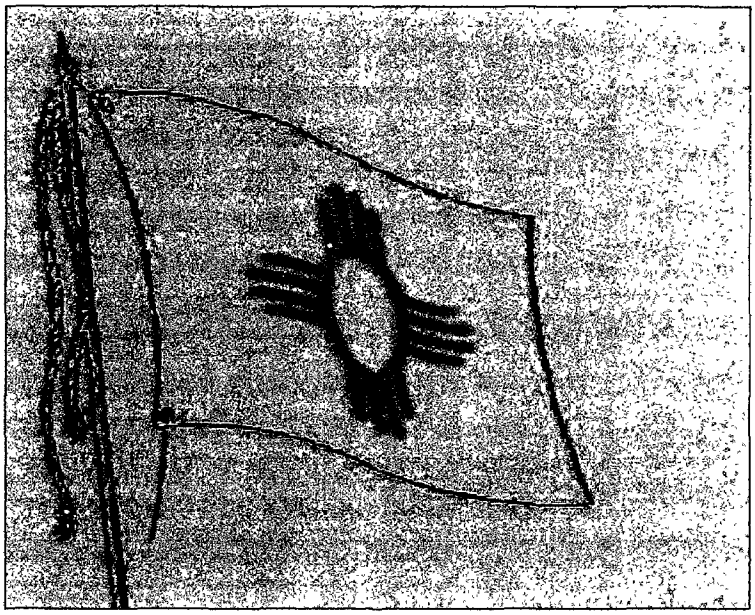
Quality Management Plan

Quality Assurance Policies, Procedures and Management Systems



State of New Mexico
Oil Conservation Division

ORIGINAL

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QUALITY MANAGEMENT PLAN IDENTIFICATION FORM

Document Title:	Quality Assurance Program Plan for the New Mexico Oil Conservation Division
Document Control Number:	_____
Organization Title:	Energy, Minerals & Natural Resources Department Oil Conservation Division
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Plan Coverage:	The plan covers all of the monitoring and measurement activities mandated through U.S. EPA and NMOCD regulations and memoranda. This includes all intramural and extramural environmental data generated by monitoring activities conducted through NMOCD program activities, contracts, grants, interagency agreements, and cooperative agreements. This document will provide QA goals and procedures for all environmental measurements funded by or through the NMOCD.

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1. QUALITY MANAGEMENT AND ORGANIZATION

1.1 NMOCD Mission

The NMOCD has statutory responsibility to regulate surface or subsurface disposition of solid and liquid wastes generated or used in the exploration, production, refinement, processing, transportation and servicing of oil and natural gas in a manner that protects surface waters, ground waters, public health and the environment.

The mission of NMOCD Environmental Bureau (E.B.) is to monitor and protect the environment to the extent mandated by the Legislature and NMOCD Rules and Regulation with the tools that are given to it by the Legislature. Environmental impacts can be significant statistically, significant to the environment and/or significant to society. Ongoing policy of the NMOCD requires establishment of a centrally managed QA program. Adherence to this Quality Management Plan will allow a single approach to data generation for or in agreement with the U.S. EPA and those programs funded in whole or in part by grants or contracts with the U.S. EPA and all state supported NMOCD programs.

In data gathering systems, QA is concerned with all of the activities that have an effect on the quality of the data, as well as the environment of methods and techniques to measure the quality of the data. Environmentally related measurement activities include all field and laboratory procedures that generate data involving the measurement of chemical, physical or biological parameters in the environment; determining the presence or absence of pollutants or hazardous substances; and studies of measurements of pollution transport.

1.2 Quality Assurance

Quality Assurance (QA) is a management system that evaluates and documents whether decision makers have the information they need to make good decisions. This Quality Management Plan (QMP) establishes policy and program requirements for the conduct of all environmentally related measurements performed by or for this agency.

The goal of the QA program for the NMOCD is to ensure that all scientific data generated by or for the NMOCD will be scientifically valid, legally defensible, and of known and acceptable precision and accuracy. This goal will be achieved by adhering to the following QA procedures throughout an entire technical study, from planning to data usage.

1.2.1 All scientific data generated by or for the NMOCD will be of sufficient or greater quality to withstand scientific and legal challenge. This includes equivalent quality data when obtained through contracts, interagency agreements, cooperative agreements, and programs providing for self-reporting of data by regulated entities.

1.2.2 The intended use of the data will be determined before the data collection efforts begin to ensure that the necessary level of data quality is available.

1.2.3 All data produced by or for the NMOCD will be of known and acceptable precision, accuracy, representativeness, completeness, and comparability.

1.2.4 All projects of the NMOCD will receive adequate funding and staff to support an acceptable level of QA.

1.3 Total Quality Management

As a matter of policy, NMOCD is strongly committed to good science, aggressive quality assurance practices and Total Quality Management (TQM). TQM states that those closest to the process should be responsible for the process's quality.

1.4 QA Structure

This NMOCD QMP covers the delegation of QA responsibility to the NMOCD Environmental Bureau and the responsibilities of the Quality Assurance Officer (QAO). The system of communication and periodic reporting of QA Program status and needs will be established and maintained within the NMOCD. This shall include annual training seminars with all district field personnel, plus periodic reviews of the State Laboratory Division QA program.

It is important that the independence and integrity of the QA Officer be protected within the system by being responsible directly to the appropriate level of management. Management in turn will also respond to identified plans, problem, and needs,

QA operation reporting within the NMOCD will be ongoing from the QA Officer to upper management while QA operations will be reported to the U.S. EPA regional quality assurance office whenever corrective action is determined to be necessary to assure quality operations. The QA Officer will, with the concurrence of the Environmental Bureau Chief and the Division Director, have responsibility for directing those actions. Also, the QA Specialist will be responsible to compile an annual summary report assessing the quality of data obtained by and for the Commission during the previous fiscal year. This report will be submitted within two months of the conclusion of each fiscal year. Figure 1-1 is an organizational chart showing the

chain of command for quality assurance actions for the NMOCD. Figure 1-2 is an organizational chart showing the lines of authority in the NMOCD.

1.5 Effective Date

This QMP becomes effective on the date that it is signed by the U.S. EPA Region 6 approval authority.

1.6 Scope

As required by Title 40 (Parts 30, 31 and 35) and Title 48 (Part 1546) of the Code of Federal Regulations (CFR), this QMP is submitted to cover the activities of the following programs U.S. EPA grants or contracts, and any other entity performing environmentally related measurements for the NMOCD.

- Underground Injection Control (U.S. EPA Grant)
- Groundwater Program (U.S. EPA 106 Grants)
- NMOCD Discharge Plan Program
- NM Scientific Laboratory Division Contracts
- Commercial Laboratory Contracts
- Compliance Monitoring

1.7 NMOCD QA Office

The NMOCD Quality Assurance Officer (QAO) and his/her support staff will be responsible for the following QA activities (see Section 9 for explanation of these functions):

- Oversight of all data generation through Management System Reviews (MSRs);
- Laboratory audits (multimedia and program specific);
- Developing and teaching courses that train NMOCD staff in QA topics;
- To provide QA specific technical assistance to our customers;
- To provide technical assistance to our customers in the planning of projects that generate environmental data;
- To provide technical assistance to our customers in the development of environmental laws, rules and regulations; and,
- Maintenance of a file system that contains a copy of all the current NMOCD QAPPs.

1.8 NMOCD QA Officer

The overall responsibilities of the QA Officer include:

1.8.1 The official NMOCD point of contact for all QA matters pertinent to NMOCD programs (U.S. EPA and State Programs). The QAO will report directly to the EB Bureau Chief;

1.8.2 Management of all QA activities within the NMOCD and extramural entities;

1.8.3 Ensuring that all data gathered for or in part in agreement within the U.S. EPA and those funded in whole or in part by grants or contracts with the U.S. EPA will be of known and acceptable quality with respect to provision, accuracy, representativeness, completeness, and comparability utilizing the Data Quality Objectives (DQOs) method;

1.8.4 Preparing and submitting for approval all on-going and new project plans for QA adequacy and recommending modifications when necessary. Approval for all plans and modifications will follow the lines of authority as depicted in Figure 1-1 with final approval through U.S. EPA; and

1.8.5 Coordinating NMOCD participation in QA laboratory evaluation program (e.g. performance evaluation studies, with audit samples, interlaboratory comparison studies, and periodic on-site inspections of a laboratory's QA system and physical facility).

2. QUALITY SYSTEM AND DESCRIPTION

The NMOCD quality system relies on a small Quality Assurance Office and on individuals in the Environmental Bureau and the various NMOCD Districts to accomplish the Quality Assurance function.

In the NMOCD quality system each level of the organization has a responsibility to provide to its customers the highest quality products and services possible. Effective oversight of the quality process becomes the responsibility of the customer to assure quality is received from their suppliers. In addition, the NMOCD will implement a series of technical and managerial audits in order to ensure this effective oversight. Details of the quality assessment methods are found in Section 9 of the QMP.

The NMOCD Environmental Bureau assumes the lead role for preparation of the NMOCD QMP, and its periodic update.

2.1 Quality Assurance Functions

The NMOCD Environmental Bureau Chief or designee shall be responsible for the following QA activities within the Division (see Section 9 for explanation of these functions):

2.1.1 Development and consistent implementation of the necessary QMPs for Division Operations involving collection of environmentally related data, including the Division's intramural and extramural (both grants and contracted) projects;

2.1.2 Concurrence and submission of QMPs to U.S. EPA Region 6 Office of Quality Assurance for approval;

2.1.3 Review and approval of QAPPs for which an approved QMP exists;

2.1.4 Assignment of a QA technical Liaison between the Division and the U.S. EPA Region 6 Office of Quality Assurance;

2.1.5 Providing routine technical guidance to customers on QA requirements;

2.1.6 Maintenance or oversight of a file system that contains a copy of all valid QAPPs;

2.1.7 Participation as a Team Member in Management System Reviews (MSRs), Technical System Audits (TSAs) and other audit/review functions as described in Section 9; and

2.1.8. Assistance in determining QA needs of the NMOCD

2.2 Date Quality Objective (DQO) Process

The Data Quality Objective (DQO) Process is an essential tool to be used in planning all environmental data collection activities. DQOs shall be developed following all applicable U.S. EPA guidance. This QMP requires that DQOs be an essential element of all QAPPs, and contain a mechanism for assuring compliance. This is applicable to activities conducted by contractors. For all enforcement related projects, the NMOCD General Counsel will be involved in the DQO development process to assure that evidentiary needs are met.

2.3 QA Project Plans (QAPPs)

U.S. EPA Order 5360.1 requires that every project involving the collection of environmental data must have a written Quality Assurance Project Plan (QAPP) approved prior to initiation of data collection activities.

A QAPP presents, in specific terms, the policies, organization, objectives, functional activities, QA, and quality control (QC) activities designed to achieve the DQOs of a particular project or continuing operation. The typical characteristics of a good QAPP are:

- requirements for management and technical audits and a process for correction of deficiencies;
- a requirement for documenting sampling procedures; and,
- the definition of specific QC activities.

QAPPs will be written for each project or continuing operation by the QAO. Each QAPP will contain the required elements as identified in Chapter III of the November 1999 Interim Final of EPA QA/R-5, EPA REQUIREMENTS FOR QUALITY ASSURANCE PROJECT PLANS FOR ENVIRONMENTAL DATA OPERATIONS.

QAPPs should provide for the review of all activities which could influence data quality and the determination of those operations which must be covered by Standard Operating Procedures (SOPs). At a minimum, the activities to be included in the SOPs or QAPP and reviewed shall include:

- general network design;
- specific sampling site selection;
- specific and analytical methodology;
- probes, collection devices, storage containers, and sample additives and preservatives;
- special precautions, such as heat, light, reactivity, combustibility and holding time;
- federal reference, equivalent or alternate test procedures
- instrument selection use;
- calibration and standardization;
- preventative and remedial maintenance;
- replicate sampling;
- blind and spiked samples;
- **collocated samples**;
- quality control procedures such as intra-laboratory and intra-field activities;
- intra-field activities;
- documentation;
- sample custody;
- transportation;
- data handling procedures;
- service contracts;
- measurements of provision, accuracy, completeness, representativeness, and comparability;
- document control; and,
- quality assurance reports.

QAPPs must be prepared in document control format, with provision for revision, as needed, and with a record of the official distribution. All project plans must conform to the guidelines established in the U.S. EPA document U.S. EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations, (EPA QA/R-5, November 1999 Interim Final).

Each QAPP will cite the specific QMP, and its effective date, that it falls under. No QAPP will be submitted to U.S. EPA for approval without an approved QMP, as the QMP is essential for beginning the criteria of a QAPP. Implementation of QAPPs will be evaluated by the NMOCD, and the U.S. EPA Region 6 OQA will maintain oversight through MSRs, Audits and other means.

2.4 Intramural (In-House) Projects

All NMOCD QMPs and QAPPS will adhere to the standards outlined by U.S. EPA QA/R-2 (formerly QAMS 004/80) and U.S. EPA QA/R-5 (formerly QAMS 005/80), respectively. The OQA shall evaluate the implementation of these plans through the regional audit program or during MSRs.

2.5 Extramural Projects - Grants, Contracts and Cooperative Agreement

This category includes those projects conducted under state financial assistance programs, such as grants, cooperative agreements, interagency agreements, contracts, etc. The QA Project Plans required of awardees or contractors will be developed consistent with U.S. EPA guidance and regulations and this QMP.

2.6 QA Status Report Requirements - QA Project Plans

For data collection projects expected or planned to be completed within eighteen months, a single QA status (final) report will be submitted at the conclusion of the project. For projects expected or planned to continue longer than eighteen months, an interim QA status report will be submitted every twelve months after data collection begins and at the conclusion of the project. These reports will be submitted to the OQA. The QA report on each project will be a separately identified Status Report (both interim and final) addressing as a minimum the following areas:

- QA management (any changes);
- Status of completion of the QA project plan;
- Measures of data quality from the project;
- Significant quality problems, quality accomplishments, and status of corrective actions;
- Results of QA performance audits;
- Results of QA systems audits;
- Assessment of data quality in terms of precision, accuracy, completeness, representativeness, and comparability; and
- Quality Assurance related training.

2.7 Standard Operating Procedures (SOPs)

Standard Operating Procedures (SOPs) will be developed as needed and incorporated into this QMP or the QAPPs. SOPs for functions such as sample collection, preservation and shipment,

chain of custody, etc. will be prepared by the NMOCD Environmental Bureau staff. All SOPs will be reviewed and updated/revalidated on an annual basis. Documentation of annual reviews will, at a minimum, consist of a signature page with final approval by the cognizant supervisor.

3. PERSONNEL QUALIFICATIONS AND TRAINING

3.1 QA Staff Qualifications

The staff members of the NMOCD Environmental Bureau shall fulfill the educational, work experience and training requirements for their positions, as outlined by the New Mexico Personnel Board Classification Plan in their position descriptions. (See Appendix B). The Environmental Bureau staff will attend meetings and take courses that enhance their knowledge of QA, the technical aspects of the programs they consult, and environmental analytical methodology, as time and funds permit.

3.1.1 Quality Assurance Officer: The QA Officer should possess an acceptable knowledge through past education, training, and/or experience of the technical aspects of the QA program within his/her responsibility. The Officer should have as a minimum, a Bachelor of Science degree in one of the physical or environmental sciences or have accumulated at least four years of experience within his/her discipline. Also, the Officer should have laboratory experience and should possess at least a general knowledge of all monitoring and analytical activities in the field and in the laboratory and professional status to deal effectively with project managers and organizational administrators and have an acceptable knowledge of appropriate laws, regulations and environmental monitoring guidelines.

3.1.2 Technical Personnel: Those staff members who procure environmental samples, generate environmental data, or interpret environmental conditions using environmental data should possess at a minimum a Bachelor of Science degree in one of the physical or environmental sciences, or have accumulated at a minimum five years experience in an environmental monitoring profession, or receive sufficient training to compensate for any deficiencies in educational preparation and professional experience.

3.2 QA Training

The following U.S. EPA courses will be attended by the QAO and, if possible the Environmental staff:

- Orientation to Quality Assurance Management,
- Data Quality Objectives,
- Writing Quality Management Plans (QMP), and
- Writing Quality Assurance Project Plans (QAPP).

Training program will be administered, as necessary, to NMOCD employees that could be engaged in any data gathering projects. This training will include refresher training, technology transfer and individual training aimed at enhancing the individuals qualifications as well as the NMOCDs ability to carry out a QA program. This training includes attendance at job related training courses, seminars, workshops, or professional meetings. This training can include instruction which is OCD produced, contract supplied, or promoted by professional associations or other government entities. The training for all staff will be documented and documentation retained.

Additionally, each year, NMOCD hosts a training session in one of the NMOCD Districts for all technical staff in the main office and field offices. This training session, originating with the U.S. EPA in 1992 and continued by the NMOCD, to distribute updated information relating to environmental regulations, rules and policies, as well as to provide sample analysis training to all personnel as a group to ensure uniform sampling techniques.

