

ENVIRONMENTAL MANAGEMENT REPORT

1985 UPDATE

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# 1985 Environmental Management Report

## REGION VIII UPDATE

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## PART I

### REGIONAL ADMINISTRATOR'S OVERVIEW

The Region VIII staff is growing to recognize the usefulness and necessity of the Environmental Management Report (EMR) as a critical and basic planning tool. The suggested format for the 1985 update further strengthens the popularity and utility of this document in the Region. Excessive narration is eliminated and major problems, solutions and results are presented precisely and logically. This format allows for ease of comparing and prioritizing problems across media as well as within and between regions. We envision the EMR as becoming a mechanism in Region VIII which can allow the integration of programmatic and management goals to enable the development and implementation of programs to solve our significant environmental problems.

As we prepare the 1985 update, we find that the status of the priority problems previously identified have not changed significantly and that the rankings are essentially the same. Nevertheless, some noticeable environmental results have been achieved during the past year.

The report addresses the major problems in Region VIII listed in rank order:

- Hazardous Waste Control (Superfund - RCRA)
- Ground-water Contamination
- Urban Air Quality
- Nonpoint Source Water Pollution
- Toxic Substances
- Clean-up and Disposal of Radioactive Waste
- Acid Deposition in Western Wilderness Areas
- Pesticides
- Drinking Water Quality
- Toxic Substances in Surface Water

#### HAZARDOUS WASTE CONTROL (Superfund - RCRA)

Hazardous waste control is ranked as the Region's most difficult environmental problem and number one priority not only because of its potential effects on human health and the high level of public concern it generates, but also because of the overwhelming time, costs and complexity involved in investigation, litigation and cleanup of waste sites.

During the past year, immediate public health or environmental threats at seven NPL sites have been abated. These involved contamination of a drinking water supply, radiation hazards due to radon daughter exposure in structures, and direct public contact with high concentrations of heavy metals and pesticides in surface soils. Nearly 35,000 drums have been exhumed at the Denver-Arapahoe Chemical Waste Processing Facility (Aurora, Colorado) and shipped out of state for disposal. This site provides striking evidence of the degree of public concern regarding hazardous waste control: the public hearings have been well-attended, media coverage has been extensive, and there has been involvement by two citizen action groups and a task force established by the Governor.

Much of the creosote and pentachlorophenol in the ponds at the Union Pacific Tie Treatment Plant in Laramie, Wyoming, have been shipped off-site. With 160 acres of gross contamination reaching the aquifers and the nearby Laramie River, this facility has been a major environmental and regulatory (RCRA/CERCLA) problem for the Region.

Other major closure/cleanup actions underway include the Rocky Mountain Arsenal, Martin Marietta, Burlington Northern and several oil refineries.

#### GROUND-WATER CONTAMINATION

The potential for contamination of ground water, the major source of water for drinking and agricultural uses in this Region is the second highest priority problem. Nearly ninety percent of regional public water supplies and ninety five percent of rural supplies depend on ground water. Here in the arid west, there are no viable alternatives to the continually expanding use of ground water for potable, irrigation and industrial demands.

A major accomplishment during FY 85 was the organization and staffing of the Regional Ground-Water Coordination Office. Even under ever compressing schedules and sparse guidance, the office has made positive initiatives to aid and encourage our states in formulating and upgrading ground-water protection programs.

#### URBAN AIR QUALITY

Region VIII continues to experience air quality problems with carbon monoxide, ozone, and particulate matter in the large urban communities. Particulates remain the most widespread problem in the Region, affecting both urban areas and many smaller towns. Over 3 million people are exposed at some time to elevated levels of these pollutants. The air quality control measures projected in the 1984 EMR update are now in various stages of implementation. The first year of the ride sharing program for Colorado was implemented last November and lasted through January. Monitoring indicated that the planned one-day per week - no drive- portion of the BAP resulted in a vehicle mile traveled (VMT) reduction of about 3%. The States goal for the program was a 5% reduction the first year, which was expected to increase to 15% by 1987 as individual behavior changed. Next year's program will emphasize high pollution days. The effort to reduce driving on high pollution days had very little impact, and there seemed to be little, if any, reduction in driving due to either the program or forecast high pollution days. Citizen participation did improve over the course of the program.

The primary contingency measure in the Colorado SIP is to use gasohol. Testing on 52 vehicles has demonstrated that CO reductions of at least 20% can be obtained from gasohol use. The State is now considering a voluntary gasohol program. EPA has authority under 211(C)(4)(C) of the Clean Air Act to promulgate a mandatory gasohol requirement, if it is necessary, to attain the ambient air quality standard.

## NONPOINT SOURCE WATER POLLUTION

Recent water quality reports indicate that approximately 75% of stream segments in Region VIII meet Clean Water Act goals for fishable, swimmable water. Regionwide studies have been performed to determine levels of pollutant impairment to stream beneficial uses. Eighty-five to ninety percent of all pollutants violating water quality standards and classified as threatened, moderate or severe levels (as defined by ASIWPCA) can be attributed directly to nonpoint sources.

Major contributors to regional nonpoint problems include discharges of heavy metals from abandoned or inactive mines and severe loadings of nutrients, sediment and salinity. Over the past eighteen months several projects which contain major NPS components have been in progress. Implementation of Watershed/Clean Lake projects at Lake Herman and Sylvan Lake in South Dakota and at Spiritwood Lake, North Dakota are completed. Three other projects have been initiated in Utah. EPA has also initiated a multiple ownership planning/best management practices study of silviculture in Montana and directed a large portion of Agriculture Conservation Program funds into NPS watershed activities.

Formal meetings and discussions have been held in each state between leaders of agriculture agencies and the Regional Administrator's Office.

## PESTICIDES AND TOXIC SUBSTANCES

Pesticides and toxic substances, though treated separately in this report as media problems, are inseparably intertwined with the other priority problems of hazardous waste control, groundwater contamination and drinking water quality. Human exposure to these materials presents major health concerns, yet our ability to control the presence of these materials in the environment is limited and has serious regionwide impact because they affect the total population at some time in some way.

The major problem thrust of the discussion on pesticides and toxic substances in the Regional Environmental Problems Section of this report, is directed towards influencing and obtaining Headquarter's action and support to address and develop additional policies, regulations and training to promote the safe and effective application, cleanup, removal and disposal of the common and familiar toxic materials with which we live.

## CLEAN UP AND DISPOSAL OF RADIOACTIVE WASTE

The CERCLA National Priorities List of December 30, 1982, provided authority for expenditures from CERCLA Superfund resources for site investigation, cleanup (where justified) and disposal of 31 former radium processing sites. Since 1979, EPA and State Surveys have identified 44 properties in the Denver Metropolitan area with possible low-level radioactive contamination. These properties, collectively known as the Denver Radium Site, were added to the Superfund NPL in 1983. Under a cooperative agreement with EPA, the Colorado Department of Health has developed seventeen individual site engineering assessments and remedial action plans.

Remedial action on the Vitro Mill Site in Salt Lake City got under way early in July 1985 when the first rail shipment was made to the Clive, Utah depository about 80 miles east of Salt Lake City. Completion of this cleanup is set for 1st Quarter 1988. Another favorable action was achieved in July for the disposition of the Durango, Colorado mill tailings. The Bodo Canyon site was officially selected by DOE as the depository for Durango Tailings. Remedial Action is scheduled from 3rd Quarter 1986 thru 1st Quarter 1988. At Edgemont, South Dakota remedial action on vicinity properties is expected to be completed by October 1986 rather than the summer of 1987.

