federal regulations.

UST leaks can create major ground water problems,

especially when community water systems are threatened. Montana communities that have experienced ground water contamination problems from leaking UST's include Cascade, Fort Benton, Sheridan, Livingston, Superior, Missoula and Great Falls. One of the better known leaking UST cases is the Church Universal and Triumphant's development north of Yellowstone Park.

During the 51st Legislative session (1989), the legislature approved three major underground storage tank bills. The following November, the DHES adopted rules implementing new UST regulations. A brief review of the state's underground storage tank regulations and the resulting programs follows.

#### Status of Underground Storage Tank Program and Regulations

**HB 552:** National studies have shown that improper design and installation of underground storage tanks is a major cause of system failure. HB 552, the Montana Underground Storage Tank Installer Licensing and Permitting Act, requires tank owners to obtain permits for UST installations, repairs, and closures, and requires those who remove and install UST's to be licensed by the DHES. The bill also authorizes the department to adopt rules establishing fees for licenses, a permitting process, and inspections of

tank installations and closures.

To ensure that owners properly install and close UST's, the UST program primarily relies on on-site inspections. The DHES is using a substantial portion of the permit and inspection fees authorized by HB 552 to reimburse local inspectors. In the future, the responsibility for inspection and enforcement may be delegated to local governments.

The EQC received some testimony that criticized the DHES rules for not requiring new tanks to have double-walled construction and for not specifying proper methods for disposal of old tanks and contaminated soil and sludge. These aspects of DHES' rules parallel federal EPA regulations. In a cleanup situation after a leak has occurred, the DHES requires tank owners and operators to obtain the department's approval of disposal methods on a case by case basis. The DHES is also working on identifying locations where contaminated soils can be safely landfarmed.

**SB 321** amended the Montana Hazardous Waste Act to specifically include underground storage tanks, and authorized the DHES to establish annual tank registration fees to defray state and local government costs for implementing an UST leak prevention program. The Act established leak detection requirements for all existing tanks, and performance and

design standards for new UST systems.

The Statement of Intent accompanying SB 321 instructed the DHES to implement the UST program consistent with tank-related portions of the Uniform Fire Code and to work cooperatively with local health and fire officials to implement a leak prevention program.

Portions of DHES and federal regulations require that all UST's installed before 1988 be upgraded, replaced with new systems or properly closed by 1998. These provisions are presenting serious problems for some tank owners. The least expensive option -- properly closing the tanks -- is too costly for many small businesses. Such businesses may also have problems meeting financial assurance requirements if any of their tanks leak.

Over the past few years some tank owners, including small service stations, moved their tanks above ground in an attempt to minimize the costs. However, the Uniform Fire Code prohibits above-ground tanks at stations that serve the public. Local fire officials did not consistently enforce this provision of the code in small towns in the past and many service station owners who moved their tanks above ground were unaware that they were in violation. The Uniform Fire Code permits above-ground tanks if they are enclosed in concrete and if the enclosure contains no more than three tanks, with no individual tank in excess of 6,000 gallons capacity. These size limitations make above-ground

tanks an impractical option for most service stations. Many rural Montanans are concerned that small, local service stations will go out of business as a result of the various tank-related requirements and that it will become impossible to purchase gasoline in certain rural areas of the state.

Senator Baucus introduced a bill in Congress during the spring of 1990 that would allow small service station owners to obtain grants and loans from the Federal Leaking Underground Storage Tank (LUST) trust to comply with UST regulations. The DHES received \$720,000 of LUST trust funds for fiscal year 1991 which are matched 10 percent with state funds. However, the DHES presently can use this money only to respond to emergencies or to initiate cleanups when no responsible party can be found or when the responsible party does not pay for the cleanup in a timely manner.

**HB 603:** Federal and DHES regulations require UST owners and operators to demonstrate financial responsibility for taking corrective action and compensating third parties harmed by accidental tank releases. HB 603 established the state Petroleum Storage Tank Release Compensation Fund to provide UST owners and operators with a financial assurance program for cleanup of tank releases. The compensation fund is supported by a one cent fee on each gallon of gasoline distributed in the state between July 1,

1989 and June 30, 1991 and a .75 cent fee thereafter. The fund is administered by the Petroleum Tank Release Compensation Board which is composed of seven gubernatorial appointees.

The EPA has approved Montana's Petroleum Tank Release Compensation Fund for providing the required financial assurance; however, tank owners are responsible for paying half of the first \$35,000 in cleanup and damage costs if a leak occurs. Farm or residential tanks with a capacity of 1,100 gallons or less that contain fuel used for noncommercial purposes or heating oil that is consumed on the premises are not eligible for reimbursement from the fund. The DHES and staff for the Petroleum Tank Release Compensation Board estimate that about 80 percent of the leaks typically discovered in Montana are likely to be technically eligible for reimbursement.

As of June 30, 1990 there was \$4.4 million in the fund, with approximately \$3.5 million unobligated. As of August 1990 the Board had received 52 claims totaling just over \$1 million. Thirty-two of the claims have been processed and the Board has approved payment of \$346,000. All of the claims were for remedial investigation and cleanup costs except one that included third party damages. While the potential exists for claims to eventually exceed available funds, the Board's staff have indicated that concern about this problem is probably premature at this time. Tank owners are tending

to submit their claims in incremental amounts so that the Board has not received many large claims at any one time.

The 1989 Montana Legislature made major decisions to regulate UST's and to provide financial assurance support for some tank owners. Many aspects of the current UST requirements were approved in response to federal requirements, but the Legislature also recognized that leaking UST's are a significant threat to ground water quality and that major efforts to prevent future tank leaks are warranted.

The EQC evaluated the potential need for modifications in existing UST requirements and increased financial assistance to help tank owners and small businesses to comply and cover portions of cleanup costs if leaks occur. The EQC recognized that compliance with the regulations raises serious economic issues for many tank owners, particularly small businesses and farm and residential tank owners. However, the Council ultimately deferred to the decisions made by the 1989 Legislature, regarding the types of tanks that should be regulated and the rules adopted by the DHES related to tank construction requirements.

The Petroleum Tank Release Compensation Board submitted a memorandum to the EQC stating its concerns about the prospect of extending the Petroleum Tank Release Cleanup Fund to provide cleanup reimbursement to owners of



small farm and residential tanks with 1,100 gallons or less capacity and heating oil tanks regardless of size. According to the Board, inclusion of these tanks would increase the number of tanks covered by the fund by about 59 percent. The fund is presently supported only by revenues from the sale of gasoline. The Board took the position that fees should be assessed on heating oil and diesel fuel if the smaller tanks are covered. The Board also said that the present \$8 million cap on the fund would need to be raised or a separate fund would need to be created for the smaller tanks in order to ensure that enough money is available to cover potential cleanup costs. The EQC ultimately elected not to recommend changes in the existing fund or the types of tanks that receive coverage.

The State Fire Marshall said that service stations are presently required to place existing above-ground tanks underground only when they are in need of replacement or when they pose an immediate threat to the public or adjoining property. New unenclosed above-ground tank systems are not allowed under the Uniform Fire Code (UFC). The Fire Marshall Bureau is currently reviewing various technical issues (e.g., distance from residential or adjoining property, tank design requirements, size limitations, safety features, separation from onsite buildings) to determine whether the UFC could be modified to allow rural service stations to construct

new above-ground tanks under certain conditions. However, a key issue that is likely to have a significant effect on the cost and viability of above-ground storage tanks is new regulations the Environmental Protection Agency is developing for these types of tanks.

The EQC approved the following final recommendation relating to underground storage tanks:

**The Environmental Quality Council supports proposed Congressional legislation to make federal Leaking Underground Storage Tank Trust money available to help small businesses providing petroleum products in geographically isolated communities to comply with underground storage tank regulations. Accordingly, the EQC will send a letter to the Montana Congressional delegation expressing support for this legislation.**

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## **Hard Rock Mining**

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Ground water quality protection is an important issue associated with hard rock mining, especially mines that use cyanide. Potential sources of ground water contamination by hard rock mining operations include cyanide heap leach facilities, disposed tailings, spills and leaks, and water accumulating in abandoned pits. Fluids from these sources may contain contaminants in concentrations

that substantially exceed natural water quality levels.

Hard rock mining is one of the more heavily regulated sources of potential ground water contamination in Montana. Modern mining technology is capable of preventing most ground water problems, but concern persists that the best technology may not necessarily be employed in practice. Also, accidents and mine design failures have occurred sufficiently often to foster continuing debate about the effectiveness of current regulatory requirements and enforcement procedures. Two significant aspects of the debate concern the different levels of regulatory oversight and review of mining projects that occur 1) under the Metal Mine Reclamation Act based on the size of the mining operation, and 2) under the separate responsibilities of the Department of State Lands (DSL) and the Department of Health and Environmental Sciences (DHES).

The 1989 Legislature added new provisions to the Metal Mine Reclamation Act to require small mining operations (those that remove 36,500 tons of material per year or less and disturb five acres or less of surface) using cyanide to obtain an operating permit for the cyanide-related portion of their operations. SJR 22 specifically directed the EQC to review implementation of this legislation. In response to this directive, the EQC sponsored a special case study and panel discussion of hard rock mining and ground water

quality protection issues at its March 9, 1990 meeting.

The EQC also considered and endorsed a number of the recommendations provided by the Governor's Mine Permitting Improvement Advisory Council, a group established for the purpose of evaluating the DSL's hard rock mine permitting and review process.

### Background

Although cyanide is not the only potential ground water contaminant associated with mining operations, it has probably generated the most public concern. Cyanide is highly toxic, but degrades into harmless chemicals and dissipates relatively quickly in the presence of sunlight and oxygen. It is also neutralized by common soil organisms, but it can persist for long periods in ground water.

If cyanide and the various minerals used in mining operations escape into ground water, drinking water supplies, fisheries and aquatic systems could become contaminated, especially in areas where surface and ground water systems are closely interconnected.

The DSL and the DHES have reported that between two-thirds and three-fourths of the mines that have used cyanide in Montana have had documented fluid losses. These problems have occurred at both large and small mines. The larger operations pose a greater threat to water quality because of the high volumes of cyanide solution

used, but the large operators also have the funds and technical expertise to respond to problem situations. Small mining operations may lack both funds and expertise to adequately resolve water quality problems.

### DSL and DHES Responsibilities for Ground Water Protection

All hard rock mining in Montana is regulated by the DSL under the Metal Mine Reclamation Act. Small mining operations are exempted from many of the provisions of the Act but are required to file an annual statement with the DSL agreeing not to pollute any stream, to reclaim disturbed land and to comply with other provisions.

Larger mines are required to obtain an operating permit from the DSL and to submit a detailed permit application that must include a reclamation plan, hydrologic data, descriptions of the mine design, tailings impoundment and monitoring methods and remedial action plans. The Act also requires any person proposing to engage in mineral exploration to obtain an exploration license.

The DHES has the authority to regulate pollution discharge sources, but by rule, defers to the DSL's mine permitting process. Water quality protection provisions identified by the DHES are included as conditions of the mine operating permit. Small mines that are exempted from permit requirements under the Metal Mine Reclamation Act are required to obtain a ground

water pollution discharge permit from the DHES if their operations would discharge waste into ground water.

Representatives of the mining industry and representatives of public interest groups have different perspectives on the question of whether ground water contamination from mining is primarily a historic phenomenon or a significant current problem. Though the total number of acres disturbed by mining in the state is relatively small, ground water vulnerability to contamination varies by location, thus the need for special mine design features and pollution control measures also varies by location. While mining companies are not uniformly committed to using the most modern environmental control technology, awareness of environmental issues has increased substantially within the industry in recent years.

Citizens and public interest groups are concerned that the full extent of ground water contamination from current mining operations, especially small mines, is not being discovered. Some of the public's concerns may be addressed by new provisions requiring small mines using cyanide to obtain an operating permit from the DSL for the cyanide-related portion of their operations. However, these provisions have only been in place since July 1, 1989.

Lack of staff and high turn-over of experienced staff in both the DSL and DHES is a major problem that has been discussed in detail by the

Governor's Mine Permitting Improvement Advisory Council. Concerns about this problem have also been raised repeatedly by both business and public interest groups in testimony before the EQC.

Both the DSL and DHES have the authority to enforce their respective statutes and to issue notices of violation. Also, both departments may require a mining company to undertake corrective actions and may seek civil penalties for violations. Some interested parties believe it would be preferable for one state agency to be responsible for all aspects of water quality cleanup operations.

