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Colorado Department
of Public Health
and Environment

Colorado's EMS Permit Pilot Project

Finding effective and innovative ways to achieve superior environmental protection is the primary goal of the Colorado Department of Public Health and Environment's (CDPHE's) innovation initiative referred to as the Environmental Management System (EMS) Permit Pilot Project. A second goal of the project is to test a systematic, multi-media outcome-based permit system using an approved "permit enhanced" EMS as the vehicle. This pilot project provides an opportunity for states and the U.S. Environmental Protection Agency to examine the benefits an innovative EMS approach in protecting and enhancing public health and the environment.

To this end, CDPHE is conducting a series of pilot projects. Each pilot project will involve a regulated entity (or entities included in a defined business, economic, or other sector) that has implemented an EMS or is in the process of implementing an EMS. Data on changes in environmental performance, regulatory compliance, pollution prevention, and stakeholder involvement will be collected and evaluated, as well as information on the types and quality of information available to stakeholders. Through these pilot efforts CDPHE will determine whether and how the use of an EMS increases public health and environmental protection and provides better public information than existing regulatory requirements.

The attached draft Pilot Project Work Plan has been created to serve the EMS permit pilot for several sectors: CAFOs, aerospace, and one other sector. The work plan describes how each pilot project will be conducted and completed. The work plan includes descriptions of roles and responsibilities, schedules, research objectives, stakeholder involvement, data management procedures and data assessment and analysis techniques.

CDPHE appreciates your interest and involvement in Colorado's EMS Permit Project. If you have any questions regarding the project or the proposed work plan, please contact Phyllis Woodford at 303-692-3477 or Jill Cooper at 303-692-2007.

Sincerely,

Doug Benevento
Executive Director

Colorado Department of Public Health and Environment's

Environmental Management System Permit Pilot Project

PROJECT WORKPLAN

January 21, 2004

Project Background

During the past two years the Colorado Department of Public Health and Environment (CDPHE) engaged in an internal review of its environmental programs[1] to identify and implement innovative approaches to existing regulatory programs, and to achieve more efficient or effective environmental protection. From this effort a series of innovative initiatives were proposed to management, including the creation of an Environmental Management System (EMS) Permit. The goals of CDPHE's EMS permit pilot project include:

- Utilizing an EMS to deliver compliance-equivalent performance through enforceable performance standards;
- Reliance upon an EMS with specific, department-approved performance improvement goals to raise environmental performance through continual environmental improvement;
- The use of an EMS to continue producing compliance and performance into the future;
- Continuation of CDPHE's selective policy that offers rewards to good performers who have used or want to add an EMS to their environmental management approach;
- The appropriate allowance for stakeholder involvement in a participant's environmental footprint, compliance history, and community relations situation;
- The consideration of cross-media impacts when making environmental decisions; and,
- Finding ways to have the regulated organizations' EMS efforts replace and/or augment some of government's environmental regulatory functions, including inspections through external third-party audits, minor permit modifications through the EMS tracking system, and reporting through the EMS data collection, problem identification, root cause analysis, system modification, etc.

In order to systematically develop and implement an EMS permit, CDPHE will test the innovation through a pilot approach as detailed below.

Project Overview

The EMS project includes whole-facility permits with three to five facilities across various sectors and trades in Colorado. The facilities must commit to compliance, as well as continued environmental improvement and superior performance through the development and implementation of an EMS. The EMS will include a continual cycle of planning, implementing, reviewing and improving the actions that an organization takes to meet its environmental obligations (similar to the ISO 14001 standard).

Colorado's EMS pilot project will go beyond ISO 14001 requirements by incorporating:

- A multi-media (air, water and solid waste - no RCRA permits involved) permit that allows for the consideration of cross-media impacts;
- A requirement for compliance with regulatory requirements, including compliance audits;
- A commitment to continual environmental improvement projects;

[1] Environmental programs include the Consumer Protection Division, Air Pollution Control Division, Pollution Prevention Program, Water Quality Control Division, and Hazardous Materials and Waste Management Division.

- Enhanced community involvement and communications;
- Information learned from EMS implementation and sharing with CDPHE, regional and/or local working groups and the public;
- Specific data on the goals, implementation, and performance of their EMS as reported in the national and Colorado supplemental data protocols;
- Known regulatory deficiencies, as required by the appropriate regulatory agency, through the aspects and impacts analysis of the EMS; and,
- Management commitment to participate in the project through a letter of intent.

