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QUALITY ASSURANCE MANUAL USGS - YUCCA MOUNTAIN Project

SUPERSEDED
by QMP-5.5
R1 7.28-85

CHAPTER 11 - EXPERIMENT AND RESEARCH CONTROL

SECTION 1 - PREPARATION AND ISSUANCE OF TENTATIVE TECHNICAL PROCEDURES

1. PURPOSE. To provide the requirements and instructions for documentation of any planned experimental and research work that is used to produce data in support of the NNWSI Project license application.
2. SCOPE OF COMPLIANCE. These requirements apply to QA Level I or II site investigations, experiment and research activities that produce data, recommendations, or other bases for characterization of the site. They apply to all USGS personnel, including contractors, assigned by the USGS to perform work as described by the specific work activity.
3. POLICY. In conformance with the requirements of NNWSI-SOP-02-01, measures shall be established to ensure that all activities performed to obtain characteristics or values not previously known for site characterization are identified and performed in accordance with written experiment and research procedures that incorporate the requirements contained in applicable performance criteria. The procedures shall include provisions for assuring that all prerequisites for the given experiment or research activity have been met, that adequate instrumentation is available and used and that the experiment and research activity is performed under suitable environmental conditions. Results shall be documented and evaluated to assure that the requirements have been satisfied. In addition, for Level I and II activities the procedures shall include provisions for assuring that prerequisites for the given experiment have been met, and that necessary monitoring is performed. The prerequisites shall include the following as applicable:
 - a) Calibrated instrumentation;
 - b) Appropriate equipment;
 - c) Trained personnel;
 - d) Condition of equipment and the item under consideration;
 - e) Suitable environmental conditions; and
 - f) Alternative procedures.
4. DEFINITIONS.

EXPERIMENT: Performance of operations that are carried out under controlled conditions to establish characteristics or values not known previously.

RESEARCH: A systematic inquiry or extensive investigation into a subject item or area in order to discover or revise facts, theories, knowledge, etc. Investigations often require the development of new methodology.

TENTATIVE PROCEDURE: A QA controlled document that provides the documentation requirements for conducting research or experimental investigations prior to establishment of final methodology for a given activity.

5. PROCEDURE.

5.1 Basic Documentation - All tentative procedures for QA Level I and II experiments and research activities shall be controlled by the use of logbooks or procedures (or other suitable means to provide uniform documentation of the test, research or experiment). At a minimum, the documentation shall be set up to include the following elements as the test, research or experiment investigation dictates:

- a) Title of the work activities;
- b) Name of qualified individual(s) performing the work activity;
- c) Work activity objectives;
- d) Equipment and materials used;
- e) Calibration requirements including range, accuracy and tolerances;
- f) Prerequisites for the given experiment in Paras. a) - f) of Para. 3; and
- g) Dated signature of the individual(s) making the above entries.

5.2 Additional Documentation - Provisions shall be made to enter the following information as appropriate:

- a) Date and name of individual making the entry;
- b) Description of the experiment or research element attempted;
- c) Conditions which may adversely affect the experiment or research investigation;
- d) Identification of samples used;
- e) Brief listing of results with notation of questionable results;
- f) Any deviation to the tentative work plan as described in Section 5;
- g) Interim conclusions reached, if appropriate; and
- h) Final results and a summary of the outcome of the experiment or research investigation objectives previously listed.

In many cases it may not be possible to assure compliance with the above requirements by means of keeping a log book for the purpose of experiment or research documentation. Accordingly, Attachment 1, or another form patterned after it that includes all the same elements shall be used to document NNWSI-USGS project work described by a tentative procedure. As an alternative the format of this form may be used in a log book. In any case, Sections 1 through 5 of Attachment 1 shall be completed prior to commencing work and entered into the official record (see records section below), even when the remainder of the progress reporting (Section 6) requirement is accomplished by means of the log-book format.

5.2 Document Control - Each tentative technical procedure must be designated by a unique code. To distinguish these procedures from the standard technical procedures, a "TP" shall be placed as the leading code before the regular procedure number. (Example: TP-NNWSI-USGS-HP-99, R0). As for other technical procedures, the appropriate procedure number is obtained by assignment from the QA Office.

