Approvals	
Approved by Quality Assurance Coordinator: Charles Beatty Jr.	
Signature:	Date:
Approved by Radiation Safety Officer: Jay Maisler, CHP	
Signature:	Date:
Approved by Trustee Project Manager: Jeff Lux	
Signature:	Date:
Approved by Administrator, Cimarron Environmental Response Trust: Bill Halliburton	
Signature:	Date:

Summary of Changes

Revisions to this document will be identified, and revisions or addenda will be issued as needed. The Trustee Project Manager maintains the signed original of this document; no controlled copies are issued. The end user is responsible to verify with the Trustee Project Manager that any hard copy being referenced is the current revision. A summary description of each revision or addenda will be noted in the following table.

Revision Number	Date	Comments
Rev. 0	April 11, 2011	Original
Rev. 1	February 29, 2012	Changes Assigned Leader to Activity Leader, other editorial changes
Rev. 2	September 19, 2013	General review of Plan incorporating editorial changes, Revised Section 2.2 and added Section 2.6.
Rev. 3	April 7, 2016	General revisions per triennial QA program review
Rev 4	September 28, 2022	Revisions and reorganization throughout in anticipation of expanded project scope.

TABLE OF CONTENTS

1.0 QUALITY ASSURANCE PROGRAM

1.1 INTRODUCTION

As Trustee of the Cimarron Environmental Response Trust (CERT), Environmental Properties Management LLC (EPM) is committed to the decommissioning and remediation of the Cimarron site in accordance with all license and regulatory requirements. EPM requires the development and implementation of a Quality Assurance (QA) program that provides for the assurance of the required level of quality in the planning, execution, and documentation of quality-critical work performed at the site. This Quality Assurance Program Plan (QAPP) documents the program that will be implemented at the Cimarron site.

Successful implementation of this QAPP provides for the achievement of the following objectives:

- Products and services that comply with license and regulatory requirements.
- Quality management systems and procedures that are documented, communicated, controlled, and effectively put into practice.
- Opportunities to identify and improve the organization and the quality, compliance, and cost effectiveness of work performed.
- Timely evaluation of personnel resources, needs, skills and performance to stress the importance of, and identify opportunities for, continual quality improvement.
- Data of sufficient quality to support Cimarron decommissioning goals and assure compliance with regulatory requirements.
- Documented management reviews indicating concurrence with quality-affecting procedures.
- Triennial management reviews of the effectiveness of the quality assurance program.
- Notifications to the NRC regarding changes to the QAPP as well as QA organization.

EPM retains contractors to perform work at the site. This QAPP establishes a program requiring that quality be incorporated in the planning, performance, and documentation of work. For contractors performing quality-critical work, the CERT QAC will review Contractors' quality assurance and quality control programs to assure that they comply with the requirements of this QAPP. This QAPP

also establishes a program for the evaluation and qualification of contractors and subcontractors, communication of quality requirements to contractors and subcontractors, and the monitoring of contractor and subcontractor performance and product quality. Acceptance of contractors' qualifications to perform quality-critical work must be documented before the contractor begins work for the CERT.

1.2 BACKGROUND

The Cimarron facility operated as a nuclear fuel production facility under Licenses SNM-928 (for uranium processing) and SNM-1174 (for mixed oxides processing) until the facility was closed in 1975. Decommissioning began in 1976. License SNM-1174 was terminated in 1993; decommissioning in accordance with the requirements of NRC License SNM-928 is ongoing. The decommissioning of equipment, structures, impoundments, former burial areas, and soil is complete.

The current objective of the CERT is the remediation of groundwater to criteria established by the US Nuclear Regulatory Commission (NRC). Groundwater remediation requires planning, data collection and management, and decision-making; all of which are subject to NRC-established quality requirements. Quality requirements are met through implementation of this QA program (consisting of the QAPP, implementing procedures, and supporting documents). This QA program will be periodically revised to reflect changes associated with ongoing decommissioning activities.

The CERT was established in accordance with the January 26, 2011, Consent Decree and Environmental Settlement Agreement executed by the former licensee, the Department of Justice (DOJ), the Nuclear Regulatory Commission (NRC) and the State of Oklahoma (among others). The NRC license was transferred to the CERT, which owns the Cimarron Site; as Trustee, Environmental Properties Management LLC (EPM) manages the accounts that provide the funding for the remediation of the Site. EPM is the Trustee for the CERT; because the CERT has no employees, the Trustee functions as the licensee.

1.3 PURPOSE AND APPLICABILITY

The QA program ensures that technical and quality assurance procedures required to implement the QA program are consistent with regulatory, licensing, and QA program requirements and are properly documented and controlled.

The Cimarron QA program is documented by this QAPP and its associated procedures. Sufficient records of conduct and performance are required to demonstrate adherence to this program. Contractors or subcontractors performing support activities (e.g., sampling, analysis, data evaluation, design, and record generation) shall retain records sufficient for the licensee to review to evaluate compliance with applicable program elements.

As the document defining the quality assurance program implemented at the Cimarron Site, the QAPP describes ***what*** will be done to provide for acceptable quality. Quality Assurance Implementing Procedures (QAIP) implement the program; they describe ***how*** quality objectives will be identified and quality documented in the performance of quality-critical work.

The QA program applies to all quality-critical work performed at the Site, defined as activities that contribute to the decommissioning of the site to achieve termination of the NRC license in compliance with regulatory requirements, including, but not limited to:

- Groundwater monitor well drilling, installation, and development
- Sampling and analysis of environmental media
- Design and evaluation of groundwater characterization and remediation plans
- Design of groundwater treatment processes
- Groundwater remediation activities
- Packaging and transportation of waste
- Other activities directly affecting license termination and site closure decision-making, if so designated by the Trustee PM or Quality Assurance Coordinator (QAC)

The QA program does not apply to non-quality-critical activities such as mowing, fence repair, building maintenance, or other activities not related to regulatory requirements.

1.4 REGULATORY REQUIREMENTS

This QAPP establishes a quality assurance program meeting the applicable requirements of the following:

- NRC Regulatory Guide 1757, *Consolidated Decommissioning Guidance, Decommissioning Process for Material Licenses*
- NRC Regulatory Guide 4.15 (NUREG 4.15), *Quality Assurance for Radiological Monitoring Programs (Inception Through Normal Operations to License Termination) - Effluent Streams and the Environment*
- NRC License SNM-928

In addition, quality requirements not required by NUREG 4.15 or NUREG 1757 were included in this QA program; these were obtained from various sources including NQA-1, *Quality Assurance Requirements for Nuclear Facility Applications*.

2.0 GLOSSARY

Activity Plan: A document that describes the objectives of a non-routine, quality-critical, activity including requirements for radiological protection, environmental compliance, safety & health protection, and quality assurance, and work instructions directing the performance and documentation of a non-routine quality-critical activity.

CERT Repository: The CERT repository is an electronic document retention and management system established on servers controlled by the Trustee. It serves as the permanent and official repository of Trust documents and records.

Cimarron Environmental Response Trust (CERT): The CERT is the NRC licensee and owner of the Cimarron Site, and the holder of the accounts which fund the remediation of the Site.