4. PROCUREMENT OF ITEMS AND SERVICES

The goal of NMOCD is to obtain and supply goods or services that comply with pre-determined levels of quality, and meet the needs and expectations of the customer. To accurately translate the NMOCD needs and expectations to the supplier, a contractual document that clearly states those needs and expectations will be executed pursuant to the New Mexico Procurement Codes. The Procurement Code establishes statutory procedures for bid evaluation and awarding and amending contracts. Those goods and services supplied by NMOCD will comply with the requirements of the QMP.

4.1. Applicability

These requirements apply only to those NMOCD procurement actions or suppliers who provide services or items, such as sample bottles, chemicals, etc., that directly affect the quality of results or products (i.e., analytical laboratory services, sample collection or sampling plan preparation) for environmental programs.

4.2 QA Requirements

All NMOCD programs that utilize contractual services will be let for bid pursuant to the New Mexico purchasing rules. Appendix C contains a copy of a typical Request For Proposal (RFP). The RFP includes the requirement that a QA plan be submitted.

All contracts for environmental measurements will be monitored and evaluated pursuant to the QAPP developed for the service. The QAPP will address

- the method for ensuring the services comply with the contract conditions;
- the method for corrective action;
- the criteria used to evaluate the contract compliance; and,
- the criteria for auditing the contractor facilities.

5. QUALITY DOCUMENTATION AND RECORDS

All quality assurance documents prepared and submitted by the NMOCD will be reviewed by the NMOCD Management as outlined in Figure 1-1. Additionally, quality assurance plans will be required of the Scientific Laboratory Division and of any contract services which are to be paid with grant funds. These will be reviewed and approved, then filed after action in a central Environmental Bureau file room.

5.1 Record Maintenance

All quality assurance documents or records will be filed after action in a central Environmental Bureau file room. The documents will be maintained under the supervision of the Environmental Bureau. The records will be maintained for the period required in the New Mexico State Record Center Record Retention Schedule. Special care will be taken to preserve the integrity of sensitive documents such as audit and performance reports. This care shall include security.

6. DATA PROCESSING SYSTEM (Computer Hardware and Software)

6.1 QAPP Database

The NMOCD will design and implement a computer program or database for the tracking of various QAPPs. This database will contain at a minimum:

- a complete listing of the State QAPPs;
- current status of the QAPPs;
- name of the customer involved;
- approval date of the QAPPs; and
- names of the NMOCD staff member(s) and reviewer(s) of the QAPPs involved.

The database will be maintained by the QAO, who will also use the database to keep NMOCD management apprised of any problems warranting their attention.

6.2 Environmental Database

The NMOCD is currently implementing a relational database system for the storage and maintenance of environmental data received from field sites. The system includes electronic mail connection and server access with each of the NMOCD District offices so that data can be directly incorporated into the database.

6.3 Computer Hardware and Software

Quality Specifications for computer hardware and software systems is maintained under the New Mexico Energy, Minerals and Natural Resources Department (ENMRD) Information Systems Bureau's (ISB) Information Technology (IT) Plan. The IT Plan is a comprehensive plan that addresses, management roles and responsibility, user requirements, purchasing and evaluation of hardware and software, security, resource management requirements, data handling, training, disaster recovery and loss/damage controls and improvements.

The IT plans meet the requirements for EPA directives 2182 and met the EPA directive 2100 including Year 2000 compliance. The complete IT plan is found in Appendix "D".

7. QUALITY PLANNING

All scientific data generated by or for the NMOCD will be of sufficient or greater quality to withstand scientific and legal challenge. This includes equivalent quality data when obtained through contracts, interagency agreements, cooperative agreements, and programs providing for self-reporting of data by regulated entities.

7.1 Customer Identification

For the purposes of this QMP and all subsequent QAPPs, "customer" will mean an individual(s) or organization(s) for whom equipment or services are furnished or work is performed. All environmental measurements and equipment utilized to obtain the measurements will conform to requirements and expectations as defined in this QMP and individual QAPPs.

7.1.1 The U.S. EPA is a customer for data generated by or for the NMOCD for those programs funded in whole or in part by grants or contracts with the U.S. EPA. In addition, data requested from the NMOCD by the U.S. EPA that is generated during the normal cause of NMOCD responsibilities and is not related to a U.S. EPA grant or contract will adhere to the requirements of this QMP.

7.1.2 The NMOCD is a customer for equipment furnished or data generated to or for the NMOCD through contracts or agreements. The NMOCD, as a customer, requires information of sufficient quality so that its decisions are based on valid scientific assumptions and good quality data.

7.1.3 The New Mexico public are customers in that the decisions made by NMOCD and the USEPA impact the environment and public health.

7.1.4 The regulated community is a customer in that decisions made by NMOCD and U.S. EPA based on valid quality information will protect the environment and public health, expend the least amount of resources and cause the least amount of disruption of activities.

7.2 Customer Needs

The QA program for the NMOCD is designed to ensure that all scientific data generated by or for the NMOCD will be scientifically valid, legally defensible, and of known and acceptable precision and accuracy. This will be achieved by following QA procedures throughout the entire technical study, from planning to data usage.

Therefore, it is the goal of the NMOCD that:

- The intended use of the data will be determined before the data collection efforts begin to ensure that the necessary level of data quality is available.
- All data produced by or for the OCD will be of known and acceptable precision, accuracy, representativeness, completeness, and comparability.

All projects of the OCD will receive funding and staff as available to support an acceptable level of QA.

7.3 Communication of Needs

QAPPs will be developed for each aspect of the acquisition of environmental data including the sample gathering, sample analysis and data use to ensure that:

- the intended measurements or data acquisition methods are appropriate for achieving project objectives;
- assessment procedures (including QA and QC) are sufficient for obtaining data of the type and quality needed and expected; and,
- any limitations on the use of the data can be identified and documented.

Each project that involves environmental data generation, acquisition or use will be planned utilizing the DQO process detailing the correct sequence and execution of said project so that the customer's needs are translated into specifications which will produce the desired results.

7.4 Documentation

All documentation for a particular project will be contained in the QAPP for that project. The minimum documentation require are:

- Standard operating procedure for sample collection
- Schedules for data acquisition
- Reporting schedules
- Record retention
- Method for field notes transcription
- Health and safety requirements for project participants

8. IMPLEMENTATION OF WORK PROCESSES

This plan exists to ensure environmental measurements are of known and acceptable quality. This QMP provides policies and procedures for oversight of implementation.

8.1 Implementation Tracking

All activities subject to the requirements of this plan will be tracked by the QAO. The performance of activities will be measured against the technical and quality specifications established in the individual QAPP, as well as against relevant procedures outlined in the appropriate SOPs. This performance will be evaluated through inspections and audits.

8.2 Management Oversight

All projects that produce environmental data are to be monitored and evaluated by the QAO. The level of oversight, inspections and audits will be determined and stated in the QAPP for the project and will be commensurate with the intended use of the project results.

The QAO will prepare periodic reports on the project. The report will evaluate the routine performance of the project measured against the technical and quality specifications established in the project QAPP. The report will be submitted to the Environmental Bureau Chief (EBC) for review.

Any modifications to the project specifications based on evaluation will be approved by the EBC with the concurrence of the Division Director. For projects funded in whole or in part by the U.S. EPA, concurrence from the U.S. EPA will be obtained prior to implementation.

9. QUALITY ASSESSMENT AND RESPONSE

Even the best QA plans are of limited value unless they are implemented. In order to ensure that QA plans are being implemented and that they are adequate, a series of technical and managerial audits are necessary. These audits represent the major mechanism of oversight.

The U.S. EPA Quality Assurance Management Staff (QAMS), has defined seven types of tools that are used in assessing the quality of an organization's programs:

- management systems reviews;
- surveillance;
- audits;
- performance evaluations;
- peer reviews and technical reviews;
- readiness reviews; and,
- data quality assessments.

Audits utilizing the above tools will be performed on all entities providing environmental data to the NMOCD.

Typically, an Audit Team will be comprised of a Team Leader and one or more members from the NMOCD Environmental Bureau. The team may be augmented from time to time with members drawn from a variety of possible sources, such as other state program offices, the state Laboratory Division, District environmental staff and U.S. EPA (if available). A description of audit review types is presented below, including some detail about the conduct of existing activities in laboratory technical systems audits, and performance evaluations.

9.1 Quality Assurance Management System Reviews (MSR)

A MSR is an independent assessment of management, the management process and structure established by a group to carry out QA responsibilities. The MSR includes review of the adequacy, use and effectiveness of guidance provided U.S. EPA to the State; the use and effectiveness of guidance provided by the NMOCD to its contractors; the process for preparing important QA documentation; the relationship among participants in the program activity under review; the knowledge base of the NMOCD and contractor staff on QA/QC processes and responsibilities; QA process implementation and oversight of QA activities, etc.

Specific QA elements addressed in an MSR include, for example:

- Assessment of the effectiveness of the Quality System of Quality Management;
- Procedures for developing Data Quality Objectives (DQOs);
- Procedures for developing QA Project Plans (QAPPs);
- Procedures for developing Quality Management Plans (QMPs);
- Procedures and schedules for conducting audits;
- Tracking systems for assuring that the QA program is operating and that corrective actions disclosed by audits have been taken;
- Providing a definite level of financial resources and personnel devoted to implementing the QA program;
- the degree of management support;
- responsibilities and authorities of the various line managers and the QA Officer for carrying out the QA program; and
- Use of Quality Indicators to monitor Quality Improvement.

A schedule for conducting MSRs for each program on an annual basis will be developed with the concurrence of the manager whose program is to be reviewed and is then included in the annual OQA work plan. MSRs will be performed for each project that involves environmental data generation, acquisition or use such as the Scientific Laboratory Division. If necessary, MSRs can be conducted on an unannounced basis. More frequent reviews and followup reviews will be conducted if findings are significant, or corrective actions are ineffective.

The Team Leader must discuss the initial impressions and all preliminary findings from the MSR with the reviewed managers. This briefing will allow for closure of the objectives set forth in the entrance briefing. Following the MSR, the Team Leader, in conjunction with Team Members, will prepare a written report which will be submitted to the reviewed manager through the appropriate Division Directors. The reviewed manager will prepare a written statement of corrective actions to each of the findings and will return this response to the chief, Office of Quality Assurance within 30 days unless a different timeframe is agreed upon in advance.

Upon receipt of response, the Team Leader will evaluate corrective actions for adequacy, and for timeliness of implementation. If deemed inadequate, the NMOCD QA Officer will be notified to initiate appropriate action.

9.2 Quality Assurance Technical Systems Audit (TSA)

Periodic audits of the State laboratory and contracted laboratories will be performed as outlined in the following sections.

A TSA focuses on the given system for environmental data operations and its associated quality control system. The primary purpose is to assess the adequacy of sampling, measurement, analysis, calibration, and similar procedures used to generate the data. TSAs that deal with sampling and measurements are field TSAs. (see Section 9.2.2).

9.2.1 Laboratory TSAs

The QAO prepares the schedule for conducting the periodic TSAs of NMOCD contract laboratories and noncontract laboratories submitting analyses on behalf of the regulated community, makes necessary arrangements, reviews the records of the laboratories in order to devise individual audit protocols, and participates in the TSAs. TSAs will be performed prior to contracts let with a particular laboratory for a particular projects. A multimedia approach is used in the TSAs. The QAO has lead responsibility for preparation of the audit report. The QAO performs special purpose audits as requested. The QAO will keep management apprised of any problems warranting their attention during the relevant briefing as outlined in the following sections.

The primary goals of laboratory audits as conduced by NMOCD are as follows:

- to gather information concerning the laboratory organization, operation and capabilities;
- to determine the reliability of the data produced; and,
- to point out and help correct any deficiencies that may exist.

Since the laboratories visited are so varied, no uniform audit procedure has been developed; instead, the audit protocol is tailored to fit each laboratory. The general procedure is outlined below:

9.2.1.1 Planning

The QAO is responsible for:

- Coordinating the audit schedule with NMOCD Management and the appropriate laboratory managers;
- Explaining the audit procedure to the various laboratory managers;
- Finalizing the audit schedule with the audit team members and the laboratories to be audited;
- Reviewing laboratory files on performance evaluation (PE) data and prior audits; and
- Preparing audit protocol as per requirements of the Audit Protocol SOP, and briefing audit team.

9.2.1.2 Auditing

In order to assure that the focus of the TSA is toward verification of a laboratory's conformance to its commitments to NMOCD, each on-site evaluation will be conducted in the following manner:

- Entrance briefing to introduce team members and to learn of changes in organization, operation, mission, personnel, equipment, etc.;
- Walk through overview of laboratory;
- Review of documentation to determine completeness of chain of custody, analytical records, equipment maintenance, etc.;
- In-depth laboratory review to include interviews with supervisors, technologists and assistants; and
- Exit briefing during which the findings of the audit are discussed in depth with management.

9.2.1.3 Reporting

The QAO will:

- Brief supervisor at NMOCD on findings;
- Prepare written audit report; and
- Prepare audit report and distribute to laboratory management.

The laboratory manager will be given 30 days to respond in writing to the findings. Upon receipt of the response, the QAO will evaluate and follow up the response, append the response to the report, and then distribute copies of the appended report NMOCD management.

If the corrective actions proposed are deemed inadequate or ineffective, the QAO will be notified to initiate appropriate action. In addition to the audits of State and certain Federal laboratories performed by the OQA, other TSAs are carried out, as listed below.

9.2.2 Field TSAs

The QAO is responsible for scheduling and conducting TSAs for all internal and contract activities that develop environmental data for the NMOCDs use.

To ensure QAPP objectives are met and that the data generated is of acceptable quality, and inspections shall include verification of:

- use of NMOCD's guidelines for sample collection and field measurement methods;
- use of NMOCD's guidelines for field equipment and instruments;
- calibration of field instruments according to U.S. EPA or manufacturer's specifications before, during and after use in the field; these calibrations should be recorded as a permanent record;
- periodic inspections, maintenance and servicing of all field office laboratory equipment and instruments;
- use of NMOCD's guidelines for sample containers to prevent contamination and to ensure an adequate sample size;
- use of NMOCD's guidelines for sample preservation methods and adherence to recommended sample holding times;
- use of NMOCD's guidelines for chain of custody procedures in the field and during shipment;
- collection of quality control samples (e.g., field blanks and duplicative samples) as needed for the laboratory quality control program;

9.3 Performance Evaluations

Many U.S. EPA programs sponsor performance evaluations. Generally, these evaluations consist of facilities being sent single blind samples for analysis from a central source. The NMOCD requires its contact laboratories to participate in the U.S. EPA Quality Assurance Proficiency Sample Program, as identified in Appendix C, 'REQUEST FOR PROPOSALS, CHEMICAL ANALYSES SERVICES.'

9.4 Data Quality Assessments

The Data Quality Assessment (DQA) process is built on the fundamental premise that "Data Quality" is meaningful only in context of the intended use of the data, by the decision maker. The intended use of the data is established by the project's Data Quality Objectives process (Section 2.2). The DQA process primarily involves the statistical analysis of data for decision-making with respect to the planned or required levels of confidence in the data. The results of a DQA should be used for two specific purposes. First, for the specific decision, it can be used in making recommendations to the decision maker to modify portions of the DQAs. Secondly, it can be used as a guide for the planning and acquisition of supplemental data for this project and potentially for other projects.

10. QUALITY IMPROVEMENT

10.1 QA Office Responsibilities

The process of continuous quality improvement leads to the development of a better and more responsive quality system. Toward that end, the QAO will perform the following:

10.1.1 The QAO will conduct technical systems audits of laboratories that are submitting data to NMOCD and will ask for written comments to findings, and, where appropriate, will perform followup.

10.1.2 The QAO will monitor the various performance evaluation studies, e.g., the national performance audit program and the water performance evaluation studies.

10.1.3 QAO will act on the status of laboratories based upon the on-site technical systems audits and performance evaluation studies.

10.1.4 The QAO will conduct on-site technical systems audits.

10.1.5 The QAO will conduct training in topics related to quality assurance.

10.1.6 The QAO will maintain a close liaison with laboratory staffs.

10.1.7 The QAO will provide technical assistance to the regulated community.

10. 2 Corrective Action

In order to maintain this continuing quality improvement, the QAO will periodically review SOPs, personnel training programs,. and sampling and analytical activities to prevent or minimize problems that may affect the quality of environmental data. If deficiencies are noted, corrective actions shall identify the root cause of the problem, determine if the problem is unique or has more generic implications, and recommend procedures to management to prevent recurrence.