5.3.1 The tentative procedure shall be distributed per QMP-6.01 with a copy of the completed Attachment 1 being sent to WMPO Management, WMPO QA, the QASC, the USGS QA Office, and to the work site.

5.3.2 A copy of the tentative procedure, and all supporting documentation shall be filed with the PI for submission to the USGS Records Processing Center as part of the raw data package.

5.4 Tenure of Tentative Procedure - The tentative procedure shall be used until the methodology has reached a mature stage where it is reasonable to expect that a technical procedure (QMP-5.01) can be prepared.

5.4.1 The PI shall be responsible for determining the stage at which the tentative procedure is converted to a technical procedure per QMP-5.01.

5.4.2 A review of all tentative procedures on file and communication with the PI will be made quarterly by the QA Office to determine the status of the procedure's advancement and extended use or conversion to a technical procedure per QMP-5.01.

5.4.3 On discovery by surveillance, etc. of unwarranted extended use of a tentative technical procedure, conflict over its continued use will be first discussed with the Branch Chief and if not resolved will be subject to issuance of a Nonconformance Report.

5.4.3.1 If an activity is completed through the use of a tentative technical procedure, then QA Level I or II data that was collected is not admissible and an NCR shall be written per QMP-15.01. Potential nonconforming conditions of this nature can be averted by converting the tentative procedure to a technical procedure per QMP-5.01.

5.4.4 On conversion to a technical procedure (QMP-5.01), the new technical procedure shall make reference to the appropriate tentative technical procedure which was used as its basis.

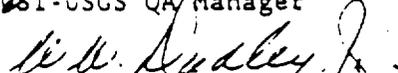
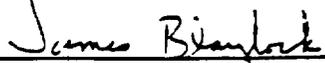
5.5 Review - The tentative technical procedure shall be reviewed and attested by signature per Attachment 1. The reviewers of the first part of the procedure through Part 5.0 shall verify that criteria in items 3, 4 and 5 of Para. 5.0 are technically accurate, complete and clearly stated. This review shall be conducted and documented per QMP-3.07, Technical Review. The remaining part of the procedure shall be reviewed and signed on each page by a peer attesting to the technical content of the daily entries.

6. RECORDS MANAGEMENT. Records associated with this procedure shall be submitted to the USGS Records Processing Center in accordance with QMP-17.01. Records to be submitted include all documents concerning tentative procedures for work supporting the NNWSI.

7. REFERENCES. There are no references to materials external to this manual.

8. ATTACHMENTS. Attachment 1. Documentation of Tentative Procedure form.

9. EFFECTIVE DATE. This procedure shall become effective upon its approval as noted by completion of the following signatures.

 _____ NNWSI-USGS QA Manager	<u>10/17/86</u> _____ Date
 _____ Chief, Branch of NNWSI	<u>10/2/86</u> _____ Date
 _____ USGS Assistant Director For Engineering Geology	<u>10/17/86</u> _____ Date
 _____ Project Quality Manager DOE Waste Management Project Office	<u>10/27/86</u> _____ Date

DOCUMENTATION OF TENTATIVE PROCEDURE

Procedure No. TP-NNWSI-USGS- . . . R0

1.0 PURPOSE. This procedure is prepared to meet the requirements of NNWSI-USGS-QMP-11.01 for documenting the activities to be conducted under the title: _____

2.0 OBJECTIVE. The planned objective is _____

3.0 TENTATIVE WORK PLAN. In summary, the activity will be conducted as follows:

The method includes _____
(Add additional pages as required)

4.0 PERSONNEL. Persons responsible for the work are _____, Principal Investigator and other contributing investigators who may be delegated responsibilities appropriate to their credentials as certified according to procedure NNWSI-USGS-QMP-2.03, Certification of USGS and USGS Contractor Personnel for the NNWSI Project. Key contributing investigators will include _____

4.1 Essential equipment and materials include _____

2 Equipment requiring calibration includes _____

which will be calibrated as follows: _____
(Use reference when possible)

5.0 APPROVAL. In accordance with QA requirements, the above items are subject to review and control. This requirement is satisfied by the following signatures and effective date that is the latest date shown.