Cimarron Site (Site): The property owned by the CERT.

Contractor: Any organization or individual contracted directly to the Trustee.

Controlled Document: A document for which workers are required to access and use only the current revision in performing quality-critical work. Plans (including Activity Plans), procedures, desk instructions, and contractual documents are examples of controlled documents.

Decisions Affecting License Termination or Site Closure: For the purpose of this QAPP, decisions which provide for the decommissioning of the site to achieve termination of the NRC license in compliance with regulatory requirements.

Nonconformance: Any deficiency in characteristic, performance, or documentation that renders the quality of an item or deliverable unacceptable or indeterminate

Quality-Critical Activity: Any activity that contributes to the decommissioning of the site to achieve termination of the NRC license in compliance with regulatory requirements.

Quality Assurance (QA): Quality Assurance is the programmatic implementation of planned and systematic evaluations which provide confidence that the performance of quality-critical activities complies with pre-defined requirements.

Quality Assurance Coordinator (QAC): The individual who is responsible for the maintenance and implementation of the quality assurance program.

Quality Assurance Implementing Procedure (QAIP): A procedure which instructs personnel regarding ***how*** to perform a requirement required by the QAPP.

Quality Assurance Program Plan (QAPP): The document which describes and governs the Quality Assurance Program.

Quality Assurance Program (QAP): The licensee's program for quality assurance, as documented in the Quality Assurance Program Plan (QAPP).

Quality Control (QC): Quality Control (QC) consists of actions that measure and control the characteristics of equipment, processes, deliverables, and materials to meet established standards.

Quality Data: Data that directly or indirectly support decisions affecting license termination and/or compliance with regulatory requirements. The collection, management, and evaluation of quality data are subject to the requirements of the QAPP.

Quality Document: The current version of a plan, procedure, or instruction which stipulates requirements which must be met, or which directs the performance of quality-critical activities.

Quality Record: A record that documents that quality-critical work was performed in accordance with requirements specified in contracts, plans, procedures, drawings, or specifications.

Radiation Safety Officer (RSO): The individual who is responsible for maintenance and implementation of the radiation protection program.

Subcontractor: Any organization or individual retained by a contractor.

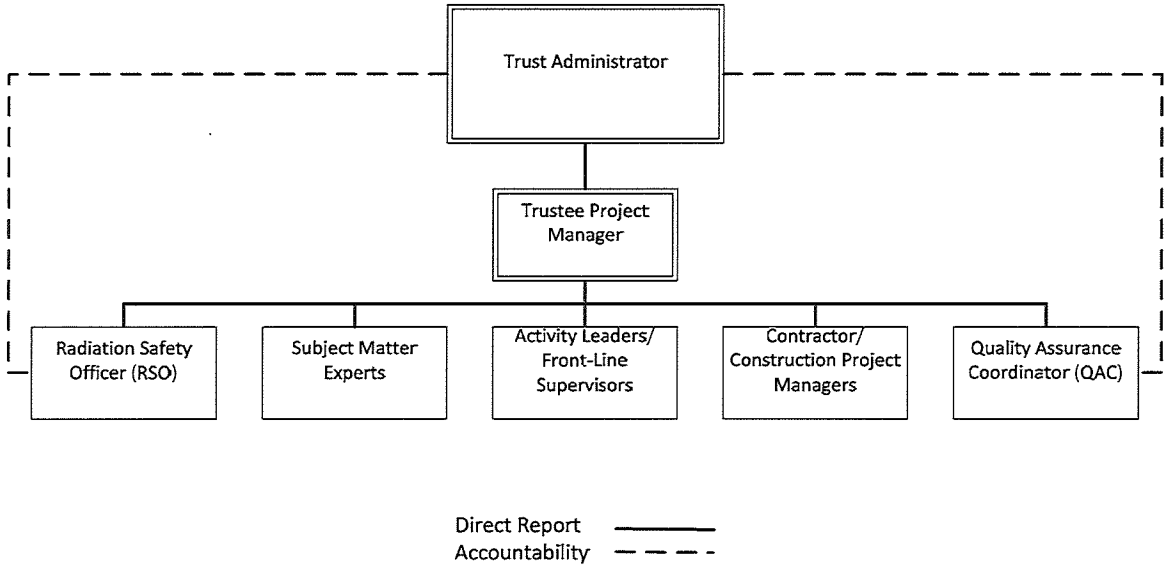
Trustee: Environmental Properties Management (EPM), the Trustee identified in the January 26, 2011, Consent Decree and Environmental Settlement Agreement and the February 14, 2011, Environmental Response Trust Agreement (Cimarron). The Trustee is the administrator of the CERT and functions as the licensee on behalf of the Trust.

3.0 ORGANIZATIONAL STRUCTURE AND RESPONSIBILITIES

This section provides the structure of the organization as it relates to the QA program. The duties, and responsibilities of the positions within this organization, down to the first-line supervisory level, are described in this Section. Personnel responsibilities for the review and approval of plans and procedures are listed in Section 5 of this QAPP.

3.1 ORGANIZATION CHART

The Organization Chart for the CERT is presented below:



3.2 DUTIES AND RESPONSIBILITIES

3.2.1 Trust Administrator

The Trust Administrator is responsible for the management of Trust assets and provides the resources needed to complete the decommissioning of the site. The Trust Administrator monitors

and reports the financial status of the Trust accounts. The Trust Administrator is responsible for the preparation of periodic decommissioning funding cost estimates and annual budgets.

The Trust Administrator provides support for quality assurance and radiation safety functions at the Site; the . The Trust Administrator is also responsible for the review and approval of the QAPP and the Radiation Protection Plan (RPP).

3.2.2 Trustee Project Manager

The Trustee Project Manager (Trustee PM) is responsible for overseeing the construction and operation of decommissioning systems, the implementation of radiation safety, industrial safety and health, quality assurance, and environmental compliance programs. The Trustee PM is responsible for ensuring that all personnel performing decommissioning activities, or working in radiation protection, safety and health, quality assurance, or environmental compliance functions receive training and have the skills and experience require to perform those functions.

The Trustee PM shall ensure that the performance of quality-critical activities is (a) prescribed in documented instructions, procedures, and drawings; (b) accomplished through implementation of these documents, and (c) documented in accordance with this QAPP. The Trustee PM is also responsible for review and approval of quality-critical plans.

3.2.3 Radiation Safety Officer

The Radiation Safety Officer (RSO) is responsible for maintenance and implementation of the radiation protection program. A list of the Radiation Protection responsibilities of the RSO is provided in the RPP.

3.2.4 Quality Assurance Coordinator

The QAC is responsible for the maintenance and implementation of the quality assurance program and has authority to go directly to the Trustee PM or the Trust Administrator to resolve quality issues if needed.

The QAC performs or schedules periodic and/or ad hoc audits and observations of all decommissioning and program management functions. The QAC is also responsible to perform periodic evaluations of the effectiveness of the quality assurance program and to ensure that all personnel performing quality-critical tasks have received the appropriate level of training on the Site-specific quality assurance program. The QAC attends Site ALARA Committee meetings.