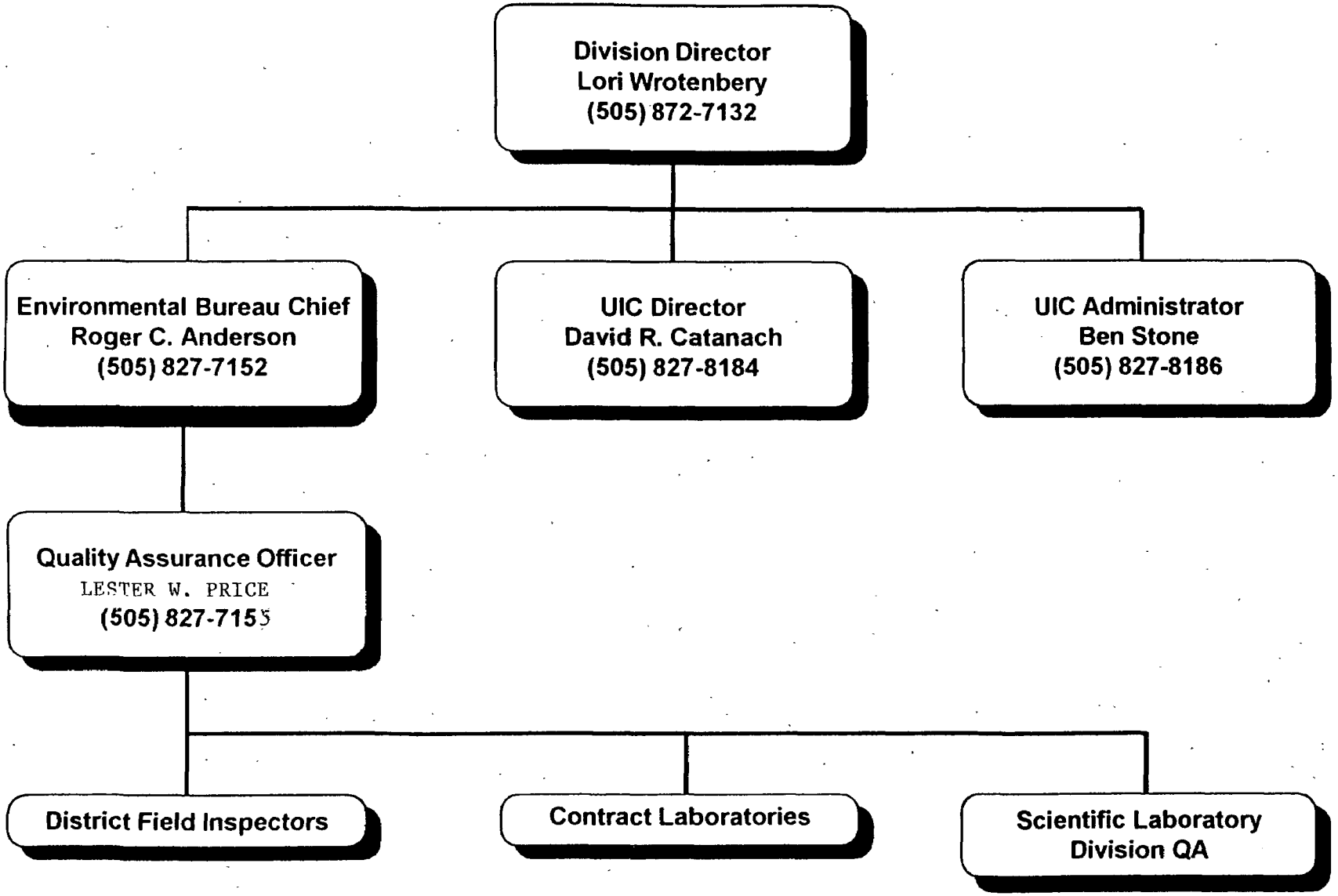

Division Director
Lori Wrotenbery
(505) 872-7132
Environmental Bureau Chief
Roger C. Anderson
(505) 827-7152
UIC Director
David R. Catanach
(505) 827-8184
UIC Administrator
Ben Stone
(505) 827-8186
Quality Assurance Officer
LESTER W. PRICE
(505) 827-7155
District Field Inspectors
Contract Laboratories
Scientific Laboratory
Division QA

Figure 1-1

Oil Conservation Division

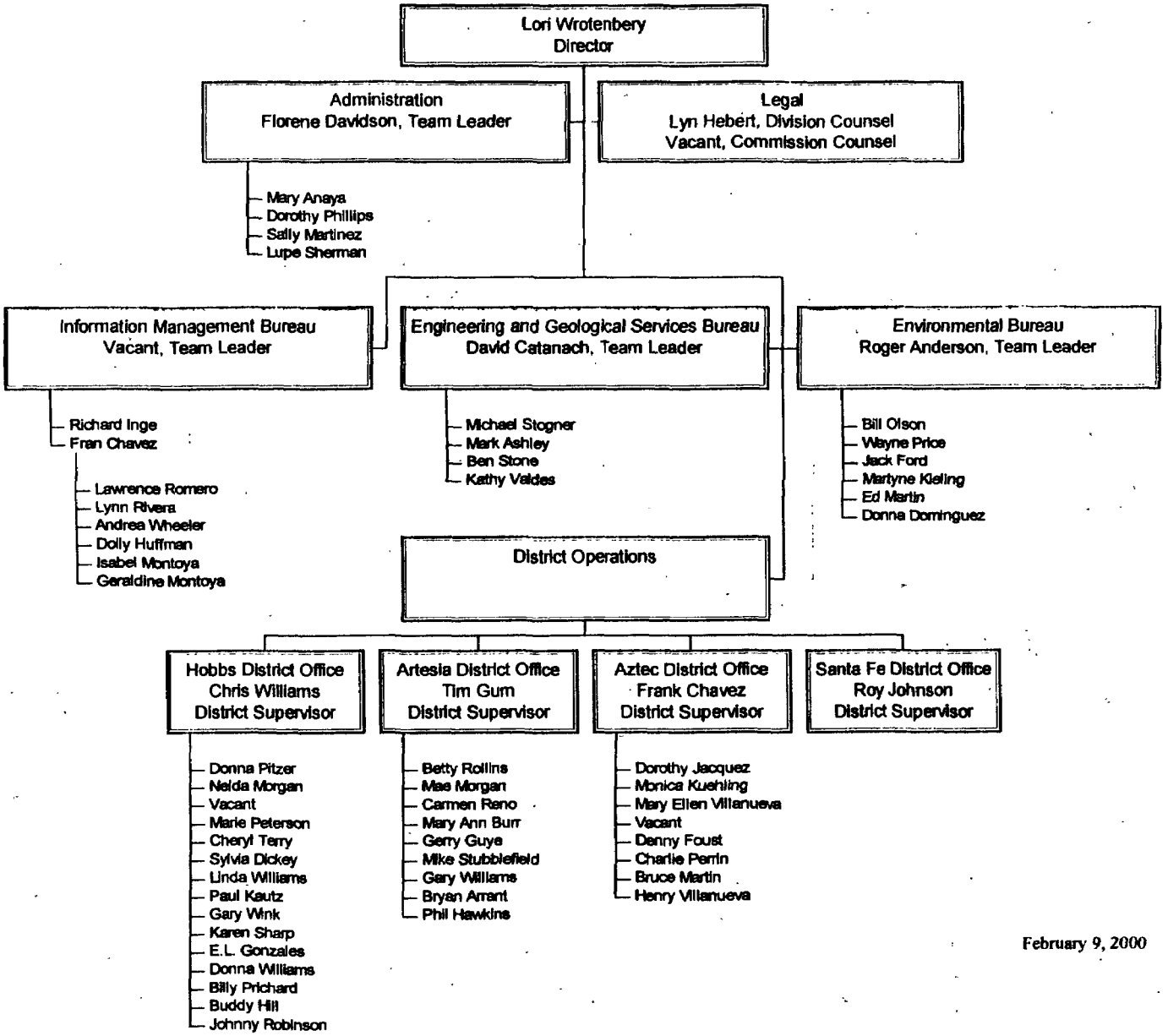


FIGURE 1-2

APPENDIX A

APPENDIX A

TERMS AND DEFINITION

Activity - an all-inclusive term describing a specific set of operations or related tasks to be performed, either serially or in parallel (e.g., research and development, field sampling, analytical operations, equipment fabrication), that in total result in a product or service.

Assessment - the evaluation process used to measure the performance or effectiveness of a system and its elements. In this Standard, assessment is an all-inclusive term used to denote any of the following: audit, performance evaluation, management systems review, peer review, inspection or surveillance.

Audit - a planned and documented investigative evaluation of an item or process to determine the adequacy and effectiveness as well as compliance with established procedures, instructions, drawings, QAPPs, and other applicable documents.

Characteristic - any property or attribute of a datum, item, process, or service that is distinct, describable, and measurable.

Contractor - any organization or individual that contracts to furnish services or items or perform work.

Computer Program - a sequence of instructions suitable for processing by a computer. Processing may include the use of an assembler, a compiler, an interpreter, or a translator to prepare the program for execution. A computer program may be stored on magnetic media, and be referred to as "software", or may be stored permanently on computer chips, and be referred to as "firmware". Computer programs covered by this Standard are those used for design analysis, data acquisition, data reduction, data storage (data bases), operation or control, and data base or document control registers when used as the controlled source of quality information.

Corrective Action - measures taken to rectify conditions adverse to quality and, where necessary, to preclude their recurrence.

Customer - any individual or organization for whom items or services are furnished or work performed in response to defined requirements and expectations.

Data Quality Assessment (DQA) - is a process for performing statistical analysis to determine whether the quality of a data set is adequate for its intended use.

Data Quality Objectives (DQOs) - a statement of the precise data, the manner in which such data may be combined, and the acceptable uncertainty in those data in order to resolve an environmental problem or condition. This may also include the criteria or specifications needed to design a study that resolves the question or decision addressed by the DQO process.

Data Quality Objectives Process - a Total Quality Management (TQM) tool developed by the U.S. Environmental Protection Agency to facilitate the planning of environmental data collection activities. The DQO process asks planners to focus their planning efforts by specifying the use of the data (the decision), the decision criteria, and their tolerance to accept an incorrect decision based on the data. The products of the DQO process are the DQOs.

Data Usability - the process of ensuring or determining whether the quality of the data produced meets the intended use of the data.

Design Review - a documented evaluation by a team, including personnel other than the original designers, the responsible designers, the customer for the work or product being designed, and a QA representative to determine if a proposed design will meet the established design criteria and perform as expected when implemented.

Engineered Environmental Systems - an all-inclusive term used to describe pollution control devices and systems, waste treatment processes and storage facilities, and site remediation technologies and their components that may be utilized to remove pollutants or contaminants from the environment. Examples include wet scrubbers (air), soil washing (soil), granulated activated carbon unit (water), and filtration (air, water). Usually, this term will apply to hardware-based systems; however, it will also apply to methods or techniques used for pollutant reduction of the contaminants, such as capping, solidification or vitrification, and biological treatment.

Environmental Conditions - the description of a physical medium (e.g., air, water, soil, sediment) or biological system expressed in terms of its physical, chemical, radiological, or biological characteristics.

Environmental Data - any measurements or information that describe environmental processes or conditions, or the performance of engineered environmental systems.

Environmental Data Operations - work performed to obtain, use, or report information pertaining to environmental processes and conditions.

Environmental Monitoring - the process of measuring or collecting environmental data.

Environmental Processes - manufactured or natural processes that produce discharges to or impact the ambient environment.

Environmental Programs - an all-inclusive term pertaining to any work or activities involving the environment, including but not limited to: characterization of environmental processes and conditions; environmental monitoring; environmental research and development; the design, construction and operation of engineered environmental systems; and laboratory operations on environmental samples.

Environmentally Related Measurements - the data collection activity or investigation involving the assessment of chemical, physical or biological factors in the environment which affect human health or the quality of life.

Environmental Technology - an all-inclusive term used to describe pollution control devices and systems, waste treatment processes and storage facilities, and site remediation technologies and their components that may be utilized to remove pollutants or contaminants from or prevent them from entering the environment. Examples include wet scrubbers (air), soil washing (soil), granulated activated carbon unit (water), and filtration (air, water). Usually, this term will apply to hardware-based systems; however, it will also apply to methods or techniques used for pollution prevention, pollutant reduction, or containment of contamination to prevent further movement of the contaminants, such as capping, solidification or vitrification, and biological treatment.

Extramural - relating to activities performed for NMOCD but not by NMOCD employees, usually by contracts, grants or cooperative agreements. Used in reference to QAPPs and QMPs.

Financial Assistance - the process by which funds are provided by one organization (usually government) to another organization for the purpose of performing work or furnishing services or items. Financial assistance mechanisms include grants, cooperative agreements, and government interagency agreements.

Graded Approach - the process of basing the level of application of managerial controls applied to an item or work according to the intended use of results and the degree of confidence needed in the quality of the results. (See Data Quality Objectives Process).

Hazardous Waste - any waste materials that satisfies the definition of "hazardous waste" as given in 40 CFR Part 261, "Identification and Listing of Hazardous Waste".

Independent Assessment - an assessment performed by a qualified individual, group, or organization that is not part of the organization directly performing and accountable for the work being assessed.

Inspection - examination or measurement of an item or activity to verify conformance to specific requirements.

Intramural - term used to describe activities performed by NMOCD employees, usually used in relationship to QAPPs, OMPs, contracts or grants.

Item - an all-inclusive term used in place of the following: appurtenance, facility, sample assembly, component, equipment, material, module, part, product, structure, subassembly, subsystem, system, unit, documented concepts, or data.

Management - those individuals directly responsible and accountable for planning, implementing, and assessing work.

Management System - a structured non-technical system describing the policies, objectives, principles, organizational authority, responsibilities, accountability, and implementation plan of an organization for conducting work and producing items and services.

Management System Review (MSR) - the qualitative assessment of a data collection operation and/or organization(s) to establish whether the prevailing quality management structure, policies, practices and procedures are adequate for ensuring that the type and quality of data needed are obtained.

May - denotes permission but not a requirement.

Method - a body of procedures and techniques for performing an activity (e.g., sampling, chemical analysis, quantification) systematically presented in the order in which they are to be executed.

Mixed Waste - hazardous waste material, as defined by 40 CFR part 261 (RCRA), mixed with radioactive constituents.

Must - denotes a requirement that has to be met.

Objective Evidence - any documented statement of fact, other information or record, either quantitative or qualitative, pertaining to the quality of an item or activity, based on observations, measurements, or tests which can be verified.

Organization - a company, corporation, firm, enterprise, or institution, or part thereof, whether incorporated or not, public or private, that has its own functions and administration.

Peer Review - a documented critical review of work generally beyond the state of art or characterized by the existence of potential uncertainty. The peer review is conducted by qualified individuals (or organization) who are independent of those who performed the work, but are collectively equivalent in technical expertise (i.e., peers) to those who performed the original work. The peer review is conducted to ensure that activities are technically adequate, competently performed, properly documented, and satisfy established technical an quality requirements. The peer review is an in-depth assessment of the assumptions, calculations, extrapolations, alternate interpretations, methodology, acceptance criteria, and conclusions pertaining to specific work and of the documentation that supports them. Peer reviews provide an evaluation of a subject where quantitative methods of analysis or measures of success are unavailable or undefined, such as in research and development.

Performance Evaluation (PE) - a type of audit in which the quantitative data generated in a measurement system are obtained independently and compared with routinely obtained data to evaluate the proficiency of an analyst or laboratory.

Procedure - a documented set of steps or actions that systematically specifies or describes how an activity is to be performed.

Process - an orderly system of actions that are intended to achieve a desired end or result. Examples of processes include analysis, design, data collection, operation, fabrication, and calculation.

QTRAK - is a Computer Program that contains database information on Quality Management Plans and Quality Assurance Project Plans to the Program Managers, Project Officers, and the OQA for planning and assessment of the status of regional Quality Management Plans and the associated Project Plans.

Qualified Data - any data that have been modified or adjusted as part of statistical or mathematical evaluation, data validation, or data verification operations.
Quality - the sum of features and properties/characteristics or a process, item, or service that bears on its ability to meet the stated needs and expectations of the user.

Quality Assurance (QA) - an integrated system of management activities involving planning, implementation, assessment, reporting and quality improvement to ensure that a process, item, or service is of the type and quality needed and expected by the customer.

Quality Assurance Forum - the interdivisional organization, with an advisory function for Quality Assurance activities of NMOCD in general and the Quality Assurance Office specifically. Provides regular feedback to the ESD Director and the customers of the QA Office.

Quality Assurance Management Staff (QAMS) - the U.S. EPA's headquarters staff element that establishes and promulgates Quality Assurance Policy.

Quality Assurance Officer (QAO) - the designated NMOCD staff member that has the delegated authority for approval of all Quality Management Plans in NMOCD, Chief of the Office of Quality Assurance.

Quality Assurance Program Description/Plan -see Quality Management Plan.

