NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

TEST PLAN

TITLE: **Data Collection During Well Completion Activities at NC-EWDP-2DB**	REVISION: **0** DATE: **6-20-08** PAGE: **1 of 4**

TEST PLAN NUMBER: **TPN-5.5**	SUPERSEDES: **None**

APPROVAL

6/20/08
Director Date

CONCURRENCE

6/20/08
Geoscience Manager Date

6/20/08
Principal Investigator Date

6/20/08
Quality Assurance Officer Date

1.0 INTRODUCTION

This test plan (TPN) describes limited data collection activities by the Nye County Nuclear Waste Repository Project Office (NWRPO) in well NC-EWDP-2DB (herein referred to as -2DB) during efforts by Inyo County to clean out and complete the existing well with an isolated zone in the Lower Carbonate Aquifer (LCA). Well -2DB is located near US Highway 95, approximately 4 miles west of Lathrop Wells. Inyo County is directly funding and supervising the drilling and completion of -2DB.

The NWRPO believes that by completing -2DB with an isolated zone in the Lower Carbonate Aquifer, it has potential to fill hydrogeologic data gaps in its Early Warning Drilling Program (EWDP) regarding potential flowpaths from Yucca Mountain to residents in Amargosa Valley.

For this reason, the NWRPO has decided to work cooperatively with Inyo County to conduct the following activities at NC-EWDP-2DB:

- Obtain field splits of drill cuttings at regular depth intervals starting below 2,900 ft (or when the Paleozoic bedrock is encountered).
- Geologically log the cuttings.
- Place a representative subsample of the cuttings from each depth interval in chip trays.
- Measure water levels.
- Maintain depth control on drill pipe and casing in the well using the Tubing and Casing Record form found in TP-7.0, *Drill Site Management*.

2.0 PURPOSE AND JUSTIFICATION

Groundwater travel time and the link between the alluvial aquifer and underlying carbonate aquifers in the region between Yucca Mountain and Death Valley at the points of recharge and discharge are issues of concern. Evidence obtained from EWDP drilling suggests an upward movement of water from LCA into the alluvial aquifer in the vicinity of several wells located along Highway 95 south of Yucca Mountain. The completion and future monitoring of -2DB will help characterize this discharge pathway and its effect on potential alluvial aquifer flow and transport pathways from Yucca Mountain to Amargosa Valley.

3.0 SCOPE OF WORK FOR SAMPLING, LOGGING, AND WATER LEVEL MEASUREMENTS

3.1 Responsibilities

The Nye County NWRPO Geoscience Manager (GSM) will be the Principal Investigator (PI) responsible for supervising all technical data collection described in this TPN. The NWRPO designated field representative (NDFR) or designee is responsible for supervising NWRPO field personnel and ensuring that field data collection activities are conducted in accordance with this TPN and other applicable QA plans and procedures. The NDFR will cooperate with Inyo County and its contractors, follow drill site rules, and participate in safety meetings. However, the NDFR will not be responsible for Inyo County drilling-related tasks or data-collection activities, including supervising the drilling contractor. The NDFR will be responsible for collecting and labeling NWRPO drill cuttings for storage, archiving, and geologic logging.

3.2 Data Collection Tasks

The NDFR and field personnel will conduct the following tasks:

1. Maintain a general record of drilling activities in the assigned field scientific notebook. Include information that would affect the representativeness of drill

cuttings. For example, record any applicable borehole caving or drill cuttings return problems as well as the type of drilling fluid and/or lost circulation material used.

2. Obtain representative samples of drill cuttings from regular depth intervals determined by the GSM. These samples will be used for field geologic logging and the filling of plastic chip trays for future reference, as described in the following.

3. Geologically log the drill cuttings following procedures, to the extent possible, specified in TP-8.0, *Field Collection, Logging, and Processing of Borehole Geologic Samples*. Only non-alluvium drill cuttings will be collected, therefore Alluvium Logging Forms are not required. It may not be possible to fill in all fields of the Non-Alluvium Drill Cuttings Logging Form. For example, drilling methods may preclude obtaining meaningful data for sample recovery, sample density, and moisture content; if this is the case, these parameters will be left blank for each depth interval on the form(s). Finally, record reasons in the scientific notebook for not entering data on the forms.

4. For future reference, place a small representative drill cuttings sample from each depth interval in a plastic chip tray. Label the chip tray with the borehole name and each compartment with the appropriate depth interval. If no sample is available, place a marker in the empty compartment. Samples indicated by the GSM or designee will be sent to the SMF for storage and future use by Nye County.

5. Measure groundwater levels in the borehole at times deemed appropriate by the NDFR (note that the Inyo County drill rig runs on a 24 hours per day, 7 days per week schedule). Follow procedures specified in TP-9.9, *Measurement of Groundwater Levels Using Electric Well Sounders.* In the scientific notebook, record borehole and drilling fluid information that would help in interpreting borehole water level measurements.

6. Maintain depth control for drill pipe and casing entering and leaving the borehole using the Tubing and Casing Record form found in TP-7.0.

All data recorded on QA forms and in the field scientific notebook will be reviewed by NWRPO personnel not directly involved in recording the data and submitted to the NWRPO Quality Assurance Records Center with all supporting documentation and metadata.

4.0 HEALTH AND SAFETY

Field safety procedures shall be followed and documented as outlined in the most current version of HSP-1.0, *Independent Scientific Investigations Program Health and Safety Plan for General Field Activities*, or the applicable Site Specific Health and Safety Plan.

5.0 MANAGEMENT

Before conducting work, the NDFR performing the tasks described in this TPN will be trained in the procedures specifically applicable to the equipment and methods used herein. Personnel will document that they have read and understand this TPN and other applicable QA documents.

The QA Officer is responsible for ensuring that this TPN meets QA requirements and that the NDFR is trained in and complies with the requirements of this TPN. The PI is responsible for the preparation, technical review, and revision of this TPN, as well as oversight of its performance.

6.0 REFERENCES

HSP-1.0, *Independent Scientific Investigations Program Health and Safety Plan for General Field Activities*. Health and Safety Plan. Nye County Nuclear Waste Repository Project Office (NWRPO). Pahrump, Nevada.

TP-7.0, *Drill Site Management.* Technical Procedure. NWRPO. Pahrump, NV.

_TP-8.0, *Field Collection, Logging, and Processing of Borehole Geologic Samples*.

_TP-9.9, *Measurement of Groundwater Levels Using Electric Well Sounders.*