NYE County NWRPO -Technical Data Report

RID No.	Transmitter	Org.	Receiver	Org.	Key word1	Title/Description
7407	Gilmore	NWRPO	QARC	Nye	23P	NC-EWDP-23P Alluvium Logging Forms

1

Doc. Date 10/29/2007 **General Doc. Type** QA Program Doc **Keyword2** cuttings

Entry Date 1/30/2008 **Detailed Doc. Type** Alluvium/Non-Alluvium Logging **Keyword3** geology

Data Originator Preparer Kathy Gilmore

Title of Data NC-EWDP-23P Alluvium Logging Forms

Description of Data Drill cuttings logging reports exported from drilling database (NC Drilling v3.6.mdb) in .pdf format (Alluvium Logging Form from 3/9/02 to 7/9/02).

Data Collection Method Samples collected during reverse circulation drilling of 23P.

Data Location(s) NC-EWDP-23P

Data Collection Period(s) 3/9/02 to 7/9/02

Data Source(s) Drill cuttings samples and Nye County NWRPO laboratory data that includes grain size distribution (sieve data) and hydrometer data (silt/clay measurement).

Supporting Data: RIDs 5134, 5527, 6756

Data Censoring Particle size distribution data and USCS Group Name on Alluvium Logging Form. Water Production data for interval 435 to 1340 ft.; data recalculated for interval 435 to 1200 ft. in RID 5527.

Data Processing Data from field logging forms were entered into the drilling database, reviewed, and transmitted to the QARC.

Data Limitations NC-EWDP-23P was drilled using an 8 1/2 in. tricone rock bit with 4-1/2 in. drill pipe and employing reverse circulation (dual-wall) air drilling methods. The near surface (0 to 22.5 ft) alluvial drill cuttings samples are not representative of in situ sediments due to hole erosion and related sample contamination resulting from the use of conventional air circulation drilling methods to start the borehole. Some sample disturbance from in situ conditions in the remaining alluvium is due to several drilling related factors including: 1) sample degradation by the mechanical action of the rotary bit; 2) contamination due to some hole erosion and related sample mixing typical of reverse circulation drilling; and 3) winnowing of fines at the cyclone collector during dry drilling. Major sample disturbance resulting from a sample handling factors present in several other boreholes (NC-EWDP-10S, -22S, and -22PB) was not a factor in this borehole. This was the loss of some of the fine fraction (and relative increase of the coarse fraction) when attempting to homogenize saturated zone samples containing too much water. In addition, minor disturbance may have been introduced into samples by: 1) gravel accumulating on the rotating splitter during wet drilling; 2) unsaturated zone sample homogenization process and sample splitting; 3) loss of fines during pumping and siphoning of clear water from wet bucket samples; and 4) a very minor introduction of wind-blown fines during sample drying.

The Alluvium Logging Form includes preliminary field estimates of grain size distribution for the approximately 1340 ft of alluvium penetrated. The estimates are made on every 2.5 and 5 ft sample intervals and used for preliminary layering information and general planning of wells and screen intervals prior to receipt of laboratory data. These field estimates of grain size distribution should not be considered representative of the geologic samples. However, grain size distribution data determined by laboratory analysis on every second 2.5 ft sample and every 5 ft sample interval are considered representative of the geologic samples. Therefore, particle size distribution and USCS name are censored.

Sample disturbance is considered less in this borehole drilled with reverse circulation methods than in boreholes using conventional circulation (e.g.

NYE County NWRPO -Technical Data Report

RID No.	Transmitter	Org.	Receiver	Org.	Key word1	Title/Description

NC-EWDP-22PA and -10P). In addition, sample disturbance is considered less in this borehole than in NC-EWDP-22PB drilled with the same reverse circulation methods because major sample handling problems in the saturated zone were avoided.

Governing QA Docs.	TP-8.0, Field Logging and Handling of Borehole Samples, Revision 3, 09/25/01, Section 5.5
Frequency of Transmittal	once per borehole
Direct Questions About Data To-	NWRPO QA Records Center