Preparer	Date	Reviewer	Date
QA Manager	Date	Chief, Branch of NNWSI	Date

6.0 PERIODIC PROGRESS REPORTING. Within the context of the above described experiment, any special task currently under way includes _____
(Be clear

as to any specific phase of the experiment that is especially important
to the work being reported here)

6.1 As conducted, this element (or task) represents the following deviation(s) or changes from the basic procedure as described on _____
(date)

by _____:
(Author) (Be specific about any changes
or modifications that could become an important part of a procedure)

6.2 Sample identification: _____

6.3 Conditions encountered that could adversely affect this experiment are
(Both inherent and unexpected occurrences)

6.4 Results and/or interim conclusions including those with a negative bearing that provide guidance for continued work include: _____

(Interim conclusions

are an important trail to the final results and to an eventual technical procedure that documents the methods used)

6.5 COMMENTS:

Investigator _____

Date _____

QUALITY ASSURANCE MANUAL

CHAPTER 11 - TEST/EXPERIMENT CONTROL

SECTION 1 - PREPARATION AND ISSUANCE OF TENTATIVE TECHNICAL PROCEDURES

1. PURPOSE. This is to provide the requirements and instructions for documentation of any planned experimental work that is used to produce data in support of the NNWSI Project license application.
2. SCOPE OF COMPLIANCE. These requirements apply to site investigations that produce data, recommendations, or other bases for characterization of the site exclusive of test activities that are not normally performed within the scope of the NNWSI-USGS Project. They apply to all USGS personnel, including contractors, assigned by the USGS to perform work as described by the specific work activity.
3. POLICY. In conformance with the requirements of NNWSI-SOP-02-01, measures shall be established to ensure that all activities performed to obtain characteristics or values not previously known for Site Characterization are identified and performed in accordance with written experiment procedures that incorporate the requirements contained in applicable performance criteria. The procedures shall include provisions for assuring that all prerequisites for the given experiment have been met and that adequate instrumentation is available and used. Results shall be documented and evaluated to assure that the requirements have been satisfied. In addition, for Level I activities the procedures shall include provisions for assuring that prerequisites for the given experiment have been met, and that necessary monitoring is performed. The prerequisites shall include the following as applicable:
 - 3.1. Calibrated instrumentation;
 - 3.2. Appropriate equipment;
 - 3.3. Trained personnel;
 - 3.4. Condition of equipment and the item under consideration;
 - 3.5. Suitable environmental conditions; and
 - 3.6. Alternative procedures.
4. DEFINITIONS.

EXPERIMENT: Performance of operations that are carried out under controlled conditions to establish characteristics or values not known previously.

RESEARCH: A systematic inquiry or extensive investigation into a subject item or area in order to discover or revise facts, theories, knowledge, etc. Investigations often require the development of new methodology.

4.2 Equipment requiring calibration includes _____

_____ which will be calibrated as follows; _____
(Use reference when possible)

5.0 APPROVAL. In accordance with QA requirements, the above items are subject to review and control. This requirement is satisfied by the following signatures and effective date that is the latest date shown.

Preparer	Date	Reviewer	Date
QA Manager	Date	Other	Date

6.0 PERIODIC PROGRESS REPORTING. Within the context of the above described experiment, any special task currently under way includes _____
(Be clear

_____ *as to any specific phase of the experiment that is especially important to the work being reported here)*

6.1 As conducted, this element (or task) represents the following deviation(s) or changes from the basic procedure as described on _____
(date)

by _____: _____
(Author) (Be specific about any changes or modifications that could become an important part of a procedure)

6.2 Sample identification: _____

6.3 Conditions encountered that could adversely affect this experiment are _____
(Both inherent and unexpected occurrences)

8. ATTACHMENTS.

Attachment 1. Form for "Documentation of Tentative Procedure".