#### **Confidentiality of Information**

The Metal Mine Reclamation Act requires the DSL to keep confidential all information obtained from small mining operations and information contained in applications for exploration licenses, except for the name of the applicant and the county where the proposed exploration will occur. Testimony submitted to the EQC has raised questions about the constitutionality of this provision. These questions are based on the contention that the provision does not appropriately acknowledge the public's right to obtain information about potential environmental impacts and proposed resource development.

#### **Small Miners Exemption**

The EQC received testimony indicating that both small and large mining operations should have to meet the same requirements for protecting ground and surface water quality, considering site specific conditions and the type of mining process involved. The present regulatory system has allowed some small operators to mine without the technology and resources required to properly protect the environment, especially when accidents occur.

#### **Bond Forfeiture**

The Metal Mine Reclamation Act was amended in 1989 to prohibit any person from conducting mining or exploration activities in the state if that person, or any firm or business association of which that person was a principal or controlling member, forfeited a bond under the Act. However, these amendments do not prevent operators from reorganizing under a different structure and obtaining new operating permits.

The Metal Mine Reclamation Act was also amended in 1989 to require small miners to post a performance bond equal to the state's actual cost of reclaiming land disturbed by placer or dredge operations. Larger mines have always been required to post a performance bond. The Act also authorizes persons whose water supply has been damaged by mining or exploration to recover damages

for loss in water quality or quantity. The mining company may also be required to provide a substitute water supply.

The Water Quality Act does not contain either bonding requirements or a bond forfeiture provision. However, the DHES is authorized to initiate civil actions to assess a violator for the cost of investigating contamination incidents and for any expense incurred by the state in removing, correcting or terminating any adverse effects upon water quality resulting from an unauthorized discharge of pollutants.

Both the Metal Mine Reclamation Act and the Water Quality Act could be amended to authorize the DSL and DHES to investigate a permit applicant's past mining operations in other states, as well as Montana, to determine whether any bonds were forfeited or whether any violations of permit requirements or state laws remain unabated. Provisions similar to the bond forfeiture section of the Metal Mine Reclamation Act could be included in the Water Quality Act. Also, DSL and DHES could be authorized to investigate situations where a person changes corporate names to evade discovery of past forfeitures or permit violations.

### **Nondegradation Policy**

The Water Quality Act contains a nondegradation policy which declares that any

state water whose existing quality is higher than established standards must be maintained at that level unless the Board of Health and Environmental Sciences determines that a change is justifiable as a result of necessary economic or social development.

The DHES and BHES did not systematically apply this provision to mining operations in the past. However, during the past year the DHES began notifying mining companies that they must obtain a waiver of the nondegradation policy from the BHES if their proposed mining operations could potentially cause water quality degradation. Mining representatives assert that it will be problematic for the industry to comply with a strict interpretation of this requirement. An option that industry representatives identified to partially address their concern is designation of industrial zones where mining operations would have flexibility to operate under lower water quality standards or waste disposal requirements than is allowed in other areas.

The DSL and DHES have suggested that mining companies submit a waiver application to the BHES and a mine permit application to the DSL concurrently in order to expedite the state's permitting and environmental review processes.

### **EQC Deliberations**

The EQC decided to endorse recommendations of the

Governor's Mine Permitting Improvement Advisory Council to change the confidentiality provision in existing law, prohibit persons with past unabated mining violations from obtaining new permits until the past violations are resolved, and authorize the DSL to establish a system for tracking the past environmental compliance records of mining company officers.

The EQC also concluded that the frequency of ground water contamination incidents and problems the DSL and DHES have experienced in enforcing and overseeing cleanup operations warrants a general review of the agencies' respective roles and duties. The purpose of the review is to identify and implement procedures and, if necessary, adopt rules to improve coordination of the agencies' respective ground water protection responsibilities.

The EQC's final SJR 22 recommendations related to hard rock mining are as follows:

**The Environmental Quality Council endorses legislation recommended by the Governor's Mine Permitting Improvement Advisory Council to amend the confidentiality provision of the Metal Mine Reclamation Act (Section 82-4-306, MCA) to allow the Department of State Lands to release information about mine exploration projects on public lands, except for patented claims. The type of information that will no longer be held confidential includes the**

**locations of exploration projects and a description of surface disturbance, excluding proprietary geological information.**

**The Environmental Quality Council recommends that the DHES and the DSL jointly review their respective rules, procedures and statutory responsibilities to ensure that water quality is protected from adverse effects associated with hard rock mining activities. The EQC further recommends that the departments revise their rules, procedures and interagency agreement as necessary to more effectively coordinate mine permitting, regulatory activities, and cleanup operations relating to water quality protection.**

**The Environmental Quality Council recommends that the DHES specifically review its rules pertaining to the content of applications for water pollution discharge permits and make revisions as necessary to ensure that the information is sufficient to enable the department to evaluate and mitigate ground water quality impacts associated with mining operations.**

**The Environmental Quality Council endorses legislation recommended by the Governor's Mine Permitting Improvement Advisory Council to prohibit persons from obtaining mining permits if they have unresolved legal issues stemming from past violations of state and federal mining laws that are not being**

addressed in good faith. If past legal issues are resolved to the satisfaction of the involved state and federal agencies, a person subsequently would be able to obtain new mining permits.

The Environmental Quality Council endorses legislation recommended by the Governor's Mine Permitting Improvement Advisory Council to authorize the Department of State Lands to establish an annual reporting requirement for all individual officers and directors of mining companies, partnerships, and other business entities to track and assess individual liability for environmental damages stemming from permitted mining.

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## **Agricultural Chemicals**

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There are differing opinions about the potential scope and significance of ground water contamination by pesticides in Montana. Although relatively little monitoring has been done, there is general agreement that Montana's problems are not as critical as those of many other states and that Montana is still in a position to use preventive measures to protect ground water from agricultural chemicals.

The 1989 Legislature approved the Montana Agricultural Chemical Ground Water Protection Act as a first major step toward managing pesticides to prevent

ground water contamination. SJR 22 specifically identified this legislation as one of the subjects of the Environmental Quality Council's interim study of ground water protection and management. Accordingly, the EQC scheduled a case study and panel discussion of agricultural chemical and ground water quality issues at its January 1990 meeting. Most of the policy issues presented in this report were identified by the panelists.

### **Montana Agricultural Chemical Ground Water Protection Act of 1989**

The Montana Agricultural Chemical Ground Water Protection Act declares that it is the policy of the state to protect ground water and the environment from degradation due to agricultural chemical use, to allow for proper and correct use of agri-chemicals, to manage agri-chemicals in a manner that prevents and minimizes their presence in ground water, and to provide for education and training on ground water protection, agri-chemical use, and alternative agricultural methods.

The Act directs the Montana Department of Agriculture (MDA) to prepare agricultural chemical ground water management plans for specific areas of the state where an agricultural chemical is detected in ground water at 50 percent of the ground water quality standard for that chemical. Other criteria that also trigger the need for a

specific management plan, include: 1) when monitoring indicates a trend of increased presence of an agri-chemical in ground water; 2) when an agri-chemical migrates from the initial point of detection; 3) when leachable agri-chemicals are used in areas underlaid by ground water that is vulnerable to impairment; and 4) when the EPA proposes to suspend or cancel registration of an agri-chemical or otherwise restrict its use due to concerns about ground water quality. The DHES is responsible for establishing ground water quality standards for agricultural chemicals and for formal review of the management plans prepared by the MDA.

After the MDA adopts a specific agricultural chemical management plan, farm producers, pesticide applicators, government agencies and other persons using that pesticide in areas covered by the plan would be required to comply. Plan requirements could include modifications in agri-chemical use, restrictions on use in sensitive areas around water wells, required implementation of best management practices and education, training, and licensing for agri-chemical users.

The Act also directs the MDA to prepare a general statewide agricultural chemical management plan. A major purpose of this plan is to educate farm producers and other pesticide users about farming practices and agricultural chemical management methods that will

prevent or minimize ground water contamination. The Act gives the Montana State University Extension Service and the MDA cooperative responsibility for the education programs and development of agricultural best management practices. The MDA has recently developed rules to implement the Act.

### Funding Issues

The Montana Agricultural Chemical Ground Water Protection Act is funded by pesticide and fertilizer registration fees. Funds raised by the fees are allocated to the DHES to develop new agricultural chemical ground water quality standards; to the MSU Extension Service for educational program development; to the Montana Bureau of Mines and Geology to collect ground water data on selected aquifers; and to the MDA to carry out its responsibilities under the Act.

There is general agreement that the current funding level is inadequate to fully implement the Act. Further agricultural chemical registration fee increases will be proposed in the 1991 Legislature to pay for continued agency implementation efforts. Some farmers and ranchers favor a special fee or tax on household pesticides to cover some ground water protection costs. Other states have generally favored funding agricultural chemical ground water programs from pesticide



and fertilizer registration fees or surcharges on retail sales. Some states have also used oil overcharge funds to provide partial funding for research and educational programs.

### Results of Monitoring for Pesticides in Montana Ground Water

The MDA has conducted limited monitoring for agricultural chemicals over the past six years and has detected pesticides in 25 percent of the wells sampled in 14 Montana counties. The department believes that 31 wells were contaminated by point sources (i.e., pesticide mixing and loading sites) and that 19 wells were probably contaminated by nonpoint source activities (i.e., routine field application of pesticides).

Only a small percentage of potential problem sites in Montana have been sampled for agricultural chemicals. Some of the wells where pesticides have been detected are not in locations where the risk of pesticide leaching is thought to be greatest. Since only limited monitoring has been done, the relative contribution of point sources and nonpoint sources to ground water contamination in Montana is not well understood. The MDA is planning to target future sampling efforts to areas of the state where pesticide contamination could have the greatest impacts on human health and the environment. However, better ground water hydrology data is

needed to support this effort. Additional monitoring is also needed to determine the extent of potential contamination (beyond initial detection of agri-chemicals) and to detect on-going changes in ground water quality over the long-term.

### County Weed District Issues

Noxious weeds pose a significant threat to agricultural production and natural ecosystems on a state-wide basis. There are weed management districts in every county in the state that are responsible for implementing noxious weed management programs on lands and rights-of-way controlled or owned by the counties and municipalities. Some districts are placing greater emphasis on education of their employees to protect ground water quality, including proper pesticide storage and cleanup procedures, proper application of chemicals, special precautions in sensitive areas with shallow ground water, and use of long-term integrated pest management techniques and biological controls. However, the districts are not uniformly committed to these educational efforts. Budget constraints hamper many districts' efforts to improve management and to acquire and maintain proper pesticide spraying equipment. Also, there are no professional training and certification standards for weed district supervisors.

### Agricultural Chemical Management Issues

There are several aspects of pesticide use where progress can be made to prevent ground water contamination, including waste pesticide and pesticide container disposal practices and education of pesticide dealers and applicators. Proper disposal of unused pesticides and pesticide containers is an important issue. Pesticide containers that are triple rinsed can be treated as solid waste rather than a hazardous waste. The agri-chemical industry strongly supports efforts to educate pesticide users on the importance of properly rinsing pesticide containers. The future trend is toward bulk pesticide delivery and use of refillable containers in order to reduce the number of pesticide containers in the environment. The industry supports efforts by the EPA and MDA to develop new rules addressing bulk pesticide handling, improved containment of pesticides at mixing and loading sites and proper rinsing of pesticide containers. The MDA intends to adopt rules on these subjects over the next eighteen months.

Agricultural commodity organizations and many farm producers take the position that public policies and regulatory decisions to protect ground water from agricultural chemicals must be based on scientific risk/benefit analysis, with full consideration of the impacts on production of

abundant food supplies. Environmental organizations and other farm producers are more concerned about the risks of pesticide use. These groups and individuals assert that information about the health effects of pesticides is inadequate to evaluate the risks to public health and the environment.

Most farm producers are concerned about proper disposal of old, unused pesticides that the EPA has not reregistered. The options for properly disposing of these old pesticides are presently limited. Household and garden use of pesticides and disposal of the containers is another issue that concerns agricultural producers. Household use of pesticides contributes to ground water contamination risk, but this activity is essentially unregulated.

### Alternative Agriculture Issues

Many farmers, citizens and environmental and public interest organizations believe that reduction in pesticide use is the key to reducing ground water contamination risk. These organizations and individuals strongly support increased funding for research, education and demonstration projects to provide farmers with more management options to maintain production but reduce the need for pesticides and commercial fertilizer inputs. Development of markets for grains and other crops that are produced without chemicals is an important related issue.