If the Environmental Management System Permit Pilot Project legislation passes and the Governor signs it into law, this pilot project will conform to the statutory requirements to the extent possible, including that underlying air and water quality limits (NAAQS, stream standards, groundwater standards, etc.) will not be modified nor violated.

Project Workplan

Work on the EMS permit pilot project is already underway. The project period covers over three years, ending May 15, 2007. At the conclusion of the project a final report will be submitted to EPA, the project partners and interested stakeholders. The following information provides greater detail on how the goals and objectives of the project will be met.

Project Schedule (completion dates)

March 31, 2004	Complete compliance screening, select partners, and obtain confirmation from partners that they are committed to the project
July 30, 2004	Partners and/or CDPHE develop or modify the EMS for each facility or develop EMS templates for industry sectors (as appropriate)
July 31, 2004	Develop performance measures and project criteria for EMS permit project with stakeholders (including environmental organizations, industry partners and associations, local governments and US EPA)
September 30, 2004	Conduct a baseline assessment of the environmental impacts and the compliance status of each facility
September 30, 2004*	Complete negotiations with the company and EPA on the terms and conditions for each individual EMS permit, including the first continual improvement elements; draft the enforceable language and agreement between the parties. Hold stakeholder meetings as appropriate
October 31, 2004	Begin public notice for EMS permits, as required by regulation and statutes
December 1, 2004 - December 1, 2006	Implement EMS permits, track compliance rates, environmental improvements, and administrative efficiencies during this time
September 30, 2005	Estimated date of facilities' completion of compliance and EMS conformance audits
December 1, 2006	Conduct the follow up assessment of the environmental impacts and the compliance status of each facility
February 28, 2007	Analyze data, evaluate program with stakeholders, develop report and, if proven successful, begin to institutionalize the program

* The completion date of this milestone may change if negotiations continue beyond September 30, 2004.

EMS Development and Implementation

During the initial EMS development and implementation phase of the project (December 2003 – April 2004) the project will focus on the following components:

- Written environmental policies with commitments from top management to superior environmental performance;
- Development of methods and procedures that take into account environmental aspects and impacts, compliance with legal requirements, objectives and targets and corporate-wide environmental programs;
- Implementation which focuses on structure and responsibility, training and communication for employees, EMS documentation and control, operational control and emergency preparedness and responses, checking and corrective action which include monitoring and measurement, corrective and preventive action, regular EMS audits and a continual improvement (including pollution prevention[2]) plan as the central theme.

EMS Permit

Concurrently, or following the development of the conventional EMS for partners without an exiting EMS, the permit component of the EMS will be developed (December 2003 – July 2004). The EMS permit will include specific environmental standards and work practice requirements, but will not necessarily dictate technology requirements. Project partners will be responsible for proposing the methods and technologies to be used to comply with regulatory requirements. This approach provides incentives for project partners to implement pollution prevention alternatives wherever possible. In addition, the EMS permit would require project partners and CDPHE to review and consider the cross-media impacts of the technology and/or work practice selected. CDPHE shall solicit comments and input from the appropriate and necessary stakeholders prior to the permit being finalized, and a public comment process shall follow issuance of the draft or final permit, as required by state law. The EMS permit is considered equivalent to any existing environmental permits, as it will contain the necessary requirements and elements of any environmental permit.

CDPHE is currently exploring the regulatory and statutory flexibility that already exists to allow such an analysis (i.e., the Best Available Control Technology definition requires environmental impacts be considered, EPA is proposing an alternative Maximum Achievable Control Technology standard). If the authority to consider cross-media impacts for certain programs does not currently exist, CDPHE will work with EPA in developing any necessary regulatory modifications. The EMS permit will also include the specific administrative requirements, such as when an EMS permit modification would be required and the public comment provisions. The regulatory flexibility work is anticipated to occur frequently in the first year of the project, but could also continue throughout the project as CDPHE and project partners become more familiar with cross-media issues and approaches. Regardless of EMS permit implementation, the participating facilities' existing permits will remain in place during the pilot project period.

Performance Measurements

CDPHE will use this pilot project to determine if and how the use of an EMS permit (a) increases public health and environmental protection, and (b) provides better public information than existing regulatory requirements. Performance measures will be developed as necessary and used throughout the project period (February 2004 – May 2007).