3.2.5 Subject Matter Expert

A subject matter expert (SME) is a knowledgeable and experienced individual who uses his or her expertise in a specific discipline to review and approve plans for quality-critical work from a technical perspective and to determine the qualification of personnel to perform quality-critical work. The SME assists in identifying and applying critical knowledge relevant to the project and works to ensure that project objectives are relevant and valid.

3.2.6 Construction Project Managers

Construction Project Managers (Construction PMs) will be responsible for each phase of construction (e.g., well installation, utility & foundation installation, trench installation, construction of the WATF building, etc.), and will report to the EPC Lead. Contracts will include the scope of work, design and specifications, and cost and schedule provisions for each of these phases. Some phases may involve multiple contracts and contractors; for instance, the fabrication and procurement of ion exchange systems may be contracted separately from the fabrication and installation of the resin processing equipment. Construction PMs will confirm that all personnel working under contracts for their phase of work have received the appropriate training and are qualified to perform the tasks they have been assigned. Construction PMs will be responsible for monitoring the schedule, cost, and quality of their respective projects.

3.2.7 Activity Leader

Activity Leaders (ALs) are supervisors of crews performing non-routine quality critical work at the Site. ALs are responsible for the implementation of activity plans and the procurement of services and materials needed for the activities they oversee. ALs will ensure that all personnel performing work are familiar with the activity plan under which the work is being performed, and

that they have received the training needed and are qualified to perform the tasks for which they are responsible. ALs are responsible for monitoring the schedule and quality of project work.

3.2.8 Front-Line Supervisors

Front-Line Supervisors will be responsible for the performance of routine quality critical work performed during remediation operations. Front-Line Supervisors ensure that personnel performing work are familiar with the applicable work instructions (including procedures and desk instructions), have received required training, and are qualified to perform the tasks for which they are responsible. Front-Line Supervisors are responsible for monitoring the schedule, cost, and quality of project work.

3.2.9 All Project Personnel

All personnel are encouraged to maintain the level of quality required by plans, procedures, and instructions. In addition, personnel are encouraged to be attentive to any quality issues that may appear in the work of their peers, suppliers, contractors, and subcontractors. A consistent and exemplary level of quality can only be obtained through vigilant attention to the whole of the work, not just the pieces for which an individual is directly responsible.

All personnel are responsible to:

- Maintain familiarity with the applicable requirements of the QA program, and maintaining a personal commitment to implementing the QA program requirements in their everyday work.
- Identify opportunities for quality improvement.
- Conscientiously use stop work authority as needed to mitigate risks to safety, security, or quality.

3.3 EXISTING ORGANIZATIONAL UNITS

As Trustee, EPM delegates and manages responsibility for the quality-critical work through contractors and subcontractors. Contractors and subcontractors who perform specific aspects of

quality-critical work are considered "Organizational Units" per NUREG-1757. This section describes the unit-specific responsibilities and management structures that currently exist at the site.

3.3.1 Radiation Protection

The Radiation Protection unit is responsible for the implementation of the radiation protection program as defined in the RPP and associated procedures and desk instructions. The Radiation Protection Unit reports to the RSO, who reports directly to the Trustee PM, with an indirect reporting relationship with the Trust Administrator.

3.3.2 Safety and Health

The Safety and Health unit is responsible for the implementation of the site-specific safety and health program as defined in the Safety & Health Plan. The Safety and Health unit reports directly to the Contractor's management, with an indirect reporting relationship with the Trustee PM.

3.3.3 Quality Assurance

The Quality Assurance unit is responsible for the implementation of this QA program. The Quality Assurance unit reports to the QAC, who reports directly to the Trustee PM, with an indirect reporting relationship with the Trust Administrator.

3.3.4 Groundwater Remediation Design

The Groundwater Remediation Design unit is responsible for the design of groundwater extraction and delivery systems, treated water injection systems, in-process groundwater monitoring, and discharge monitoring. The Groundwater Remediation Design unit is also responsible for applying for and establishing procedures for operation of extraction and injection systems and for complying with all required environmental permits. The Groundwater Remediation Design unit reports to a Contractor Project Manager, who reports directly to the Trustee PM.

3.3.5 Groundwater Treatment Design

The Groundwater Treatment Design unit is responsible for the design of facilities for groundwater treatment, water treatment systems that remove uranium from groundwater by ion exchange and nitrate by biodenitrification, systems for processing and packaging wastes produced by water treatment, and waste storage facilities. The Groundwater Treatment Design unit is also responsible for establishing procedures for in-process treatment system operation and monitoring and waste processing and packaging. The Groundwater Treatment Design unit reports to a Contractor Project Manager, who reports directly to the Trustee PM.

3.3.6 Environmental Media Sampling

The Environmental Media Sampling unit is responsible for the collection, packaging, and shipping of samples of environmental media for laboratory analysis. The Environmental Media Sampling unit also assists the Trustee PM in overseeing site maintenance performed by contractors and/or subcontractors, much of which may not be quality-critical work. The Environmental Media Sampling unit is overseen by an AL, who reports to the Trustee PM.

3.4 FUTURE ORGANIZATIONAL UNITS

Before fabrication of water treatment systems and installation of groundwater remediation infrastructure begins, the roles and management structures of other organizational units will be defined. Examples of anticipated organizational units include, but are not limited, to:

- Groundwater Extraction and Injection System Construction
- Groundwater Treatment System Construction
- Groundwater Extraction and Injection Operation and Monitoring
- Groundwater Treatment Operation and Monitoring
- Waste Management

4.0 QUALIFICATIONS AND TRAINING OF PERSONNEL

Personnel responsible for performing activities affecting quality shall be provided training and instruction as described in this section. Personnel will maintain proficiency by retraining, reexamining, and recertifying, or by periodic performance reviews, as appropriate. Continual training will be conducted, as needed, to maintain awareness of events and issues that could affect quality.

Certain training will also be provided to site personnel who perform non-quality-critical work at the site (e.g., site maintenance).

Training and qualification records will be maintained by the QAC.

4.1 PERSONNEL TRAINING

All training will be documented. Guidance for the content and frequency of QAPP training is provided in QAIP 4.3. Instructions for documentation of training and task qualification is provided in QAIP 4.4.

4.1.1 Management Personnel

Management personnel receive training on the QAPP, which is updated annually and upon revision of the QAPP.

4.1.2 Field Supervisors and Activity Leaders

Activity Leaders and Front-Line Supervisors are required to complete the following training:

- The provisions of the QAPP that are relevant to the work that will be performed
- Implementation and documentation of applicable QAIPs
- The level of Radiation Safety Training required by the Radiation Safety Program, based on the work that will be performed
- Those provisions of the Safety and Health Program that are relevant to the work that will be performed

- Those provisions of the Sampling and Analysis Plan that are relevant to the work that will be performed
- Implementation and documentation of applicable Sampling and Analysis Procedures

4.1.3 Technical Personnel

Persons performing technical work on quality-critical activities (e.g., sampling, data analysis, design) are consider Technical Personnel. Technical Personnel will receive training on those portions of the QAPP, RPP, SAP, and S&H programs relevant to the work that will be performed.