Quality Assurance Project Plan (QAPP) - a formal document describing in comprehensive detail the necessary QA, QC, and other technical activities that must be implemented to ensure that the results of the work performed will satisfy the stated performance criteria.

Quality Control (QC) - the overall system of technical activities that measures the attributes and performance of a process, item, or service against defined standards to verify that they meet the stated requirements established by the customer.

Quality Improvement - a management program for improving the quality of operations. Such management programs generally entail a formal mechanism for encouraging worker recommendations with timely management evaluation and feedback or implementation.

Quality Indicators - measurable attributes of the attainment of the necessary quality for a particular environmental decision. Indicators of quality include precision, bias, completeness, representativeness, reproducibility, comparability, and statistical confidence.

Quality Management - that aspect of the overall management system of the organization that determines and implements the quality policy. Quality management includes strategic planning, allocation of resources, and other systematic activities (e.g., planning, implementation, and assessment) pertaining to the quality system.

Quality Management Plan (QMP) - a formal document that describes the quality system in terms of the organizational structure, functional responsibilities of management and staff, lines of authority, and required interfaces for those planning, implementing, and assessing all activities conducted.

Quality System - a structured and documented management system describing the policies, objectives, principles, organizational authority, responsibilities accountability, and implementation plan of an organization for ensuring quality in its work processes, products (items), and services. The quality system provides the framework for planning, implementing, and assessing work performed by the organization and for carrying out required QA and QC.

Readiness Review - a systematic, documented review of the readiness for the startup or continued use of a facility, process, or activity. Readiness reviews are typically conducted before proceeding beyond project milestones and prior to initiation of a major phase of work.

Record - a completed document that provides objective evidence of an item or process. Records may include photographs, drawings, magnetic tape, and other data recording media.

Remediation - the process of reducing the concentration of a contaminant (or contaminants) in air, water, or soil media to a level that poses an acceptable risk to human health.

Self-Assessment - Assessments of work conducting by individuals, groups, or organizations directly responsible for overseeing and/or performing the work.

Service - the category of economic activity that does not produce manufactured items. In environmental data operations or engineering projects, such activities include design, inspection, laboratory and/or field analysis, repair, and installation.

Significant Condition - any state, status, incident, or situation of an environmental process or condition of an engineered environmental system in which the work being performed will be adversely affected in a manner sufficiently serious to require corrective action to satisfy quality objectives or specifications and safety requirements.

Specification - a document stating requirements and which refers to or includes drawings or other relevant documents. Specifications should indicate the means and the criteria for determining conformance.

Standard Operating Procedure (SOP) - a written document that details the method for an operation, analysis, or action with thoroughly prescribed techniques and steps, and that is officially approved as the method for performing certain routine or repetitive tasks.

Supplier - any individual or organization furnishing items or services or performing work according to a procurement document or financial assistance agreement. This is an all-inclusive term used in place of any of the following: vendor, seller, contractor, subcontractor, fabricator, or consultant.

Surveillance - the act of monitoring or observing a process or activity to verify conformance to specified requirements.

Technical Review - a documented critical review of work that has been performed within the state of the art. The review is accomplished by one or more qualified reviewers who are independent of those who performed the work, but are collectively equivalent in technical expertise to those who performed the original work. The reviews are an in-depth analysis and evaluation of documents, activities, material, data, or items that require technical verification or validation for applicability, correctness, adequacy, completeness, and assurance that established requirements are satisfied.

Technical Systems Audit (TSA) - a thorough, systematic, on-site qualitative audit of facilities, equipment, personnel, training procedures, record keeping, data validation, data management, and reporting aspects of a system.

Total Quality Management (TQM) - the process of applying quality management to all activities of the organization, including technical and administrative operations. See Quality Management and Quality System.

Validation - an activity that demonstrates or confirms that a process, item, data set, or service satisfies the requirements defined by the user.

Verification - the act of authenticating or formally asserting the truth that a process, item, data set, or service is, in fact, that which is claimed.

Work - the process of performing a defined task or activity (e.g., research and development, field sampling, analytical operations, equipment fabrication).

APPENDIX B

STATE PERSONNEL OFFICE
810 San Mateo
Santa Fe, NM 87503

NEW MEXICO PERSONNEL BOARD CLASSIFICATION PLAN

SPB-6251

GEOLOGIST II
(GEOLOGIST 2)

DEFINITION:

Supervises geologists and/or technicians engaged in geological investigations for solution of geologically related highway problems and in research and special studies; or performs administrative and other geological duties concerning conservation of oil and gas.

SUPERVISION AND GUIDELINES:

Under general supervision of a district supervisor, engineer or senior geologist. Guidelines are agency policy and procedures; knowledge of state laws and regulations pertaining to Highway or Oil Conservation Commission.

EXAMPLES OF WORK PERFORMED:

For Assignment in Highway Department

Plans and directs a program of geological investigations of roadways and materials used for highway construction; designs highway slopes and landslide corrections; locates suitable areas for borrow and surfacing pits; writes geotechnical reports; performs geological investigations on foundations of failed roadway structures; designates locations in selected pit areas for test holes to be dug; monitors a drilling rig operation; reviews geological reports of construction areas; researches and maps the geology of the state concentrating on the aggregate resources; prepares groundwater reports; prepares data for computer analysis; performs seismic surveys; interprets radioactive well logs; monitors water wells; investigates the physical and chemical properties of soils in drainage areas; surveys bridge sites; performs related duties as assigned.

For Assignment in Oil and Gas

Consults with and advises oil industry representatives on geological matters and on actions necessary to comply with state specifications and conducts field tests to ensure compliance of oil and gas operations with state laws, rules and regulations; makes geologic field investigations; prepares maps and cross-sections; makes general geological studies; serves as technical consultant to the Commission and its staff on geological problems; participates in hearings as expert witness in petroleum geology; may serve as trial examiner when so appointed by the Commission; assists and advises the public on matters pertaining to state laws, rules and regulations of the Oil Conservation Commission; performs related duties as required.

STATE PERSONNEL OFFICE
810 San Mateo
Santa Fe, NM 87503

NEW MEXICO PERSONNEL BOARD CLASSIFICATION PLAN

SPB-6252

GEOLOGIST III
(GEOLOGIST 3)

DEFINITION:

Performs supervisory geological duties in field of conservation of oil and gas or highway design construction and maintenance and associated work.

SUPERVISION AND GUIDELINES:

Work is under direction. Guidelines are agency policy and procedures and basic principles of geology; knowledge of state laws and regulations pertaining to Highway or Oil Conservation Commission.

EXAMPLES OF WORK PERFORMED:

For Assignment in Highway Engineering

Supervises geological investigation programs; supervises the preparation of geological profiles, cross-sections, rock structure maps, charts, graphs and related reports; consults with sections in agency and FHWA to furnish information on specific geotechnical problems associated with highways; prepares budget and justifies expenditures for the unit; consults with supervisor to plan activities for the units; supervises specialized laboratory tests; trains and supervises subordinates; performs related duties as assigned.

For Assignment in Oil and Gas Conservation

Conducts specialized geological studies of oil and gas pools in a Commission district to determine reservoir characteristics, pool continuity or boundaries, pool structure and stratigraphy and proper casing and plugging programs to protect fresh waters and other natural resources; consults with and advises oil industry representatives on geological matters and on actions necessary to comply with state specifications and standards; supervises and participates in: field inspections and field tests to ensure compliance of oil and gas operations with state laws, rules and regulations; may serve as expert witness in petroleum geology at hearings; may participate in economic and oil and gas market demand hearings; serves as technical consultant to the Commission and its staff on geological matters; assists and advises public on technical matters pertaining to state laws, rules and regulations of Oil Conservation Commission; performs related duties as required.

STATE PERSONNEL OFFICE
810 San Mateo
Santa Fe, NM 87503

NEW MEXICO PERSONNEL BOARD CLASSIFICATION PLAN

SPB-6253

GEOLOGIST IV
(GEOLOGIST 4)

DEFINITION:

Performs responsible administrative and advanced technical and supervisory duties in the field of oil and gas conservation or highway engineering.

SUPERVISION AND GUIDELINES:

Under general direction. Guidelines are some administrative practices, appropriate statutes, state laws, rules and regulations in the field of oil and gas production and conservation or highway engineering and sound principles of geological practice.

EXAMPLES OF WORK PERFORMED:

For Assignment in Highway Engineering

Directs all geological investigation programs; preparation of geological profiles, cross-sections, rock structure maps, charts, graphs and related reports; preparation of recommendations concerning design, maintenance and use of roadways and related structures; training of subordinates; performs related duties as required.

For Assignment in Oil and Gas Conservation

Conducts or directs specialized geological studies of oil, gas, carbon dioxide, or geothermal pools or reservoirs to determine characteristics, pool continuity or boundaries, pool structure and stratigraphy and proper casing and plugging programs to protect fresh waters and other natural resources; consults with and advises oil industry representatives on geological matters and on actions necessary to comply with state specifications and standards, supervises and participates in: field inspections and field tests to ensure compliance of oil and gas operations with state laws, rules and regulations; serves as expert witness in petroleum geology at hearings and as hearing examiner when appointed by Commission; may participate in economic analysis and oil and gas market demand hearings; serves as technical consultant to Commission and its staff on geological matters; assists and advises public on technical matters pertaining to state laws, rules and regulations of Oil Conservation Commission; performs related duties as required.

STATE PERSONNEL OFFICE
810 San Mateo
Santa Fe, NM 87503

NEW MEXICO PERSONNEL BOARD CLASSIFICATION PLAN

SPB-7120

ENVIRONMENTAL ENGINEERING SPECIALIST I
(ENV ENG SPEC 1)

DEFINITION:

Performs specialized engineering work in defense of New Mexico's environmental quality.

SUPERVISION AND GUIDELINES:

Work is under direction. Guidelines include federal and state laws and regulations, agency guidelines and policies and sound engineering principles.

EXAMPLES OF WORK PERFORMED:

Reviews applications, preliminary and final plans, and specifications for proposed plants, facilities and/or equipment to determine the completeness technical feasibility, engineering accuracy and compliance with applicable county, state, federal guidelines, regulations and/or laws; performs complex calculations based on data supplied in pursuit of verification of design, pollution abatement and quality control capabilities, conducts supplementary investigations, research, surveys as needed; announces and conducts public hearings on proposed projects notes and incorporates responses; issues permits and approvals and notifies concerned public of the action; monitors and/or participates in on-site inspections, both during and after construction of water/quality/supply or air pollutant sources to ensure adherence to approved and maintenance manuals, cost estimates, progress reports and design change orders; performs tests or audits test results to determine conformity; supplies procedures and interpretations; compiles findings and technical data for reports and projections; may encode data for computer programming; recommends and drafts revisions and addendums to agency guidelines and regulations; performs related duties as required.

DISTINGUISHING CHARACTERISTICS:

At this level in the Environmental Engineering Specialist series, incumbents perform specialized engineering duties in support of the state's environmental improvement program.

MINIMUM QUALIFICATIONS:

1. Any combination of education or experience in engineering totaling eight (8) years, of which one year must have been experience in engineering related to environmental program activities.

OIL CONSERVATION DISTRICT SUPERVISOR
(OC DISTR SUPVR)

DEFINITION:

Directs the proration and allocation of crude petroleum oil and natural gas production in a district; performs responsible administrative and supervisory work in connection with the conservation of oil and gas resources.

SUPERVISION AND GUIDELINES:

Under general direction of the Oil Conservation Commission. Guidelines are good administrative practices and the State laws, rules and regulations covering oil and gas operations including drilling, production, and injection etc.

EXAMPLES OF WORK PERFORMED:

Plans, assigns and supervises the work and administration of an Oil Conservation District Field office; prepares reports, recommendations, and suggested orders regarding technical phases of conservation of oil and gas resources; provides technical assistance at hearings of the commission; advises the public on oil and gas laws, rules and regulations; maintains contacts with other State and Federal personnel regarding oil and gas conservation problems; provides proration, allocation, and other information as requested by representatives of the petroleum industry, government agencies, private firms, and citizens; supervises the administration of a field office, which may include supervising the work of a Petroleum Engineer. Performs related duties as required.

DISTINGUISHING CHARACTERISTICS:

This is the supervisory management position in an Oil Conservation Commission District Field office including duties of providing technical assistance in hearings, establishing oil and gas proration, and providing advises the public.

MINIMUM QUALIFICATIONS:

1. High school graduation or equivalent plus any combination of college education and experience in petroleum engineering, petroleum technology or geology totaling nine (9) years, two (2) years of which must have been in a responsible administrative and supervisory capacity.

2. Extensive knowledge of the principles and practices applied in prorating and allocating petroleum production; of the State laws, rules and regulations relating to oil and gas conservation; of the State's petroleum resources; and of the methods used by the oil industry in the exploitation of the petroleum resources of the State.

3. Ability to plan and administer the activities of a group of professional, technical, and clerical assistants; to interpret clearly and concisely factual data, laws, and administrative rules and regulations applicable to oil and gas conservation; to appear at hearing and present information impartially and effectively; to administer the laws, rules, and regulations with firmness and impartiality; and to establish effective working relationships with superiors, subordinates, associates, and private individuals contacted in the course of work.

STATE PERSONNEL OFFICE
810 San Mateo
Santa Fe, NM 87503

NEW MEXICO PERSONNEL BOARD CLASSIFICATION PLAN

SPB-0034

ADMINISTRATOR V
(ADMINISTRATOR 5)

DEFINITION:

Incumbents of this class in the administrator series in the management grouping direct the provision of administrative support services such as personnel, fiscal, property management or management information systems.

SUPERVISION AND GUIDELINES:

Under administrative direction. Guidelines include agency policies and good administrative techniques.

EXAMPLES OF WORK PERFORMED:

Directs the provision of administrative support services in the areas of personnel, fiscal, property management or management information systems; directs, develops, and supervises execution of procedures; monitors and evaluates performance of subordinates; develops reporting procedures and other methods to establish accountability; plans, analyzes and recommends courses of action to agency management; coordinates administrative support activities; provides staff training; performs related work as required.

DISTINGUISHING CHARACTERISTICS:

The Administrator 5 class is allocated to those positions which direct a combination of agency supportive services such as personnel, fiscal, property management, and management information systems where at least three of these functions are present and where the administrative support activity is of extensive scope. The Administrator series differs from the other series in the management grouping in that the Administrator has responsibility for management support services activities, and not for a program activity.

MINIMUM QUALIFICATIONS:

1. High school graduation or General Educational Development test and any combination of general college education and/or experience in business or public administration or in the fields of personnel, fiscal, property management, management information systems, or experience in an administrative support capacity equivalent to eight (8) years, three (3) years of which must have been supervisory.

STATE PERSONNEL OFFICE
810 San Mateo
Santa Fe, NM 87503

NEW MEXICO PERSONNEL BOARD CLASSIFICATION PLAN

SPB-7074

PETROLEUM ENGINEERING SPECIALIST
(PETROLEUM ENG SPEC)

DEFINITION:

Performs engineering duties relative to regulation of oil and gas production.

SUPERVISION AND GUIDELINES:

Work is under general direction. Guidelines include state and federal laws, rules and regulations, agency policies and procedures, and principles, practices, and methods of petroleum engineering.

EXAMPLES OF WORK PERFORMED:

Conducts hearings to review evidence presented by applicants for exceptions to rules pertaining to pools, installation of downhole equipment, commingling of reservoirs, extension of potash oil areas, etc.; prepares recommendations on the acceptance or rejection of applications; evaluates parameters, economic feasibility, and equitability of the participation formulas contained in proposed statutory unitization; evaluates gas well tests and test procedures; evaluates the need for gas prorationing and recommends prorationing formulas; reviews applications for downhole commingling to insure protection of correlative rights, prevention of waste, and application of engineering principles; reviews applications for enhanced recovery for application of engineering principles and protection of underground sources of drinking water; provides engineering advice to agency staff and the oil industry relative to drilling, production, injection, equipment design, and materials specifications; reviews applications for well category determinations for compliance with the Natural Gas Policy Act; appears as expert witness in court; assists in preparing cases that have been appealed to the court; performs related duties as required.

DISTINGUISHING CHARACTERISTICS:

This classification involves the exercise of independent judgment in the solution of problems and development of engineering related policies/procedures for oil and gas production and conservation.

MINIMUM QUALIFICATIONS:

1. Any combination of college education, training and experience in engineering or the physical sciences totaling seven (7) years, of which three (3) years must have been experience in the field of petroleum engineering or technology.

STATE PERSONNEL OFFICE
810 San Mateo
Santa Fe, NM 87503

NEW MEXICO PERSONNEL BOARD CLASSIFICATION PLAN

SPB-7309

WATER RESOURCE ENGINEERING SPECIALIST II
(WATER RESOURCE ENG SPEC 2)

DEFINITION:

Directs and conducts complex engineering activities related to water resource programs.

SUPERVISION AND GUIDELINES:

Work is under general direction. Guidelines are laws, agency rules regulations, policies and procedures.