Each pilot will contribute baseline data on environmental performance prior to the introduction of the EMS, descriptive information about EMS design, and four semiannual updates of data on environmental performance following the introduction of the EMS. Data will be provided through the completion of the

[2] Pollution prevention is defined by Colorado statute, and does not include treatment of wastes after they are created.

MSWG EMS data protocols and additional questions added by CDPHE. Electronic and printed versions of the protocols are available on the Internet at www.eli.org/isopilots.htm. Data collected through the Pilot Project will be available to interested parties and summarized in the final report to the public.

The pilot project will contribute data in the following categories:

- Environmental performance (e.g., measures of emissions of pollutants, risk factors, use of energy and natural resources, etc.), for example:
  - Solid waste reduction in tons per year,
  - Hazardous pollutants (air, water, or waste) in pounds per year,
  - Water use reduction in gallons per year,
  - Energy use reduction in kWh per year, and
  - Air pollutant reductions (CO2, PM, and VOCs).
- Environmental condition indicators (measures of environmental quality in relation to the facility and its discharges, e.g., substantiate the well-being of the air, land, water, and living things as part of a larger eco-system);
- Environmental compliance indicators (specify and describe deficiencies in terms of unauthorized releases and government requirements);
- Pollution prevention indicators (include pollution prevention performance information and what stakeholders believe are the priority pollution prevention actions);
- Community involvement measures (identify ways the facility has played a leadership role in involving the public in defining goals and objectives and how it has incorporated public insights and recommendations):
  - Increased reporting to the community through public reports (i.e., sustainability or environmental reports), and
  - Community involvement in identifying goals of facility.
- Continual improvement;
- Employee involvement (CDPHE and project partners);
- Involvement of interested parties;
- Quality and quantity of environmental information produced;
- EMS design; and,
- EMS costs and benefits.

To determine baseline conditions, the pilot will contribute data prior to implementing the EMS. To assess the short-term results of establishing an EMS, the pilot will submit four quarterly updates of data following the introduction of the EMS. Descriptive information about the EMS design will be submitted to evaluate distinguishing EMS features and superior practices.

Data Quality Assessment, Validation and Usability

The CDPHE Pilot Project managers shall assess data quality. This shall be accomplished by looking at the following data quality aspects:

- Completeness (is all the data included);
- Appropriateness (scope and detail appropriate to support research objectives);
- Accuracy (level of accuracy appropriate to questions being asked);
- Precision (description of desired measurement);
- Relevance (adds information that supports research objectives); and,
- Comparability (to other Colorado pilots and other studies on EMS performance).

The project will involve standard measures and protocols – what required for an appropriate measures…. The WQCD and HMWMD can self-authorize – QA plan (Joe S., Bob J., water??).

Data Analysis

Data analysis will be conducted to compare baseline data on EMS performance and regulatory compliance, and on the public's access to environmental information, with performance in these areas after EMS implementation. Improvements of performance over baseline performance will indicate improved environmental protection and information. Performance, including information sharing, shall also be compared to regulatory requirements in these areas. The elements that will be evaluated to determine the success of this project will be developed with the stakeholders, including environmental organizations, community members, local, state and federal government agencies, and industry. This is the first work item in the above schedule.

The collected data and analysis will be presented to the Regional Working Group (see below section "Regional Working Group" for more information). The Working Group, CDPHE and the Pilot will analyze the data. The final conclusions, and subsequent report to the public, may include conclusions drawn from the data from all of the Colorado Pilot Projects. Case studies and examples drawn from the Pilots may be used to illustrate conclusions.

Continual Environmental Improvement

The EMS permit will require the facility to select, agree to, and implement continual improvement projects. As CDPHE develops the program, it will be answering questions such as:

- Should the facility's specific continual improvement projects be enforceable?
- Should a failure to complete the continual improvement projects result in the facility leaving the EMS permit program? If so, criteria should be developed to guide those decisions.
- What type of review or approval of the continual improvement projects by CDPHE and/or other stakeholders should occur?

CDPHE will be working with stakeholders and partners to answer and develop policies and procedures to address these types of issues. This work will occur during the development of the EMS permit and as the systems are implemented and audits are performed (February 2004 – April 2007).