4.1.4 Radiation Protection Personnel

Radiation Safety Training for radiation protection personnel is defined in the RPP. Radiation protection personnel will also receive training on those portions of the RPP, SAP, and S&H programs that are relevant to the work that will be performed.

4.1.5 All Site Personnel

All personnel who perform quality-critical work on the Cimarron Site will receive training on those portions of the QAPP, RPP, SAP, and S&H programs that are relevant to the work that will be performed.

4.1.6 Retraining

Retraining will be required as follows:

- Radiation Safety Training (all levels) – minimum annually; when plan is revised; or as needed (determined by the RSO).
- Quality Assurance Program Plan - minimum annually; when plan is revised; or as needed (determined by the QAC).
- Safety and Health Program - minimum annually; when plan is revised; or as needed (determined by the Trustee PM or QAC).
- Retraining requirements for procedures and desk instructions will be determined by the Trustee PM, QAC, RSO, or SME.

4.2 QUALIFICATIONS

The following sections define personnel qualification requirements. Section 7 of this QAPP establishes a program for the evaluation and qualifications of contractors and subcontractors (i.e., Vendor Qualifications).

4.2.1 Lead Auditors and Inspectors

Auditors for internal audits and assessments, as well as for external audits of laboratories and other service providers whose work is critical to quality, must be approved by the QAC. The Trustee PM may designate personnel for these functions with a written justification of their qualifications for an audit or assessment.

Personnel performing inspections and/or observations need not be approved Auditors, and may be qualified based on their skills, experience, or task specific training, as approved by the QAC and/or the Trustee PM.

4.2.2 Technical Personnel

Qualification requirements for technical personnel who work on quality activities is dependent upon the type of technical work being performed. Qualifications will be determined by:

- Trustee Project Manager
- Quality Assurance Coordinator
- Subject Matter Expert (for compliance with technical work and/or activity plans)

4.2.3 Radiation Protection Personnel

The qualifications for radiation protection personnel will be defined and documented in accordance with the RPP.

4.2.4 Personnel Performing Quality-Critical Work

Qualification requirements for personnel who perform quality-critical work on the Cimarron Project will be verified by their supervisors. Personnel qualification requirements may be specified in procurement documents (Section 7.0).

4.3 DOCUMENTATION OF TRAINING

Documentation of all formal training and job qualification programs shall include attendees, date of attendance, and the objectives and content of the program. Documentation of training to implement plans and procedures, as well as task qualification, must be documented and include the revision of the plan or procedure which the individual is qualified to perform.

4.4 EVALUATION OF WORK PERFORMANCE

The Trustee PM will be responsible for evaluation of work performance through inspections or assessments. Inspections may include the review of records that demonstrate that items received, or work performed complied with requirements. Assessments may consist of observations of work being performed to determine compliance with requirements. The Trustee PM may delegate inspections or assessments to SMEs, as appropriate. Work performance evaluation will include consideration of the following:

- Qualification of personnel performing work
- Compliance with work instructions
- Safety performance
- Quality of work
- Documentation of work performed
- Ability to meet deadlines

5.0 OPERATING PROCEDURES AND INSTRUCTIONS

Requirements for the performance of routine activities are provided in written operating procedures and instructions. Where applicable, instructions, procedures, and drawings shall include quantitative acceptance criteria (such as those pertaining to dimensions, tolerances, and operating limits) and qualitative acceptance criteria (such as workmanship samples) as criteria for evaluation of the quality of work performed. Monitoring for compliance with quality-critical documents may be conducted at any time by the QAC (or designee).

5.1 RADIATION PROTECTION PROGRAM PROCEDURES

Radiation protection procedures have been developed to provide consistent, effective performance of radiation protection activities. Desk Instructions provide guidance on radiation protection program implementation or to clarify program implementation expectations from the RSO.

5.2 SAFETY AND HEALTH PLAN

The Safety and Health Plan (S&H Plan) describes the non-radiological safety and health program which applies to all personnel who perform work on the Cimarron Site.

5.3 SAMPLING AND ANALYSIS PLAN

The Sampling and Analysis Plan (SAP) specifies sample collection requirements for environmental media and includes sampling requirements for quality assurance quality control (QA/QC) programs. It also specifies sampling equipment decontamination, documentation, sample preparation and shipment, and laboratory analytical methods. Finally, it specifies requirements for groundwater monitoring well installation and abandonment. The SAP tells ***what*** must be done; SAP procedures tell ***how*** these activities are to be performed.

5.4 SAMPLING AND ANALYSIS PROCEDURES (SAPS)

Quality requirements for the collection and analysis of samples of environmental media (including treated groundwater) are provided in SAP Procedures. Procedures for in-process treatment sampling,

groundwater sampling, and effluent sampling will be developed after design drawings and specifications are finalized and/or during the construction phase of decommissioning.

5.5 STANDARD OPERATING PROCEDURES (SOPS)

Where practicable, Standard Operating Procedures related to the operation and maintenance of decommissioning systems will be developed. Examples of operations that will be addressed include:

- Backwash of filters.
- Removal of a resin vessel from the ion exchange system and replacement with a refreshed resin vessel, with redirection of flows within the ion exchange system.
- Processing and packaging spent resin.
- Collection, packaging, and shipping of resin/absorbent mixture for laboratory analysis (may be SAPs.
- Loading LLRW onto trucks for disposal.

5.6 ACTIVITY PLANS

Quality requirements for non-routine activities not subject to specific contracts with contractors or subcontractors will be defined in activity plans. Activity plans include:

- A unique identifier (name) of the activity.
- The objective of the activity.
- Radiological, environmental, and safety & health hazards associated with the work, and actions to mitigate those hazards.
- QA and quality control (QC) requirements and measures to address QA and QC requirements
- Step-by-step work instructions.
- Documentation required to demonstrate successful completion of the activity and compliance with quality requirements, and the distribution/destination of those documents.

5.7 QUALITY ASSURANCE IMPLEMENTING PROCEDURES (QAIPS)

Quality Assurance Implementing Procedures (QAIPs) provide instructions that tell personnel ***how*** to implement the QA program. A list of current revisions of QAIPs is maintained by the QAC.

5.8 CONSTRUCTION WORK

Plans and procedures described in Sections 5.1 through 5.7 apply to work performed at the site through all phases of decommissioning. During the construction phase of decommissioning, contractors will be retained to fabricate, construct, and install groundwater remediation components, water treatment systems, resin processing systems, and the facilities associated with all of these. Quality requirements for construction will not all be addressed in the plans and procedures described in Sections 5.1 through 5.7 above. Additional specifications and requirements (still subject to the requirements of the QAPP) will be presented in contracts, design drawings, and specifications associated with contracts executed only during the construction phase of decommissioning.

5.8.1 Construction Contracts

Construction Contracts may require that the Contractor prepare a site-specific QA program that complies with the CERT QA program. Otherwise, Construction Contractors will be required to follow the CERT QA program.

5.8.2 Construction Execution Specifications

Quality requirements (including quality control requirements) for construction will be provided in standard format such as MasterFormat or referenced to industry-specific Standard Specifications. These requirements will be identified by the Contractor's Subject Matter Expert or Project Manager and communicated through written instructions.