EXAMPLES OF WORK PERFORMED:

Directs, coordinates, evaluates and reviews programs and projects to develop, conserve, adjudicate, control, and distribute water supplies and water resources; reviews and comments on federal, state, local and private water development projects; confers with the State Engineer and Division Chiefs on development, administration and protection of the state water resources, and agency policies, plans and procedures; advises legal staff on agency policy in agency hearings and court proceedings; represents the agency at various meetings, seminars and conferences; advises, confers and consults with water users, engineering consultants, lawyers and the public on water resource matters; supervises, directs and trains subordinate personnel; performs related duties as required.

DISTINGUISHING CHARACTERISTICS:

This is the senior level of the engineering specialist series involving the direction and coordination of programs relating to water development and conservation and the supervision of professional and technical personnel involved in water resource activities. At this level, incumbent functions as Assistant Division Chief, District Supervisor, Section Chief, or advisor to Interstate Compact Commissioners.

MINIMUM QUALIFICATIONS:

1. Any combination of education, training or experience in water resource program activities, hydrology, engineering or the physical sciences totaling 10 years, of which two (2) years must have been experience in engineering related water resource program activities.

   NOTE: Registration as a professional engineer by the State of New Mexico will be required where position assignment includes independent con-

APPENDIX C

NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

NOTICE OF REQUEST FOR PROPOSALS
CHEMICAL ANALYSES SERVICES

The Oil Conservation Division of the New Mexico Department of Energy, Minerals and Natural Resources is soliciting proposals from qualified analytical laboratories to perform chemical analyses on Aqueous, Non-Aqueous and Air samples collected by the Oil Conservation Division. The laboratory will be required to perform the analyses pursuant to methods approved by the U.S. Environmental Protection Agency within approved holding times and to submit the results to the Oil Conservation Division within thirty (30) days (or lessor time agreed upon in the contract) of receipt of the samples. Samples submitted will be obtained primarily from sites associated with the oil and gas industry.

Copies of the REQUEST FOR PROPOSALS may be obtained from:

Wayne Price
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505
(505) 827-7155

The deadline for receipt of proposals is 4:00 p.m., June 04, 1999. Two (2) copies of the proposal, each with original signature must be received, addressed to the following, by the above time and deadline date:

Wayne Price
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505
(505) 827-7155

The Procurement Code, NMSA 1978 13-1-28 Through 13-1-199, imposed civil and criminal penalties for its violation. In addition, New Mexico criminal statues impose felony penalties for bribes, gratuities and kick backs.

NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

REQUEST FOR PROPOSALS
CHEMICAL ANALYSES SERVICES

I. STATEMENT OF WORK

Contract Background

The New Mexico Department of Energy, Minerals and Natural Resources through its Oil Conservation Division regulates the production of oil and natural gas in the state and in connection therewith is charged with the duty to protect fresh water, public health and the environment. It is also a constituent agency responsible for enforcing New Mexico Water Quality Control Commission Regulations. The Regulations of the New Mexico Oil Conservation Division and the New Mexico Water Quality Commission require routine and special sampling and testing of water, soils, solid waste and air.

Description of Purpose

This invitation seeks proposals from qualified analytical laboratories to perform chemical analyses on aqueous, non-aqueous and air samples collected by the Oil Conservation Division. The analytical laboratory will be required to perform chemical analyses as listed on Exhibit "A" attached hereto pursuant to methods approved by the U.S. Environmental Protection Agency within approved holding times and to submit the results to the Oil Conservation Division within thirty (30) days (or a lesser time agreed to in the contract) of receipt of the samples. Samples submitted for analyses will be obtained primarily from sites associated with the oil and gas industry.

Contract Period and Cost Considerations

The contract will be effective upon approval of the Department of Finance and Administration and will run from approximately July, 1999 through June 30, 2003, renewable or terminable annually on June 30 at the option of the Oil Conservation Division, unless sooner terminated by the parties under the provisions of the contract. The contract will have a maximum contract amount, but this will not represent a fixed fee or flat charge. Payment will be in accordance with the unit costs provided for in the contract.

II. INSTRUCTIONS FOR PREPARATION OF PROPOSALS

A responsive proposal shall include the following:

A. Name, address and telephone number of the offeror.

B. A statement of qualification of the offeror, including resumes of the analytical staff delineating relevant experience.

C. A proposal, based on cost per analysis, by line item number, for the analytical analyses including all quality assurance and controls, any associated waste disposal, and one copy of the results delivered within thirty (30) days to the Oil Conservation Division. Any applicable taxes will be included in the cost of the analysis. The proposal should be signed by the offeror or an officer or employee who has authority to bind the offeror. A proposal sheet is attached as Exhibit "A."

D. A copy of all state and federal certifications.

E. A copy of the Quality Control and Quality Assurance Plan. Include the frequency that blanks, spikes and duplicates will be analyzed.

F. Turn around time from date of receipt of sample to mailing of results to the Oil Conservation Division.

G. The experience ability of the analytical staff to appear in a court of law and successfully defend their analytical procedures and results and a statement of applicable rates for such appearances.

H. Additional services supplied by the offeror such as sample containers with preservative, any necessary field or trip blanks, shipping containers, blue ice, labels, custody seals, permanent marking pens, gloves, prepaid postage, OCD specified designed Chain-of-Custody forms , etc.

I. A description of chain of custody procedures.

J. The communication chain available for Oil Conservation Division personnel to discuss problems and/or special circumstances with the offerors technical staff.

K. Offeror performance on USGS Standard Reference Water Sample Program.

L. Offeror performance on EPA Proficiency WS and Test.

M. A list of at least 5 references of present or past customers. Recommendation letters

may be included.

N. Provide a waste disposal plan.

III. CONTRACTUAL TERMS AND CONDITIONS

In addition to other requirements set forth herein, the offeror must make, include, and agree to the following assurances as a part of the responsive proposal submitted in response to this Request for Proposals:

A. This Request for Proposals does not commit the Department to pay any costs incurred by any offeror in the submission of a responsive proposal. Issuance of this Request for Proposals does not constitute an award commitment on the part of the Department. A Request for Proposals may be canceled, and any or all proposals may be rejected in whole or in part, when it is in the best interest of the Department. Technical irregularities in the form of the proposal of the low offeror that do not alter the price, quality, or quantity of the services offered may be waived. The Department specifically reserves the right to reject even responsible, qualified proposals that make it impossible to determine the true amount of the proposal, and proposals that exceed the Department's budgeted or available funds for the project.

B. Offerors submitting proposals may be afforded an opportunity for discussion and revision of proposals. Revisions may be permitted after submissions of proposals and prior to award for the purpose of obtaining best and final offers. Negotiations may be conducted with responsible offerors who submit proposals found to be reasonably likely to be selected for award.

C. It is understood that all proposals shall become a part of the official file on this matter without obligation to the Department and shall be made available for public inspection.

D. To assure the Department that the offeror has the staff, facilities, and competence to furnish the services required under this contract, the Department shall be allowed to determine the adequacy of the staff, facilities, and competence of any offeror considered for the contract award. For this purpose, if the Department deems it appropriate, the offeror will permit representatives of the Department to make a inspection of the offeror's facilities or equipment, or to administer such tests as the Department considers appropriate.

E. In order to receive consideration, each proposal, certification, or representation submitted in response to this Request for Proposals must be signed by the offeror or an officer or employee who certifies that he has the authority to bind the offeror. This signature shall signify that the matters stated or certified in the proposal are true and

accurate to the best of the offeror's knowledge and that the proposal was made without collusion or fraud.

F. The offeror agrees to comply with all relevant federal and state laws and regulations pursuant to the award of the contract contemplated by this Request for Proposals.

G. The offeror agrees to comply with all provisions of this Request for Proposals.

H. The successful offeror shall not subcontract any portion of the service to be performed under this Request for Proposals without the prior written approval of the Department.

I. All applicable state laws, municipal ordinances, and rules and regulations of all authorities having jurisdiction over the work described in this Request for Proposals shall apply to the awarded contract throughout, and they will be deemed to be included in the awarded contract as therein though written out in full.

J. The successful offeror shall agree to be bound by the laws of the State of New Mexico. Any appropriate litigation shall be brought in Santa Fe Country, the First Judicial District Court of New Mexico.

K. Offerors must assure the Department that they will have licenses and permits required by Federal and State laws for performance of the work described in this Request for Proposals.

L. Offerors must assure that he is duly qualified to do business in the State and is in good standing under the laws of the State of New Mexico.

M. A copy of the proposed contract is attached hereto as Exhibit "B".

N. The Procurement Code, Sections 13-1-28 through 13-1-199 NMSA 1978, imposes civil and criminal penalties for its violation. In addition, the New Mexico criminal statutes impose felony penalties for illegal bribes, gratuities, and kick backs.

IV. Evaluation of proposals will be based on the following:

	POINTS
A. Price per line item to include Laboratory-supplied sample containers and prepaid shipping to Lab.	35
B. Quality Control and Quality Assurance and the ability to legally defend the results, including maintaining chain of custody evidence.	25
C. Qualifications and certifications of laboratory	

	and personnel.	15
D.	Ability to maintain communication between OCD staff and laboratory technical staff.	10
E.	Ability to analyze and return the results in less than the required thirty (30) days.	5
F.	Convenience and cost of getting samples from the field to the laboratory.	10
	TOTAL	100

V. RELEVANT PROCESSING DATES

The deadline for the receipt of proposals is 4:00 p.m., June 04, 1999. Two (2) copies of the proposal, each with original signature, must be received, addresses to the following, by that date and time:

Wayne Price
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505
(505) 827-7155

VI. NOTICE

Awarding of a contract is contingent upon sufficient appropriations and authorization being granted by the New Mexico Legislature. The State reserves the right to cancel this Request for Proposal at any time if it is in the best interest of the State of New Mexico.

VII. CONTACT PERSON

All questions with regard to this Request for Proposals must be addressed to:

Wayne Price
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505
(505) 827-7155

EXHIBIT "A"

ITEM ANALYSIS DESCRIPTION — ITEM PRICE

001 Halogenated Volatile Organics: Method 8021 (Halo)

Constituents as listed in the method.

Aqueous _____

Non-Aqueous _____

Air _____

002 Aromatic Volatile Organics: Method 8021 (BTEX)

Constituents as listed in the method plus;
MTBE, 1-3-5 Trimethylbenzene and 1-2-4 Trimethylbenzene

Aqueous _____

Non-Aqueous _____

Air _____

Surcharge MTBE _____

Surcharge TMB's _____

003 Aromatic and Halogenated Organics: Method (8021) Full TCL Suite.

Constituents as listed in the method plus;

MTBE, 1-3-5 Trimethylbenzene and 1-2-4 Trimethylbenzene

Aqueous _____

Non-Aqueous _____

Air _____

004 Aliphatic Hydrocarbon Headspace:

C^1-C^5 constituents in headspace of vial as received at laboratory.

Above Water _____

005 Polynuclear Aromatic Hydrocarbons: Method 8310*

* (Note: method 8270 SIMS allowed if detection limits meet or exceed NM WQCC numerical standards.)
Constituents as listed in 8310 plus;

1-methylnaphthalene
2-methylnaphthalene

Aqueous _____

Soil _____

Air _____

006 Polychlorinated Biphenyls: Method 8082

Constituents as listed in the method.

Aqueous _____

Soil _____

007 Phenols: Method 8041

Constituents as listed in the method.

Aqueous _____

Non-Aqueous _____

008 Volatile Organics GC/MS: Method 8260C
Constituents as listed in the method plus MTBE.

Aqueous _____

Non-Aqueous _____

In Air _____

Surcharge MTBE_____

009 Semi-Volatile Organics GC/MS: Method 8270B

Constituents as listed in the method plus;

1-methylnaphthalene
2-methylnaphthalene

Aqueous _____

Non-Aqueous _____

Air _____

010 Oil and Grease: Method 9070 In Aqueous _____

011 Total Petroleum Hydrocarbons: GRO $_{c6-c18}$ Aqueous _____

Non-Aqueous _____

Air _____

DRO $_{c6-c28}$ Aqueous _____

Non-Aqueous _____

Air _____

DRO $_{c16-c28}$ Aqueous _____

Non-Aqueous _____

Air _____

012 Total Petroleum Hydrocarbon: Method 418.1 Aqueous _____

Non-Aqueous _____

Air _____

014	Arsenic: AA Method 7061	Aqueous	_____
015	Barium: AA Method 7080	Aqueous	_____
016	Chromium: AA Method 7190	Aqueous	_____
017	Chromium (Hexavalent) AA Method 7196	Aqueous	_____
018	Cadmium: AA Method 7130	Aqueous	_____
019	Lead: AA Method 7421	Aqueous	_____
020	Mercury(L): AA Method 7470	Aqueous	_____
021	Mercury (S): AA Method 7471	Aqueous	_____
022	Selenium: AA Method 7741	Aqueous	_____

023 Metals By ICAP Method 6010/ (ICPMS)*

*(Metals by EPA methods 6000 or 7000 series if detection limits meet or exceed NM WQCC numerical standards.)

Aluminum	Lead
Antimony	Magnesium
Arsenic	Manganese
Barium	Molybdenum
Beryllium	Nickel
Boron	Potassium
Cadmium	Selenium
Calcium	Silicon
Chromium	Silver
Cobalt Sodium	
Copper	Thallium
Iron	Zinc

Aqueous _____

Non-Aqueous_____

024 Cations and Anions (General Chemistry)

Method:
From 40 CFR 136.3
List of approved
Inorganic test procedures.

Analysis	Method (Fill in method #)
Fluoride	_____
Calcium	_____
Potassium	_____
Magnesium	_____
Sodium	_____
Bicarbonate	_____
Carbonate	_____
Chloride	_____
Sulfate	_____
Total dissolved solids	_____
Cation/Anion Balance (5%)	_____
Ph	_____
Conductivity	_____

Aqueous _____

Non-Aqueous_____

Bromide Surcharge Aqueous _____

025 Nitrogen
Nitrate
Nitrite
Ammonia
Total Kjeldahl Nitrogen

Method: SDWA 300 Series Nitrogen

Cost for Suite: Aqueous _____

026 RCRA CFR 40-261 Characteristics SW-846

Ignitability	Method: 1010	_____
Corrosivity	Method: 1110	_____
Reactivity	per SW846	_____

Full RCRA TCLP Per Method 1311; Constituents as listed in CFR 40-261.24	Aqueous _____ Non-Aqueous _____
Full RCRA TCLP Per Method 1311; less Pesticides and Herbicides.	Aqueous _____ Non-Aqueous _____
TCLP Per Method 1311; (ZHE and Volatiles only)	Aqueous _____ Non-Aqueous _____
TCLP Per Method 1311; (Semi-Volatiles only)	Aqueous _____ Non-Aqueous _____
TCLP Per Method 1311; (Metals only)	Aqueous _____ Non-Aqueous _____

027 Radiological Analyses (Groundwater & Norms)

Analysis	Method (Fill in method #)	Price
Gross Alpha+Beta	_____	Aqueous _____
		Non-Aqueous _____
Gross Alpha	_____	Aqueous _____
		Non-Aqueous _____
Radium 226	_____	Aqueous _____
		Non-Aqueous _____
Radium 228	_____	Aqueous _____
		Non-Aqueous _____
Lead 210	_____	Aqueous _____
		Non-Aqueous _____

028 **Paint Filter Test** (Landfill/farm Applications) Method 9095

Non-Aqueous_____

029 NM WQCC Toxic Pollutant List 1101.TT

Aqueous _____

Non-Aqueous _____

Air _____

030 Emergency Turn Arounds:

Please indicate additional surcharge in percent (%) for all above line items:
Please feel free to add addition sheets if necessary:

3 day turn around	Surcharge_____%
7 day turn around	Surcharge_____%
14 day turn around	Surcharge_____%
21 day turn around	Surcharge_____%

APPENDIX D

New Mexico Energy, Minerals and Natural Resources Department
Annual Information Technology (IT) Plan

Fiscal Years 00 & 01

Jennifer A. Salisbury, Cabinet Secretary
Kathy T. Watkins, Information Systems Chief

September, 1999

Part 7: Special Appropriation Request Project Documentation

Form C-2: Information Technology Special Appropriation Request

A.	Project Description
B.	Business Justification
C.	Schedule
D.	Technical Overview
E.	Project Management
F.	Project Staffing
G.	Change Control and Problem Resolution
H.	Disaster Recovery and Loss/Damage Controls
I.	System Security
J.	Testing, Validation, and User Acceptance
K.	Training

Included in the FY00 plans are various projects detailed later in the document, including the completion of Y2K compliance project for in-house systems, PCs, servers, and networks, and the rewrite of in-house business systems to current client-server technology. EMNRD will be replacing the manual payroll processing for the department with Electronic Time Reporting, in conjunction with new State Human Resources Management System (HRMS) and implementing the new version of its in-house Expenditure Tracking and Management System (ETMS).