Continual environmental improvements goals will vary from partner to partner based on the aspects and impacts analysis, regulatory compliance needs and community input. The selection of continual improvement goals will be the responsibility of the project partners. CDPHE, however, will encourage project partners to select goals that address significant environmental impacts and compliance related needs. Examples of potential continual improvement goals include the following type of projects:

- For a power plant, energy recovery projects, e.g., re-use of fly ash as an alternative combustion fuel – reduce coal use by a negotiated amount of tons/year and generate a certain amount MWh/year from recovered fly ash (measurement: tons of coal displaced by recovered ash; megawatt-hours of energy recovered from previously landfilled ash).
- Conduct industrial ecology projects (e.g., beneficial re-use of high-volume industrial wastes in construction materials).
- Commitments to opacity limits well below the current regulatory requirements, except during periods of malfunction (measurement: opacity as read by continuous emission monitors or using other methods).
- Improved land use and reduced risk of environmental contamination through commitments to reduce solid and hazardous waste sent to landfills and find beneficial uses. Eventual goal is to completely eliminate waste streams to landfills. A second goal is to reduce risk and potential liability for groundwater contamination caused by leaching or leaking of materials from the landfills. (Measurement: volume of waste diverted and landfill space made available.)

- EMS audits of all key suppliers that may present significant environmental aspects as part of the service they provide the plant. ISO 14001 like protocols shall be used for these audits. Feedback will be supplied to the suppliers. (Measurement: list of audits conducted and qualitative and quantitative performance measures specific to the company's contract with each supplier.)
- Toxic release and use reduction project(s). For example, a power plant would contribute to research and conduct field-testing at the plant to characterize mercury emissions and to evaluate the performance of mercury control technologies for coal-burning plants. (Measurement: percent complete and results of testing.)
- Projects that can demonstrate better overall environmental performance, with the allowance for higher media-specific emissions standards, but that remain within the parameters of the required technology given considerations in making control technology determinations).

Community Involvement

CDPHE will require the partner facilities to enhance the overall communication and involvement with the community including effective community involvement in the development of this initiative. Effective communication means that project partners must find ways to communicate the environmental impact, objectives and targets of their facilities and address the community's perceptions and reactions to this information. The goal is to develop a level of trust that results in changes to operations, processes, continuous environmental improvement and implementation of pollution prevention plans that are meaningful to the community. It does not mean involvement by the community in business decisions, fiscal matters, proprietary information, etc. This activity will be the responsibility of the project partners, but is anticipated to take place throughout the project period.

From the regulatory perspective, CDPHE anticipates that the public comment requirements could be modified through an EMS permit approach. For example, instead of public comment only occurring at the end of the permitting process, comment and participation would be encouraged and allowed at the beginning of the process. Thus, the comment period at the end of the process may be shortened. CDPHE will explore this approach with its partner stakeholders near the beginning of the project period (January 2004 – December 2004).

EMS and Compliance Audits

EMS and compliance audits are an important element of Colorado's project. Developing the audit process will require input and involvement from multiple stakeholders. CDPHE already begun to analyze and develop the elements of a required compliance audit with assistance from other states, CDPHE inspectors, partner facilities, and the environmental community. The goal is to create a compliance audit through the EMS permit that could stand in the stead of a traditional state inspection. The state will not relinquish any enforcement authority such as the ability to respond to complaints or the ability to conduct inspections. Instead, the state will consider on a case-by-case basis whether conducting an inspection at the partner facility is the best use of its limited compliance assurance resources. Or, could those resources be better utilized towards targeting more problematic environmental concerns or facilities.

The EMS permit will also contain a statement concerning the facility's ability to use Colorado's Self Audit Law. Currently, facilities required to conduct audits by law are not eligible to use the protection of the law. CDPHE will use its enforcement discretion and allow participating facilities to use the Self Audit Law protection, if the only restricting factor is the fact the audit is required.

Incentives for Facility Involvement

In return for the voluntary participation of the partners in the EMS permit project, CDPHE is willing to work towards certain incentives as requested by the project partners. Incentives will be developed during the project period and examples include:

- Waiving certain procedural requirements including requiring permit revisions for minor modifications;
- Streamlining reporting and monitoring requirements;
- Alternative monitoring and enhanced corrective actions;
- Reduced reporting/decreased administrative expense;
- Annual discharge monitoring reports;
- Wastewater noncompliance notifications;
- Electronic reporting/submittals; and
- Single cross-media inspections at a reduced frequency.