5.8.3 Construction Drawings

Quality requirements (including quality control) may be included on construction drawings. These requirements will be identified by the Contractor's SME or Project Manager and communicated through written instructions.

5.9 INDEPENDENT REVIEW

All plans, procedures, instructions, specifications, and drawings must receive independent review and approval. These documents must also bear a unique identifying number, date, and revision number.

Drawings must also identify the name of the preparer as well as the name of the independent reviewer and the date of the independent review.

5.10 PLAN AND PROCEDURE APPROVAL

The following table provides the requirements for approval of plans and procedures:

Table 5-1

Plan and Procedure Approval Responsibility

Document Description	Trustee Administrator	Trustee PM	RSO	QAC	Safety & Health Manager	Subject Matter Expert(s)	Activity Leader
Radiation Protection Plan	X	X	X	X			
Radiation Protection Procedure			X				
Radiation Protection Desk Instruction			X				
S&H Plan	X	X	X		X		
QAPP	X	X	X	X			
Standard Operating Procedure		X	*As Applicable*	X		X	
Sampling and Analysis Procedure						X	

Activity Plan		X	*As Applicable*	X		*As Applicable*	X
QAIP		X	*As Applicable*	X	*As Applicable*		

5.11 PROGRAM CHANGE

Editorial changes or personnel reassignments of a nonsubstantive nature do not require NRC notification. Where applicable, revisions to the QAPP will be evaluated and/or approved in by the ALARA Committee.

Condition 27(e) of NRC License SNM-928 provides flexibility for the licensee to make changes to the NRC-approved Decommissioning Plan (DP) and the RPP, provided certain constraints are met. A QAIP entitled "Program Change Evaluation Process", provides the process for the review and implementation of such changes to ensure that the license condition requirements have been met.

6.0 DESIGN

The Cimarron QA program defines design as the process of planning and designing quality-critical systems, structures, components, or processes. Design examples include:

- Provisions incorporated into systems for radiation protection control.
- Components/systems for water treatment and waste packaging operations.
- Facilities and processes for collection, packaging, and shipping of samples.
- Review and evaluation of data for design purposes.
- Design of groundwater remediation system installation and operating systems for the collection, transport, and injection of groundwater.
- Fabrication, and installation of groundwater treatment systems and operations.

The purpose of this section is to provide the quality requirements for controlling design work.

Designs must address applicable regulatory requirements and both qualitative and quantitative design requirements by establishing design standards in specifications, drawings, procedures, and/or instructions. Deviation from such standards shall be reviewed and approved by qualified individuals, and approval of deviations shall be documented.

6.1 CONTRACTOR AND SUBCONTRACTOR (VENDOR) DESIGN

EPM uses contractors and subcontractors to perform most design activities. These vendors must be approved in accordance with Section 7.0 of this QAPP. The quality assurance program of the individual vendor must be reviewed and approved by the Trust. The vendor's compliance with its quality assurance program will then constitute compliance with this quality assurance program.

6.2 DESIGN INTERFACES

The Trustee PM will manage design interfaces and provide for coordination among participating design teams.

6.3 DESIGN INPUTS AND OBJECTIVES

The first step in design control is the clear and (if possible) quantifiable definition of the desired outcome, defining the quality-critical objectives. Then those inputs which must be known to develop a design that achieves the desired outcome must be identified. The identification of objectives and design inputs are captured in a Basis of Design generated by the contractor or subcontractor preparing the design.

The Trustee PM will provide for the review of the Basis of Design against the requirements of SNM-928, commitments to the NRC and ODEQ, and other applicable requirements and regulations.

6.4 DESIGN OUTPUTS

Design outputs consist of any combination of written plans or instructions, permit applications (or permits if already issued), illustrations (e.g., figures), design drawings (including notes), and specifications.

6.5 DESIGN REVIEW

All designs shall be subjected to a documented independent review. This review will verify or check the adequacy of the design using alternate or simplified calculation methods, or by performance of a suitable testing program.

The verifying or checking process shall be performed by individuals or groups other than those who generated the original design, but who may be from the same organization. Design documents must be signed by both the preparer and the reviewer.

6.6 DESIGN CHANGES

Design changes, including field changes, shall be subject to the same requirements for review and approval as those applied to the original.

7.0 PROCUREMENT AND CONTROL OF MATERIALS, EQUIPMENT, PARTS AND SERVICES

7.1 PROCUREMENT

7.1.1 Procurement of Materials, Equipment, and Parts

Procurement of quality-critical materials, equipment, and parts (a.k.a. items) from vendors requires inclusion of applicable quality requirements in procurement documents. These include the technical, quality, regulatory, and administrative requirements applicable to the items.

7.1.2 Procurement of Services

Providers of services must be qualified as described in Section 7.1.4, Vendor Qualification. Procurement of quality-critical contractors such as laboratory or engineering design may include adoption of the contractor's quality assurance program.

7.1.3 Requisition

Quality-critical materials must not be requisitioned until it is determined that the supplier can ensure an appropriate level of quality. The requisitioner may require evidence of the supplier's quality assurance program, third party audits, assessments, or certifications of the supplier's capabilities. When this evidence is required, it will be reviewed by the QAC or designee. Satisfactory review of the supplier's documentation (and a physical audit of the supplier's facilities, if appropriate) will be documented and records will be maintained in the CERT repository (reference Section 12.0 of this QAPP).

If an item is an "off the shelf" item of commercial grade, but has quality-critical performance characteristics, those characteristics must be specifically listed on the requisition. The requisitioner will also note on the requisition whether receipt inspection or testing is required prior to acceptance of the item (inspection should be required at a minimum to verify that quality requirements established by the purchase requisition have been met). Cut sheets or specifications

used to select the item, and any specifications or instructions delivered with the item(s), should become part of the procurement file and distributed to the end user as necessary.

7.1.4 Vendor Qualifications

Vendors must be qualified to complete quality-critical work. Qualification may be based on the vendor's submitted statement of qualifications, third party audits, referrals, professional certifications or licensure, or by the review of other information deemed relevant to establish the vendor's qualifications to perform a required scope of work. Vendor qualification may include contract-related requirements (e.g., required insurance or EMR rating).

Records of vendor qualification are maintained by the QAC. Vendor qualification records are retained in the CERT repository.

A Trustee representative may access vendor facilities to perform assessments and inspections. Specific procurement requirements established by the requisitioner may also require the vendor to submit documentation and records that demonstrate the acceptability of the service or equipment provided.

7.1.5 Periodic Vendor Assessment

Each approved vendor's performance is assessed periodically to maintain the vendor's qualification status. Documented vendor reviews are valid for up to three years.

Assessment of the vendors may include reviewing assessment reports conducted by regulatory agencies or other customers. Internally, the assessment may be based on vendor performance, or by physical audit or receipt of a vendor performance questionnaire. Approved vendors may also be re-evaluated when:

- A vendor's performance is considered unacceptable by the Trustee PM or QAC.
- At the discretion of the Trustee PM or QAC, based on a trend of non-conformances, prolonged periods of inactivity, or significant and documented problems with other clients or regulators.
- At the discretion of the Trustee PM or QAC, vendors whose performance is unacceptable may be disqualified or maintained on hold pending successful implementation of corrective action.