### ACID DEPOSITION

Region VIII states and EPA are currently being called upon to make multi-million dollar PSD permit decisions and adequate information on acid deposition impacts is not available. The situation is aggravated by the large number of Class I wilderness areas in close proximity to existing and proposed air pollution sources. These sensitive alpine ecosystems may also be impacted by other major sources including existing and projected upwind smelters.

Several representative lake and watershed studies have been conducted over the past three years at sites representative to typical high elevation ecosystems. Several Federal agencies have been involved in these studies which are basically designed to provide valuable detailed information on the sensitivity of lakes to acidic deposition and to detect any trends in acid rain effects. Detailed chemical and biological data have been collected at lakes in the Wind River Range of Wyoming and in the Mt. Zirkel Wilderness Area, Flattops Wilderness Area and Rocky Mountain National Park in Colorado. These studies will continue during the 1985 field season and are planned as long term monitoring sites for atmospheric deposition effects. In 1985, an additional site is planned in the San Juan Mountains of southwestern Colorado based on the potential acidic deposition impacts from the Four Corners Power Plant and the copper smelters in southern Arizona and northern Mexico.

### DRINKING WATER QUALITY

Compliance with drinking water regulations has emerged as the best measure of how well the intent of the Safe Drinking Water Act is being met. National guidance has set compliance targets for 1984 and beyond. The five states in Region VIII, which have accepted delegation of the program, needed definite improvement to meet their targets.

In the last EMR, one state in particular, Utah, was singled out for its very low level of compliance with bacteriological requirements. Compliance in Utah continues to lag behind Regional and National levels, but there has been a significant and steady increase in compliance over the last two years, a trend which Regional and National levels have failed to meet.

### TOXIC SUBSTANCES IN SURFACE WATERS

Approximately 10 to 15% of the water quality standards violations in the Region can be attributed directly to point sources. These sources are extremely significant because they are the major contributors of toxics to stream systems. Critical monitoring activities are proceeding at industrial, mining and municipal facilities to identify constituents of point source pollution. Also, regional staff are assisting state counterparts to develop more sophisticated bioassay techniques and subsequent site-specific stream standards.



## PART II

### REGIONAL ENVIRONMENTAL PROBLEMS

#### Ranking Procedures/Criteria

The Senior Staff studied and ranked the list of "most significant environmental problems" for the Region's 1985 EMR Update. Although there were problems differing in levels of concern and severity, it was agreed that when all criteria were examined that practically all of these problems were essentially regionwide in geographic scope.

Ranking criteria included: Level of impact to human health (with ranges from psychological to physical discomfort and fatal potential; Number of persons exposed; geographical land area affected; level of public concern and if due to first hand physical observation (brown cloud), media coverage or nationwide concern; programs existing in EPA to combat the problem (for funding, legislation, regulations in place); needed Headquarters' actions; and cross media dependence and implications.



## HAZARDOUS WASTE CONTROL

### Superfund - Hazardous Waste Site Cleanup

#### Problem Assessment

The cleanup of uncontrolled hazardous waste sites is a regionwide problem. Nearly 700 sites are now included on the Region's inventory of potential hazardous waste sites. Additional site entries are expected in all states. 34 sites in Region VIII are targeted on the proposed and final National Priorities Lists for investigation and remedial action. The sites tend to fall into one or more of five major categories: mining sites, federal facilities, wood-treating facilities, radioactive sites and landfills. Superfund sites pose multi-media problems. Groundwater is potentially or actually threatened at 29 of the 34 sites. Contamination of soils and surface water is also prevalent. Contaminants of concern are far-ranging: Superfund hazardous substances include heavy metals, radionuclides and organics. The level of public concern and public participation is high in Region VIII. Active citizen involvement occurs throughout all phases of Superfund - discovery, investigation and cleanup (Anaconda Smelter, Lowry Landfill, Harriman Park, South Adams County).

As the Region moves into the design and construction phases at the NPL sites, we are encountering these problems:

**Off-site Disposal Capacity:** The recent off-site disposal policy should help insure that wastes from Superfund sites are taken only to disposal facilities in compliance with RCRA requirements. However, the more stringent, new RCRA standards coupled with public opposition to siting new facilities will limit the availability of facilities for off-site disposal of Superfund wastes. In Region VIII with a preponderance of radioactive sites, the lack of an approved low-level radioactive waste disposal site has already held up cleanup of one site.

**Alternative Technologies:** The off-site disposal policy also encourages the use of permanent treatment technologies over land disposal. But in most cases this approach is prohibitive because proven methodologies are few and the capacity of acceptable technologies, e.g. incineration, is very limited.

**Cleanup Standards:** Do current standards provide long-term reliable protection of public health and the environment? For most toxic substances, standards do not even exist. The Region needs guidance on assessing the risk posed by complex mixtures of hazardous substances at Superfund sites and on selecting cleanup levels for both water and soils.

Federal facilities constitute a significant portion of our priority sites. We have experienced difficulties in negotiating formal agreements for CERCLA studies and cleanup with the majority of Region VIII facilities. These sites tend to be very large geographically (square miles) and involve extremely dangerous contaminants (plutonium, nerve agents, pesticides).

## Regional Agenda

The Regional goal is to move projects expeditiously through the investigation and cleanup phases. Both fund-financed and enforcement methods are heavily used. State participation in meeting this goal is increasing. States are assuming a greater role both as lead agencies (Utah) and assisting the Region (Colorado, Wyoming). In the past year, Colorado has removed a major program obstacle by creating a fund to provide the State match required before Superfund money can be spent for cleanups at any site. Utah has assumed the lead management role at four NPL sites, up from zero the year before. The investigation phase has improved over 1984. Steps were taken to address delays in the remedial investigation/feasibility study (RI/FS) process, including:

- Publication of final RI/FS guidance.
- Increasing contract lab program capacity.
- Streamlining REM contracting procedures.
- Limiting negotiations with potentially responsible parties.

Barriers that still remain in this area are:

- Poor quality data from the contract laboratories. (At one site, this may add at least \$100,000 in costs and three months to the schedule.)
- Lack of standard protocols for groundwater sampling. Existing monitoring technologies may not be sufficient to define the extent of groundwater contamination.

## Headquarters Actions Needed

- o Develop alternative technologies for treatment of contaminated water and soils.
- o Increase permanent treatment capacity.
- o Develop guidance for establishing cleanup levels.
- o Develop standard protocols for groundwater sampling.
- o Focus research efforts on determining the reliability of remedial actions.
- o Strengthen the existing Memorandum of Understanding with the Department of Defense by requiring site-specific agreements.
- o Negotiate Memorandum of Understanding with Department of Energy.

## Environmental Results

While the site investigation process under Superfund has improved, major changes are still needed in order to expeditiously complete site cleanups. Region VIII plans to delete one site from the NPL during FY 85. This is the only site in the Region where remedial action is complete and monitoring data shows that the remedy is effective.

## HAZARDOUS WASTE CONTROL

### Resource Conservation and Recovery Act (RCRA)

#### Problem Assessment

With the economic and population growth in the West, a wide spectrum of hazardous waste is being generated by the newer "high-tech" industries, as well as the older ones such as oil refineries, wood preservers and chemical, paint and steel manufacturers. There is great concern about the impacts and risks which mismanagement of these wastes poses, for without proper control, these wastes can contaminate the environment by way of spills, "midnight dumping", leachate from land disposal units and leaks from underground storage tanks.