9. EFFECTIVE DATE. This procedure shall become effective upon its approval as noted by the USGS Assistant Director's signature.

J. W. Willmon
NNWSI USGS QA Manager

8/9/85
Date

W. W. Dudley, Jr.
NNWSI USGS Project Coordinator

8/9/85
Date

J. R. Rolfs
for USGS Assistant Director
For Engineering Geology

24 Aug 85
Date

QUALITY ASSURANCE MANUAL

CHAPTER 5 - INSTRUCTIONS, PROCEDURES AND DRAWINGS

SECTION 1 - PREPARATION OF TECHNICAL PROCEDURES

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1. **PURPOSE.** This is to provide the requirements for documentation of technical procedures to be prepared for all technical activities that require quality assurance.
 2. **SCOPE OF COMPLIANCE.** These requirements apply to site investigations that produce data, maps, recommendations, or other bases for characterization of the NNWSI site that are performed by the USGS for the NNWSI as standard practices in contrast to those activities determined to be of an experimental nature (QMP-11.01). They apply to all USGS personnel, including contractors, assigned by the USGS to perform work as described by the specific work activity.
 3. **POLICY.** Technical procedures shall be prepared for all Quality Level I or II NNWSI-USGS activities. The procedures shall provide sufficient description of work activities such that a qualified person could reproduce the work and results under the same conditions at a later date. These procedures shall be controlled by the USGS Quality Assurance Office and apply to all technical programs. It is specifically required that the procedures shall:
 - a) Address each of the applicable QA criteria of NQA-1 in accordance with the requirements of NVO-196-17 as defined in Section 4 of this procedure;
 - b) Be prepared and approved prior to implementation of the task;
 - c) Have an independent technical review per QMP-3.07; and
 - d) Be accessible during work at the work location along with all referenced material.
 4. **PROCEDURE.** As controlled documents, technical procedures shall comply with the following requirements and/or guidelines: For special processes, QMP-9.01 specifies additional requirements. When a technical procedure is prepared using a tentative technical procedure (QMP-11.01), the appropriate tentative technical procedure shall be listed in the reference section.
 - 4.1 **Unique Identifying Number** - The identifying number shall be assembled and displayed as described in QMP-6.01. This sequential number shall be obtained from the QA Office or its delegate at the stage of draft preparation.
 - 4.2 **Scope of Compliance** - A statement on compliance requirements shall include both who the procedure concerns, and what data or other output is within the scope of the procedure.

4.3 Responsibilities.

4.3.1 The Principal Investigator (PI) is responsible for identification of the activity and assignment of its QA level, for preparation of appropriate technical procedure(s) in compliance with this procedure and for obtaining the required review(s) in a timely manner.

4.3.2 A contributing investigator performing the work described in the technical procedure as a delegate of the PI shall have the immediate responsibility for complying with the procedure.

4.3.3 The USGS Branch/NHP Chief shall assume ultimate responsibility for the completeness and technical content, for certification of the PI responsible for the technical procedure, selection and certification of reviewers, and for assuring compliance with the rules for any changes that might be required as a deviation from the procedure.

4.3.4 The Chief, Branch of NNWSI shall have overall responsibility for assuring that the technical procedures are prepared in full compliance with the requirements of NVO-196-17 and its SOP's.

4.3.5 The USGS QA Manager is responsible for reviewing and approving all technical procedures for completeness in meeting all applicable 18 NQA-1 Criteria for quality assurance.

4.4 Technical Details - Technical procedures shall provide sufficient description of work activities such that a qualified person performing the task at a later date under the same conditions could reproduce the work. Attachment 1 includes the following required topics in a suggested format that guides the preparer through the necessary input requirements:

- a) Purpose;
- b) Scope of Compliance;
- c) Personnel Responsibilities;
- d) Instruction on How to Perform Work;
- e) Description of Material and Equipment to be Used, Including Limits, Accuracy, Handling and Calibration Needs;
- f) Instructions on How to Operate and Calibrate Equipment and Measures to Maintain the Calibration Records;
- g) Quantitative or Qualitative Acceptance Criteria of Results;
- h) Description or Example of Data Documentation;
- i) Identification, Treatment and Control of Samples;
- j) Records Requirements; and
- k) References.