7.2 INSPECTION OF ITEMS

The inspection required for an item is specified in procurement documents or an activity plan. The QAPP does not establish specific inspection or assessment requirements or frequencies, but all items are subject to inspection or assessment by the Trustee PM or QAC (or personnel designated by either individual).

A vendor may provide required documentation, or independent inspections may be performed to verify conformance with procurement requirements. When inspection evaluates conformance of an item to specified requirements, the inspection must be documented. Inspection records contain at a minimum the item inspected, date of inspection, inspector, type of observation, results, and either acceptability or, if not acceptable, a description of the nonconformance.

7.3 CONTROL OF MATERIALS

Control of quality-critical materials is required. Examples of these materials include resin and chemicals used in the remediation process, partially processed and processed waste, and potentially contaminated equipment.

Where possible, quality-critical materials must be properly labeled and easily identifiable. The status of such materials must be designated. For instance, spent resin must be identified as such and must be segregated from unused resin to prevent its misuse.

Additionally, all materials should be stored properly in designated locations appropriate for that material. Storage areas should be clearly demarcated and labeled to prevent inadvertent misplacement and/or misuse of quality-critical materials.

8.0 SAMPLING, ANALYSES, MEASUREMENTS, AND PROCESSES

Requirements related to the on-site measurement of radiological contamination and the off-site analysis of dosimeters are addressed in the RPP. The collection and analysis of samples of environmental media, resin, and treated water for off-site analysis, including analysis for concentration of radionuclides, is addressed in the SAP and this QAPP.

8.1 QUALITY CONTROL IN ENVIRONMENTAL AND EFFLUENT SAMPLING

Quality requirements for sampling of environmental media (e.g., solids, liquids, or gases) will vary based on the purpose for conducting the sampling. Quality requirements will be established during design or activity planning. Methods for determining and demonstrating compliance with quality requirements will be addressed in any combination of:

- Design documents
- The Sampling and Analysis Plan and associated procedures
- Activity plans

Methods for determining and demonstrating compliance with quality requirements will be addressed in the SAP and associated procedures.

Quality control procedures for both environmental and effluent sampling shall address the following, as applicable:

- The frequency of duplicates and replicates.
- Chain of custody procedures.
- Calibration of instruments and equipment.
- Measurement and documentation of field parameters as applicable.
- Access requirements based on the physical configuration of the sampling point (sample port, well, etc.) and the type of collector.

- Container type and volume, preservation, and holding times.

8.2 LABORATORY QUALITY CONTROL

Analytical laboratories used by the Trustee will be subject to vendor qualification requirements provided in Section 7.0 of the QAPP. Analytical laboratory qualifications will include the following:

- Review of the laboratory's QA program
- Accreditation by the DEQ (if applicable)

Vendor qualifications for laboratories which perform radiological instrument calibration or dosimeter analysis, will be determined by the RSO. Certification by National Environmental Laboratory Accreditation Program (NELAP) will be required for dosimeter analysis.

Verification & Validation (V&V) requirements in the contracted analytical laboratory's QA program will be reviewed as part of the laboratory's vendor qualification. Accepted methods of data review will be required for analyses performed in accordance with established standard methods. If analysis by methods that are not established standard methods will require independent third-party validation.

Data quality review will be performed by an independent party in accordance with established data quality assessment procedures.

Requirements for verification of on-site measurements (e.g., field parameters) must be approved by the QAC and (if applicable) a SME.

8.3 CONSTRUCTION QUALITY CONTROL

Construction quality will be controlled using the three-phase quality system described below. The purpose of the three-phase system is to require the contractor to plan and schedule quality-critical work to ensure that it is prepared to start each subsequent task.

8.3.1 Construction Submittals

Submittals are required by the contractor to regulate the timely flow of materials to be incorporated into construction work. They are necessary to demonstrate that the proposed materials, etc., comply with the drawings and specifications. All required submittals must be submitted by the contractor in time to allow for the review, approval, procurement, delivery, and performance of the preparatory phase of the "Three Phases of Control", before it is needed for construction.

First Phase – Pre-Construction Meeting

The Pre-Construction Meeting will be performed prior to any construction work, as determined by the Trustee PM or the QAC. The following topics will be reviewed:

- Contract plans and specifications.
- Status of submittal approvals.
- Physical examination of materials.
- Status of preliminary work.
- Procedure/plan for accomplishing work.
- Safety hazard assessment.
- Radiation protection assessment.
- Testing – number of tests; when; where; and nature of recording.
- Identify individuals with QA/QC responsibility.

Second Phase – Initial Inspection

The Initial Inspection will be conducted at the beginning of any phase of construction work and will include the following:

- Check preliminary work (e.g., from previous phase) – verify full compliance.
- Establish level of workmanship.
- Resolve all differences.

- Check safety compliance.
- Check radiation protection compliance.

Third Phase – Follow-up Inspections

Follow-up inspections will be performed daily to ensure that controls continue to provide work which conforms to the drawings and specifications.

8.3.2 Documentation of Construction Controls

All construction quality control activities will be documented as follows:

- Submittals will be classified as: Approved; Approved, Except as Noted; or Disapproved;
- Pre-Construction Meetings will be documented with an agenda and meeting minutes.
- Initial Inspections will be documented on the Daily Construction Quality Control Form.
- Follow-up inspections will be documented on the Daily Construction Quality Control Form.

8.4 PROCESS CONTROL

The Cimarron remediation system – consisting of groundwater extraction, treatment, and discharge and injection systems – will be equipped with a fully-integrated control system providing continuous automated operation under normal conditions. The control system will provide the permissives, trips, and interlocks, along with appropriate redundancies, necessary for safe and reliable operation. Programmable logic controllers (PLCs) will process inputs associated with process instrumentation, equipment status signals, operator commands, and other data sources. The PLCs will also execute automated and manual process commands using analog control loops and binary control functions, in accordance with the control logic established by PLC software programming. Critical interlocks and other functions will be executed via hardwired connection and/or failsafe hardware configurations. A single PLC located in the Western Area Treatment Facility (WATF) control room will serve as the Balance of Plant (BOP) controller, with other PLCs located on self-contained equipment skids serving as distributed process controllers. These PLCs will be subordinate to the BOP controller but will be capable of safely operating their respective processes

independently. The PLCs will also execute alarm functions and collect data for logging purposes. All operational data will be transmitted back to the BOP controller for logging via a central database consisting of a server equipped with a historian software package.

The control system will include human-machine interfaces (HMIs) in the WATF control room and select equipment skid locations to facilitate operator command execution and display the status of process control operators and alarms. The HMIs will also display key operational data. The central (BOP) HMI will provide a geospatial display of well field operational information for both the WA and Burial Area #1 (BA1) systems. The BOP HMI will consist of a computer workstation with panel monitors while the remote HMIs will consist of touchscreen thin clients. The control system will include remote telemetry providing alarm notification (e.g., text messages, e-mail, etc.) and acknowledgement capability (via web-based interface). The web-based interface will also provide remote monitoring, control, and data download capabilities. Local and remote access to the control system will be managed via password-protected permissions established for various personnel roles and access levels.