#### Regional Agenda

With the additional authorities provided by the amendments to RCRA, the Hazardous and Solid Waste Act of 1984 (HSWA), the Region and its five authorized States have been moving ahead vigorously to control the hazardous waste problems. A variety of actions have been taken or placed on the agenda this year:

Permits: Part B permit applications have been requested for all 'land disposal' facilities. These requests include the new HSWA requirements on exposure assessments, releases and old solid waste management units. Training seminars have been held to assist permit applicants. One of the barriers is the lack of timely policy decisions and guidance manuals on permit issues.

Progress has been made in the issuance of permits for commercial treatment, storage, and disposal facilities. Solvent recyclers in Colorado and Utah obtained their permits and the application for a major disposal facility in Colorado has been declared complete. There is still a great need for additional commercial capacity, as noted in previous EMRs. Permits for new facilities will be a top priority.

Major closure/cleanup actions underway include the Rocky Mountain Arsenal, Martin Marietta, Burlington Northern, Denver-Arapahoe Chemical Waste Processing Facility, Union Pacific Tie Treatment Plant and several oil refineries.

Compliance: The Region and States have maintained an aggressive inspection and enforcement program with regard to generators, transporters and TSD facilities. Ground water contamination has been the primary focus. Comprehensive groundwater monitoring evaluations have been conducted at more than half of the 'disposal' facilities, and the remainder have been scheduled. The Regional Office is preparing several enforcement actions which draw upon the new Corrective Action Order authority provided by HSWA. A number of combined RCRA/CERCLA actions have been taken.

'Disposal' facilities have been notified regarding the November 8, 1985, deadline for certification of compliance with the groundwater monitoring and financial assurance requirements. The impacts of the resulting loss of interim status and subsequent closure actions will be substantial, for both the facilities and the Regional Office and States.

Community Relations: Site-specific and general communication strategies have been developed to educate the public and the regulated community about hazardous waste control. Through community outreach efforts, the fears and opposition of the public to legitimate waste handling techniques may be minimized. Informational brochures, meetings and various media are being used to help industry, small businesses in particular, to better understand the importance and methods of compliance with the hazardous waste regulations.

#### Headquarters Actions Needed

o HSWA contains provisions for dealing with the significant problem of Leaking Underground Storage Tanks (LUST). While Congress intended that the States implement the LUST Program, it failed to provide adequate funding. We need Headquarters to obtain enough funds to carry out this large and important program. Estimated amount needed: \$2 million for Region VIII alone in FY-87, compared to the \$14 million budgeted nationwide.

o Another area which requires Headquarters action concerns data processing of the Biennial Hazardous Waste Reports from generators and TSD facilities. We need some follow-through on the plan to make this information (which has been sent to Headquarters and entered into a database) accessible to the Regions and States. It is this kind of data on the types, amounts and disposition of wastes which is needed for environmental indicators and trends analysis.

#### Environmental Results

Based upon the Regional and National agenda, we can expect several specific outcomes in the area of hazardous waste control. The number of facility closures will continue to increase as a result of the permit requests and the inability to certify compliance by November 8, 1985. Permit issuance will be slow, due to the new, complex HSWA standards and the community involvement requirements. Efforts in the area of groundwater monitoring and corrective action should begin to show significant results. Implementation of the LUST program will begin to characterize the extent of the leaking underground tank problem.

## GROUND WATER CONTAMINATION

### Problem Assessment

Of the total number of Region VIII public water systems dependent on ground water, 17% (438 systems) reported some measure of contamination in 1984. Tons of hazardous materials have been introduced into the environment due to years of a concentrated mining, industrial and agricultural activities. The contaminants involved, which threaten ground-water quality, are often highly toxic and some are known carcinogens. The nature of these substances is such that many damaging health effects may not be apparent for several years and may pose a threat to future generations. As a result, the level of concern for public health is very high. Home owners have reported detecting volatile fumes in basements and well contamination due to leakage of petroleum products from underground storage tanks. Septic systems have leaked into an undetermined number of private wells. A contamination incident, caused by leachate seepage from a landfill known to have accepted hazardous chemical wastes, resulted in closure of the facility.

Wood preservative wastes in buried disposal pits have migrated into area water wells, thus prohibiting at least one community from irrigating with ground water.

Nonpoint source contamination incidences also effect ground-water quality. There is an increase in the appearance of pesticides and fertilizers in rural drinking water wells. This is mostly because of poor irrigation and application practices. Mining operations, many of which have been abandoned, contribute acids, metals and PCB's to ground water. Residents of one community, located 100 miles downstream from a mining site, were forced to construct an alternative water system due to the deposition of mine wastes in the sediment of the river system.

### Regional Agenda

The Region VIII Ground-Water Coordination Office (GWCO) has awarded five of the States the \$100,000 supplemental 106 funds to begin activities in state ground water programs for FY85. The sixth state is in the process of applying for this grant. Most of the states have already submitted draft ground-water workplans for FY86 as part of the State/EPA agreement. In addition to administration of these grants the GWCO is assisting the states by providing and indentifying ground water training opportunities. Procedures to enhance technological transfer and identify state research needs have been initiated. Technical and program support has been provided to state agencies through staff activities. Efforts to initiate the Ground-water Classification system will continue.

State legislation pertaining to ground-water issues remains fragmented. The region, under the Resource Conservation and Recovery Act amendments, is in the process of implementing the Leaking Underground Storage Tank program. This includes the registration of tanks by the owners and operators and requires new facilities be constructed with non-corrosive materials.

### Headquarters Actions Needed

- o Continue to provide support funds for growing State ground-water protection programs and consider need for larger allocations. Also, consider changing 106 grant allocation formula with emphasis on States with large aquifers and which attempt strict protection efforts for noncontaminated ground water.
- o Provide much needed training to State and Regional ground-water personnel. State funds for training purposes are available through the 106 ground-water allocation but, travel monies are limited by the State legislatures. The Office of Ground-Water Protection must therefore take a lead role in emphasizing the necessity of training on a State and Regional level.
- o Office of Research and Development should continue efforts to identify and prioritize state research needs pertaining to ground-water issues. More emphasis must be placed on the transfer of technology from the research community to the states. Special attention to field applications of new monitoring and analysis technology is essential.
- o Ground water classification efforts need to be realistic yet provide a basis for stringent control programs where warranted.

### Environmental Results

Positive changes and environmental results will be identified more readily as better monitoring data becomes available. We expect that, as a result of regional activities, samples from regional ground-water monitoring wells will show a decrease in the contaminant levels being tested. Consideration for ground water supplies should increase due to classification efforts. This trend would be evidenced by land use patterns which in turn reflect a concern for underground sources of drinking water. Siting of waste disposal facilities or other sources of contaminant discharge will tend to be strategically positioned according to the recharge and use characteristics of the underlying ground water.

## URBAN AIR QUALITY

### Problem Assessment

Region VIII continues to address the major urban air quality problems associated with particulates, carbon monoxide and ozone. Particulates are the most widespread air problem in the Region, affecting both large urban areas and many smaller towns. The Denver area has one of the most severe air pollution problems in the country. In 1983, the levels of both carbon monoxide (24 ppm, 8 hour average) and TSP (147 mg/m<sup>3</sup> annual geometric mean) in Denver were the highest in the nation.