There are a number of on-farm research projects underway in Montana and other northern Great Plains states that are testing alternative and sustainable agricultural management practices. Much of this work is financed by non-profit foundations or is being conducted informally by individual farmers. The MSU Extension Service and Agricultural Experiment Station are involved in some alternative agricultural research, but state funding for these types of projects has been limited. The 1989 Legislature directed the MSU Agricultural Experiment Station and Extension Service to conduct research and develop education projects on methods of farming without chemicals. However, the Legislature failed to appropriate specific funds and MSU has not redirected other funds within its budget to support this work.

Some of the panelists who testified at the EQC's January 1990 meeting said that the effectiveness of agricultural chemical ground water management plans will necessarily depend on the availability of a workable, proven set of alternatives to reduce agricultural chemical use. Persons supportive of this view believe that answers to certain research questions would be substantially more effective than a regulatory approach in encouraging Montana farm producers to voluntarily reduce pesticide and fertilizer use. Some examples of alternative agricultural research questions presented to the EQC

are: What biological control techniques are effective against the Russian wheat aphid? What is the best timing for mechanical weed control operations in major Montana crops? Could a high protein field pea now being grown in Saskatchewan serve as a soybean substitute in Montana and make possible the introduction of another legume into a small grain rotation? What legumes use the least amount of water and hence have the greatest potential for success in Montana?

### EQC Deliberations

The EQC rejected options for establishing economic incentives to encourage farmers to implement agricultural practices to protect ground water. The Council also eliminated from consideration the option of authorizing conservation districts to prepare specific agricultural chemical ground water management plans in advance of the triggering mechanisms presently set forth in the Agricultural Chemical Ground Water Protection Act.

Another option that the EQC dropped from consideration was a provision to authorize the Department of Agriculture to cancel the registration of any pesticide found in Montana ground water unless the department director finds that the health effects are not carcinogenic, mutagenic, teratogenic, or neurotoxic. Because Congress had approved the 1990 federal farm bill before the EQC completed its final SJR 22 recommendations,

the EQC elected not to prepare a resolution or letters expressing formal support for federal farm policies to enhance ground water protection.

The EQC addressed the remaining options through the following final recommendations:

The Environmental Quality Council endorses the portions of the Department of Agriculture's proposed budget for the 1992-1993 biennium that provide additional funding to implement the 1989 Montana Agricultural Chemical Ground Water Protection Act and to expand ground water monitoring for pesticides.

The Environmental Quality Council endorses legislation to specifically include research and demonstration of low chemical input farming practices among the types of projects proposed by public entities that are eligible to compete for funds from the water development and renewable resource development grant programs.

The Environmental Quality Council endorses a resolution directing the DNRC to give greater emphasis to projects that focus on alternative agricultural practices and reduced agricultural chemical use in promoting the water development and renewable resource development grant programs, and directing Montana State University to aggressively pursue funding from all available state and federal sources for these types of projects. The EQC

will also send a letter to MSU expressing the Council's support for alternative agricultural research and demonstration projects, and encouraging MSU to seek grant funds in order to give greater emphasis to these projects.

The Environmental Quality Council endorses legislation requiring weed district supervisors to receive training related to pesticide management, ground water protection, and public and worker safety, within the limits of available funding. The EQC also endorses the use of noxious weed management funds for purposes of improving the quality of training available to weed supervisors and for providing stipends where necessary to enable weed supervisors to attend the training programs.

The Environmental Quality Council recommends that the Department of Agriculture review its existing publications that classify pesticides according to their potential to contaminate ground water and make improvements wherever possible to increase the usefulness of these materials to Montana agricultural producers and other persons who use and apply pesticides. The EQC further recommends that the department reference this material on its computerized bulletin board to encourage greater public awareness of the information.

The Environmental Quality Council recommends that the Department of Agriculture

prepare and publish a map showing usage patterns of pesticides commonly applied to agricultural crops and rangelands that have a high probability of leaching into ground water. To develop the map, the department should rely upon records currently collected from pesticide dealers and commercial and government applicators and records that will be collected from the U.S. Department of Agriculture from farm applicators showing applications of restricted use pesticides.

The Environmental Quality Council endorses legislation to require pesticide registrants to submit to the Department of Agriculture results of tests completed on or after October 1, 1991, relating to the leachability of pesticides that have significant potential to impair ground water. The EQC also endorses legislation to require the department to provide copies of pesticide test results to interested persons, provided that the department may charge a reasonable fee for this service.

The Environmental Quality Council recommends that the Department of Agriculture review its pesticide applicator training and certification programs and make revisions and improvements to increase the level of information and emphasis placed on long-term integrated pest management techniques.

The Environmental Quality Council endorses legislation to establish a voluntary reporting system to encourage persons to contact the Department of Agriculture and report the types and volumes of waste pesticides in their possession, and directing the department to compile and analyze the information for purposes of making recommendations to the 1993 Legislature concerning the design and scope of a proposed waste pesticide collection program.

The Environmental Quality Council recommends that the Department of Agriculture develop proposals for the 1993 Legislature's consideration to ensure proper disposal of pesticide containers.

#### Legislative Action

Passed

SB 161

Voluntary Waste Pesticide Reporting System

\* Signed by Governor

HB 240

Include Low Chemical Input Agricultural Products in Renewable Resource Development Grants Program

\* Signed by Governor

**Failed**

SB 185

Require Pesticide Registrants  
to Submit Pesticide  
Leachability Tests Results

\* Tabled in Senate Agriculture

HJR 6

Resolution Supporting  
Alternative Agricultural  
Research and Demonstration

\* Tabled in Senate  
Agricultural Committee

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**Water Quality Bureau  
Staffing**

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Virtually every section of the SJR 22 interim study contains recommendations to provide additional funds to the DHES, Water Quality Bureau (WQB) to increase and improve the current level of effort devoted to water pollution discharge permit review, enforcement of the Water Quality Act, and overall water quality protection.

At the EQC's October meeting, WQB staff presented a detailed description of the bureau's current ground water protection program, including information describing the program's current workload and staff assignments. The WQB identified specific areas within the program where new staff would be assigned if the 1991 Legislature were to

decide that the WQB needs additional people to work on ground water protection.

At this time the ground water program is totally funded by the EPA, but not at a level sufficient to handle the work load, especially considering the increasing number of ground water contamination incidents state-wide.

The following points summarize the ground water program's workload issues:

-- DHES' ground water rules have not been reviewed or updated in 8 years -- water quality standards have not been adopted for many pollutants and where standards are lacking, the DHES lacks authority to require ground water cleanup in locations where no reasonably foreseeable beneficial use of the water would be affected -- numerous other policy issues and technical questions that have arisen over the years may warrant a general review of the rules

-- ground water pollution discharge permits currently require 4 to 8 months to process; compliance inspections of permitted facilities are minimal; some facilities have not been inspected in over 3 years

-- landfarming of contaminated soils, sewage lagoons, and Class V disposal wells (dry sumps) are three sources of ground water pollutants that the DHES has not been able to properly regulate

-- the WQB receives reports/complaints of about an average of 30 spills and accidents per month involving pollutants and possible ground water contamination; the reports and complaints are coming in at an increasing rate due to greater public awareness of ground water; many of these matters require substantial investigation and oversight, with some taking years to resolve

-- over the past 3 years about 12 new water pollution enforcement cases per year have been referred to DHES legal staff but only 4 or 5 cases per year have been closed; the back-log is seriously hampering the legal staff's effectiveness

-- the number of mine permit applications that the WQB reviews in conjunction with the Department of State Lands has increased dramatically -- the ground water staff is not able to review monitoring data collected by mine permit applicants and can conduct only minimal permit compliance monitoring

-- the number of major ground water problem sites has increased substantially (i.e., Church Universal and Triumphant, Nelson Trailer Court, Mountain Water Co.) -- work on such sites generally extends over several years

-- in FY 90, 27 major subdivisions, 820 minor subdivisions, 14 trailer courts, and 3 condominium developments were approved by

the WQB -- environmental assessments were prepared on only 2 subdivisions under MEPA

-- 1.0 new FTE may be approved by the 1991 Legislature through proposed staff increases for the safe drinking water program, but this person would only provide assistance on reviews of subdivisions with public water systems

-- the WQB currently does not have an organized ground water pollution prevention component for projects such as ground water vulnerability assessment and prioritization and public education and outreach

Based on the information WQB staff presented to the EQC, the following list shows where 4.5 additional FTE's would be assigned if the 1991 Legislature concludes that additional staff are necessary:

0.5 FTE -- water pollution discharge permitting and compliance inspections; writing guidelines for permit applicants; and determining regulatory requirements for sewage lagoons and land farming of contaminated soils

0.3 FTE -- ground water rules update and ground water protection strategy development

0.5 FTE -- complaint, spills

and accident  
response

0.4 FTE -- technical  
review of mine  
permit applications  
and compliance  
monitoring;  
technical assistance  
to other state  
government programs

0.3 FTE -- major  
ground water  
contamination site  
evaluation and  
oversight

0.5 -- development  
of preventive ground  
water protection  
program components

1.0 FTE --  
subdivision review

1.0 FTE -- legal  
expertise and water  
quality enforcement

### EQC Deliberations

Based upon the WQB workload  
issues summarized in this  
section and other information  
concerning the scope of ground  
water quality protection  
problems in the state that was  
presented under the hard rock  
mining, septic system and  
sewage disposal, agricultural  
chemical, and ground water  
management sections of the SJR  
22 ground water study, the EQC  
endorsed the following  
recommendation:

**The Environmental Quality  
Council recommends that the  
1991 Legislature provide 3.5  
additional FTE's to the Water  
Quality Bureau and 1.0  
additional FTE to the DHES  
legal unit to work on ground  
water quality protection  
tasks.**



# Forest Management

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## Introduction

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Interest in the relationship between timber management and water quality has increased over the last two decades. This increased interest has come from public concern over water quality and water-based recreation as well as a growing awareness by resource managers of the need for watershed conservation.

Federal and state governments have responded by instituting regulations to protect these resources. The federal government has passed legislation amending the Clean Water Act and revising public land management statutes. During the early 1970's, western state governments began a process of revising forest practice legislation to encourage the protection of wildlife and watersheds.

As part of this process, in 1987, the Montana legislature passed **House Joint Resolution 49**, directing the Environmental Quality Council to study forest practices and watershed effects in Montana. The specific goals of the study were to determine:

\* how current forest management practices are

affecting watersheds in Montana;

\* the range of management practices that conserve watersheds and maintain economically viable timber harvest operations;

\* the administrative framework promoting the use of best management practices in Montana and other states; and

\* if areas of potential improvement are indicated, the actions that would be most conducive to achieving both watershed and timber goals.

During the last biennium (1989-1991), the EQC continued its evaluation of forest management by addressing three major topics; best management practices for timber harvests, cumulative watershed effects, and sustained yield forest management.

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## Legislative Background

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House Joint Resolution 49 (HJR 49) was preceded by several other legislative efforts to regulate forest practices in Montana.

Bills proposed during the 1973, 1974, and 1975 sessions would have authorized minimum

state standards for timber harvesting, road construction, reforestation, chemical use, and disposal of logging slash. These proposals were supported by state agencies, environmental groups, and major segments of the timber industry, but opposed by non-industrial forest landowners, and ultimately defeated.

In 1975, the legislature did pass the **Natural Streambed and Land Preservation Act**, requiring approval from local conservation districts for any activity that would alter the bed or banks of a perennial stream. Although not specifically aimed at timber management, a major application of this law has been for stream crossings associated with forest roads.

The forest practices legislation proposed in Montana between 1973-1975 coincided with a rash of similar legislative activity in other western states. New or revised forest management legislation was adopted in Oregon in 1971, Nevada in 1971 and 1973, in California in 1973, and in Idaho and Washington in 1974. Many of these acts superseded 1940's vintage laws which focused primarily on reforestation. Legislation enacted during the 1970's addressed the broader issues of water quality, soil conservation and wildlife habitat.

No forest practices legislation was introduced again in Montana until 1987. That year, **HB 781** was introduced to allow private forest landowners to enter into "binding cooperative

agreements" with the Department of State Lands (DSL). The ten year agreements would specify practices for timber management on private forest lands that would prevent degradation of watersheds. Members of the cooperative agreements would receive a reduced property tax rate on land subject to the act's provisions. The bill also authorized the DSL to adopt and enforce forest practice rules which would apply to private forest lands larger than forty acres and not under a cooperative agreement.

In a hearing before the House Natural Resources Committee, proponents of HB 781 argued that the bill was needed to protect Montana watersheds from damage by logging operations. Opponents questioned the need for legislation, citing existing cooperative watershed management programs and an increased attention to water quality by Montana timber operations. The Committee eventually tabled HB 781 and instead drafted a resolution for an interim study of forest practices and their effects on watersheds in Montana. This resolution was ultimately approved as HJR 49.