8.5 DATA QUALITY CONTROL

Data quality control typically applies to off-site testing of samples, material, etc. However, data quality control may also apply to the on-site generation of data, or installation of equipment. Control of tests will be included in SAP procedures and activity plans, or other quality control documents.

Requirements for off-site laboratories are discussed in Section 8.2 above.

8.5.1 On-site Data

Two main categories of laboratory analytical data are geotechnical and chemical/radiological. Geotechnical data, when received, is stored in the CERT repository.

Chemical/radiological data may receive two types of review following receipt. The first is a data quality review in accordance with *National Functional Guidelines for Inorganic Superfund Methods Data Review* (EPA, 2017). The second, when applicable, is a "reasonableness" review

consisting of comparison with historical results from the same location. For radiological analytical data, reasonableness review may also consist of comparison between laboratory analytical results. For example, isotopic concentration data may be compared to isotopic activity to evaluate data acceptability.

Following review, analytical data is uploaded to an EQuIS database. Review-assigned data qualifiers are manually entered in addition to laboratory-assigned data qualifiers.

8.5.2 Geodetic Data

Geodetic data is collected by a licensed surveyor. New data is evaluated by tying in with existing locations. For example, a survey of new monitoring wells should include obtaining the same data for one or more existing monitoring wells. New survey data is included in the CERT repository. A monitoring well inventory and the ArcGIS database are updated based on the new data in the CERT repository.

8.5.3 Radiological Survey Data

Radiological survey data collected on site is managed in accordance with the Cimarron RPP. Electronic copies of radiological survey forms are maintained on the site computer and are uploaded to the CERT repository. Some paper copies may be maintained on site.

8.5.4 Field Measurements

Examples of field measurements collected on site are ground water sampling field parameters and lithologic data obtained during drilling operations. Ground water field parameters are recorded on field parameter forms. Where applicable, field parameters are collected with instruments that are calibrated daily during field work. When practical, processes are established to provide real-time quality control for field measurements. Boring logs and monitoring well completion diagrams are prepared by task-qualified personnel who are familiar with Site geology in accordance with SAP procedures.

9.0 CONTROL OF MEASURING AND TEST EQUIPMENT

The purpose of this section is to assure that tools, gauges, instruments, and other measuring and testing devices used in quality-critical activities are properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits.

Types of measuring and test equipment currently in use includes radiological instruments, water level indicator, and field parameter meters. Instruments that will be in use during groundwater remediation include flow meters, pressure sensors and transducers, and in-line pH meters.

Details regarding control of the groundwater extraction and treatment system are included in Section 8.0 of the Decommissioning Plan. Local and remote access to the control system will be managed via password-protected permissions established for various personnel roles and access levels.

Plant operations will be documented.

9.1 CALIBRATION

Measuring and test equipment requiring calibration must not be used unless the calibration is current. Plans, procedures, and/or designs require verification and documentation of calibration.

Frequency of equipment calibration shall be in accordance with applicable procedures and instructions, as well as manufacturer's recommendations. If applicable, calibration checks shall be performed in accordance with applicable procedures and instructions and manufacturer's recommendations prior to use as specified in SAP procedures or standard operating procedures.

Requirements for calibration and control of radiological instrumentation are provided in the RPP.

The adequacy of supplier controls (e.g. internal calibration) on measuring and test equipment is subject to assessment.

9.2 ADJUSTMENT

Calibrated measuring and test equipment, subject to operation checks, may be adjusted by qualified personnel in accordance with procedures.

9.3 EQUIPMENT INVENTORY

Equipment which impacts quality-critical activities or data (e.g., calibrated instruments) must be marked with a unique identifier, such as a serial number. An inventory of measuring and test equipment owned or controlled by the Trustee must be maintained on site, along with records of calibration.

9.4 OUT-OF-SERVICE EQUIPMENT

When equipment is found to need calibration or repair, it must be taken out of service. Out-of-service equipment must be visibly marked (i.e., tagged) and physically separated from in-service equipment. If the equipment is owned or controlled by the Trustee, the equipment inventory must be updated to reflect the status of the equipment and to maintain control of its use.

10.0 HANDLING, STORAGE, AND SHIPPING

The purpose of this section is to establish measures to control the handling, storage, and shipping of material and equipment in accordance with procedures and instructions.

Handling, storage, and shipping activities includes the proper containerization, preservation, and shipping of environmental samples for analysis. These efforts are controlled through detailed work instructions in plans or procedures.

Qualified contractors and/or subcontractors will provide handling, storage, and shipping services for low level radioactive waste (LLRW) and solid waste. Such contractors and/or subcontractors will be qualified as described in Section 7.0 of this QAPP.

Contaminated materials being shipped for disposal must comply with DOT regulations and disposal facility Waste Acceptance Criteria (WAC). Manifests, and/or bills of lading must document the appropriate packaging and transportation of such materials. A Radiation Protection Procedure will be developed to provide instruction for classification and shipping papers for LLRW.

Handling and storage requirements also apply to materials which possess hazardous characteristics, or which have specific requirements for their handling or storage. For instance, flammable materials must be stored in fire-rated vented cabinets, and liquids which may spontaneously produce vapors may require the use of personnel protective equipment. Materials requiring special handling and/or storage requirements will be identified and labeled, and procedures or other instructions for their handling and/or storage must specify those requirements.

As stated in Section 7.3, all materials should be stored properly in designated locations appropriate for that material. Storage areas should be clearly demarcated and labeled to prevent inadvertent misplacement and/or misuse of quality-critical materials.

11.0 CONTROL OF NONCONFORMING ITEMS AND EQUIPMENT

This QAPP defines nonconformance as any deficiency in characteristic, performance, or documentation that renders the quality of an item or deliverable unacceptable or indeterminate. This includes data that is considered deficient or suspect through failure of sampling, analysis, or data processing procedures.

When items or equipment are evaluated and determined not to comply with quality requirements, they are designated as "nonconforming". Nonconforming items or equipment will be controlled to prevent inadvertent installation or use by labeling, tagging, and/or isolation.

When procedures are not properly followed, that incorrect "performance" is considered a nonconformance. When errors are identified in documentation, those documents are considered nonconforming.

When a nonconformance is identified, the nonconformance shall be documented on the Notice of Deficiency (NOD) form. The NOD describes the nonconformance, identifies the preliminary cause and the immediate corrective action taken, documents the root cause identified during subsequent investigation, and describes the corrective actions that need to implemented to address the nonconformance and prevent future nonconformances.

Deficiency reporting and documentation of the corrective action process are addressed in QAIP 15.1. Section 14.0 provides requirements for corrective actions.

12.0 DOCUMENTS AND RECORDS

This QAPP requires maintenance of a system that produces unequivocal, accurate records that document all quality-critical activities. The purpose of this section is to provide quality requirements for the management of quality-critical documents and records.

A controlled document is a document for which workers are required to access and use only the current revision in performing quality-critical work. This includes plans such as the RPP, the QAPP, and the SAP, activity plans, procedures, desk instructions, and contractual documents .