The "Brown Cloud" haze, comprised of extremely fine particulate matter continues to appear quite frequently over Denver in the early part of the day and is one of the main reasons for the high level of public concern for improved air quality. The haze is caused by extremely fine particles representing only a portion of the TSP in the air. Eight to 33% of the particulate matter causing the haze comes from residential wood burning and partially toxic diesel emissions. In many mountain communities, wood-burning is the only significant source of particulates other than fugitive dust. Many mountain areas have exceeded the annual TSP standard every year since monitoring began. Several areas in Montana have a particulate problem due to both residential wood burning and prescribed burning on forest lands.

EPA has not yet addressed the relationship between wood combustion and exceeding the TSP standard. Although control has been effective with stationary source violations in Denver, the area still exceeds the national standard by 100%. Mountain communities are still unclassifiable under the Rural Fugitive Dust Policy.

Carbon Monoxide (CO) concentrations in the region's populated areas continue to be the most aggravating problem and affect the most people. Carbon monoxide problems all stem from mobile source emissions in urban areas: the Colorado cities of Metro-Denver, Fort Collins, Greeley, and Colorado Springs; Provo, and Salt Lake City, Utah; and the Montana cities of Missoula, Billings, and Great Falls. Denver and Salt Lake City are the only two areas in the Region which have not attained the ozone standard. Caused primarily by vehicle emissions, the ozone problem may be reduced to the standard by 1987. Public concern over air quality is high in Denver, moderate in Salt Lake City, and low in Montana.

### Regional Agenda

The Region sees a continuing need for technical and financial assistance to states to determine the contribution of woodburning and diesel emissions to the existing TSP problem and the potential PM<sub>10</sub> problem.



The Region funded a Colorado woodburning survey for urban areas; and co-sponsored a workshop on woodburning attended by all six regional states, and some local representatives. Recently, Colorado received a \$75,000 grant amendment increase to test and set emission limits, and to design specifications for woodburning devices.

Power plants in the Denver area are replacing scrubbers with baghouses, which will provide more effective control of fine particulates, and should reduce power plants' contributions to the Denver "Brown Cloud". Colorado is considering additional controls for emissions from woodburning and from mobile sources, such as diesel vehicles. Region VIII is encouraging consideration of the use of methanol as a fuel in diesel engines, especially for buses in the Denver area.

Several Colorado communities have begun to address the woodburning issue themselves. Aspen and Crested Butte have established building codes which prohibit more than one wood combustion unit per building, unless the additional units meet clean burning specifications. Other communities have launched public information programs that identify the problems from woodburning, and educate the public on the proper methods to burn wood, while lessening particulate emissions. The Colorado Air Quality Control Commission has received legislative authority to develop emission limits for woodburning stoves and to design specifications for fireplaces installed after July 1, 1987.

Region VIII has provided \$100,000 in grants to Colorado in 1985 to assist in the ride-sharing effort, and plans to provide an equal amount in 1986. The Region has requested additional funding from Headquarters. The Regional EPA and GSA are coordinating a major ride-sharing campaign this year for the Federal agencies' 40,000 employees and for Colorado. Entitled "Better Air - You Hold The Key", the State campaign has an estimated budget of \$500,000 per year.

#### Headquarters Actions Needed

- o The fugitive dust policy, which was written to apply only to TSP, states that areas with low population (under 50,000 in the West) will not be considered as non-attainment areas if there are no industrial sources of particulate matter. Since fugitive dust would be the principle cause of high levels in such areas and since most fugitive dust is larger non-respirable particles, the policy had considerable justification. However, the policy has been proposed to be continued under the new PM<sub>10</sub> standard. Since all PM<sub>10</sub> is respirable, the justification is much weaker for continuing a fugitive dust policy. The present policy will have to be rewritten to apply it to PM<sub>10</sub>, and until it is, the control requirements for low population areas with high PM<sub>10</sub> levels is very much in doubt. There are many such areas with suspected high PM<sub>10</sub> levels in Colorado, Utah, Wyoming and Montana. Headquarters OAQPS must develop a new fugitive dust policy on particulate control as soon as possible. States need to address both known TSP violations and probable PM<sub>10</sub> violations. EPA also needs to make the PM<sub>10</sub> standard final.

- o The Federal high altitude standards for motor vehicles have contributed to the attainment of CO and ozone standards in Denver and Salt Lake City. Colorado receives funds to perform the Federal Test Procedure at high altitude to determine how well vehicles comply with the standards. The Office of Mobile Source Air Pollution Control (OMSAPC) must continue to fund this program to insure continued progress by manufacturers, and by states such as Colorado and Utah, toward the goal of attaining CO and ozone standards. EPA must also develop guidance and procedures on RFP in order to assure attainment by 1987.
- o Headquarters support will be needed for the approval of the Denver CO plan with the possibility of an EPA promulgated gasohol program as a contingency measure to assure attainment by 1987.
- o Headquarters support to determine extent of toxic air contamination due to woodburning and diesel emissions.

### Environmental Results

The attainment of the CO and Ozone standards will be possible by 1987, but gasohol may have to be required by EPA to meet the standard in Denver.

Attachment of the particulate standards will be a longer process, and residential woodburning may have to be discontinued in some areas.

The ride-share program can effect a noticeable difference in Denver air quality, particularly in the winter months.

## NONPOINT SOURCE POLLUTION

### Problem Assessment

Approximately ninety percent of the water quality standards violations in Region VIII are attributed to nonpoint source pollution. Agricultural nonpoint pollution, mostly the result of irrigation practices, is the most serious problem in Region VIII. In Montana and Colorado, abandoned mines are a major NPS source. Abandoned hard rock mining Best Management Practices (BMPs) are not yet well developed, and progress is slow. The silviculture problem relates mostly to road construction. Nonpoint source pollution from Federal lands, which comprise 32% of the land area in Region VIII, is a growing concern. Colorado, South Dakota, Utah, Montana, and Wyoming have considerable Federal land area and all report problems working with Federal agencies. The problems range from a lack of resources and uncooperative attitudes to failure to implement BMPs as per their own policies, and NPS strategy.

Salinity, associated with irrigation and other agricultural practices, continues to be a problem in the arid West, provoking both interstate and international concern. The Region VIII states have experienced loss of land suitable for farming due to saline build-up in soils and saline seeps in some dry land areas. The problems associated with salinity appear to be growing and adequate measures for controlling the problems are being investigated.

### Regional Agenda

The primary focus of the Region VIII program is on agriculture NPS since it is the most serious problem and the one for which BMP's have been developed and limited funding is available through USDA. Silviculture problems are occurring for which BMP's are known, but multiple ownership implementation procedures are not yet developed. A silviculture NPS specialist is being hired. Construction NPS is ready for control by cities and counties, but urban runoff cost-effectiveness is still under study.

Federal lands compliance with nonpoint sources is developing as a major activity in Region VIII. The lands involved are primarily those of the Forest Service and BLM. In the deliberations of the National NPS Task Force, major efforts will be made to assure adequate attention to NPS Forest plans and Resource Management Plans and their implementation in subsequent activity plans.

The Regional NPS Strategy is to support each state to the maximum by utilizing existing resources to implement state and national goals and the National NPS Policy as reflected in the individual Task Force Agency Strategies. State and EPA tasks and milestones to achieve these strategies will be documented in each State/EPA Agreement. Regarding Federal lands, the Regional Strategy is to work for closer cooperation between each State and their respective Federal land management agencies to resolve the problem issues and to support each Federal Agency in implementing their strategy.