4.4.1 Any handling, storage, or treatment of samples or instruments shall be detailed in the technical procedure to meet full compliance with QMP-8.01 and QMP-13.01, respectively. Additional topics shall be included as required and applicable.

4.5 Technical Review - The technical review requirement shall be acknowledged by means of the reviewer's signature certifying the review on the approval page of the procedure. This reviewer shall be

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each procedure, the preparer may modify the pre-wording as required; however, no topic listed shall be omitted. For example, if calibration is not required, that fact shall be stated as an indication that calibration was given due consideration.

5. RECORDS MANAGEMENT. Records associated with this procedure shall be submitted to the USGS Records Processing Center in accordance with QMP-17-01. For example, each procedure shall be submitted along with its review comments.

6. REFERENCES.

6.1 ANSI/ASME NQA-1, Quality Assurance Program Requirements for Nuclear Facilities, American Society of Mechanical Engineers, 1983 Edition.

7. ATTACHMENTS.

Attachment 1. Annotated Outline for Preparation of Technical Procedures for the USGS Quality Assurance Program.

8. EFFECTIVE DATE. This procedure shall become effective upon its approval as noted by completion of the following signatures.

<u><i>M. Wilmon</i></u> NNWSI-USGS QA Manager	<u>10/27/86</u> Date
<u><i>W.W. Dudley, Jr.</i></u> Chief, Branch of NNWSI	<u>10/27/86</u> Date
<u><i>James B. Slivins</i></u> USGS Assistant Director For Engineering Geology	<u>10/17/86</u> Date
<u><i>James Blaylock</i></u> Project Quality Manager DOE Waste Management Project Office	<u>10/27/86</u> Date

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Annotated Outline for
Preparation of Technical Procedures
for the USGS Quality Assurance Program

Introduction

The USGS Quality Assurance (QA) Program has been developed to document field, office and laboratory investigations in support of the NNWSI Project. In part, this documentation consists of technical procedures which describe specific work and responsibilities relative to quality assurance. These technical procedures are based on the USGS and NNWSI Project QA requirements.

The NNWSI-USGS Project management directs that the technical procedures shall be uniform and concise, yet complete in content and of similar format. The purpose of this QA Technical Procedure Preparation Form is to facilitate procedure preparation. All QA criteria known to be required have been included in this form and it is imperative that all of the spaces provided on the following pages be completed. Certain pre-written portions have been included for the preparer to get a feel for the input required, or for the responsibility assumed with the procedure. It is desirable to obtain the preparer's input in complete draft form to minimize editorial time and retain the author's impact.

Before completing this form, please review it and become acquainted with its organization. As much explanation or reference material as required may be included; however, it is desirable to have the procedure as brief as possible without sacrificing quality and completeness. For conciseness, standard procedures, discussion of methods, etc., can be referenced whenever possible. Such references can be attached, if short, or be separately available at the work site, as appropriate.

To simplify the preparation of a technical procedure, the preparer might list each of the input carets (< >) next to its appropriate text on a separate page using this form as a guide only. This text can then be readily fitted into the technical procedure format with the word-processing equipment.

It should be kept in mind that a technical procedure is not an operator's manual nor a trainer's manual. It is a document which allows another competent, well-trained individual to follow what was done with sufficient detail to allow this second party to reproduce the work and results under the same conditions at a later date.

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USGS TECHNICAL PROCEDURE <1> , Rev <2> (Document No. Original - Rev 0)

Title <3> _____

1.0 PURPOSE

1.1 To assure the accuracy, validity, and applicability of the methods used to <4>

(Give a brief work description)

this procedure provides a guide for USGS personnel and their contractors to perform the described activity. From this procedure, the Department of Energy (DOE) and the Nuclear Regulatory Commission (NRC) can evaluate these activities for meeting requirements of the NNWSI Project, and competent, trained personnel can reproduce the work.