ISB staff will analyze the existing networks and servers and plan for appropriate replacements, upgrades and improvements to these servers and networks. A formal review and analysis of technical plans for wiring and telecommunications in EMNRD offices will be completed, and the plan developed for future expansion of networks and telecommunications.

Department-wide work on Geographic Information Systems (GIS) and Global Position Systems (GPS) and e-business will integrate department data and training for agency personnel. IT personnel will receive training in routers, NT, SQL Server, Visual Basic, and other required technology. A firewall will be installed to provide for better security and to allow for the development of a department Intranet.

IT plans included in the FY01 base budget request include the purchase of additional LAN monitoring tools and equipment, upgrades for virus protection, and other new software required to support division programs, and the continuing upgrade and replacement of servers, software, PCs and communications equipment as planned and required. The FY00 plan for the expansion of networks and telecommunications to improve throughput and performance for field offices will be executed.

Department-wide work on GIS/GPS and e-business will be expanded so that EMNRD is participating in and leading work with other state agencies in these areas.

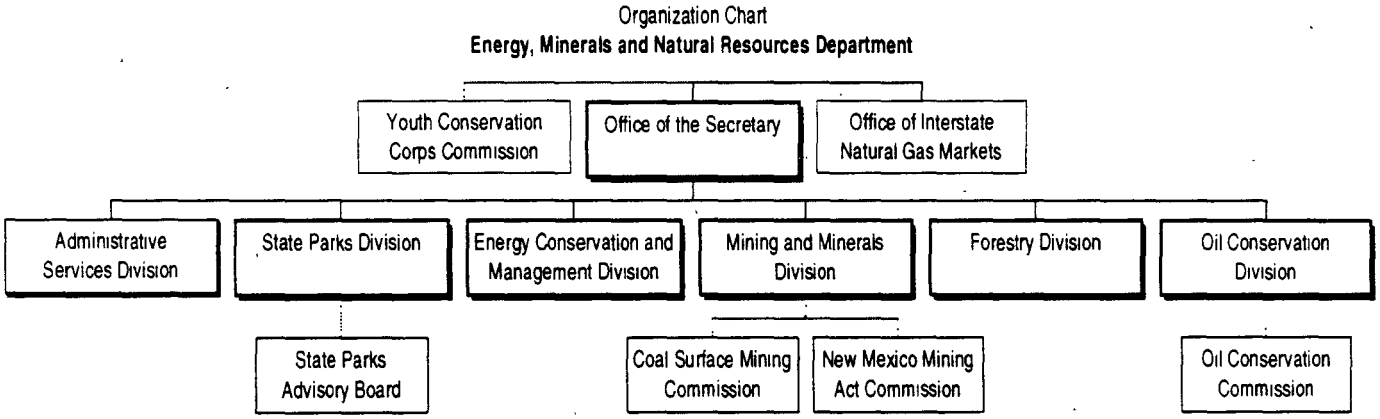
The C-2 project requested for FY01 is:

OCD proposes to design and implement a comprehensive imaging and document management system to manage its oil and gas public records. Using commercial off-the-shelf imaging and document management software, the Petroleum Information Resource Document Management System (PIR/DMS) will preserve an irreplaceable information resource and enhance the division's regulatory capabilities. Approximately 2.5 million pages will be scanned, indexed and maintained online. Index entries and database links will tie this information to ONGARD. Industry and public access will be provided via the Internet.

The department contact for the Information Technology Plan is EMNRD's IS Bureau Chief, Ms. Kathy Watkins, 827-5947.

C. Agency Description

The Energy, Minerals & Natural Resources Department employs 475 people throughout the state in the following divisions: Office of the Secretary, Administrative Services, Energy Conservation and Management, Mining and Minerals, State Forestry, State Parks, and Oil Conservation as indicated in the organization chart below. The Youth Conservation Corps is administratively attached to the department. Santa Fe offices are located at 2040 S. Pacheco and at the Villagra Building.



Office of the Secretary

The Cabinet Secretary, who is appointed by the Governor with the consent of the state Senate, is the department chief executive, charged with the responsibility of all operations in accordance with applicable state and federal laws and regulations.

The Office of the Secretary consists of the Secretary of EMNRD, the Office of the General Counsel, the Office of Interstate Natural Gas Markets, WIPP Transportation Safety Program and the Office of the Inspector General. OFS also staffs the state's Radioactive Waste Consultation Task Force.

Administrative Services Division

The Administrative Services Division (ASD) is responsible for financial accounting, human resource management and personnel development, budgets, finance, and information systems. Other important services for the department employees at all locations include building leases, procurement, purchasing, and inventory, including central control and distribution of supplies.

The Information Systems Bureau (ISB) is part of ASD and provides technical and planning services to the all of the divisions of the department. The bureau works cooperatively with the program divisions to plan IT strategy and implementation. ISB has twelve (12) full time employees in two functional areas: Network and Operations, and Applications Development.

Information Technology service provided by ISB include data processing networks which support electronic mail, voice mail, accessibility to department data, and access to the World Wide Web.

Energy Conservation and Management Division

The Energy Conservation and Management Division (ECMD) plans and administers state and federal energy efficiency and renewable energy technology programs such as alternative transportation fuel and solar/wind energy programs. It also provides technical assistance and information to government agencies, Indian tribes and pueblos and educational institutions. Program funding is primarily provided by the U.S. Department of Energy, enabling ECMD to deliver technical support and consultative services to New Mexico tribes, state agencies, schools and the public.

PART 3: DESCRIPTION OF IT PLAN IMPLEMENTATION FOR FY99

Significant goals were accomplished in FY99 (July 1, 1998 – June 30, 1999) :

Working toward its goal of a paperless workplace and to provide the department with complete electronic communications capability via e-mail and Internet access, the department replaced its 386 and 486 desktop PCs and dial-up host computers with Pentiums. The Microsoft Exchange server was also upgraded in FY99, providing better response time and reliability for departmental e-mail and global access to other state agencies.

The Information Systems Bureau, in conjunction with the Financial Services Bureau, upgraded the Unix version of the American Management System (AMS) Accounting System to the Year 2000 compliant release, Advantage 2000.

To better utilize IT resources and to support the agency's mission through cooperative efforts with all program divisions, ISB and the divisions developed a new structure for teamwork and IT tasks. ISB developed an ISB Charter to outline the responsibilities and areas under the control of the IS Bureau and the functions of technical liaisons and power users who are in the other EMNRD divisions. Divisions may appoint one or more power users to have certain technical authority not granted to others in the divisions. A division may also designate one power user to be that division's technical liaison with ISB. These people may perform more tasks than other power users and will have additional responsibilities involving the planning of IT strategies, installing and maintaining equipment, working with the ISB Help Desk and developing and administering change management procedures.

The Forestry Division and the Information Systems Bureau hired the General Services Department's Office of Communications to convert FD field offices from modem communications to microwave links. This project is in process.

The Department, under the direction of the Cabinet Secretary, initiated two department-wide task forces in FY99:

1. Geographic Information Systems/Global Positioning Systems (GIS/GPS)
2. Electronic business (e-business), including electronic commerce and electronic permitting

The task forces manage and promote cross-divisional strategic planning and shared training in these two areas where more than one EMNRD division is involved in technical projects. The groups meet monthly, at a minimum, and will continue to be the leading force in GIS/GPS and e-business development for EMNRD.

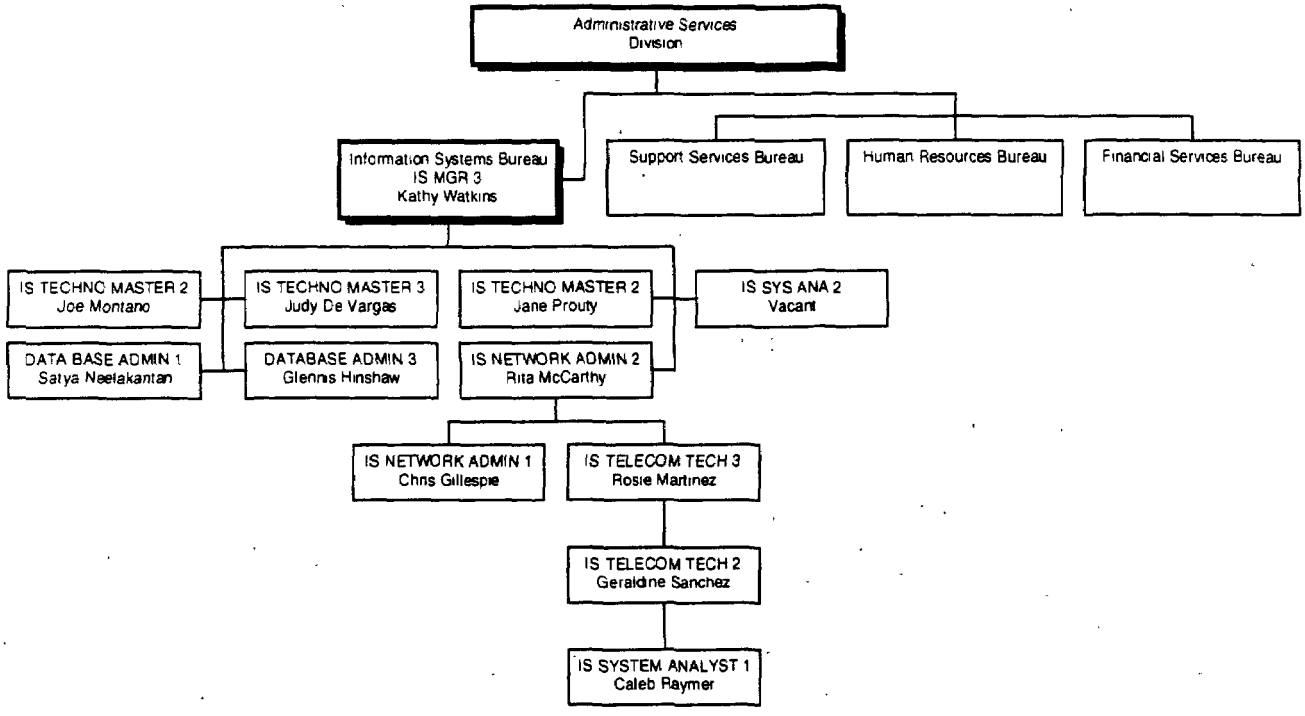
PART 4: DESCRIPTION OF IT ENVIRONMENT AND INFRASTRUCTURE

A. Current IT Environment, Organization Structure, Strategies and Goals

- **Environment:** There are twelve employees in the Information Systems Bureau including the IT Manager/Bureau Chief. The bureau is divided into two groups. The Network and Operations group has primary responsibility for help desk, hardware and network installation, diagnostics, and troubleshooting. The other group, Application Development, is responsible for database administration, application development and programming.

- **Organization Chart:**

Energy, Minerals and Natural Resources Department
Administrative Services Division
Organization Chart



The ratio of technical staff to agency IT users is 2.5%.

- Work with other state agencies to share knowledge, training and resources for the mutual benefit and development of GIS/GPS, E-business and other technologies.
- Aggressively pursue getting all key well data onto the Oil Conservation Division's ONGARD and RBDMS systems.
- Enable access to well information to the petroleum industry and the public via the Internet.
- Utilize Internet training facilities and share training opportunities with other agencies.
- Train IT personnel in routers, NT, SQL Server, etc.
- Implement seamless data replication among the Oil Conservation Division districts, RBDMS and ONGARD systems.

FY01

- Continue efforts toward a paperless workplace by improving electronic communications capability, both inside the department for employees and outside the department to increase public awareness of the value of responsible natural resource management and development.
- Continue the implementation of the Petroleum Information Resource/Document Management System (PIR/DMS) for the Oil Conservation Division (funding is requested for FY01).
- Expand department programs for GIS/GPS for State Parks, Oil Conservation, Mining and Minerals, Forestry, and Energy Conservation and Management divisions; develop cross-agency data sharing for mapping oil wells, mines, forest fires, etc. and global positioning techniques.
- Expand department programs for e-business (electronic permits and electronic commerce) for State Parks, Oil Conservation, Mining and Minerals, Forestry, and Energy Conservation and Management divisions; share development strategies and training to use for oil well and mining permits, sales of seedlings, sale of State Park passes, fires, etc.
- Using results of the review and analysis from FY00, improve and expand wiring and telecommunications in central and field offices.
- Utilize existing agency resources for IT projects by developing and training division personnel as Technical Liaisons and Power Users to work with ISB.
- Provide services to internal staff and citizens via Intranet and Internet applications.

Incorporate e-business (electronic permitting, electronic commerce and new imaging procedures), along with advances in GIS and GPS, to reach Mining and Minerals Division and Oil Conservation Division business goals.

Purchase additional LAN monitoring tools and equipment, telecommunications equipment, upgrades to virus protection, and other new software and hardware required to support division programs. Replace the RS6000 server used for the AMS accounting system, and upgrade the associated hardware and software. Acquire and implement a new server and disk array for the NT network to use for agency shared files. Upgrade the department NT servers to Windows NT 2000. Purchase and implement a new UPS to enable the file servers to continue to operate for at least 5 ½ hours when a power outage occurs.

- **Mitigate or prevent adverse public health and environmental impacts resulting from activities or events under the Department's jurisdiction.**

  Expand department programs for GIS/GPS for State Parks, Oil Conservation, Mining and Minerals, Forestry and Energy Conservation and Management divisions; develop cross-agency data sharing for mapping oil wells, mines, forest fires, etc. and global positioning techniques.

  Expand department programs for e-business (electronic permits and electronic commerce) for State Parks, Oil Conservation, Mining and Minerals, Forestry, and Energy Conservation and Management divisions; share development strategies and training to use for oil well and mining permits, sales of seedlings, sale of State Park passes, fires, etc.

  Complete the microwave and frame-relay communications for the Forestry Division.

  Provide services to internal staff and citizens via Intranet and Internet applications.

- **Conserve and showcase New Mexico's natural, cultural and historical resources and demonstrate the value of responsibility managing and developing them.**

  Continue the implementation of the Petroleum Information Resource/Document Management System (PIR/DMS) for the Oil Conservation Division (funding is requested for FY01).

Purchase additional LAN monitoring tools and equipment, telecommunications equipment, upgrades to virus protection, and other new software and hardware required to support division programs. Replace the RS6000 server used for the AMS accounting system, and upgrade the associated hardware and software. Acquire and implement a new server and disk array for the NT network to use for agency shared files. Upgrade the department NT servers to Windows NT 2000. Purchase and implement a new UPS to enable the file servers to continue to operate for at least 5 ½ hours when a power outage occurs.

Provide services to internal staff and citizens via Intranet and Internet applications.

Continue efforts toward a paperless workplace by improving electronic communications capability, both inside the department for employees and outside the department to increase public awareness of the value of responsible natural resource management and development.

Using results of the review and analysis from FY00 for EMNRD, improve and expand wiring and telecommunications in central and field offices.

Install firewalls for better security and develop department Intranet.

Enable access to well information to the petroleum industry and the public via the Internet.

Implement seamless data replication among the Oil Conservation Division districts, RBDMS and ONGARD systems.

- **Continuously evaluate departmental programs, policies and regulations in response to customer needs.**

  Complete Y2K compliance for departmental applications and hardware.

  Implement Electronic Time Reporting in conjunction with new State Human Resources Management System (HRMS).

  Convert legacy database systems to current technology, primarily MS Access, Visual Basic, and SQL Server.

  Complete the RFP for State Park Reservations and issue the award for the project.

  Implement and promote cooperation between ISB and the division users via the Power User Group meetings to discuss departmental IT plans, issues and solutions.

Implement and promote cooperation with ISB and the division users via the Power User Group meetings to discuss departmental IT plans, training, issues and solutions.

Train IT personnel in routers, NT, SQL Server, Visual Basic, etc.

IT Goals Tied to State IT Strategic Plan

- **Strategy 1: Resources/Priorities.**

  Utilize existing agency resources for IT projects by developing and training division personnel as Technical Liaisons and Power Users to work with ISB.

  Implement and promote cooperation with ISB and the division users via the Power User Group meetings to discuss departmental IT plans, training, issues and solutions.

  Continue efforts toward a paperless workplace by improving electronic communications capability, both inside the department for employees and outside the department to increase public awareness of the value of responsible natural resource management and development.
  Implement Electronic Time Reporting in conjunction with new State Human Resources Management System (HRMS).

  Reduce keying of well production information through implementation of scanning software/hardware.

- **Strategy 2: Service Delivery.**

  Continue the implementation of the Petroleum Information Resource/Document Management System (PIR/DMS) for the Oil Conservation Division (funding is requested for FY01).

  Complete the RFP for State Park Reservations and issue the award for the project.

  Aggressively pursue getting all key well data onto the Oil Conservation Division's ONGARD and RBDMS systems.

  Implement the Forestry Division program for selling seedlings through the Internet.