The major emphasis will continue to be placed on lands managed by the Forest Service and Bureau of Land Management, and on programs provided by the Soil Conservation Service, Agricultural Stabilization and Conservation Service and the Extension Service for Agriculture. Urban construction strategies are being deferred awaiting completion of the National Urban Runoff Project reports. Major leadership for urban construction is presently being provided by several areawide NPS agencies through 205(j) funding and Clean Lakes projects. Development of an abandoned hard rock mining source strategy will have to await availability of resources and cost-effective BMP's.

#### Headquarters Actions Needed

In order to effectively approach the problem, it is necessary to:

- o allocate resources and positions to the nonpoint program for regional offices rather than continue to fund positions from other programs.
- o develop stronger regional and National cooperation with the key Federal land agencies and Department of Agriculture (SCS, ASCS, etc.).
- o include enforcement of EO 12088 and EO 12372 for Federal agencies as needed.
- o develop more implementation resources to control the problems at the sources. (106 grants, nonpoint pollution grants, Clean Lakes grants).
- o resolve sensitive areas of conflict such as water conservation and water rights laws vs water quality considerations.
- o strengthen the nonpoint public awareness programs.
- o provide funding for complete data entry to STORET and develop programs to effectively analyze problems and situations.
- o increase implementation effectiveness monitoring efforts.
- o strengthen the EPA policy regarding use of the General Permits approach to contact of quasi-point sources such as feedlots, construction runoff, placer mining, etc.
- o improve National NPS Technology Transfer activities.
- o define sediment criteria in terms of fishery impacts.

#### Environmental Results

During the last year, Watershed/Clean Lake project implementations have been completed at Lake Herman and Sylvan Lake in South Dakota and at Spiritwood Lake, North Dakota.

## TOXIC SUBSTANCES

### Problem Assessment

TSCA issues which the Agency needs to address include:

- Disposal of household chemicals, such as caustics, pesticides, wood preservatives, paints and motor oils, in landfills not designed to contain such liquid wastes.
- Inadequate regulation and training of asbestos removal and encapsulation contractors and their employees, with the result that workers, building occupants and school children receive unnecessary exposure to asbestos.
- Need for improved air sampling and analysis techniques for asbestos identification and fiber count, in order to better identify and quantify small fibers. Important issues to be investigated relate to sample collection, sample handling, membrane type, and the development of a generally accepted method for determining fiber count.
- Disposal of PCB-containing equipment in underground mines. PCB's in this equipment can contaminate ground and surface waters as the abandoned mines flood.

### Regional Agenda

EPA Region VIII sponsored a successful collection day for household chemicals run by the Tri-County Health Department, Colorado, in the Fall, 1984. Several other Colorado counties are sponsoring similar programs in 1985. The Toxics Branch has begun to educate hospital administrators about proper asbestos handling and removal procedures, in an initial effort to address asbestos in public buildings. Region VIII has had limited experience with the scanning electron microscopy (SEM) method for asbestos analysis, and as a result of this experience, has identified four issues which the Agency needs to address. PCB inspections in underground mines have been routine in Region VIII for several years.

### Headquarters Actions Needed

#### Disposal of Household Chemicals:

- o Either the Toxic Substances Control Act or the Solid Waste Disposal Act/Resource Conservation and Recovery Act grant program should be expanded to fund additional innovative demonstration and long-term collection programs for household chemicals.
- o Headquarters staff should rely heavily on input from Regional RCRA and TOSCA programs for design and implementation of this activity.

#### Inadequate Regulation and Training of Asbestos Removal and Encapsulation Contractors:

- o OPTS should develop a certification and inspection program for asbestos removal and encapsulation contractors, possibly modeled after the commercial pesticide applicator program. All contractors should be required to follow current best management practices for asbestos removal projects.

- o In an effort to educate the workers who actually do the removal, OPTS, through its three asbestos training centers, should fund mandatory one-day safety workshops for contractor employees and laborers.

#### Need for Improved Air Sampling and Analysis Techniques for Asbestos:

EPA OPTS and the Office of Research and Development should work with NIOSH to conduct research on the following items:

- o Evaluation of alternative air sample cassette design to avoid the electrostatic buildup on filter membranes and to promote an even fiber distribution across the membrane face.
- o Evaluation of the use of silver, "Nuclepore" or other alternative membranes in conjunction with scanning electron microscopy/energy dispersive X-ray (EDX) analysis.
- o Evaluation of the effect of sample rate and sampling duration on the results of total asbestos fiber capture.
- o Evaluation of alternative point (fiber) counting methods to be used in conjunction with SEM.

After these studies have been done, EPA and NIOSH should jointly publish a recommended sampling procedure which improves on the current procedure.

#### Disposal of PCB-Containing Equipment in Underground Mines:

- o OPTS Office of Compliance Monitoring should revise its Priority Inspection Plan to specifically include underground coal and hard rock mines.
- o The Office of Compliance should require the Regions to negotiate informal local agreements with their local Mine Safety and Health Administration (MSHA) Offices to have MSHA personnel train EPA PCB inspectors on proper safety equipment and procedures for "going underground". (EPA inspectors would not be allowed underground without this training).

#### Environmental Results

The major focus of these initiatives is the prevention of underground, surface and air quality problems. Because prevention is usually less expensive than environmental cleanup, it should be possible to calculate the environmental results in terms of cleanup dollars saved, and water supplies protected. For asbestos, the results could be the reduction of asbestos-related diseases.

## CLEANUP AND DISPOSAL OF RADIOACTIVE WASTES

### Problem Assessment

Sixteen of the twenty-five designated DOE Mill Tailings Remedial Action Project (UMTRAP) sites are located in Region VIII. The Uranium Mill Tailings Radiation Control Act of 1978 (Public Law 95-604, 42 USC 7901) authorized the Department of Energy (DOE) to undertake remedial action at 24 designated sites and associated vicinity properties. This act was amended in January 1983 by Public Law 97-415 to perform remedial actions at vicinity properties at Edgemont, South Dakota. (Cleanup of the Edgemont processing site is TVA's responsibility.) Assessments have been made on twelve Denver properties adjacent to original properties requiring possible remedial action. A major unresolved problem with cleanup of the Denver radium sites is the fact that the State of Colorado has been totally unsuccessful in providing a disposal site for the contaminated soil, building material, etc. to be removed. According to the latest (6/3/85) Colorado LLW Siting Schedule, a site will be proposed in Fall of 1986, but waste will not be accepted until Spring of 1991.

### Regional Agenda

The Region VIII Regional Office continues to perform health risk analyses, provide technical assistance and radiation detection and monitoring equipment, on occasion, to the contractor's field study personnel, provide overview monitoring of work being performed and assessment of the feasibility study reports as generated. At the present time there are only two or three sites where personnel working in buildings on the property are being subjected to working levels of radon progeny which are marginally acceptable.

For several years the Regional Office has engaged in a fairly constant interface with activities of the Albuquerque, New Mexico UMTRA Project Office. A considerable number and variety of documents have been reviewed and comments furnished for each site. These included Preliminary and Final Drafts for Engineering Assessments, Environmental Impact Statements, Environmental Assessments, Remedial Action Designs, etc.

Nearly all of the UMTRA/STATES and Tribes quarterly meetings have been attended by a regional representative who participated in the discussion of problems, plans, schedules, public meetings, EPA environmental requirements, site selection, etc.

### Headquarters Actions Needed

Environmental quality assurance procedures by the Regional Office will require analyses of soil samples and filters from RPISU Radon Progeny Sampling Units.