1.2 This procedure describes the components of the work, the principles of the methods used, and their limits. It also describes the detailed methods to be used for calibration, operation and performance verification of any equipment. In addition, it defines the requirements for data acceptance, documentation, and control; and it provides a means of data traceability.

2.0 SCOPE OF COMPLIANCE

2.1 This procedure applies to all USGS personnel and their contractors who may perform work referred to in Para. 1.1, or use data obtained from this procedure if it is deemed to potentially affect public health and safety as related to a nuclear waste repository.

2.2 All data derived from this procedure that are presented to support licensing of the NNWSI Project repository, and any equipment calibrations or recalibrations that may be required shall be in accordance with this technical procedure. Variations are allowed only if and when this procedure is formally revised, or otherwise modified, as described in Section 8.

3.0 PERSONNEL RESPONSIBILITIES The Principal Investigator (PI) is responsible for assuring full compliance with this procedure. Per QMP-2.02 and QMP-2.03, the PI shall require that all personnel assigned to work under this procedure shall have the necessary technical training, experience, and personal skills, to adequately perform this procedure; and they shall have a working knowledge of the USGS QA Manual. Responsibilities of others including the reviewer(s), contributing investigators, Branch/NHP Chief, QA Office and the Chief, Branch of NNWSI are as described in Para. 4.3, QMP-5.01.

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4.0 DETAILED PROCEDURE

<5>

(Introduce the work by relating how it contributes to the NNWSI Project.)

4.1 Objective: <6>

(What will be accomplished by this procedure?)

4.2 Methods Used: <7>

(Organize and summarize the methods used, referencing input where possible. Be complete and add as many pages and subheadings as necessary.)

4.3 Alternative Method(s) Considered: <8>

(Any similar systems or methods based on different principles to obtain the same objectives and why they were not chosen.)

4.4 Materials/Equipment Required: <9>

(List all equipment and materials including special or unique items needed for this procedure. For equipment or materials, state accuracy or operating range and any handling, storage and shipping requirements per QMP-13.01.)

4.5 Assumptions Affecting the Procedure: <10>

(Assumptions concerning design, performance and interpretation; to be referenced when possible)

4.6 Data Information: <11> _____
(What type of data comes from this procedure
and what form is it in?)

4.6.1 Quantitative/Qualitative Criteria: <12> _____
(Specify quantitative
criteria (Examples: tolerances, operating limits) and qualitative
criteria (Example: comparative samples) as appropriate against which
job performance or completion can be evaluated.)

4.7 Limitations: <13> _____
(List any constraints that might affect the results
obtained including 1) those of equipment - frequency response, pres-
sure limits, drill accuracy, flow rates, depth limits, etc., 2) phy-
sical barriers - accessibility, depth limits, electronic noise, etc.,
and 3) emerging technology including state of the art of equipment.)

<14> 4.8 Other (_____): _____
(Anything pertinent but not covered above such as interfaces,
hold points, special process requirements, drawings per QMP-5.02 etc.)

5.0 CALIBRATION REQUIREMENTS. Calibration <15> (is/is not) required as a
part of this technical procedure. When calibrations are required, all
instruments and methods when applicable, will be calibrated in compliance
with the Instrument Calibration Procedure (NWSI-USGS-QMP-12.01) prior to
obtaining data that will be cited to support licensing the NWSI Project.
(When the answer indicates no calibrations are required, please skip to
Section 6.0.)

5.1 Calibration Responsibility: The PI is responsible for calibrations
required by this procedure. Calibration will be in accordance with
procedures described or referenced in Para. 5.2. Maintenance of all
calibration records described in Para. 5.3 may be done by a
contributing investigator under the direct supervision of the PI.