The EQC's HJR 49 forest practice study, completed in 1988, resulted in the development of an initial set of "best management practices" for timber harvesting in Montana, and the eventual passage of HB 678. Under **HB 678**, the DSL provides information on best management practices to landowners and

loggers, as well as an on-site consultation for proposed actions in sensitive areas. This voluntary use of best management practices and efforts by other groups to monitor cumulative watershed effects constitute the state's official program for protecting water quality in forested areas.

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## **Best Management Practices**

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Best management practices (BMPs) for forestry were originally developed in the 1970's through a mandate of the federal Clean Water Act. BMPs are minimum standard guidelines for forest operations which are intended to protect water quality and site productivity.

As part of the 1987-1989 HJR 49 interim study, the EQC worked with interested and affected groups to develop an initial set of forestry BMPs for the state. They also established an audit process to evaluate on-site management practices at timber sales to determine if BMPs were being applied during timber harvest operations, and if applied, whether they worked.

Audit teams conducted the first state-wide assessment of forest practices for BMPs during the summer of 1988 (Zacheim, 1988). In 1989, the University of Montana, under the Flathead Basin Water Quality and Fisheries Cooperative, audited a number of other sites for BMPs in the Flathead River Drainage

(Ehinger and Potts, 1990). In 1989, the Montana Legislature directed the Department of State Lands (DSL), forestry division, to conduct another series of audits evaluating forest practices for BMP implementation and to report the audit results to the EQC before the 1991 Legislative session (Schultz, 1990).

The 1990 DSL audits were conducted by three teams on 44 separate sites in the western half of the state. Each audit team was composed of six members; a fisheries biologist, a forester, a hydrologist, a representative of a conservation group, a road engineer, and a soil scientist.

Sites were selected using a set of criteria established during previous audits which included geographic location, ownership group (federal, industrial private, state or non-industrial private), amount of acreage harvested and year of harvest. In general, the sites chosen were ones where timber harvests were likely to have an effect on water quality.

On each site, 58 practices were evaluated for both application -- the degree to which the practice was applied, and effectiveness -- the degree to which the practice was effective in preventing the deposition of sediment in surface waters.

A summary of the results of the 1990 audits, compiled by the DSL, are presented in the following text and tables (for a more detailed analysis, see Schultz, 1990).

The audit teams evaluated a total of 1780 practices at the 44 sites to assess how effectively landowners and operators applied BMPs. This general assessment is presented in **Table 1**.

**Table 1**  
**Application of BMPs by Ownership Group**

<b>Ownership Group</b>	<b>Federal</b>	<b>Industrial</b>	<b>Non Industrial Private</b>	<b>State</b>	<b>All Sites</b>
<b>Number of Practices Audited</b>	617	670	294	199	1780
<b>% Which Meet or Exceed Standards</b>	86%	78%	61%	81%	78%
<b>% of Minor Departures</b>	11%	15%	15%	14%	14%
<b>% of Major Departures</b>	2%	6%	17%	5%	6%
<b>Gross Neglect</b>	0%	1%	8%	1%	2%

BMP application was rated on a 5 point scale:

- 5 - Operation exceeds requirements of BMP;
- 4 - Operation meets requirements of BMP;
- 3 - Minor departure from BMP (departure of small magnitude distributed over a localized area, or over a larger area where potential for impact is low);
- 2 - Major departure from BMP (departure of large magnitude, or the repeated neglect of BMPs);
- 1 - Gross neglect of BMP (risks to soil and water resources were obvious; no indication that BMPs had been applied.)

Analyzing only the percentage of BMPs applied by ownership group does not accurately reflect how well or poorly the state's watersheds are being protected. Even a low percentage of misapplied BMPs can result in severe impacts. To provide several perspectives, the DSL analyzed the data in different ways.

In **Table 2**, a set of nine high risk BMPs (those which, if misapplied, will have the most severe effect on watersheds) identified by the DSL have been analyzed separately. For this category of BMPs, the percentage of departures is higher than the percentage of departures for all audited practices.

**Table 2**

**Application of High Risk BMPs  
by Ownership Group and Rating Category**

<b>Ownership Group</b>	<b>Federal</b>	<b>Industrial</b>	<b>Non Industrial Private</b>	<b>State</b>	<b>All Sites</b>
<b>Number of High Risk Practices Audited</b>	117	121	51	38	327
<b>% Which Meet or Exceed Standards</b>	64%	54%	26%	55%	53%
<b>% of Minor Departures</b>	28%	31%	24%	29%	29%
<b>% of Major Departures</b>	8%	12%	35%	16%	15%
<b>Gross Neglect</b>	0%	2%	16%	0%	3%

The DSL also analyzed the information evaluating what percentage of **sites** departed from the BMPs, and the average number of departures per site. This information is provided in **Table 3**.

**Table 3**

**Audit Sites with Departures from BMP Application  
and Average Number of Departures per Site**

Ownership Group	Total # of Sites	% Sites with Departures			Average #/Site		
		Minor	Major	Gross	Minor	Major	Gross
Federal	16	94%	56%	0%	4.2	0.9	0.0
Industrial	16	100%	63%	13%	6.4	2.3	0.4
Non Industrial Private	7	100%	86%	57%	6.1	7.0	3.3
State	5	100%	40%	20%	5.4	2.0	0.2
All Sites	44	98%	61%	16%	5.5	2.5	0.7

**Table 4** provides a summary of the effectiveness of all practices audited, by ownership group. The effectiveness rating evaluates whether the application or misapplication of a particular forest practice increased the likelihood, or actual occurrence of, surface sediment entering stream channels.

**Table 4**  
**Effectiveness of BMPs**

<b>Ownership Group</b>	<b>Federal</b>	<b>Industrial</b>	<b>NIP</b>	<b>State</b>	<b>All Sites</b>
<b>Number of Practices Rated</b>	616	669	294	199	1778
<b>Adequate Protection</b>	89%	79%	65%	83%	80%
<b>Minor/Temp Impacts</b>	7%	11%	17%	10%	11%
<b>Major/Temp, Minor/Prolonged</b>	4%	7%	16%	7%	7%
<b>Major/Prolonged</b>	0%	3%	2%	0%	1%

BMP effectiveness was rated on a 5 point scale:

5 - Improved protection of soil and water resources over pre-project condition;

4 - Adequate protection of soil and water resources (small amount of material eroded; material does not reach draws, channels, or floodplains);

3 - Minor and temporary impacts (some material erodes and is delivered to draws but not to streams; impacts last one year or less);

2 - Major and temporary or minor and prolonged (a major impact occurs when material erodes and is delivered to a stream or annual floodplain; a prolonged impact is one lasting more than one year);

1 - Major and Prolonged.

In **Table 5**, the DSL analyzed the percentage of **sites** with impacts, and the average number of impacts per site.

**Table 5**

**Audit Sites with Impacts and  
Average Number of Impacts per Site**

<b>Ownership Group</b>	<b>Federal</b>	<b>Industrial</b>	<b>NIP</b>	<b>State</b>	<b>All Sites</b>
<b>Total Number of Sites</b>	16	16	7	5	44
<b>Minor/Temp Impacts</b>	69%	88%	100%	60%	80%
<b>Major/Temp, Minor/Prolonged</b>	56%	69%	86%	40%	64%
<b>Major/Prolonged</b>	0%	19%	14%	0%	9%
<b>Minor/Temp Impacts</b>	2.8	4.8	7.3	4.0	4.4
<b>Major/Temp, Minor/Prolonged</b>	1.6	2.8	6.6	2.8	3.0
<b>Major/Prolonged</b>	0.0	1.1	1.0	0.0	0.6



According to the Department of State Lands, the information from the 1990 audits indicated that:

\* 78 percent of the practices audited met BMP standards, (**Table 1**);

\* there were notable differences among the ownership groups in their application and effectiveness of all BMPs, (**Table 1**);

- federal lands consistently rated better than other ownership groups; USFS and BLM standards of operation generally exceeded the BMP requirements;

- the DSL ranked second among the ownership groups for application and effectiveness of BMPs;

- industrial private landowners ranked third, and non-industrial private landowners ranked fourth;

\* 53 percent of the high risk practices audited met BMP requirements, (**Table 2**);

\* nearly all sites (43 of 44), had at least one minor departure from BMP application (**Table 3**);

\* more than half the sites (27 of 44) had at least one major departure, (**Table 3**);

\* nonindustrial private lands had the highest average number of departures per site, (**Table 3**);

\* all sites on non-industrial private lands had minor, temporary impacts -- all but one had major or prolonged impacts, (**Table 3**);

\* the percent of practices rated as providing adequate protection is high (80 percent), (**Table 4**), but impacts are still occurring on a majority (64 percent) of the sites audited, (**Table 5**);

\* 80 percent of the sites audited were producing at least minor, temporary impacts to the soil and water resource, at an average of 4.4 practices per site, (**Table 5**);

\* 64 percent of all sites were producing major temporary impacts, at an average of 3.5 practices per site, (**Table 5**);

\* the greatest departure from BMPs and the most impacts were associated primarily with road drainage and road construction;

\* best management practices were nearly always properly applied for road planning and location, and for minimizing stream channel disturbance;

\* no difference was evident among regions of the state in application and effectiveness of BMPs.

## Recommendations

Based on the information from the 1990 audits, the Department of State Lands made the following recommendations on forest management to the 1991 Legislature.

**Continue the interdisciplinary BMP audits, on an annual or biannual basis, in order to make landowners and timber operators more aware of forestry BMPs.**

**Form a committee to study and rectify the perceived inconsistencies between the hazard reduction requirements, BMP goals and silvicultural objectives for reforestation.**

**Adjust BMPs where the audits point out weaknesses.**

**Continue educating loggers, landowners and foresters, concentrating on problem areas documented through BMP audits.**

**Keep future audits consistent with past audits to provide a relevant means of comparison.**

**Actively encourage the site's logging contractors to attend the audit. At a minimum, give contractors a copy of the audit results for their sites.**

**Develop a system to remedy specific problems found during audits.**

**Continue funding volunteer audit team members.**

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## **Cumulative Watershed Effects**

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Best management practices are one tool used to prevent increased stream flow and increased sediment deposition in forest watersheds. However, BMPs do not eliminate all impacts from forest operations. Though the effect of a single forest activity may be minimal at the point of origin, the combined, or "cumulative effect" of several timber activities may create downstream water quality problems.

The term cumulative effect relates to changes in water quality, water yield (stream flow), channel structure, or aquatic habitat caused by the interaction of natural ecosystem processes with multiple forest operations. Specific results of cumulative effects might include altered channel form, increased sedimentation, reduced reservoir capacity, or degraded agricultural, municipal or industrial water supplies. A cumulative effect may occur from the interaction between forestry and other activities, such as mining or agriculture; and may occur incrementally, from the gradual build up of sediment, or suddenly, with a flood.

While cumulative watershed effects have received much recent attention, the issue is not new. State forests in Montana were established in 1925, in part to provide watershed protection (77-5-

101, MCA). Currently, the National (NEPA) and Montana (MEPA) Environmental Policy Acts require federal and state agencies to evaluate the potential for cumulative impacts that may result from government activities.

In the last several years, in some instances, land managers have deferred timber harvests because of the amount of land already harvested in a given watershed. Timber harvests have been postponed or suspended on state or federal lands in the Lolo Creek Drainage, the Kootenai National Forest's Canoe Gulch Ranger District, and in tributaries of Whitefish and Placid Lakes, which are both nutrient sensitive and have high levels of recreational use (Schultz and Sihler, 1990).

#### Montana Cumulative Watershed Effects Cooperative

In 1984-85, when it became apparent that cumulative watershed effects could limit forest management options on both state and federal lands in Montana, the affected agencies and several large timber companies formed a cooperative to address this issue. The Montana Cumulative Watershed Effects Cooperative (MCWEC) includes representatives from the U.S. Forest Service, the Bureau of Land Management, Plum Creek Timber Company, Champion International, the DSL, the Department of Health and Environmental Sciences, and the Department of Natural Resources and Conservation.

The geographic area of the Cooperative has been limited on a trial basis to mixed ownership watersheds in the Lolo, Kootenai and Flathead National Forests.

In addition to compiling information on BMPs and sharing information on proposed harvest activities, in 1988 the MCWEC adopted a three phase process to address cumulative effects. **Phase 1** uses models to raise a red flag where cumulative effects exist or are imminent. The Cooperative agreed to use the USFS WATSED model as a method for identifying the potential for a cumulative effect. The WATSED model incorporates a series of site-specific inputs (area, soils, precipitation, runoff, erosion factors, etc.), to predict the increased water yield and increased sediment yield that will result from a proposed management action. However, the techniques used for indicating when a problem is imminent are not exact, and some members from industry involved in the Cooperative have expressed concern that the models used have not been verified and that USFS and DSL threshold levels for increases in sediment or water yield are arbitrary.