  Complete the microwave and frame-relay communications for Forestry.

Provide increased GIS/GPS data sharing by revising procedures and developing data warehouses for selected data.

Aggressively pursue getting all key well data onto the Oil Conservation Division's ONGARD and RBDMS systems.

Expand department-wide work on GIS/GPS and e-business to actively work with other state agencies in these areas, through CIO tasks forces and through continued sharing of files, maps, and data with other agencies. Some of the specific areas targeted are Mining and Minerals conversion of legacy maps into GIS/CAD formats, serving of MMD information to other agencies using web-enabled GIS technologies, and evaluating requirements for Internet map-serving software products.

Work with other state agencies to share knowledge, training and resources for the mutual benefit and development of GIS/GPS, e-business and other technologies.

Provide services to internal staff and citizens via Intranet and Internet applications.

Continue efforts toward a paperless workplace by improving electronic communications capability, both inside the department for employees and outside the department to increase public awareness of the value of responsible natural resource management and development.

Implement seamless data replication among the Oil Conservation Division districts, RBDMS and ONGARD systems.

Enable access to well information to the petroleum industry and the public via the Internet.

- **Strategy 5: Telecommunications Availability and Network Access.**

Review and analyze technical plans for wiring and telecommunications in EMNRD Offices and develop a plan for expansion of networks and telecommunications.

Using results of the review and analysis from FY00, improve and expand wiring and telecommunications in central and field offices.

Purchase additional LAN monitoring tools and equipment, telecommunications equipment, upgrades to virus protection, and other new software and hardware required to support division programs. Replace the RS6000 server used for the AMS accounting system, and upgrade the associated hardware and software. Acquire and implement a new server and disk array for the NT network to use for agency shared files. Upgrade the department NT servers to Windows NT 2000.

Programming staff needs training for new technologies, project management, systems analysis, programming, databases, and other tools. The staff is always working on critical projects, reacting to new requirements, and too often the training is not given or received.

The staff spends most of its time in reaction mode without sufficient time to plan for the future in a proactive way.

IT Strategies and Resolutions.

Completion of the Y2K compliance for personal computers, servers and communications will be completed in the first quarter of FY00. At that time, EMNRD will be fully Y2K compliant with its systems and equipment.

Redesigning and rewriting the department's Expenditure Tracking and Management System for a Windows interface and Y2K compliance was underway until the loss of the personnel assigned to the task. Contractual services may be required to complete this project during FY00.

EMNRD/ISB is working to maintain the technologically advanced environment to both support the agency and to attract new IT employees. Our management is supportive of our efforts and continues to work with the CIO, DFA and LFC to provide solutions to the resource issues. We request cooperation and understanding from these entities to assist in our efforts to support our agency's critical mission and goals.

EMNRD has requested the funding for classes for both the user and the technical staff for training on project management, business analysis, technical skills, including servers, routers, and PCs.

EMNRD/ISB participates in the project to solve the problems for remote locations not receiving the best of service or technologies needs by working on the Broadband Committee (BMAC).

EMNRD will continue to purchase virus protection updates or licenses, and implement firewalls and other software to protect its data.

EMNRD hopes to cooperate with other agencies to share resources in remote sites and to consolidate otherwise expensive, out-of-state training. Staff will be trained for long-term success even though short-term assignments may temporarily be somewhat lengthened.

6) Other applications by specific Division will be restored dependent on length of time in off-site location. If the disaster situation is temporary (1 or 2 weeks), ISB will wait until back at home site.

Phase 3 - Recovery Strategy Planning

The current recovery plan is predicated on the premise that the department's main building on Pacheco Street has been destroyed. In that event, a basic network will be set up in the Villagra Building to serve the immediate administrative needs of the department and with the acquisition of replacement equipment and hardware, this installation would become the hub of the network. It is estimated that quarters suitable for housing the department's critical functions could be leased within a week. A local state contract vendor has a "quick-ship" policy for such emergencies. It should be possible to have a functioning network in place within 72 hours as most of the hardware, software and peripherals required are on the shelf in the company's headquarters and can be shipped overnight.

Phase 4 - Response and Recovery Planning

Information Systems Bureau	- The Bureau Chief, Kathy Watkins, will delegate Information Systems staff to set up off-site location, to bring up file servers, restore from backups and test critical applications.
Support Services	- The Bureau Chief, Gene Melady, will work with Kathy Watkins.
Personnel & Training	- The Bureau Chief, Renee Manley, will work with GSD/ISD for access to computers at their site and Department of Finance and Administration for payroll issues.
Financial Services	- The Bureau Chief, Joe Moulton, will delegate Financial Services Bureau to test ETMS and AFN1, to make sure the applications are working correctly.

Division Power Users may be asked to participate in testing networks and applications specific to their programs and field sites.

Inter-agency Resources

EMNRD shares data on boat registrations with the Taxation and Revenue Department. The Oil Conservation Division, Taxation and Revenue Department and the State Land Office share ONGARD data. MMD and OCD are collaborating with several other agencies (State Highway, Office of Cultural Affairs) to determine the most efficient ways to serve GIS-related mapping products at the departmental level and the possibility of serving the same data to all state agencies through a web-based interface.

C. Wide Area Network Description

The Energy, Minerals and Natural Resources Department (EMNRD) information system consists of Local and Wide Area Networks, and Remote Dial-up access connecting networks and users at different locations spread over a wide geographic area. The Local Area Networks (LANs) are located in the Santa Fe, Hobbs, Artesia, Aztec and Chama offices. The Wide Area Network connections consist of two 56K frame relays, one T1 frame, and one microwave connection. The remote dial-up access connection consists of a Citrix Metaframe server with four dial-up lines and 15 Internet connections. All remote offices currently use a local Internet Service Provider (ISP) to access the Citrix Metaframe server via the Internet; the four dial-up lines are used as a backup for remote offices that are unable to connect via the Internet.

The Santa Fe office Local Area Network is a heterogeneous network. It is comprised of several different components. EMNRD is primarily an Ethernet topology with Token Ring hooks (Transparent LAN Service) to GSD/ISD at the Simms Building and to the Villagra Building. The department LAN and WAN primarily consist of CISCO equipment; i.e. the routers, switches, and hubs. IPX and IP are the protocols currently being used. ISB currently maintains three different operating systems: Netware 4.11, Windows NT 4.0 Enterprise Server and Unix.

D. IT Hardware, Software and Infrastructure Inventories

HARDWARE INVENTORY FORM

Agency Name **Energy, Minerals and Natural Resources** Agency Code **521**

EOY = End of Year. Please provide actual and planned inventories as noted. Use the net annual inventory figure for each year, i.e. use the number of actual units anticipated to be in place after additions, replacements, etc. for each year. For Y2K status, enter? If status is unknown. If some are compliant and some not within a category, give figures here on a separate sheet.

Hardware Inventory	FY99 EOY Actual # of Units	FY00 EOY Planned # of Units	FY01 EOY Planned # of Units	Y2K Compliant ?*
Personal Computers	403	427	427	Yes
PC: Pentium (133 +)	312	390	427	Yes
PC: Other	91	37	0	Yes
Laptop: Pentium(133 +)	24	54	68	Yes
Laptop: Other	13	13	13	Yes
Printers	100	122	125	Yes
Cost: > $10K	1	1	1	Yes
Cost: < $10K	99	121	124	Yes
Minicomputers	1	1	1	Yes
RS6000	1	1	1	Yes
Servers	14	14	14	Yes
Intel - 386 or 486	2	2	2	Yes
Intel - Pentium	11	11	12	Yes
CD-ROM Server	1	1	1	Yes
Routers (specify brand)				
Cisco 4500	5	5	5	Yes
Catalyst 5000	2	2	5	Yes
Other hardware				
Scanners	5	5	5	Yes
Plotters	5	5	5	Yes
CD Juke Box	1	1	1	Yes
Disk Array	7	7	7	Yes
UPS	10	10	10	Yes
HSM	1	1	1	Yes

Acrobat Exchange		4	4	Yes
Acrobat Reader		106	106	Yes
Doc to Help		4	4	Yes
Easy Photo		7	7	Yes
GraphicsLink		57	57	Yes
PageMaker	6	18	18	Yes
Persuasion Player		7	7	Yes
PhotoDeluxe		5	5	Yes
Photoshop		5	5	Yes
Project	1	4	4	Yes
Quattro Pro f/Windows		10	10	Yes
Rally!for AS400		7	7	Yes
Schedule +		188	188	Yes
Sterling		29	29	Yes
Visio		1	1	Yes
Works	2	2	2	Yes
Windows Commandar		10	10	Yes
1-Step Backup Zip&Jaz		18	18	Yes

Visual FoxPro for Windows		3	3	Yes
Internet Server Software				
IIS	1	2	2	Yes
Remote Communications				
PC Anywhere Host	4	4	4	Yes
Citrix - Winframe	57	60	60	Yes
Internet Firewall	1	1	1	Yes
Backup Software				
ArcServe	2	5	5	Yes
EZArc	2	2	2	Yes
Crystal Info Report Server	5	5	5	Yes
HSM Manager (Cheyenne)	1	1	1	Yes
UPS - PowerChute	10	11	11	Yes

ID. Transactions – Transaction Number, Transaction Description, Requestor, Vendor ID, Purchase Name, Transaction Amount. Encumbrance/Obligation Balance – Center, Account, Fiscal Year, Encumbrance Number, Balance and General Ledger balance							
Purpose: Tracks departmental contracts from the time the RFP is issued until the contract is closed. Provides data for reports used during legislative session. Data types: Phase, Project Manager, Contractor, Begin Date, End Date, Amount, Description.	**Contracts Tracking System** Netware/dBase-Clipper.	EMNRD contract documents	Contract reports	EMNRD staff and contractors, legislature	Would have to prepare contract reports manually	4	Y
Purpose: Consists of a database downloaded from Tax & Rev's mainframe database. Queried by Boating Officers and other authorized staff to obtain information on boat ownership and registration. A report is generated for the U.S. Coast Guard. Data types: Registration Status, Registration Number, Hull ID, Model Year, Make, Length, Number of People,	**Boat Registration Inquiry** Netware/dBase-Clipper	Taxation & Revenue Dept. data files from boating registration	Report on boating ownership and registration	EMNRD State Parks, Coast Guard	Would have to use out-of-date information	4	Y

Purpose: AFIN is a fully online, integrated financial management systems which delivers critical capabilities such as automatic control over encumbrances and pre-encumbrances, extensive budgeting features for both revenues and expenditures, and grant/project management. Its standard features include general ledger, accounts payable, accounts receivable, cash management and financial reporting. Used to track purchase and voucher documents as well as other transactions. Data types: Document Type, Document Number, Document Action, Document Description, Line Amount, Adjusted Amount, Object, Activity, Commodity Code, Quantity, Unit Cost, Responsible Person, Vendor Name, Vendor Address	**Advantage Financial 2000 (2.1) (AFIN)** Unix/Microfocus Cobol, Sybase SQL Server, sequential ledger files	ETMS (EMNRD) and C-FRAS (DFA)	Accounting and budget reports	EMNRD financial and budget staff	Manual budget control and reports	3	Y

Purpose: Tracks and schedules activities, allows OCD staff to enter well production and disposition information on 10,000 wells from the C-115 (Operator's Monthly Report) form. Program extracts completed C-115s and converts data into format expected by ONGARD. Data types: Operator Number, Report Month and Year, Receipt Date, Keyed Date, User, Verified Date User, API, Pool, Property, Injection Volumes, Gas, Oil, Water Volumes Produced, Volumes Sold, Transporter, BTU/Gravity	**Risk Based Managed System (RBDMS)** Access 97.	ONGARD, inspectors' laptop computers	Inspectors' laptop computers	Oil Conservation Division inspectors and managers, Oil and Gas Industry	Would have to enter information into ONGARD manually and redundantly	4	Y

PART 6: Base Budget or Program Change Project Detail Table

DETAILED FORM INSTRUCTIONS

BASE OR PROGRAM CHANGE PROJECT DETAIL TABLE

PLEASE NOTE: THIS IS NOT A BUDGET FORM.

List all system development projects meeting these criteria:

- expenditures >$100,000, and
- to be done with resources in the operating budget (base or program change).

Do not include

- infrastructure upgrade projects (equipment expansions or upgrades).
- projects for which a special appropriation is requested (form c-2).

Give expenditure amounts planned for the current fiscal year and the next. In the Project Total column, give actual project total expenditures, including any for fiscal years outside FY99 and FY00, if any. Give $ in thousands: $50,232 would be 50.2

NOT APPLICABLE

System Development (check when actually or expected to be completed):

	FY98 & Prior	FY99	FY00	FY01	FY02	FY03 & Subseq.
Needs Assess.			X			
Formal Design				X		
Software Develop't.				X		
Hardware Acquisition				X		
FTE Hired, Trained						
Fully Oper-ational				X	X	
Mainte-Nance					X	X

System Life Expectancy (Dates in Fiscal Years):_____FY01 – FY06_____

Project Summary (attach Detailed Project Description as outlined in IT plan Guide):

The New Mexico Oil Conservation Division proposes to design and implement a comprehensive imaging and document management system to manage its oil and gas public records. Using commercial off-the-shelf imaging and document management software, the Petroleum Information Resource Document Management System (PIR/DMS) will preserve a priceless information resource and improve the division's regulatory capabilities. Approximately 1.5 million pages will be scanned, indexed and maintained online. Indexing entries and database links will tie this information to ONGARD. Industry and public access will be provided via the Internet.

Certification: I hereby certify that the amounts and information provided are the best estimates and that no willful misrepresentation is hereby made.

Kathy Watkins

08-31-99

Kathy Watkins
Information Systems Bureau Chief
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Date

Although the **Regulatory Transaction Automation (PIR/RTA)** module is mentioned in this overview, no funding is requested at this time. Discussions are underway with a number of individuals and organizations in both the oil and gas industry and the public sector about the direction and implementation of this module. Funding will likely be requested in the FY02 or later timeframe.

Estimated total development costs for the Document Management System (PIR/DMS) of the New Mexico Petroleum Information Resource are $1,251,690. Ongoing cost of operating the system is projected at $107,795 annually. Direct cost savings of $122,100 per year are projected as a result of more efficient records access by division staff and office space economies. Additional potential cost savings of $247,000, as well as a possible increase in revenue to the state as a result of the PIR/DMS totaling $4,280,014 over five years, are also described in this document.

B. Business Justification

(1) Project Relationship to Agency Goals

The Oil Conservation Division's mission is ***"to assure the protection, conservation, management, and responsible development of oil, gas, and associated natural resources through professional, dynamic regulation and advocacy for the ultimate benefit of New Mexico."*** Second in importance only to its staff, OCD's files, documents and databases are essential to the successful achievement of the division's mission. The two and one-half million pages of well files, administrative and regulatory orders, and other documents represent the corporate memory of the oil and gas industry in New Mexico and are essential to the wise stewardship of this vital natural resource.

The Petroleum Information Resource project is a high priority project in the Oil Conservation Division's Work Plan under Objective IIIC: *"Promote and develop electronic information exchange with the industry and public."* This objective meets the State of New Mexico objectives of *"Increase Economic Development"* and *"Provide More Efficient Government"*.

The OCD Strategic Plan identifies the following four goals:

I. *"We will respond to industry and public needs."*

II. *"We will reduce State liability and increase operator accountability."*

III. *"We will provide a quality data and information management system."*

IV. *"We will maximize the individual and organizational professionalism of the Oil Conservation Division."*

Development of the New Mexico Petroleum Information Resource supports the achievement of numerous specific objectives relating to all four goal areas of the OCD strategic plan including:

"Gather information and opinions from industry and the public."

"Effectively and efficiently service industry and community needs from strategic locations."

(3) Summary Cost-Benefit Analysis

Estimated total development costs for the Document Management System (PIR/DMS) of the New Mexico Petroleum Information Resource are $1,251,690. Ongoing cost of operating the system is projected at $107,795 annually. Direct cost savings of $122,100 per year are projected as a result of more efficient records access by division staff and office space economies. FY01 system development and implementation costs will be $1,069,730. These costs, plus other related costs, will be broken down as follows:

	Budget Category	**FY01 Request Amount**
000	Personal Services	0
010	Employee Benefits	0
020	In-State Travel	2,000
030	Maintenance and Repairs	0
040	Supplies	0
050	Contractual Services	228,280
060	Operating Costs	
070	Other Costs	0
080	Capital Outlay	837,450
095	Out-of-State Travel	2,000
150	Other Fin.	0
	Total	1,069,730

Well File and Document Conversions	Hourly Rate	Hours	Cost
Scanner Operators	15	5,696	85,440
Well File Indexers	30	4,000	120,000
Hearing Order Indexers	30	1,000	30,000
Case File Indexers	30	2,000	60,000
Administrative Order Indexers	30	1,000	30,000
Project Manager	60	1,080	64,800
Total Conversion			390,240
Total Project Costs			**1,251,690**

Annual Operating Costs

Like any automated information management system, PIR/DMS requires resources on a regular basis to ensure continued effective operation and to remain relevant to the needs of OCD and its customers. These projections do not provide for any major functional changes to PIR/DMS or significant hardware upgrades. If required, such enhancements will be addressed through the annual budgeting process. Ongoing operating costs for PIR/DMS are projected at $107,795 annually as shown below.