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5.2 Calibration Procedure: <16>

*(List the instruments/methods that
require calibration)*

5.2.1 Calibration of the <17>

*(Summarize the procedure(s) for each
of the instruments and methods listed in Para. 5.2. State
frequency of required calibration.)*

5.3 Calibration Records: Calibration data will be entered in a notebook or other organized documentation. A field notebook will be used if the test equipment is used in the field. These notebooks or other documents shall be maintained as described in the Document Control Procedure (NNWSI-USGS-QMP-6.01) and stored in accordance with the QA Records Management Procedure (NNWSI-USGS-QMP-17.01). Minimum data will include instrument type, its identification and location, calibration procedure used, its date, the standard used, its range and accuracy, recalibration due date, responsible division subunit, any pertinent observations and the name of the person calibrating the instrument. Calibration entries shall be signed and dated by the person performing the calibration and filed with the QA Office.

5.4 Labeling of Equipment Calibration Status: In compliance with NNWSI-USGS-QMP-12.01, a sticker will be affixed to each piece of equipment used in this procedure denoting the calibration status according to one of the following three categories:

- a) Equipment identification, date calibrated, date recalibration is due, procedure number and calibrator;
- b) Equipment identification, "OPERATOR TO CALIBRATE", and the procedure number; or
- c) Equipment identification and "NO CALIBRATION REQUIRED".

6.0 IDENTIFICATION AND CONTROL OF SAMPLES. Samples <18> (will be/will not be) collected as part of this procedure. (If there are no samples, skip to section 7.0.)

<19> 6.1 Sample Identification: As part of the data records and documentation, and in compliance with QMP-8.01, all samples will be identified as follows:

(State how samples are marked.)

<20> 6.2 Control and Storage: In compliance with QMP-8.01, the collected and identified samples shall reside in the custody of _____ who shall store them <21> _____ (State where samples are stored, and their eventual disposition.)

<22> 6.3 Special Treatment: _____ (Identify and explain any special treatment/processing that is required due to time, moisture, temperature, oxidation, dehydration, etc.)

7.0 QUALITY ASSURANCE RECORDS. All information collected and recorded under this procedure that is to be used in support of the NNWSI Project licensing process is required to be a part of the official USGS record. Input needed to process the information as a record includes: title or description, subject, originator, date of the document, and whether it is an original, a revision or an addendum.

<23> Specific items from this procedure that will constitute a record are _____ (List all forms, notebooks, paper or magnetic data recording tapes, etc.)

7.1 Notebooks or other organized documentation will be prepared as appropriate by the PI or a contributing investigator to record data from this procedure and shall include any information considered by the originator to be pertinent. When data are kept in loose-leaf form, each page will be numbered consecutively and chronologically. All documents will be signed or initialed and dated by the investigator on a daily basis when entries are made. Any revisions will be lined out, initialed, and dated.

7.2 All data collected and the applicability of methods used in this procedure will be reviewed and cosigned by a peer or supervisor of the investigator knowledgeable with the objectives of this procedure in accordance with NNWSI-USGS-QMP-6.01, Para. 4.2.2; and as such are acknowledged by both the investigator and the reviewer to be acceptable and meaningful data that meet appropriate quantitative and qualitative acceptance criteria. Unacceptable data shall be identified appropriate to the form of the data.

8.0 MODIFICATIONS. When field modifications become necessary, per Para. 4.8, QMP-5.01, the PI shall fully document the changes, submit the documentation for the same review signature and distribution process as for the original procedure, and indicate whether the change should result in a subsequent revision to the technical procedure. The documentation will be reviewed within 30 days.

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9.0 REFERENCES CITED.

<24> _____
(Use USGS format. List any tentative technical Procedures that
preceeded this procedure.)

10.0 ATTACHMENTS. The following attachments are included with this technical procedure for the purpose of examples as described.

<25> _____
(List all attached data forms, checklists, equipment brochures, etc.)

11.0 APPROVAL. This technical procedure shall become effective upon its approval as noted by completion of all the following signatures and dates.

Prepared by: <26>	_____	Date	_____
Technical Reviewer: <27>	_____	Date	_____
Branch Chief: <28>	_____	Date	_____
Chief, Branch of NNWSI: W. W. Dudley, Jr.	_____	Date	_____
Quality Assurance: J. R. Willmon	_____	Date	_____

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