If a problem is indicated during Phase 1 of the process, the Cooperative moves to Phase 2. **Phase 2** verifies model results through monitoring and on the ground assessment by Cooperative members. If a problem is verified, upper level managers initiate **Phase 3** of the process, and meet to develop a cooperative

management plan for the watershed.

Although the Cooperative's efforts are a positive attempt to manage cumulative effects, the process does not always operate smoothly and without controversy. Specific cause and effect relationships may be difficult to quantify. Though resource specialists have begun to develop methods to indicate when forest watershed uses are likely to be affected by increased sediment or stream flow, the process is not exact, and is therefore open to challenge.

Along with the technical uncertainties, the management of watersheds is confounded by other issues as well. Traditional land management is based upon the idea of a defined boundary, and that rights and responsibilities are defined with respect to these boundaries. The transboundary nature of cumulative watershed effects challenges this traditional tenet of land management.

In addition, because landowners have different management objectives, the management of cumulative watershed effects is also functionally fragmented. The importance of maintaining water quality varies between the public and private sectors. By statute, state and federal agencies must balance timber production with water quality protection. The private sector does not have this same obligation.

As an alternative approach to managing watersheds, the states of Washington and Idaho have adopted programs using

the concepts of adaptive management and basin planning.

Adaptive management offers a strategy for watershed management that can be utilized despite scientific uncertainty.

If human understanding of nature is imperfect, then human interactions with nature should be experimental. That is, policies should be designed and implemented as experiments probing the behavior of natural systems. Experiments often surprise, and scientists learn from surprises. So, if resource management is considered from the outset as an experiment, surprises are opportunities to learn rather than failures to predict. Adaptive management holds the hope that, by learning from experience, one can reach and maintain a managed equilibrium efficiently and with the resilience to persevere in the face of surprise. (Lee, 1989)

Lee and Lawrence (1986) compared adaptive management with consensus management -- the standard operating procedure of the MCWEC to date. The authors concluded that while consensus management works under many conditions, when there is a basic conflict over objectives and values, for example, water quality vs. profits, further action may be prevented under the guise of scientific uncertainty. In contrast,

adaptive management is action oriented, emphasizing learning during the process and modifying management decisions accordingly.

In basin planning, landowners within a watershed cooperatively evaluate existing conditions and activities, identify future goals and then develop a plan for the watershed. Specifically, a basin plan could 1) identify a sensitive watershed in multiple ownership, 2) assess basin condition, including sediment loads, water yields and management activities, 3) identify management objectives, including water quality thresholds and harvest levels, 4) predict watershed responses to timber harvest and other management actions, using cumulative watershed effects analysis, 5) develop refined management options contingent on possible outcomes revealed by the monitoring, 6) test prediction through monitoring, and 7) modify management activities and refine models accordingly. Basin plans are currently being developed on 60 to 70 stream segments in Idaho, the Yakima and Nisqually River in Washington, and the Milk River in Montana.

Despite the challenges encountered, the Cooperative has laid a solid framework for collective action to effectively address the problems of cumulative watershed effects management. The incorporation of the concepts of adaptive management and basin planning

by the MCWEC may assist the Cooperative in resolving problems despite the technical uncertainties of watershed management, as well as provide a more active framework in which to do so.

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## Sustained Yield

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The EQC concluded its study of forest practices in Montana by briefly reviewing the issue of sustained yield.

The concept of sustained yield originated in Germany during the 18th and 19th centuries as a scientifically-based set of rules for managing a forest.

When stands of trees had reached a certain degree of maturity -- were "ripe" -- they were cut; the land was restored to forest; the trees grew for a new cycle, leading to another forest ready for harvest at some future date. By having more or less equal areas of land (or equal volumes of timber) in each age class, the harvest each year (or at each interval) could be approximately equal. (Clawson and Sedjo, 1983)

At around the turn of the 20th century, the concept of sustained yield began to emerge in the United States, largely in response to the practice of clearcutting land for agricultural and timber

supply purposes (Clawson and Sedjo, 1983).

The use of sustained yield was further advanced by the development of the national forest system. In the early 1900's, the first chief of the Forest Service, Gifford Pinchot, and other American foresters began applying European methods of forestry, including sustained yield, to national forest lands.

Policies to promote sustained yield in this country have been pursued most aggressively by the federal government, specifically on national forest lands.

The Sustained-Yield Forest Management Act of 1944 allowed private landowners to enter into long-term contracts with the government to jointly manage forest lands of intermingled federal and private ownership for sustained yield.

The Multiple-Use Sustained-Yield Act (MUSY) of 1960 extended the sustained yield concept to resources other than timber. The act defines sustained yield as:

the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the national forests without impairment of the productivity of the land.

These "various renewable resources" of national forests are defined as outdoor recreation, range, timber, watersheds, wildlife and fish.

In 1976, the federal government instituted the

National Forest Management Act in part, to promote sustained yield management. The act directs the Forest Service to pursue a policy of nondeclining even-flow. This policy, as its name implies, requires that each forest manage timber in a fashion such that the quantity and quality of timber harvested does not decline from one year to the next.

The common definition of sustained yield developed by the Society of American Foresters (SAF) is:

[the] management of a forest property for continuous production with the aim of achieving, at the earliest practical time, an approximate balance between net growth and harvest, either by annual, or somewhat longer period[s].

The policies promoted by the federal government and the definition of sustained yield developed by the SAF suggest several possible objectives for sustained yield management, among them; a continuous supply of wood, community stability in timber-dependent regions, and the continuous output of non-timber resources, i.e., recreation, wildlife, etc.

### Sustained Yield in Montana

In November 1990, Pat Flowers, from the Montana Department of State Lands,

forestry division, made a presentation to the EQC, addressing the question of whether Montana's timberlands were being managed for sustained yield. The information for the presentation was based on a study completed in 1987 on the future of Montana's timber supply (Flowers and others, 1987).

The 1987 Timber Supply Study used the most recent estimates of available timber, along with projections of future harvest and mill demands, to estimate changes in future timber supplies in Montana. The simulations were applied to three regions of the state; the northwest, the southwest and central areas, for the years 1985 - 2030.

According to Flowers, the results of the 1987 Timber Supply Study showed some clear trends:

- \* the USFS has sufficient inventory to harvest, between 1985 - 2030, the amount of timber identified in their forest plans;
- \* the other non-industrial land owners also have sufficient inventory to cut the same amount of volume that they cut on average over the period 1970 - 1984, at least through 2030;
- \* industrial landowners will not be able to continue harvesting timber at the same rate as they averaged from 1970 - 1984; if harvests continue at the same rates, their stock of merchantable trees will be depleted between 2005 - 2010.

From the results of the 1987 timber supply analysis, several conclusions were made regarding sustained yield in Montana. First, as a whole, all ownership groups are cutting less timber than they are growing. In that sense, Montana is managing for sustained yield on a state-wide, multi-owner basis. However, if sustained yield is viewed as a goal to meet on individual ownerships, then that goal is met by all owners, except industry. Industrial landowners are cutting at a rate they cannot sustain, while all other owners can sustain expected harvest levels.

Finally, if sustained yield is viewed as a means to achieve stable timber-dependent communities, then Montana is not managing for sustained yield. Recent harvest levels probably cannot be sustained, given the expected decline in harvest from industrial lands, and despite optimistic assumptions regarding the expected harvest on Forest Service and other non-industrial lands. If recent harvest levels can no longer be met, some layoffs, and possible even mill closures, may occur.

Resource scientists are continuing to study sustained yield in Montana. Updated state-wide timber inventories for state and private landowners should be available soon. For that reason, the Montana Chapter of the Society of American Foresters has commissioned another study to examine the timber supply

issue. The study was begun in  
the final months of 1990, and

is expected to be completed in  
late 1992.

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# Rural Development

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## Introduction

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Responding to a request from the Governor and the Legislative Council, the EQC at the March 1990 meeting, agreed to undertake a study regarding the adequacy of state statutes and regulations that deal with rural development issues. The Governor identified four major areas of concern:

1. Sewage disposal;
2. Geothermal resource development;
3. Fallout shelter construction; and
4. Rural residential development.

A report presented to the Council at its June 1990 meeting reviewed the major state statutes, administrative regulations and local ordinances governing these issues. Existing or potential problems associated with these issues were identified and potential solutions to the problems were presented.

In August, October, and November, 1990, the Council considered specific responses to these issues. This section of the annual report will briefly review the background of each issue and outline the Council's deliberations and final recommendations regarding the environmental impacts of development in rural Montana.

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## Rural Development Study Findings and Recommendations

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### I. SEWAGE

#### A. Individual Septic Systems

##### Background

The overriding purpose of the sewage disposal statutes and regulations is to protect public health. The consensus of the people in local and state government who deal with sewage issues is that the regulations adequately

accomplish this task. As long as the minimum state sewage standards apply - because the system is classified as a public system, reviewed under the subdivision statutes, or the local governments have adopted adequate septic system regulations - the public health is protected.

### Problems

Problems develop, or have the potential of developing, in areas where the state minimum standards do not apply. The DHES does not regulate individual septic systems, and while local Boards of Health may develop their own regulations, an estimated 20 counties in Montana have no sewage disposal regulations at all.

### Deliberations

The Council considered a number of options to increase the review of individual septic systems. One option would have required the DHES to establish a state permit system for individual septic systems. However, EQC members were concerned by the large administrative burden that would be placed on the DHES by such a program.

Another option would have modified the statutory definition of a subdivision, e.g. removing the 20 acre provision. This would allow increased state or local government review of individual septic systems.

The Council, apart from perceived political problems

with this option, questioned whether a change in subdivision law was the appropriate place to address this specific issue.

The last option considered required the DHES to establish state individual septic system standards and also required local Boards of Health to adopt regulations as least as stringent as those standards. The Council decided that this was the most efficient and appropriate response to this issue.

### Recommendations

**The Department of Health and Environmental Sciences should be required to adopt, in administrative rules, minimum standards for individual sewage control and disposal systems.**

**Section 50-2-116 MCA should be modified to require local Boards of Health to adopt regulations at least as stringent as the state standards for individual septic systems.**

### Implementation

The Council, in conjunction with the SJR 22 Ground Water Protection and Management Study, prepared draft legislation that addressed these issues. (See the Ground Water section of this report, On-Site Sewage Disposal and Septic Systems, page 28 for details)

## **B. Sanitation in Subdivision Act.**

### Background

The only way that a non-failing individual septic system currently comes under state review is if the system is included in a subdivision. Section 76-4-104 et. al. MCA requires that any division of land that qualifies as a "subdivision" must show the availability of sufficient potable water and adequate sewage disposal capabilities before certification.

### Problems

This statute only applies to developments that meet the legal definition of subdivision. Most developments in rural Montana do not meet this definition and therefore are not subject to review for sewage disposal or potable water supply. The largest problem is the provision that excludes any division of land in excess of 20 acres from the subdivision regulations. The other major exclusions to subdivision review, the "family" and "occasional" sales, are not excluded from the sanitation review.

### Recommendation

**By requiring review at the local level for compliance with state standards for individual septic systems, the recommendations in section A address this issue as well.**

## **C. Cesspool, Septic Tank and Privy Cleaners Act**

### Background

Apart from the septic system itself, another method of disposing of sewage is by spreading cesspool or septic tank wastes. Section 37-41-105 MCA states:

*This chapter does not prohibit the owner or lessee of the property from which the septage was removed from disposing or contracting for the disposal of his own septage upon land owned or leased by him if it does not create a nuisance or public health hazard.*

### Problems

The intent of this statute is reportedly to allow a single rural family to dispose of their own waste on land they control. Alleged abuses of this statute, where large amounts of waste have been spread, have been reported to the DHES.

### Deliberations

The Council considered amending state law to include a maximum gallon-per-day sewage spreading rate. The maximum could be designed to allow only a standard "family" to qualify for this statutory exception. DHES personnel pointed out problems with establishing a maximum spreading rate that would be relevant for different site conditions as well as problems

with enforcement of the maximum rate. DHES personnel told the Council that actual problems with improper sewage spreading were rare but there should be some guidelines established for people to follow when spreading sewage.

### Recommendation

**The DHES should establish minimum recommended guidelines for sewage spreading. The recommended guidelines should initially be published via DHES circular and incorporated into administrative rules if problems with improper sewage spreading develop.**

### Implementation

The DHES, in cooperation with local health officials, is developing sewage spreading guidelines. These will be published in DHES circular format in 1991.