Ongoing Operational Cost	**Annual Cost**
Computer Hardware and Scanner Maintenance	38,000
Software Maintenance Renewals	54,795
Server Administration and Computer Support	15,000
Total Ongoing Costs	107,795

Computer Hardware and Scanner Maintenance: Onsite service contracts will be maintained for the PIR/DMS servers, optical storage jukeboxes, and scanning equipment. The cost of this maintenance coverage is increased by the comparatively remote locations of the OCD district offices (Artesia, Aztec, and Hobbs).

Software Maintenance Renewals: Software maintenance renewals ensure that the PIR/DMS will be able to maintain current versions of vendor-supplied imaging and document management software. These costs are estimated at 30% of the purchase price of the software.

Server Administration and Computer Support: Ongoing server administration and end-user computer support will be required to ensure that PIR/DMS operates effectively and that system integrity is maintained. It is estimated that this function will require one-quarter time from OCD's Management Analyst staff position.

The case file documents will be maintained for one year, and a decision will be made at that time regarding the future disposition of the original documents. The original Hearing Orders will be maintained by OCD. A decision will be made regarding the disposition of the original Administrative Orders one year after they have been in PIR/DMS.

Each year, OCD will reassess its space requirements and re-allocate the recovered space as needed.

Intangible Benefits

Besides direct, quantifiable cost savings, PIR/DMS will have more important intangible benefits, which are discussed below.

Preservation of Priceless Information Resource: The well files maintained by OCD represent the only comprehensive collection of information on the over 60,000 oil and gas wells located in New Mexico. Without this information, the division would be unable to perform its missions of protecting this essential natural resource and preventing damage to the environment. Many oil and gas wells in New Mexico are over 40 years old, drilled by companies that have long since ceased to exist. The deteriorating paper records that OCD maintains might be the only information in existence on the exact location and construction of these wells.

If a disaster in a district office or in the Santa Fe office resulted in the loss of these documents, it could take up to one year to replace them with two contract employees assigned to the project full time. The well files are duplicated in Santa Fe and the districts; if the district office with the highest number of files suffered a disaster, it could cost $26,000 to copy the Santa Fe well files and hearing orders for that district. If the Santa Fe well files and hearing orders were lost, it could cost $67,000 to replace those files. Since disasters are not likely to occur in both the largest district office and in the Santa Fe office, the higher $67,000 potential recovery cost is used in estimates of cost avoidance.

There are no back up copies of the administrative orders or case files; it is not possible to measure the cost of doing without this information.

Opportunity to Complete Data Entry: Due to time constraints when ONGARD was initially implemented, many plugged wells were not entered into ONGARD, and not all data elements were entered for the active wells. OCD recognizes that while each well file is open for scanning, this will be an excellent opportunity to fill in the critical elements that are missing. These will be replicated to OCD's technical well information system, RBDMS (Risk-Based Data Management System).

OCD estimates that 50% of the wells in its computing systems are missing at least some data elements. At an estimated 20 minutes per well file, it could cost $103,500 to complete the entry of this information. Approximately 17,000 plugged wells are not in the ONGARD or RBDMS systems. It could take approximately 30 minutes per well to find the file, validate the information, and key it in; the estimate of this cost if not done through the PIR project is approximately $76,500.

Greater Efficiencies in Accessing Data and Documents: PIR/DMS will greatly enhance the ability of OCD's staff to retrieve information quickly. With the current paper-based filing systems, staff members may unconsciously limit their analysis of potentially useful documents because of the time and effort involved in retrieving them. PIR/DMS will literally put document access at the fingertips of staff members, and integrate their retrieval with ONGARD system use. Better decisions will be made more expeditiously.

Enhance New Mexico's Favorable Climate for Exploration and Drilling: OCD records are routinely consulted by engineers, geologists, and other professionals in the oil and gas industry in the course of making exploration and drilling decisions. By making the well file records and data available via the Internet, OCD will greatly reduce the cost and effort of retrieving this information and enhance our state's business climate in the eyes of the oil and gas industry.

Other state and federal agencies such as the Environment Department, Taxation and Revenue Department, State Land Office, Bureau of Land Management, Department of the Interior, and the Environmental Protection Agency also use information in these files. They will benefit from PIR/DMS in the same areas as other users not located in the same office as the files. They will not have to make any additional investment to realize these benefits because the Petroleum Information Resource will utilize the existing architecture of the Internet.

Description	Begin	End	Deliverable
User Training			
Implement Disaster Recovery, Change Management	10-23-00	11-03-00	System Management Plan, Change Management Plan, Disaster Recovery Plan
Pilot Evaluation	10-23-00	11-03-00	Revised Project Plan, Cost Estimates, Benefits
			**** SYSTEM IN PRODUCTION ****
Oil Conservation Commission (Hearing Order) Conversion	11-06-00	03-30-01	Hearing Orders Online
Administrative Order Conversion	04-01-01	10-30-01	Administrative Orders Online
District III (Aztec) Well File Conversion	11-03-00	05-03-01	District III Well Files Online
Continued User Installations, User Training, Industry Announcements	12-01-00	06-30-02	Access to System
Districts I and II (Artesia and Hobbs) Hardware, Software Installation	01-15-01	02-15-01	Completed Infrastructures for Hobbs and Artesia
District I (Hobbs) Well File Conversion	05-03-01	11-03-01	District I Well Files Online
District II (Artesia) Well File Conversion	11-03-01	05-03-02	District II Well Files Online
Case File Conversion	05-03-02	05-03-03	Case Files Online

PLC	Pool/Lease Commingling	155
PMX	Pressure Maintenance Expansion	198
SWD	Salt Water Disposal	747
TX	Tubing	285
WFX	Waterflood Expansion	752
	Total	12,506

Administrative orders are maintained in file folders and currently accessed by order number. The folders will usually contain a typewritten letter request from the operator and a written order issued by the division. These documents in letter form are generally accompanied by supporting documentation that may consist of plats, diagrams, drawings, forms, maps, and well logs. Many of the supporting documents are not on standard size or weight paper. Optical character recognition (OCR) conversion of the administrative orders themselves would likely be successful and valuable. The supporting documentation is diverse, so it would need to be indexed.

Administrative orders typically refer to specific wells, properties, pools, and locations. While a standard nomenclature is used in the orders to describe these items, an experienced indexer would be needed to associate these descriptions with ONGARD codes.

Regulatory Orders: Since 1950, the Oil Conservation Commission (OCC) and Oil Conservation Division have issued over 12,150 "R" orders. These orders have broader scope and applicability than administrative orders and are issued only after a public hearing before the OCC or a division hearing examiner. These orders are typically text documents and should be suitable for OCR conversion; however, meaningful indexing will require experienced, knowledgeable personnel.

Case Files: The case files contain the supporting documentation for the regulatory orders. These files include exhibits, show cause documents, well plugging chronologies, compulsory pooling documentation, maps, and correspondence. These documents are frequently requested by individuals involved with upcoming hearings similar to earlier hearings. The indexing will require manual activity to categorize the types of documents.

Well Files: OCD maintains a file of regulatory request, permits, reports and technical documentation for each oil or gas well located in New Mexico. The original well file is maintained in the district office that manages the well based on its geographic location; a copy of the well file is also maintained in the division's central office in Santa Fe.

Each oil and gas well in New Mexico has been assigned a unique identifying number called the API Well Number. This identifier will be used for indexing well file records. Used in conjunction with the ONGARD database, this will allow a wide selection of data elements to be used in locating and retrieving well file documents.

Document Summary

The following table shows the estimated size of the Administrative Orders, Regulatory Orders, Case Files, and Well Files, and the projected time required to convert these files to electronic images using an automated indexing scheme where possible. Conversion and indexing time projections assume that 4,000 pages, or 160 well files, can be scanned and indexed each working day.

Document	Number of Files/Wells	Estimated Pages	Estimated Days to Convert and Index
Administrative Orders	12,506	312,650	78
Regulatory Orders	12,150	48,600	12
Case Files	12,150	972,000	243
Well Files			

read the media might disappear. An example of this is that 5 1/4" diskettes are still reliable, but very few PCs can read them today. Plan to Address: Part of any long-term system which stores data must be to refresh the data (in this case, images) periodically to keep the media current.

The system could be inaccessible to a large number of users if it requires software or technology that is unique. Plan to Address: The PIR will utilize only proven and widely accepted technologies. The image file formats selected will not require any software purchase by the users.

The system will need changes after the contractor is no longer available. Plan to Address: The contractor will be required to train EMNRD personnel on the maintenance of the software.

(3) Hardware/Software/Network Resources

System Configuration

The Document Management System (PIR/DMS) of the Petroleum Information Resource will become the central focus for OCD's information management and decision making process. Three to four OCD staff members in each of the four division offices will use PIR/DMS heavily throughout the business day, and thirty more will make several inquiries each day.

The exact design of PIR/DMS may evolve as EMNRD's infrastructure is updated, but the current design accommodates communications bandwidth limitations in the current environment. PIR does not require any change to the telecommunications environment, but will accept adaptation of the data flow when the environment is improved.

While the District III (Aztec) office is connected to the Santa Fe office by a T-1 circuit (1.44 mbps), the District I (Hobbs) and District II (Artesia) offices are connected by 56 kbps circuits. Although these circuits provide acceptable performance for their current wide area network (WAN) traffic, they do not have the capacity to support an additional imaging application at any reasonable level of performance. Furthermore, backup circuits are not currently available due to their additional cost and complexity.

Another complication, which must be addressed in the design of PIR/DMS , is providing document access to industry and the public. Given current usage levels of existing paper well files and other OCD records and the convenience of Internet access, oil and gas industry demand for PIR/DMS documents will likely be at least double that of OCD staff. Obviously the communications bandwidth problem would be further compounded by any attempt to provide industry or public access from district office servers. Document retrieval would also be more complex and cumbersome, since the retrieval software would have to determine which district office server manages each document to be retrieved. Finally, providing public access to PIR/DMS server would increase the cost of each document management server configuration and potentially impact the servers' abilities to provide good throughput for the local staff.

(the Risk-Based Data Management System) is a Microsoft Access application that uses Access and SQL Server tables that house copies of information stored in ONGARD, as well as extensive technical information on wells, such as inspection information. RBDMS runs on servers in Santa Fe and in the three district offices.

PIR/DMS will interface to ONGARD and RBDMS in a number of ways. PIR/DMS document indexing and retrievals will use established codes for objects such as pools, properties, operators and wells. Inquiry-only access will validate these codes against ONGARD tables to ensure that only known identifier and code values are used for indexing. Users of these two systems will be able to dynamically view administrative orders, well files, etc. via links from data elements in these two systems.

Internet Inquiry Interface: Interagency, industry and public access to PIR/DMS will be provided through a web browser interface. PIR/DMS documents will be stored in industry-standard formats such as Adobe's Portable Document Format (PDF) and TIFF. Leading enterprise level document management systems provide an Internet publishing interface which will be used to design web pages integrating PIR/DMS documents and OCD data.

PIR/DMS will allow retrieval of documents by several different indexing schemes, depending on the type of document. Users will drill down to the document(s) they want by filling in screen options (such as operator, pool, location, well name, etc.) narrowing down the related data elements. For well files and administrative orders, the result of these selections will be a list of wells meeting the criteria. After a particular well is selected, data will be presented for that well (depths, footages, casing, tubing, dates), as well as a list of available documents. The user will select the desired documents for viewing.

Document Creation Interfaces: Administrative and regulatory order documents are currently created by division staff using Microsoft Word. These documents will be captured via OCR using standard document indexing protocols.

Well File Conversion: Each oil and gas well in New Mexico has been assigned a unique identifying number called the API (American Petroleum Institute) Well Number. This identifier is used as the record key for OCD's well tables which contain descriptive, coded and quantitative data pertaining to individual wells. Well files are maintained in location sequence (township, range, section, unit letter) in OCD's district offices. To expedite indexing, a well indexing page will be printed for each ONGARD well record containing the well's location, descriptive information, and API Well Number, sorted in the same sequence as the district offices' filling system. The API Well Number will also be bar coded on the page so that the scanning process can recognize changes in well files and automatically index well files.

Case File Conversion: The Case Files are filed by "R" order number. This will be the main identifier for these files. The types of documents will be categorized and an indexing scheme will be developed for use while scanning in the files. Bar Codes will be used to speed backfile scanning and to ease ongoing updates.

(6) Risk Assessment and Management

Due to the fragile nature of paper, and the disasters it can be subject to, the risks of implementing PIR/DMS are not greater than the risks faced in the current environment. The considerations include:

Project Extensions: Because the files consist of thin paper, round documents, stiff paper, handwritten notes, carbon copies, stapled copies, large maps, and unusually sized paper, the conversion may take longer than we have planned. OCD will do its best to prevent this by proper planning with vendors who specialize in conversion projects such as this. Previous results of vendors in similar environments will be a factor in the selection process.

Loss of Availability of Imaged Copies: Hardware and media experience failures, so system management and disaster recovery planning and preparation will be key to the success of the project. Some of this concern is reduced because the central office server will have a replicated set of images from each of the district servers.

G. Change Control and Problem Resolution

The PIR team will conduct weekly meetings through the first district implementation, and bi-weekly meetings after that. Any proposed changes to the project design or project plan/schedule will be agreed upon by all team members and documented by the Project Manager. All impacted by the change will be advised in writing in advance of the change and their input solicited. The most current design document and project plan/schedule will be available on OCD's home page for all interested parties to review and comment. Changes from the originals will be highlighted.

H. Disaster Recovery and Loss/Damage Control

Disaster recovery is a central design consideration in PIR/DMS and a key to understanding its proposed architecture. New Mexico's oil and gas public records are currently maintained in hard copy form in OCD's four office locations. To prevent a catastrophic loss of information due to fire, flooding or other similar environmental event, well file records are maintained in both the responsible district office and in the central office in Santa Fe. This filing scheme is also mandated by the need for staff in Santa Fe for continuous access to well records and by the distances separating OCD's offices. Minimum driving time between Santa Fe and any district office is four hours.

PIR/DMS will maintain a similar redundant storage scheme for well file records. The PIR/DMS design calls for well file records scanned or captured in OCD's district offices to be replicated to a document management system server located in the divisions central offices in Santa Fe. In the event of loss of information in one location, system operation would continue from other locations.

PIR/DMS will substantially improve on the division's ability to provide continuing service in the event that one or more locations become inoperative or unavailable. Since the division's records will be stored electronically, it is comparatively inexpensive to make complete backups of the division's records of off site storage. If a district office's well files were destroyed today, almost half a million pages would have to be retrieved, photocopied, stored in file folders, packed, transported, unpacked and stored in new file cabinets in order to restore full service. Most likely, this process would take weeks during which the district offices' functions would almost completely cease. With PIR/DMS operational, district office service could be partially restored within several hours and completely restored within days. The projected cost savings of this recovery capability is documented in the Intangible Benefits section of this document.

I. System Security

Security for PIR/DMS will be provided by a variety of measures appropriate to the resources being protected, the potential threats and the relative costs of damage which may be incurred. Security becomes a particular concern because of the use of the Internet as the key communications medium for this project.

Physical Security restricts access to computing equipment to authorized personnel PIR/DMS equipment will be located in locked locations not accessible to unauthorized individuals. PIR/DMS equipment locks will also be used, and equipment will be anchored or otherwise secured to prevent theft. Security alarm systems are also in place.

Windows NT Security: The Windows NT Operating System provides a comprehensive security scheme which provides a satisfactory security environment for PIR/DMS when used in conjunction with other appropriate security measures.

Mainframe ACF2 Security will control ONGARD data stored at the ISD mainframe complex and restrict access according to the business rules defined by the Information Systems Division, ONGARD Service Center, and Oil Conservation Division.

GLOSSARY

ASD	Administrative Services Division
CFRAS	Central Financial and Reporting Accounting System
CIO	Chief Information Officer
DB2	The relational database management system used for ONGARD
CAD	Computer aided design
DFA	Department of Finance and Administration
ECMD	Energy Conservation and Management Division
ETMS	Expenditure Tracking and Management System
FD	Forestry Division
GSD	General Services Department
GSD/ISD	General Services Department/Information Systems Division
ISB	Information Systems Bureau
ISP	Internet Service Provider
LAN	Local Area Network
MMD	Mining and Minerals Division
OCD	Oil Conservation Division
ONGARD	Oil and Gas Accounting Revenue Data Base
OFS	Office of the Secretary
RBDMS	Risk Based Data Management System
RFP	Request for Proposal