## Environmental Results

The completion of remedial action contracts on designated Denver Radium Sites and the twelve vicinity properties should totally eliminate public health concerns.

Completion of remedial actions on the designated Uranium Mill Tailings sites and the associated vicinity properties should relieve the general public of any radiological health concerns from radon progeny for the next century.

## ACID DEPOSITION IN WESTERN WILDERNESS AREAS

### Problem Assessment

Acid rain is an issue of growing concern in the western United States. It is an issue of intense interest to the scientific and regulatory communities and the public. Several reports have recently claimed that many sensitive western ecosystems have already been affected by both local sources and remote major sources of SO<sub>2</sub> and NO<sub>x</sub> such as the copper smelters in southern Arizona and northern Mexico. EPA has insufficient information at this time to substantiate these claims of damage. We in Region VIII have initiated efforts in concert with several state and federal agencies to develop a comprehensive and responsible research and monitoring program to establish baseline information on "acid rain" and to develop knowledge on the sensitivity and response of high elevation ecosystems to "acid rain". We believe the opportunity still exists in the western U.S. to prevent "acid rain" effects, yet without reliable information, our ability to make reasoned decisions is seriously impaired.

Despite the lack of definitive data on western atmospheric deposition, Region VIII is currently facing a number of difficult decisions relating to acid rain control within the PSD permitting process. One example is the pending PSD permit for the proposed Chevron Oil Shale project which would emit 3500 tons per year of SO<sub>2</sub> and 35,000 tons per year of NO<sub>x</sub>. At these emission rates, the project would adversely effect nearby wilderness areas. Therefore, the PSD permit currently calls for an 80% NO<sub>x</sub> reduction at a projected annual cost of \$30 to \$87 million to the company. These types of regulatory decisions are complicated by our lack of knowledge on the issue and the high probability of the permit being litigated by either the company or environmental groups.

### Regional Agenda

Region VIII (in concert with several state, federal and private organizations) has formed the Western Atmospheric Deposition Task force (WADTF) to help ensure the coordination of research activities, the development of comparable data bases, and to jointly identify research needs and priorities. The task force does not deal with policy matters but serves primarily to share technical information. John Welles of EPA chairs the WADTF. Current activities of the WADTF are focused on defining research needs and gathering baseline data on acid deposition in the alpine west especially in those areas potentially threatened by energy resource development. The major effort is to modify existing mesoscale air quality models used for predicting downwind environmental impacts so that acid deposition and visibility impacts can be more accurately analyzed.

### Regional Agenda (continued)

EPA and the Forest Service have completed specific plans, under a Memorandum of Agreement recently signed by the Administrator of EPA and the Chief of Forests, to sample 425 high mountain lakes in 74 Federally-designated wilderness areas of the Western United States. This is part of the Western Lakes survey portion of the National Surface Water survey to evaluate the extent of water resources sensitive to acidic deposition.

At Region VIII's initiative, several western states have joined together to conduct an analysis of issues relating to atmospheric deposition in the western United States. This major study has been funded through a grant from the U.S. Environmental Protection Agency (Region VIII) and will provide a detailed emission inventory of all SO<sub>2</sub> and NO<sub>x</sub> sources in the western U.S., northern Mexico, and southwestern Canada; an identification of sensitive areas to acid deposition and, an assessment of alternative control strategies for acid rain. The management of this two-year study will be provided by the Western Governor's Association located in Denver, Colorado. Plan for the project should be completed by early April 1985.

### Headquarters Action Needed

- o Support the development of a responsible and comprehensive research and monitoring program for western acid rain in Region VIII while the opportunity still exists to prevent damage to sensitive western ecosystems through the PSD permitting process. Present funding levels (\$65,000) for aquatic studies are totally inadequate for addressing an issue of this magnitude.
- o Assist Region VIII in developing a stronger dialogue with Headquarter's policy and research programs in addressing western acid rain issues and problems.
- o Conduct comprehensive evaluation of impacts of smelters and other major southwest sources affecting Region VIII and other western states.

### Environmental Results

The studies now being made will provide a statistically valid data base of lake water chemistry from which regional assessments of acid rain sensitivity can be made.

## PESTICIDES

### Problem Assessment

This many-faceted problem includes concerns raised by both Regional and State personnel:

- dumping of liquid pesticide wastes after application
- failure to collect and contain rinsates during flushing of equipment and/or cleaning of aircraft
- disposal of used unrinsed pesticide containers in sanitary landfills or gravel pits, along fence rows or river banks
- confusion among regulators and applicators about how the RCRA amendments will apply to pesticide wastes
- currently registered pesticides for which insufficient health and environmental fate data are available
- difficulties in obtaining health or environmental data for pesticides
- field misuse problems such as drift, failure to follow label directions, spraying areas of human activity without advance notice
- the lack of monitoring of intrastate agricultural commodities for pesticide residues.
- possible groundwater contamination due to application of pesticides through chemigation equipment.
- concentrated pesticide use in urban/suburban areas which can result in surface or groundwater contamination.

### Regional Agenda

Several Region VIII states are conducting limited ground water quality monitoring efforts which include monitoring for some pesticides. Although the Regional Office could conduct special site specific pesticide contamination studies, there are no funds available for laboratory analyses of samples. The Regional Toxicologist and other program staff work closely with state and local officials, citizens and pesticide applicators to prevent or minimize human exposure to harmful pesticides. To get access to more data, the Toxics Branch has broadened its literature searching capabilities to include additional commercial, EPA and government computer data bases. Colorado developed a slide-tape program on chemigation which was co-sponsored by the Region.

### Headquarters Actions Needed

#### Improper Disposal of Pesticides:

- o The Office of Pesticide Programs (OPP) should negotiate with manufacturers to develop detoxification mechanisms and/or procedures for their products geared to use by the applicator in the field. This detoxification mechanism should accompany the product when it is sold by the dealer. If manufacturers refuse to develop these mechanisms or procedures, the Office of Research and Development (ORD) should initiate

an aggressive research and field testing program. If this approach is not feasible for some pesticides, the Agency should consider requiring manufacturers and formulators to sell certain toxic pesticides pre-mixed to reduce the amount of concentrated wastes which would have to be disposed.

- o OPP should fund a collection center for used pesticide containers in any interested state. Existing collection schemes such as the one in Alberta, Canada, could serve as basic models. Another option which OPP should explore is the development of national or model state regulations requiring pesticide dealers to accept and recycle used pesticide containers, as is now the case in Maine.
- o OPP should assess the problems associated with improper disposal of pesticide containers, and conduct research into ultimate disposal options for used pesticide containers - can they be safely incinerated, recycled as scrap, reused?
- o In FY'87, if not before, OPP, RCRA, the Regions and SFIREG should package a training session which could be put on in each state concerning the requirements for small quantity generators of pesticide wastes.