## II. GEOTHERMAL DEVELOPMENT

### Background

Unlike many other states with geothermal resources, Montana does not recognize, under state water law, any difference between "hot" and "cold" water. Therefore, while a water right to a geothermal resource is subject to the same appropriation and adjudication procedure and protection as any other water right, only the quantity of the water is protected, not the temperature or other products, e.g. minerals or gas, commonly associated with geothermal resources. Additionally, use of a ground

water geothermal resource, even a use that threatens the value of that resource to another user, is exempt from state water use permit requirements.

If the geothermal resource is used as a power source however, it may fall under the Major Facility Siting Act, (Act) section 75-20-101 et. al. MCA. The Act, implemented by the Department of Natural Resources and Conservation (DNRC), requires state certification of environmental compatibility before a geothermal power project can be developed. The Act also includes exploration notification provisions for geothermal projects that are potentially covered by the Act.

The DNRC has determined that use of a geothermal resource solely for space heat, e.g. greenhouses, residential or storage buildings, or spa use, could be defined as "geothermally derived power", and therefore be covered by the Act. The DNRC makes this determination based on the specific details of the plan as submitted by the developer. To date however, the DNRC has not applied the Act to any geothermal resource project.

### Problems

Current and future users of geothermal resources have no means of protecting the heat or by-product value of the resource under state water law. This could lead to inefficient and wasteful use of the resource and cause irreparable harm to the

resource in an entire area. Additionally, while the DNRC will determine if a geothermal development is covered by the Major Facility Siting Act based on the plans of the developer - it is unclear who must submit a plan to the DNRC.

### Deliberations

The Council reviewed geothermal statutes in surrounding states and heard presentations by DNRC personnel regarding the potential for implementing similar legislation in Montana. The Council decided that geothermal resources are a unique asset in this state and should receive more protection than is currently available through the Water Use Act.

### Recommendation

**To adequately protect all of Montana's water resources, the Water Use Act should be modified to require a permit for the use of geothermal resources. Additionally, the Major Facility Siting Act should be clarified as applicable only to geothermal resource use for the production of electricity of 7.5 megawatts or greater.**

### Implementation

The Council prepared draft legislation (**SB 210**) that addressed this issue but it was tabled by the Senate Natural Resources Committee. The Committee noted that the bill connected water quantity

and water quality in a manner that was new to Montana water use laws. Additionally, the Committee questioned whether the EQC had adequately investigated the bill's impact on current and future water users. The Committee drafted a resolution (SJR 25) directing the Water Policy Committee to conduct an interim study on the need for and the feasibility of increased geothermal resource regulation.

## III. FALLOUT SHELTERS

### Background

There are no specific state or local regulations that deal with this type of construction. However, the Montana Department of Commerce, Building Code Bureau, is in the process of preparing a recommendation to adopt Uniform Building Code appendix chapter 57 which governs fallout shelters. This would allow the state to ensure that any new fallout shelter met minimum construction and safety standards. It would not however, allow state or local governments to evaluate the scale or location of the shelter.

### Deliberations

The Council considered requiring state review and approval of shelters larger than a certain capacity. Additionally, this could trigger environmental review of the shelter under the Montana Environmental Policy Act.

The Council also considered broader legislation that would require state review of any project that exceeded a specified parameter. Parameters might include the amount of money spent on the project, the amount of land cleared or soil removed, or the number of people employed, etc. Any project that met or exceeded the applicable parameter would then require state review and approval.

### Recommendations

The Council questioned whether fallout shelter construction was a statewide problem that required increased legislative regulation. The Council noted that the on-going EQC review of MEPA implementation also addresses portions of this issue. However, recognizing that the recent shelter construction in Park County was the reason fallout shelters were included in the rural development study, the Council supported the Governor's efforts to ensure adequate disclosure of development plans early in the environmental review process.

## IV. RURAL RESIDENTIAL DEVELOPMENTS

### Background

Unregulated residential developments have been, and continue to be, a problem in rural Montana. These unregulated developments, in other words - developments not reviewed under the Subdivision

and Platting Act or the Sanitation in Subdivision Act, escape the following partial list of minimum requirements:

1. an environmental assessment of the development;
2. identification of unsuitable areas for development;
3. prescription of standards for:
  - a. roads, lots, grading and drainage;
  - b. adequate water supply and sewage and solid waste disposal services;
  - c. utility installation;
4. adequate fire and police services etc.

A new and growing facet of this problem concerns multiple ownership of a single 20 acre parcel. The resulting increase in density compounds the above problems.

### Deliberations

The Council considered the following options regarding this issue:

1. *Specifically amend the definition of subdivision.*

If increased state review of residential developments is desired, the definition of subdivision could be changed by removing the 20 acre subdivision definition and/or removing the "occasional" and "family sale" review exemptions.
2. *Allow local governments to define subdivision.*

Alternatively, the state definition of subdivision could be recast as a minimum

definition, specifically allowing local governments to define subdivision in a manner that is appropriate for their area.

3. *Encourage local planning and/or zoning.*

Correcting the subdivision laws will not solve the entire problem, however. Even if a development complies with the subdivision regulations, it still may be viewed by some citizens as an inappropriate land use for a specific area. Under current statutes, local governments, or groups of citizens, have the authority to direct area land use through planning and zoning, but few areas have done so. To foster local control of land use issues, the state could design and implement incentives for local planning and zoning. For example, increased state technical and financial assistance could be made available to communities that expressed an interest in maintaining local control over land use issues.

4. *Require local comprehensive planning and zoning.*

Alternatively, if, as discussed above, local governments are unwilling, or unable, to regulate land use, a state mandated county-wide planning and zoning program similar to Oregon's would solve that aspect of the problem. The requirement could be very general, e.g. mandating the planning and zoning action and leaving all but the most basic

requirements up to the local governments.

5. *Implement state-wide land use plans.*

Finally, the state could take on the role of planner. This could be accomplished through state-wide land use plans or identification of critical areas and areas of special significance. These options could provide strong state leadership on land use policy - yet remain flexible enough to be responsive to the special needs of Montana's diverse climate, topography and population.

### Recommendations

**The Council decided that revising the subdivision laws was a necessary first step in improving Montana's land use policy. The Council supports removing "loop holes" in the current subdivision laws such as the 20 acre definition and the "family" and "occasional" sale review exemptions.**

### Implementation

While supporting these modifications, the Council did not endorse specific legislation. The Council reviewed draft subdivision amendment legislation and the Council members will individually consider the legislation again when it is introduced.

### V. CONCLUSION

The Council was asked to evaluate the adequacy of state

regulation on four separate, but related, rural development issues. Seeing these issues, and attempting to resolve them as distinct, separate problems, underscores the basic shortcoming of Montana's land use policy.

The EQC, in its third annual report of December 1974, stated that:

*Montana has a land use policy. But it is implicit, hidden away in the nooks and crannies of the law and of the administrative codes of the many agencies of state*

*government. For the people, the legislature, and the governor, an unstated policy is hard to evaluate. It is difficult to suggest changes in an unstated policy or use it to measure the efforts of state agencies.*

This statement remains true today. Only by bringing the diffuse policy elements together into a cohesive structure - only by explicitly identifying the form, function and goals of Montana's land use policy - can these issues truly be addressed and resolved.



# Log Scaling

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## Introduction

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Log scaling is the measuring of a log to determine the amount of timber contained in that log. Several different units of measurement exist, but the most common is the "board foot", i.e. a piece of timber one foot long, one foot wide and one inch thick. Loggers, and for the purposes of this report the term "loggers" includes anyone whose financial return depends directly on log scale, have expressed concern about the accuracy of log scaling in Montana.

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## Legislative Background

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Bills authorizing state regulation of log scaling have been introduced during past legislative sessions, but none have been enacted.

The 45th Legislature (1975) requested that the Legislative

Council prepare a memo detailing log scaling practices in other timber producing states and outlining potential log scaling regulatory programs. No legislative action followed.

A proposal requesting an interim study to:

. . . undertake a comprehensive study of log scaling in Montana to determine the practicality of establishing a certification procedure for scalers in Montana, acceptable uniform standards of measurements, and regulatory procedures for log scaling. . .;

was defeated in the 47th Legislature (1981).

Last, the 51st legislature (1989) appropriated \$5,000 to the Environmental Quality Council:

(f)or the purposes of conducting public hearings on problems associated with log scaling practices and their effects on the economic health of the timber industry and on the timber resource in Montana.

For additional background information, the reader is referred to a report prepared by the Environmental Quality Council for the 52nd Montana Legislature (EQC 1990).

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## Study Process

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The study consisted of a series of hearings in order to provide a public forum for interested people to present their views on log scaling to the Council. The Council used these hearings to decide what further action was needed on this matter during the 1991 legislative session.

The study focused on the following questions.

1. Are log scaling practices inconsistent in Montana?
2. If log scaling practices are inconsistent, where are the problems? Is scaling inconsistent -
  - A. Within the mills?
  - B. Between the mills?
  - C. Between federal, state and private scalers?
3. What is causing the inconsistency?
  - A. Type of scale used?
  - B. Harvesting of smaller timber?
  - C. Inadequate scaling?
  - D. Intentional mis-scaling?
4. How widespread is the problem?

- A. Mainly a small mill problem?
- B. Mainly a large mill problem?
- C. Is the problem occurring statewide or is it localized or isolated?

5. How can the problem be corrected?

- A. Changing to cubic and/or weight scale?
- B. Independent check scaler program?
- C. Increased flexibility in mill contracts?

6. Who should correct the problem, and who pays?

- A. Voluntary agreement within the timber industry?
- B. State regulatory program?

7. If log scaling practices are not inconsistent, can the perception of inconsistency be removed by increased communication within the timber industry?

8. Are there other concerns with log scaling that should be addressed?

The public hearings were conducted in Missoula, Livingston, and Kalispell on April 28th, June 16th, and August 4th respectively. In Missoula 75 people attended; in both Livingston and Kalispell, 25 people attended.

The following paragraphs summarize the answers from the loggers and the Montana Wood Products Association to the Environmental Quality Council questions:

## Loggers

From the comments received in the three public meetings, the apparent underlying problem with log scaling in Montana is that the loggers do not trust the mills to give them an accurate scale. The specific problems, and potential solutions, mentioned most often are listed below.

### 1. The scaling is not fair.

A. Overruns - Most mills actually realize between one and one half and two board feet (BF) for every BF for which the logger is paid. Many of the loggers said they felt that the mills are "stealing" this wood from them.

What is causing the overrun?

a) Scribner decimal "C" scale - This scaling method, the most commonly used in Montana and other states, is outdated and cannot accurately scale the new smaller diameter logs. Decimal "C" was originally designed to include taper and defect, but this is now figured separately and subtracted from the gross scale without any corresponding "credit" given to the logger. Additionally, the saw kerf in the decimal "C" was designed at 1/4 inch, the kerf is now 1/8 inch, again with no corresponding "credit" given to the logger.

b) Cull logs - any log that has over 50% defect is a cull log and most mills will not

pay for it. However, some mills can still use the cull logs for chips, etc. The logger cannot get the cull logs back.

B Mis-scaling - The scalers are not independent. If a logger complains about a scale, the logger must complain to the mill. If the mill does not agree, or does not fully agree with the logger about an incorrect scale, the logger can go to no one else. It is also difficult for a logger to challenge the mill on a particular scale because of the "yard" practice of putting a scaled load on the deck, with other logs, as soon as possible.

C. No recourse for a logger with a complaint. If a logger complains about a scale, the logger must complain to the mill. If the mill does not agree, or does not fully agree, with the logger about an incorrect scale, the logger can go to no one else. It is also difficult for a logger to challenge the mill on a particular scale because of the "yard" practice of putting a scaled load on the deck, with other logs, as soon as possible. After a scaling problem has developed, it is possible for a logger to employ, often at the logger's expense, a check scaler on a particular load of logs, but this does not solve the problem of the first questionable load. And even if the mill is "caught" with a bad scale, the logger can do nothing about it. A legal action, or even complaining too loudly, will only get the

logger "black-balled" in the area.

2. The scaling is inconsistent. Despite the dissatisfaction with the decimal "C" scale, most loggers agreed that if the scale was consistent, they could live with it.

What is causing the inconsistent scaling?

A. Mis-scaling - (See 1. B above)

B. Inaccurate scaling - Montana has no scaler certification process to ensure that all scalers are at least minimally proficient.

C. Destination dependant scaling - Loggers have noticed that logs of similar quality will be scaled differently depending on the ultimate use of the logs. A BF of one tree should be the same as a BF of any other tree. It should make no difference whether the log is being sent out of state, sent out of the country, used for log homes, veneer, poles, posts, 2x4's etc.