Certain of the above incentives may require modifications to state regulations and/or approval by US EPA. CDPHE will modify state regulations through the process established by state statute and shall seek US EPA approval through the ECOS Innovations agreement process. The latter process allows for expedited review and determinations by US EPA on state innovations. Where regulatory and statutory flexibility already exists to offer these incentives, stakeholders will be informed before the permit is issued and also have an opportunity to comment on and potential appeal the permit after issuance.

Stakeholder Involvement

CDPHE will convene a meeting of facilities and local community representatives that will be participating in the EMS permit pilot project and begin the process of developing an EMS template(s) for specific facilities and making it part of the culture of each facility. For facilities with an EMS in place already, CDPHE will review and make recommendations to improve the EMS. This portion will be funded by CDPHE with possible financial contributions from the industry partners.

A citizen advisory panel may be established to allow the environmental community, local government representatives and community members to participate.

CDPHE shall coordinate closely with US EPA, Region 8 and Headquarters throughout this process. As the permits are drafted, a draft version will be submitted to both Region 8 and Headquarters for review and comments. As the permit process is established, CDPHE shall also coordinate with US EPA. CDPHE proposes a monthly conference call with the appropriate US EPA staff. The participants on this call may vary depending upon the remaining issues and topics to be discussed on each call. CDPHE understands that Region 8 is the primary US EPA contact and will work through them to schedule these meetings and identify the appropriate US EPA staff.

Regional Working Groups

The Regional Working Groups are the primary vehicle for stakeholder involvement in the CDPHE EMS Permit Pilot Project. A stakeholder is any interested party (organization or individual) who may be affected by the activities of CDPHE, or of a Pilot, and is interested in contributing to the CDPHE EMS Permit Pilot Project.

The purpose of the Working Groups is to act as a public forum for the evaluation, analysis, and discussion of Environmental Management Systems in general and of the Pilot Project specifically. The Working Groups should take an active role in evaluating the Pilot's EMS and assist in analyzing data generated by the Pilot Project. The Working Groups may also provide suggestions to Pilot for improving the EMS.

The Working Groups shall be a forum for education, networking, and open communication between industry, regulatory agencies, environmental or community interest groups, and academics. Establishing cooperative working relationships between various stakeholders is a primary goal of the working group.

CDPHE will coordinate the Regional Working Groups. Meetings will occur approximately 3 to 4 times per year. The Pilot, CDPHE and the Working Group should also participate in training and facility tours.

Reporting

CDPHE will prepare quarterly reports to the public for the period beginning the date the funds are received by CDPHE through January 2007. The reports will include baseline conditions, updates on the progress, and activities of the CDPHE EMS Pilot Project. The conclusions of the studies will be presented in the final report by May 31, 2007.

Project Budget (Estimated)

$20,000	Stakeholder outreach and support (environmental organizations)
$50,000	Baseline site assessment and data analysis: EMS conformance, compliance status, and environmental impacts (estimated $10,000 per facility x 5 facilities) (contractor)
$50,000	Permit processing fees, CDPHE staff support, and project management (CDPHE costs)
$7,000	Laptop computer ($3,000), scanner ($3,000), and digital camera and related software ($1,000) (equipment)
$11,300	Final project analysis and report (contractor or CDPHE)
$11,691	Indirect

The CAFO EMS grant is being used primarily to assist the operations in developing and implementing an EMS and bilingual resources and translations. This funding will also be used to develop templates for the different CAFO sectors (dairy, cattle, and hog). Some of the funding may be used for baseline assessment work. We will ensure that the funding does not overlap. The other partners do not require such assistance nor funding.

Pilot Project Organization, Roles and Responsibilities

CDPHE: Throughout the entire duration of the pilot project, CDPHE will serve as the administrator and manager of the project. The responsibilities of CDPHE include:

- Providing data collection protocols;
- Coordinating the collection of data;
- Providing technical assistance to project partners;
- Assisting in data collection and analysis;
- Facilitating communication with stakeholders and coordinating with the Regional Working Group;
- Providing training on Environmental Management Systems; and,
- Communicating with the governor's office, the public and stakeholders on the progress and conclusions of the project.

EMS Permit Project Manager

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