Improper Use of Pesticides:

- o OPP should allocate additional funds on an ongoing basis for Region VIII laboratory support on special site specific pesticide contamination studies.
- o OPP and the Office of Research and Development (ORD) should request more resources to expedite the data call-in and research efforts on environmental fate and chronic health effects of existing pesticides. OPP and ORD should fund research on health effects of exposure to combinations of pesticides. After data has been reviewed for a pesticide, OPP should act within one year to require use restrictions or revised labels as necessary to protect human health and environmental quality.
- o The Agency should computerize existing and future data on pesticides in ground and surface waters, using a widely known and accessible system such as STORET. The Agency should broaden its current efforts to expand Cooperative Agreements and Memorandums of Understanding with other federal and state agencies and research organizations to do joint monitoring or laboratory analyses, and to get resulting data into the centralized system.
- o ORD should continue to develop and improve environmental fate models for pesticides, such as LEACH and PRZM. ORD should conduct a 1-2 day detailed training program for Region VIII and State personnel on how to set up and use each of these models.
- o OPTS should improve Regional access to EPA Headquarters health effects information and data bases for pesticides by providing the Pesticides and Toxics Program in each Region with an annual, comprehensive list of the in-house, federal, state and commercial data sources which HQ uses to

obtain toxicity and environmental fate information. Based upon their interest, Regions should be given access by OPTS or other Agency offices to any in-house data files. The Agency should increase its efforts to get direct Regional access to toxicity, environmental fate and pesticide monitoring data collected by other agencies, such as the Center for Disease Control, U.S. Geological Survey and the U.S. Fish and Wildlife Service.

- o OPTS should revise existing Confidential Business Information (CBI) procedures for registration of pesticides to improve Regional, State and public access to toxicity and environmental fate information for those products. OPP and the Office of Drinking Water should increase their efforts to share data and information on pesticides with the potential to be found in drinking water sources.

#### Chemigation:

- o The OPP and the Office of Drinking Water (ODW) should expand and continue their joint study of pesticides in groundwater beyond its current FY'87 expiration date, and include those pesticides which are being used in chemigation systems. As a result of these studies, OPP should develop labeling requirements for pesticides used in chemigation systems which will adequately prevent groundwater contamination.
- o OPP and the Regions should work with SFIREG to develop and disseminate updated training programs and audio-visual materials on chemigation, environmental fate of pesticides and groundwater issues. Two such programs should be developed in FY'87 for use by VO-AG classes and persons conducting training seminars for applicators.
- o OPP and the Office of Research and Development should perform and require bench testing of chemigation equipment, especially valves.

#### Concentrated Urban-Suburban Pesticide Use:

- o OPP should develop updated training programs and audio-visual materials for local officials and the general public on proper usage of pesticides and integrated pest management techniques.

#### Environmental Results

It has been estimated that 14% of all Superfund sites have contamination by one or more of a dozen hazardous pesticides. As pesticide misuse and disposal are more closely regulated, and as access to health and environmental fate data improves, future ground and surface water contamination should be prevented or minimized.

## DRINKING WATER QUALITY

### Problem Assessment

Most contaminants are regulated based on harm anticipated from a lifetime exposure; however, bacteriological quality is regulated to prevent exposure to contaminants which can have immediate impacts on health. All PWS are subject to bacteriological monitoring and MCL requirements. Surface water systems, which generally have the most difficulty in making water bacteriologically safe, are also subject to turbidity monitoring and MCL requirements. (Turbidity is used as an indicator of adequacy of treatment and potential interference with disinfection.) Bacteriological quality is a very old concern and technology to address the problem has been around for a long time, but it continues to be a major concern in Region VIII, both in primacy and non-primacy states. Currently the problem is measured by determining the number of PWS complying with the monitoring and MCL regulations. Average levels of compliance in Region VIII with bacteriological standards are slightly below the national averages for FY 81 through 84 and both Regional and National levels are below the national targets for compliance set by the Office of Drinking Water. More significantly, the trend in regional compliance over the four years shows no improvement and even a slight decrease. In part this trend can be explained by improved reporting of PWS violations by State programs to EPA; however, real improvements in compliance are needed. The majority of the problems continues to be with small water systems.

### Regional Agenda

Region VIII works with state agencies (or in the case of Wyoming and Indian Tribes, Region VIII acts as the State) to improve compliance by PWS. Complete drinking water programs are in place but need to be focused on violators, particularly persistent violators, and on those systems delivering unfiltered surface water. Region VIII is working with the states to insure that they have adequate data management capabilities to identify and track violation cases and that they begin to make their enforcement activities more effective. All states have written compliance strategies and have signed enforcement agreements with EPA agreeing to compliance targets for bacteriological and turbidity requirements. When the national computer system (FRDS) is programmed to provide data for rolling years, Region VIII will analyze data quarterly for the preceding 12 months to spot trends and give feedback to States earlier than is now possible. More attention will be given to whether state action on PWS violations is timely and appropriate. More attention will also be given to investigation of waterborne disease outbreaks, especially for systems using surface water. Currently little information exists on waterborne outbreaks except for the State of Colorado.

### Headquarters Action

- o Continued development of Health Advisories and toxicology technical assistance is something in which the states are particularly interested. Further guidance addressing the problems of small water systems and the regional role in waterborne disease outbreak investigation is needed.



- o Resources to tackle compliance tracking and follow-up for non-community PWSs is needed. Exposure to water from non-community systems may be brief but since the threat from bacteriological contamination is acute, these systems deserve more attention. Sufficient resources should be made available to add any new effort, such as VOCs.
- o It would be to EPA's benefit to lobby Congress to fund the Indian Health Service at a level where they can provide more technical assistance and training for Indian water systems.
- o Care must be taken in creating new program measures - see Appendix B.

### Environmental Results

Currently, the best measure we have is number of systems (in or out of compliance). The more that systems are in compliance, the lower will be the frequency and duration of people's exposure to contaminants known to be harmful.

## TOXIC SUBSTANCES IN SURFACE WATERS

### Problem Assessment

The problems of toxic substances in Region VIII surface waters encompass a variety of media and programs. Present concerns are associated with municipal publically owned treatment works (POTW's) industrial waste pass through, oil refineries, steel milling operations, active and inactive mines, federal facilities, and a variety of hazardous waste and superfund sites. Areas Region VIII is actively addressing are:

- Nonpoint sources from abandoned mining operations and agriculture which have a decisive effect on toxics in surface waters.
- POTW problems which range from chlorine and ammonia to pass-through of toxic substances from industrial input. Construction grants for advanced treatment are frequently issued to control ammonia toxicity problems. Approximately 314 grants have been issued to 60 facilities for advanced treatment, while another 60 facilities have avoided going to advanced treatment by using land application or other no-discharge alternatives. Region VIII is working on ammonia secondary Biological Oxygen Demand (BOD), as the next step in controlling ammonia toxicity.
- The problem of pretreatment and the pass-through of toxic substances and heavy metals is a prime concern. Monitoring is beginning to determine the extent of the situation.
- Industries, including, oil refineries, steel milling operations, ore processing, high technology facilities and mining operations which have all contributed to past and present toxic pollution. Mining operations affect the water quality in all six Region VIII states. Colorado and Montana report the greatest problems. Over 120 miles of stream have been severely polluted below the Anaconda site in Montana as evidenced by fish kills and stream sediment analyses. Since the milling operation has

ceased, some aquatic life has begun to return to the area. Colorado reports that 450 stream miles have been impacted by acid mine drainage. Restoration and feasibility studies are underway. Whitewood Creek in South Dakota had been severely damaged by Homestake Mine. The State, EPA and Homestake have worked to eliminate the discharge of toxics. Whitewood Creek is showing distinct improvement since the discharge has been curtailed.

- Federal facilities in Region VIII, which include military bases, an army munitions depot, Rocky Flats, Rocky Mountain Arsenal, and Dugway testing grounds. Pollutants range from organic chemicals to heavy metals. Several sites have been included on the National Priority List (NPL). Region VIII states are working with these facilities to control both point and nonpoint pollution. The Region is working with POTWs to ensure that biomonitoring programs are included in their pretreatment programs and assisting them in identifying metals in their headworks.