3. How can the problem be corrected?

Most loggers stated that getting paid by weight is more consistent than the decimal "C" method. However, most loggers also stated that, for various reasons, they do not support a state law requiring pay by weight. There were many comments regarding the shift to the "cubic" scale. This would remove some of the problems with decimal "C",

e.g. failure to account for taper. But regardless of the type of scale used, if the mills are not consistent, the loggers felt that the underlying problem of mistrust would remain.

The following potential solutions were suggested at the public meetings.

\* Use independent scalers, paid by both the loggers and the mills. This would remove the appearance of bias on the part of the scalers.

\* Create a state agency, with enforcement power under the Weights and Measures Bureau of the Department of Commerce, to randomly spot check scalers. Even using independent scalers, most loggers want someone to go to if there is a disagreement over the scale. This state check scaler must have the authority and ability to ensure that the loggers get a fair scale.

#### Montana Wood Products Association (MWPA) Comments

The MWPA, generally representing the mills, believes that the underlying mistrust between the loggers and the mills stems from an incomplete understanding of both the scaling practices and the important role individual contracts play in the entire scaling process.

#### 1. Overruns

Responding to specific logger comments, the MWPA emphasized that overruns, taper, and the new narrower

kerf, are all included into the calculations that determine the total cost of a timber sale. For example, while it is true that the mills commonly receive one to two times as much timber as they pay for by scale - this "extra" timber is included in the equation that determines how much the mill pays per BF. In other words, if the mills reduced their overrun, i.e. actually received the same amount of timber that was scaled, the purchase price of that timber would decrease. So while the logger would get a higher scale, the timber would be worth less and the logger would end up with the same amount of money.

## 2. Cull logs

The MWPA stated that a log must now contain at least 66 percent defect, i.e. unusable timber, before it will be classified as a cull log. MWPA also stated that the cost of handling a cull log through the mill exceeds the value recovered.

## 3. No recourse when scaling problems arise

The MWPA stated that, to their knowledge, all major log yards in Montana are open for check scaling. When buying timber from state, federal or large industrial entities, the mill scale is regularly check scaled by the sellers. The mill scale is usually higher, to the mills disadvantage, than the check scale. There are consultant foresters and check scalers available in Montana but there has been

little interest on the part of independent loggers to pay for use of these services.

## 4. Scaler proficiency

The MWPA agreed that Montana has no scaler certification program, but went on to say that many scalers in Montana have been licensed in other states, attend periodic scaling workshops, and belong to professional scaling societies.

## 5. Contracts

The MWPA emphasized that most of the problems identified by the loggers could and should be addressed through the contracting process. The contract can specify the type of scale used, establish appropriate taper, reserve the right to use a check scaler, etc.

## 6. Education

The MWPA informed the Council that it would sponsor an education program involving landowners, loggers, mills, and scalers, to provide information on scaling practices and the importance of contracts. Representatives of the Montana Loggers Association also supported the program.

### Other Scaling Programs

#### 1. Idaho

Idaho requires that all log scalers be licensed by the state. The licensing procedure

involves a written and practical application test. Licensed scalers are checked every two years by state check scalers to ensure compliance with state standards. If the licensed scaler is located in another state, the scaler must travel to Idaho every two years for relicensing. A Board of Scaling Practices, funded by log purchases, oversees the licensing and scaling standards.

## 2. Oregon

Scaling bureaus, independent of either industry or public agencies, scale logs in Oregon. The timber purchaser is required to pay the scaling bureau.

## 3. Washington

Washington also uses independent scaling bureaus. But log scaling costs are split between the purchaser and the seller.

### Recommendations

After receiving the public comments regarding log scaling practices in Montana and information regarding log scaling regulation in other states, the Council decided to prepare this report and transmit it to the 52nd Legislature with no final recommendations. The Council decided that, while a problem exists, the scope of the problem was insufficient to warrant further Council action. The Council hopes that the information included in this report will assist individual legislators to better understand the issues.

Documents Submitted in Compliance with MEPA

January 1989 - December 1989

Lead Agency	Number of Environmental Assessments	Summary of Documents
Montana Department of Fish, Wildlife and Parks	3	Species introduction
Montana Department of Health and Environmental Science	51 Environmental assessments 1 Environmental impact statement	Air quality permits; wastewater discharge permits; subdivision review
Montana Department of Highways	38	Road improvements; resurfacing, bridge reconstruction, signing, etc.
Montana Department of Natural Resources and Conservation	2 Environmental assessments 1 Environmental impact statement	Oil and gas drilling permits, water projects
Montana Department of State Lands	32	Timber sales; mine operating permits; land leases for oil and gas drilling
US Department of Agriculture	1 Environmental impact statement	Emergency grasshopper control program
US Department of the Army	1 Environmental impact statement	Johnson Atol Chemical Agent Disposal System
Bureau of Land Management	1 Environmental assessment 2 Environmental impact statements	Wilderness studies; land leases for oil and gas drilling

January 1990 - December 1990

Lead Agency	Number of Environmental Assessments	Summary of Documents
Montana Department of Commerce	7	Community development block grants; water and sewer system improvements
Montana Department of Fish, Wildlife and Parks	6	Species introduction; rehabilitation projects
Montana Department of Health and Environmental Sciences	70	Air quality permits; wastewater discharge permits; subdivision review
Montana Department of Highways	12	Highway improvements
Montana Department of Natural Resources and Conservation	266 Environmental assessments 1 EIS	Oil and gas drilling permits; water reservations
Montana Department of State Lands	43	Mine reclamation; operating permits; land leases for oil and gas drilling
US Department of Agriculture	1 Environmental assessment 2 EIS's	Watershed plan; pest control programs
US Department of the Army	1 Environmental impact statement supplement	Johnson Atol Chemical Agent Disposal System
US Department of Energy	1 Environmental assessment	Power sales contracts
Bureau of Land Management	2 Draft EIS's 3 Final EIS's	Wilderness studies; land leases for oil and gas drilling



# Montana Environmental Policy Act

## Part 1

### General Provisions

#### Part Cross-References

Duty to notify weed management district when proposed project will disturb land, 7-22-2152.

**75-1-101. Short title.** Parts 1 through 3 may be cited as the "Montana Environmental Policy Act".

**History:** En. Sec. 1, Ch. 238, L. 1971; R.C.M. 1947, 69-6501.

#### Cross-References

State policy of consistency and continuity in the adoption and application of environmental rules, 90-1-101.

**75-1-102. Purpose.** The purpose of parts 1 through 3 is to declare a state policy which will encourage productive and enjoyable harmony between man and his environment, to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man, to enrich the understanding of ecological systems and natural resources important to the state, and to establish an environmental quality council.

**History:** En. Sec. 2, Ch. 238, L. 1971; R.C.M. 1947, 69-6502.

#### Cross-References

Right to clean and healthful environment, Art. II, sec. 3, Mont. Const.

Duty to maintain clean and healthful environment, Art. IX, sec.1, Mont. Const.

Department of Public Service Regulation, 2-15-2601.

**75-1-103. Policy.** (1) The legislature, recognizing the profound impact of man's activity on the interrelations of all components of the natural environment, particularly the profound influences of population growth, high-density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances, and recognizing further the critical importance of restoring and maintaining environmental

quality to the overall welfare and development of man, declares that it is the continuing policy of the state of Montana, in cooperation with the federal government and local governments and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can coexist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Montanans.

(2) In order to carry out the policy set forth in parts 1 through 3, it is the continuing responsibility of the state of Montana to use all practicable means consistent with other essential considerations of state policy to improve and coordinate state plans, functions, programs, and resources to the end that the state may:

(a) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;

(b) assure all Montanans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;

(c) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable or unintended consequences;

(d) preserve important historic, cultural, and natural aspects of our unique heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice;

(e) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and

(f) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

(3) The legislature recognizes that each person shall be entitled to a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment.

**History:** En. Sec. 3, Ch. 238, L. 1971; R.C.M. 1947, 69-6503.

#### **Cross-References**

Right to clean and healthful environment, Art.II, sec. 3, Mont. Const.

Duty to maintain a clean and healthful environment, Art. IX, sec.1, Mont. Const.

Comments of historic preservation officer, 22-3-433

Renewable resource development, Title 90, ch.2.

**75-1-104. Specific statutory obligations unimpaired.** Nothing in 75-1-103 or 75-1-201 shall in any way affect the specific statutory obligations of any agency of the state to:

(1) comply with criteria or standards of environmental quality;

(2) coordinate or consult with any other state or federal agency; or

(3) act or refrain from acting contingent upon the recommendations or certification of any other state or federal agency.

**History:** En. Sec. 6, Ch. 238, L. 1971; R.C.M. 1947, 69-6506.

**75-1-105. Policies and goals supplementary.** The policies and goals set forth in parts 1 through 3 are supplementary to those set forth in existing authorizations of all boards, commissions, and agencies of the state.

**History:** En. Sec. 7, Ch. 238, L. 1971; R.C.M. 1947, 69-6507

## Part 2

### Environmental Impact Statements

**75-1-201. General directions - environmental impact statements.**

(1) The legislature authorizes and directs that, to the fullest extent possible:

(a) the policies, regulations, and laws of the state shall be interpreted and administered in accordance with the policies set forth in parts 1 through 3;

(b) all agencies of the state, except as provided in subsection(2), shall:

(i) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment;

(ii) identify and develop methods and procedures which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations;

(iii) include in every recommendation or report on proposals for projects, programs, legislation, and other major actions of state government significantly affecting the quality of the human environment, a detailed statement on:

(A) the environmental impact of the proposed action;

(B) any adverse environmental effects which cannot be avoided should the proposal be implemented;

(C) alternatives to the proposed action;

(D) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and

(E) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented;

(iv) study, develop, and describe appropriate alternatives to recommend courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources;

(v) recognize the national and long-range character of environmental problems and, where consistent with the policies of the state, lend appropriate support to initiatives, resolutions, and programs designed to maximize national cooperation in anticipating and preventing a decline in the quality of mankind's world environment;

(vi) make available to counties, municipalities, institutions, and individuals advice and information useful in restoring, maintaining, and enhancing the quality of the environment;

(vii) initiate and utilize ecological information in the planning and development of resource-oriented projects; and

(viii) assist the environmental quality council established by 5-16-101; and

(c) prior to making any detailed statement as provided in subsection (1)(b)(iii), the responsible state official shall consult with and obtain the comments of any state agency which has jurisdiction by law or special expertise with respect to any environmental impact involved. Copies of such statement and the comments and views of the appropriate state, federal, and local agencies which are authorized to develop and enforce environmental standards shall be made available to the governor, the environmental quality council, and the public and shall accompany the proposal through the existing agency review processes.

(2) The department of public service regulation, in the exercise of its regulatory authority over rates and charges of railroads, motor carriers, and public utilities, is exempt from the provisions of parts 1 through 3.

(3) (a) Until the board of oil and gas conservation adopts a programmatic environmental statement, but no later than December 31, 1989, the issuance of a permit to drill a well for oil or gas is not a major action of state government as that term is used in subsection (1)(b)(iii).

(b) The board of oil and gas conservation shall adopt a programmatic statement by December 31, 1989, that must include but not be limited to:

(i) such environmental impacts as may be found to be associated with the drilling for and production of oil and gas in the major producing basins and ecosystems in Montana;

(ii) such methods of accomplishing drilling and production of oil and gas as may be found to be necessary to avoid permanent impairment of the environment or to mitigate long-term impacts so that the environment and renewable resources of the ecosystem may be returned to either conditions similar to those existing before drilling or production occurs or conditions that reflect a natural progression of environmental change;

(iii) the process that will be employed by the board of oil and gas conservation to evaluate such environmental impacts of individual drilling proposals as may be found to exist;

(iv) an appropriate method for incorporating such environmental review as may be found to be necessary into the board's rules and drill permitting process and for accomplishing the review in an expedient manner;

(v) the maximum time periods that will be required to complete the drill permitting process, including any environmental review; and

(vi) a record of information and analysis for the board of oil and gas conservation to rely upon in responding to public and private concerns about drilling and production.

(c) The governor shall direct and have management responsibility for the preparation of the programmatic statement, including responsibility on behalf of the board of oil and gas conservation for the disbursement and expenditure of funds necessary to complete the statement. The facilities and personnel of appropriate state agencies must be used to the extent the governor deems necessary to complete the statement. The governor shall forward the completed draft programmatic statement to the board of oil and gas conservation for hearing pursuant to the provisions of the Montana Administrative Procedure Act, Title 2, chapter 4. Following completion of a final programmatic statement, the governor shall forward the statement to the board for adoption and use in the issuance of permits to drill for oil and gas.