The Trustee PM is responsible for the maintenance of quality records. Quality records include any document demonstrating that quality-critical work was performed in accordance with requirements specified in contracts, plans, procedures, drawings, or specifications.

Quality records also include records of personnel qualification, training, and radiation exposure. Records fitting this description are classed as Lifetime Records and must be maintained until license termination. For exposure records, the retention period is indefinite.

12.1 QUALITY RECORDS

Records of both ongoing and completed quality-critical activities will be maintained. Examples of quality records include, but are not limited to, the following:

- Plan or procedure revision
- Notices of Deficiency and records of corrective actions
- Records of QA inspections, assessments, surveillances, and audits
- Completed activity plans
- Personnel training and qualification records
- Reports of analytical results
- Radiological surveys
- Procurement documents containing quality requirements and specifications, including laboratory analytical services

- Formal regulatory communications, submittals, permits, and license documents
- Equipment inventory and calibration records
- Licensed material inventory records
- Accident reports
- Intermediate activities or calculations (when needed to validate or substantiate results)
- Records of tracking and control (e.g., chain of custody)
- Field logbooks
- Laboratory notebooks

12.1.1 Records of Analytical Data

This section pertains to quality-critical data obtained from laboratory analysis. QAIP 17.1, "Data Management Procedure" establishes methods to:

- Specify electronic data deliverable formats,
- Establish data review parameters and methods, and
- Assure data are archived as quality records.

This procedure applies to analytical data supplied by contract laboratories, geodetic data collected by licensed surveyors, and field measurements collected during ground water sampling and drilling. However, the procedure may be applied to other data at the discretion of the Trustee Project Manager.

12.2 QUALITY DOCUMENTS

The current version of a plan, procedure, or work instruction which stipulates requirements which must be met, or which directs the performance of quality-critical activities are considered Quality Documents. Quality Documents are typically developed, when required, by Subject Matter Experts delegated by the Trustee PM. The Trustee PM coordinates distribution of Quality Documents.

Quality documents contain the description of how to perform work and the requirements and standards with which the deliverable or product much comply, Quality documents are also considered "Quality Records".

12.3 DOCUMENT CONTROL

Controlled documents specifically required to be maintained by this QAPP include, but are not limited to:

- The QAPP and implementing procedures
- The RPP and implementing procedures
- The SAP and implementing procedures
- The Safety and Health Plan
- Material Control and Accounting Plan
- Standard operating procedures
- Activity plans

The need for revisions to Quality Documents is often identified by personnel performing the work. The necessity for document revision will be determined by Subject Matter Experts with concurrence of the Trustee PM. Logs of current revisions for plans, procedures, and instructions will be maintained.

Personnel performing quality-critical work are required to use the latest approved version of a Quality Document by accessing it from the CERT SharePoint Site or by verifying that a copy already printed is the current revision by checking it against the log of current revisions.

Users rely on the revision number on the cover page of the controlled document to verify their printed version. Consequently, revision of individual pages within a document are not permitted. Document revisions shall be announced to potential users when they become available and the previous revision is archived in the CERT repository.

12.4 DOCUMENT AND RECORD STORAGE

12.4.1 Hard Copies of Controlled Documents

A single hardcopy of controlled documents will be maintained at the Cimarron Site. Hard copies of activity plans and the records of performance will be maintained on site as directed in the associated activity plan; they will be retained on site for the current and previous calendar year.

12.4.2 Electronic Copies of Controlled Documents

Electronic copies of controlled documents are maintained on a digital data storage site (e.g. SharePoint).

12.4.3 CERT Repository

The CERT repository contains electronic copies of controlled documents. The repository is maintained in a central location; files are in .pdf format so the document cannot be inadvertently changed by a user.

12.4.4 Retired Documents

Archived documents will be removed from the SharePoint site and retained in the CERT repository.

12.4.5 Redundant Storage

Redundant storage of records is required; this can take the form of remote electronic storage combined with onsite hardcopy storage. Records that do not need to be immediately accessible may be archived for storage at a remote location as determined by the Trustee PM or QAC.

13.0 AUDITS AND ASSESSMENTS

Assessments and audits evaluate the effectiveness of the Cimarron QA Program. The QAC is responsible for the planning and execution of internal and external audits and assessments for the CERT Trustee. Subject to approval by the QAC, audits may be requested by the Trustee PM, a SME, or the RSO.

13.1 AUDITS

Planned and periodic audits will be conducted to verify compliance and determine the effectiveness of the QA Program. The Trustee PM or the QAC will perform or schedule an audit of the QA Program at least once every three years. QA Program audits consist of both auditing documentation required by the QAPP and associated procedures, but can include review of Quality Documents, Quality Records, and the implementation of the QAPP.

An annual audit of the Radiation Protection Program will be conducted by the QAC, as required by the RPP.

Procedures for audits are in general accordance with NQA-1, and an audit report is issued to the Trustee PM (for internal audits) or to the supplier quality representative. The report will be transmitted with a request to identify corrective actions for reported findings. When applicable, a Notice of Deficiency may also be issued, as described in Section 14.0, "Corrective Actions" below.

The QAC will schedule a return visit or surveillance, or review documentation, to verify corrective actions are complete, after which the audit is closed. Desktop audits may be substituted for on-site audits depending on the complexity of the products and services being supplied.

Third party audits or independent certifications may also be reviewed in lieu of direct auditing.

13.2 SURVEILLANCES

Surveillances will be conducted and documented to focus on issues that were identified as weak in audits, or identified in Notices of Deficiency. Surveillances may be initiated by the Trustee PM, RSO, or the QAC.

13.3 ASSESSMENTS

Management (above or outside the QA organization) will regularly assess the scope, status, and adequacy of, as well as compliance with, the QA program. This will include formal triennial reviews. Follow-up to corrective actions noted in audits and surveillances, and trending/tracking, shall be managed in accordance with Section 14.0 below.

13.4 AUDIT RECORDS

Audit records shall include documentation, where applicable. Management of audit records shall be in accordance with Section 12.0 above.

14.0 CORRECTIVE ACTIONS

14.1 NOTICE OF DEFICIENCY

Corrective action for nonconformances and incidents which qualify as nonconformances is implemented through the "Notice of Deficiency" reporting process. The NOD is used to report conditions adverse to quality, and to report nonconformances related to quality requirements. NODs document stop-work actions initiated by anyone working at the Site, deficiencies in procured items or services, documents, procedure content, or lack of adherence to procedures in the performance of work. NODs document failure to comply with specified requirements. NODs may also document certain safety-related issues.

The adoption of this single reporting mechanism simplifies deficiency reporting and the resolution of issues that impact safety or quality at the site.

This process provides for the prompt identification of conditions adverse to safety or quality, determination of their cause, corrective actions that address the specific conditions adverse to quality, and follow-up. A log of deficiencies and corrective actions is maintained to permit trending analysis if appropriate. The trend analysis can be used to identify timely corrective actions to prevent recurring problems and improve performance, as well as determine effectiveness of the corrective action and need for follow-up. Deficiency reporting and documentation of the corrective action process are controlled by QA Procedure QAIP 15.1.