### Regional Agenda

Now that the water quality criteria documents for toxic substances are final, the region's primary concern is to effect the inclusion of these standards in the state standards. The states are also being encouraged to address statewide toxic problems, establish numeric limits, and develop an implementation procedure for narrative standards.

Region VIII is participating with on-site toxic surveys and assisting the states in developing site-specific standards. Work with Ceriodaphnia sp. to develop toxic screening procedures for major discharges is progressing. The Water Quality requirements section and the Bioassay Work Group are coordinating efforts to identify reference streams to develop the ecoregion/reference stream concept. This information is used to recalculate site specific criteria.

All of the Region VIII states have stream segments for which adequate standards have yet to be set. The permits, therefore, may not be adequate for protecting uses. In review letters on water quality standards, states are being informed that they need to incorporate appropriate standards to protect the beneficial uses.

### Headquarters Actions Needed

- o Headquarters must convince other Federal agencies such as the Forest Service, Department of Defense, and Office of Surface Mining to cooperate in eliminating problem areas. It is important that the cooperation and implementation continue down to the local facilities and field offices. Guidance and consistent approaches are needed to address the problems caused by inactive and abandoned mines, a majority of which are located on federal lands in Region VIII.
- o Continued coordination between Water, Superfund, and the states is necessary to address sites such as Anaconda, Montana, California Gulch, Colorado, and Rocky Mountain Arsenal.

## Environmental Results

Region VIII has developed useful techniques to analyze and locate stream standards violations. As toxic monitoring increases, monitoring stations reporting standards violations will dictate where Region and state efforts should be directed. Biosurveys conducted by the Region have given us the ability to examine effects of current and past discharges, enabling the Region to assist the states in developing numeric and narrative standards. The Region is currently working on a use attainability survey on the Clark Fork, Montana, and hopes to work on other streams in the Region.

It is estimated that 50% of the major permits have some kind of water quality based limit. Advanced treatment is progressing in the Region. The Region is working on implementing total effluent toxicity limits.

PART III

REGIONAL RECOMMENDATIONS FOR THE

AGENCY PRIORITY LIST

Region VIII recommends the following changes to the Agency Priority List for Fiscal Years 1987 - 1988:

1) In reviewing this Environmental Management Report (EMR), it becomes very apparent that public concern over priority environmental issues is a prevailing theme throughout. Yet, at no place in the priority list has outreach to the public to address their concerns been mentioned. This item will certainly be factored into future regional priorities and we recommend that future Headquarters priority lists include an item such as,

"CONDUCT PUBLIC OUTREACH ACTIVITIES IN ALL PROGRAMS TO  
ESTABLISH AND MAINTAIN TWO-WAY COMMUNICATION ABOUT  
ENVIRONMENTAL ISSUES".

2) The threat to every urban community resulting from failure to control hazardous (toxic) air pollutants has potential to adversely affect more of this country's population than any other environmental problem. Public concern over this issue is extremely high. We recommend that item #15 on the Agency Priority List be moved to position #5 and that items 5-14 become items 6-15.

**EPA REGION VIII  
1985 EMR UPDATE  
MOST SIGNIFICANT ENVIRONMENTAL PROBLEMS**

<u>Relative Ranking of Environmental Problems</u>	<u>Geographic Scope</u>	<u>Major Sources</u>	<u>Characterizations</u>		
			<u>Major Impact</u>	<u>Level of Pub- lic Concern</u>	<u>Contaminants of Concern</u>
Hazardous Waste Control - Superfund - RCRA	Region- wide	Abandoned & active sites	Threat to groundwater & human health	High	Hazardous materials and wastes
Groundwater Contamination	Region- wide	Leachate and under- ground tanks	Threat to drinking water	High	Hazardous wastes and products; pesticides
Urban Air Quality	Region- wide, esp. Denver, Salt Lake	Vehicle emissions, wood stoves	Threat to human health 2 million people	Very High in cities	Ozone, CO, Particulate PM10
Nonpoint Source Water Pollution	Region- wide	Agriculture, live-stock	Water uses of about 3 million people	Moderate and growing	Nutrients, sediment, salinity
Toxic Substances	Region- wide	Landfills, building insulation, underground transformers in mines	Public health, potential threat to groundwater	Moderate to high	Asbestos, caustics, and PCB's
Cleanup and Disposal of Radioactive Waste	Region- wide	Mill Tailings	Potential threat to human health	Moderate to high	Radioactiv Materials
Acid Deposition	Region- wide	Needs to be studied	Water uses	Moderate to high	Sulphur, nitrogen compounds
Pesticides	Region- wide	Agriculture	Threat to drinking & groundwater	Moderate to high	Dioxins, others
Drinking Water Quality	Region- wide	Several factors	Threat to human health	Moderate	Bacteria, turbidity
Toxic Substances In Surface Waters	Region- wide	Municipal facilities, industrial and mining discharges	Degraded water uses, Human health	Moderate to high	Ammonia toxics, nutrients

<u>Relative Ranking of Environmental Problems</u>	<u>Geographic Scope</u>	<u>Major Sources</u>	<u>Characterizations</u>		
			<u>Major Impact</u>	<u>Level of Pub- lic Concern</u>	<u>Contaminants of Concern</u>
Waterborne Disease	Region- wide	Surface water systems	Drinking Water	Moderate	Various
Wetlands Loss	Region- wide	Land develop- ment, agric.	Ecological	High in rural areas	Nutrients and sediments
Poorly Planned Development of High Quality Environment	Multi- State	Natural environment	Energy, min- ing, recrea- tion, water development	High	NO <sub>x</sub> , SO <sub>2</sub> , visibility, nutrients, sediment, etc.
Aircraft Noise	Multi- State	Aviation and military operations	Public health, & pristine wilderness	Moderate; high in Metro areas	Noise

SUGGESTED ENVIRONMENTAL RESULT INDICATORS

Drinking Water

The drinking water program is a public health program so it would seem appropriate that the best result indicator would be the number of persons protected. However, our data is not in a form at this time that can yield reasonable counts of persons affected. Counts of persons are not unique; in some areas, public water systems are so complex and interconnected that the persons they serve are counted several times, greatly increasing the state totals of population served.

This is especially true along the "front range" of Colorado and the "Wasatch front" of Utah. For Colorado, the total population served by community, active, public water systems in FY'84 is shown as 6,377,757 which is 221% of the total population for the state in the 1980 Census and about 265% of the fraction of the state's population expected to be served by a PWS. For Utah, the total served by PWSs is shown as 3,011,341 which is 206% of the total 1980 Census population and about 250% of expected. The effect on Regional totals is to make the population claimed to be served by PWS in Region VIII 164% of the total Census population and about 205% of what is really expected. Real improvements in compliance are going to involve small systems but their populations-served will make no dent in these greatly inflated state and Regional totals. Right now the large systems have the best compliance rates and they are also the ones doing the multiple counting, so to judge the drinking water program on the populations served is to see it as being better than it is.

Currently, the best indicator we have is the number of systems (in or out of compliance). The more that systems are in compliance, the lower will be the frequency and duration of people's exposure to contaminants known to be harmful.

Non-point Source Pollution

Suggested indicators are:

- Changes in priority water body lists
- Changes in pollutants causing non-support of designated beneficial uses
- Biological/use attainability criteria met.



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