(d) Until the programmatic environmental statement is adopted, the board of oil and gas conservation shall prepare a written progress report after each regular meeting of the board and after any special board meeting that addresses the adoption or implementation of the programmatic environmental statement. A copy of each report must be sent to the environmental quality council.

**History:** En. Sec. 4, Ch. 238, L. 1971; R.C.M. 1947, 69-6504; amd. Sec. 1, Ch. 391, L. 1979; amd. Sec. 1, Ch.473, L. 1987; amd. Sec. 1, Ch. 566, L. 1989.

#### **Compiler's Comments**

*1989 Amendment:* In (3)(a) and (3)(b) substituted "December 31, 1989" for "June 30, 1989"; and inserted (3)(d) relating to reporting requirements concerning programmatic environmental statements not yet adopted.

#### **Cross-References**

Citizens' right to participate satisfied if environmental impact statement filed, 2-3-104.

Statement to contain information regarding heritage properties and paleontological remains, 22-3-433.

Public Service Commission, Title 69, ch. 1, part 1.

Statement under lakeshore protection provisions required, 75-7-213.

Impact statement for facility siting,

75-20-211.

Fees for impact statements concerning water permits, 85-2-124.

Energy emergency provisions -- exclusion, 90-4-310.

**75-1-202. Agency rules to prescribe fees.** Each agency of state government charged with the responsibility of issuing a lease, permit, contract, license, or certificate under any provision of state law may adopt rules prescribing fees which shall be paid by a person, corporation, partnership, firm, association, or other private entity when an application for a lease, permit, contract, license, or certificate will require an agency to compile an environmental impact statement as prescribed by 75-1-201. An agency must determine within 30 days after a completed application is filed whether it will be necessary to compile an environmental impact statement and assess a fee as prescribed by this part. The fee assessed under this part shall be used only to gather data and information necessary to compile an environmental impact statement as defined in parts 1 through 3. No fee may be assessed if an agency intends only to file a negative declaration stating that the proposed project will not have a significant impact on the human environment.

**History:** En. 69-6518 by Sec. 1, Ch. 329, L. 1975; R.C.M. 1947, 69-6518(1).

#### **Cross-References**

Fees authorized for environmental review of subdivision plats, 76-4-105.

Fees in connection with environmental impact statement required before issuing permits to appropriate water, 85-2-124.

**75-1-203. Fee schedule -- maximums.** (1) In prescribing fees to be assessed against applicants for a lease, permit, contract, license, or certificate as specified in 75-1-202, an agency may adopt a fee schedule which may be adjusted depending upon the size and complexity of the proposed project. No fee may be assessed unless the application for a lease, permit, contract, license, or certificate will result in the agency incurring expenses in excess of \$2,500 to compile an environmental impact statement.

(2) The maximum fee that may be imposed by an agency shall not exceed 2% of any estimated cost up to \$1 million, plus 1% of any estimated cost over \$1 million and up to \$20 million, plus 1/2 of 1% of any estimated cost over \$20 million and up to \$100 million, plus 1/4 of 1% of any estimated cost over \$100 million and up to \$300 million, plus 1/8 of 1% of any estimated cost in excess of \$300 million.

(3) If an application consists of two or more facilities, the filing fee shall be based on the total estimated cost of the combined facilities. The estimated cost shall be determined by the agency and the applicant at the time the application is filed.

(4) Each agency shall review and revise its rules imposing fees as authorized by this part at least every 2 years. Furthermore, each agency shall provide the legislature with a complete report on the fees collected prior to the time that a request for an appropriation is made to the legislature.

**History:** En. 69-6518 by Sec. 1, Ch. 329, L. 1975; R.C.M. 1947, 69-6518(2), (7).

**75-1-204. Application of administrative procedure act.** In adopting rules prescribing fees as authorized by this part, an agency shall comply with the provisions of the Montana Administrative Procedure Act.

**History:** En. 69-6518 by Sec. 1, Ch. 329, L. 1975; R.C.M. 1947, 69-6518(4).

#### **Cross-References**

Montana Administrative Procedure Act --  
adoption and publication of rules, Title 2, ch. 4,  
part 3.

**75-1-205. Use of fees.** All fees collected under this part shall be deposited in the state special revenue fund as provided in 17-2-102. All fees paid pursuant to this part shall be used as herein provided. Upon completion of the necessary work, each agency will make an accounting to the applicant of the funds expended and refund all unexpended funds without interest.

**History:** En. 69-6518 by Sec. 1, Ch. 329, L. 1975; R.C.M. 1947, 69-6518(5); amd. Sec. 1, Ch. 277, L. 1983.

**75-1-206. Multiple applications or combined facility.** In cases where a combined facility proposed by an applicant requires action by more than one agency or multiple applications for the same facility, the governor shall designate a lead agency to collect one fee pursuant to this part, to coordinate the preparation of information required for all environmental impact statements which may be required, and to allocate and disburse the necessary funds to the other agencies which require funds for the completion of the necessary work.

**History:** En. 69-6518 by Sec. 1, Ch. 329, L. 1975; R.C.M. 1947, 69-6518(6).

**75-1-207. Major facility siting applications excepted.** No fee as prescribed by this part may be assessed against any person, corporation, partnership, firm, association, or other private entity filing an application for a certificate under the provisions of the Montana Major Facility Siting Act, chapter 20 of this title.

**History:** En. 69-6518 by Sec. 1, Ch. 329, L. 1975; R.C.M. 1947, 69-6518(3).

## Part 3

### Environmental Quality Council

**75-1-301. Definition of council.** In this part "council" means the environmental quality council provided for in 5-16-101.

**History:** En. by Code Commissioner, 1979.

#### **Cross-References**

Qualifications, 5-16-102.

Term of membership, 5-16-103.

Officers, 5-16-105.

**75-1-302. Meetings.** The council may determine the time and place of its meetings but shall meet at least once each quarter. Each member of the council is entitled to receive compensation and expenses as provided in 5-2-302. Members who are full-time salaried officers or employees of this state may not be compensated for their service as members but shall be reimbursed for their expenses.

**History:** En. Sec. 10, Ch. 238, L. 1971; amd. Sec. 6, Ch. 103, L. 1977; R.C.M. 1947, 69-6510.

**75-1-303 through 75-1-310 reserved.**

**75-1-311. Examination of records of government agencies.** The council shall have the authority to investigate, examine, and inspect all records, books, and files of any department, agency, commission, board, or institution of the state of Montana.

**History:** En. Sec. 15, Ch. 238, L. 1971; R.C.M. 1947, 69-6515.

**75-1-312. Hearings -- council subpoena power -- contempt proceedings.** In the discharge of its duties the council shall have authority to hold hearings, administer oaths, issue subpoenas, compel the attendance of witnesses and the production of any papers, books, accounts, documents, and testimony, and to cause depositions of witnesses to be taken in the manner prescribed by law for taking depositions in civil actions in the district court. In case of disobedience on the part of any person to comply with any subpoena issued on behalf of the council or any committee thereof or of the refusal of any witness to testify on any matters regarding which he may be lawfully interrogated, it shall be the duty of the district court of any county or the judge thereof, on application of the council, to compel obedience by proceedings for contempt as in the case of disobedience of the requirements of a subpoena issued from such court on a refusal to testify therein.

**History:** En. Sec. 16, Ch. 238, L. 1971; R.C.M. 1947, 69-6516.

#### **Cross-References**

Warrant of attachment or commitment for contempt, 3-1-513.

Depositions upon oral examinations, Rules



30(a) through 30(g), 31(a) through 31(c),  
M.R.Civ.P. (see Title 25, ch.20).  
Subpoena -- disobedience, 26-2-104 through  
26-2-107.  
Criminal contempt, 45-7-309.

**75-1-313. Consultation with other groups -- utilization of services.** In exercising its powers, functions, and duties under parts 1 through 3, the council shall:

(1) consult with such representatives of science, industry, agriculture, labor, conservation organizations, educational institutions, local governments, and other groups as it deems advisable; and

(2) utilize, to the fullest extent possible, the services, facilities, and information (including statistical information) of public and private agencies and organizations and individuals in order that duplication of effort and expense may be avoided, thus assuring that the council's activities will not unnecessarily overlap or conflict with similar activities authorized by law and performed by established agencies.

**History:** En. Sec. 17, Ch. 238, L. 1971; R.C.M. 1947, 69-6517.

**75-1-314 through 75-1-320 reserved.**

**75-1-321. Appointment and qualifications of executive director.**

The council shall appoint the executive director and set his salary. The executive director shall hold a degree from an accredited college or university with a major in one of the several environmental sciences and shall have at least 3 years of responsible experience in the field of environmental management. He shall be a person who, as a result of his training, experience, and attainments, is exceptionally well qualified to analyze and interpret environmental trends and information of all kinds; to appraise programs and activities of the state government in the light of the policy set forth in 75-1-103; to be conscious of and responsive to the scientific, economic, social, aesthetic, and cultural needs and interests of the state; and to formulate and recommend state policies to promote the improvement of the quality of the environment.

**History:** En. Sec. 11, Ch. 238, L. 1971; R.C.M. 1947, 69-6511.

**75-1-322. Term and removal of executive director.** The executive director is solely responsible to the council. He shall hold office for a term of 2 years beginning July 1 of each odd-numbered year. The council may remove him for misfeasance, malfeasance, or nonfeasance in office at any time after notice and hearing.

**History:** En. Sec. 13, Ch. 238, L. 1971; R.C.M. 1947, 69-6513.

#### **Cross-References**

Notice of removal to officer authorized to replace, 2-16-503.  
Official misconduct, 45-7-401.

**75-1-323. Appointment of employees.** The executive director, subject to the approval of the council, may appoint whatever employees are necessary to carry out the provisions of parts 1 through 3, within the limitations of legislative appropriations.  
**History:** En. Sec.12, Ch. 238, L. 1971; R.C.M. 1947, 69-6512.

**75-1-324. Duties of executive director and staff.** It shall be the duty and function of the executive director and his staff to:

(1) gather timely and authoritative information concerning the conditions and trends in the quality of the environment, both current and prospective, analyze and interpret such information for the purpose of determining whether such conditions and trends are interfering or are likely to interfere with the achievement of the policy set forth in 75-1-103, and compile and submit to the governor and the legislature studies relating to such conditions and trends;

(2) review and appraise the various programs and activities of the state agencies, in the light of the policy set forth in 75-1-103, for the purpose of determining the extent to which such programs and activities are contributing to the achievement of such policy and make recommendations to the governor and the legislature with respect thereto;

(3) develop and recommend to the governor and the legislature state policies to foster and promote the improvement of environmental quality to meet the conservation, social, economic, health, and other requirements and goals of the state;

(4) conduct investigations, studies, surveys, research, and analyses relating to ecological systems and environmental quality;

(5) document and define changes in the natural environment, including the plant and animal systems, and accumulate necessary data and other information for a continuing analysis of these changes or trends and an interpretation of their underlying causes;

(6) make and furnish such studies, reports thereon, and recommendations with respect to matters of policy and legislation as the legislature requests;

(7) analyze legislative proposals in clearly environmental areas and in other fields where legislation might have environmental consequences and assist in preparation of reports for use by legislative committees, administrative agencies, and the public;

(8) consult with and assist legislators who are preparing environmental legislation to clarify any deficiencies or potential conflicts with an overall ecologic plan;

(9) review and evaluate operating programs in the environmental field in the several agencies to identify actual or potential conflicts, both among such activities and with a general ecologic perspective, and suggest legislation to remedy such situations;

(10) annually, beginning July 1, 1972, transmit to the governor and the legislature and make available to the general public an

environmental quality report concerning the state of the environment, which shall contain:

(a) the status and condition of the major natural, manmade, or altered environmental classes of the state, including but not limited to the air, the aquatic (including surface water and groundwater) and the terrestrial environments, including but not limited to the forest, dryland, wetland, range, urban, suburban, and rural environments;

(b) the adequacy of available natural resources for fulfilling human and economic requirements of the state in the light of expected population pressures;

(c) current and foreseeable trends in the quality, management, and utilization of such environments and the effects of those trends on the social, economic, and other requirements of the state in the light of expected population pressures;

(d) a review of the programs and activities (including regulatory activities) of the state and local governments and nongovernmental entities or individuals, with particular reference to their effect on the environment and on the conservation, development, and utilization of natural resources; and

(e) a program for remedying the deficiencies of existing programs and activities, together with recommendations for legislation.

**History:** En. Sec. 14, Ch. 238, L. 1971; R.C.M. 1947, 69-6514.