Technical Data Information Report

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8099.00	Klenke	Nye County NWRPO	QARC	Nye County NWRPO	EWDP

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Document Title/Subject
EWDP Manual Water Level Measurements from January 1, 2011 through December 31, 2011

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Data Description
EWDP Manual Water Level Measurements from January 1, 2011 through December 31, 2011. Data package includes Nye County's Regional Groundwater Elevation Database (RGED V. 6.0_012314.accdb) containing Early Warning Drilling Program (EWDP) manual water level measurements, from January 1, 2011 through December 31, 2011, field forms, hydrographs (available on request) and exported data from database - posted to nyecounty.com website as "rid8099.xlsx".

Data Collection Method
NWRPO calibrated electric water level sounders in accordance with, Technical Procedure TP-9.9 Revision 4, Measurement of Groundwater Levels Using Electric Well Sounders dated 8/6/09.

Data Collection Location
EWDP Wells: 1DX Shallow,1DX Deep, 2DB recompleted 7/08, 3D, 4PA, 4PB, 5SB, 7S, 12PA, 12PB, 12PC, 13P, 15P, 16P, 19P, 24P, 24PB, 27P, 28P, 29P, 32P Shallow, 32P Intermediate, 32P deep, 33P Shallow, 33P Intermediate, 33P Deep, and Washburn Deep. Note: all EWDP well surveys were performed by the YMP Site Facilities Department /Field Engineering, Survey Section, with all elevations reported in NGVD-29. Therefore all EWDP water levels in this submittal and all previous EWDP Water Data Submittals (RID 6360, 6631, 7044, 7122, 7618, and 7904) have been reported in NGVD-29.

Data Collection Period
1/1/2011 – 12/31/2011

Data Sources
1) Department of Energy (DOE) Management and Operating Contractor (M&O) derived latitude and longitude for well location and elevation data for well pad elevation; 2) Depth to groundwater measured with electric water level sounders as recorded either in the Scientific Notebook (SNB) dedicated to each well, EWDP Groundwater Level SNB #144 (RID6257.01), EWDP Westbay Instrumented Wells SNB #177 (RID 8144), Site 22 Tracer Test SNBs #166 (RID 7322.01)and #181 RID 7322.03), and/or on the NWRPO Water Level Measurement Field Form (Form TP-9.9-1 Rev 1 dated 7/21/09 ; 3) NWRPO approved Well Completion Diagrams for each EWDP well for casing type, diameter, and measuring point stickup (as established with engineers steel tape and recorded in Scientific Notebook).
Supporting Data: Metadata for prior submittals of manual water level measurements in EWDP wells (RIDs, 6360, 6631, 7044, 7122, 7618, and 7904).

Data Censoring
No data were censored for the period of this submittal.

Data Processing
Routinely, data processing consists of calculations made in the Microsoft Access database (RGED v.6.0_012314.accdb) and exports made from the database to Microsoft Excel. Additionally, data are evaluated through the use of hydrographs to determine whether anomalous data exist. Anomalous data are investigated (through scientific notebooks, earthquake records, etc.) to determine the source of the anomaly. If the anomaly cannot be explained, the data are censored.

Data Limitations	The water level elevations presented must be considered approximate because of the potential error in the GPS-based elevation of the land surface at the well site which is believed to be on the order of +/- 1.75 ft. according to work performed by the Center for Nuclear Waste Regulatory Analyses. The potential error in the GPS-based elevations does not affect the depth to water nor the absolute change in water levels over time that may be calculated using the elevation datum for land surface. The potential error may, however, result in limitations in the use of these data for the calculation of hydraulic gradients between wells with the error induced in such calculations being inversely proportional to the distance between the two wells being used to perform the calculation. Water level measurements in well 2DB recompleted 7/08, may not represent water levels of the Paleozoic carbonate aquifer completion as expected. Problems encountered after the completion of the piezometer in the Paleozoic carbonate, primarily clay swelling and/or caving of the open hole completion, likely have isolated the production casing from the aquifer. See RID 7559 for more details. Water levels in wells 4PA and 4PB may have been affected by the drilling of wells 4PC –abandoned (6/2/08 – 7/10/08), and were affected by the drilling of well 4PD (7/12/08 – 5/5/10), and by pump tests conducted on 4PD (8/30/10 – 9/24/10 at approximately 150 GPM). These wells are all located on the same site and are within approximately 50 ft of each other. See 4PC SNB #151, 4PD SNBs #182, #183, and #186, and SNB #174 for additional information. The DRI-AEA Deep Well Sampler was removed from 4PA on 1/23/09, see SNB #186, p.9, and http://www.dri.edu/images/stories/editors/cermeditor/deep_well_sampling.pdf. Water level measurements in well 32P shallow piezometer may be impacted by the presence of polymer-based drilling fluids. These drilling fluids were used in the drilling of the now abandoned USW VA-3 borehole, which was situated approximately 50 feet south of 32P. The borehole was drilled by a Department of Energy contractor, under the Probabilistic Volcanic Hazard Analysis program for the Yucca Mountain project, on magnetic anomaly “g”, with a modified conventional circulation system utilizing Baroid EZ Mud polymer. Water level measurements in well 33P shallow piezometer may be impacted by the presence of polymer-based drilling fluids. The initial borehole for well NC-EWDP-33P was drilled by Department of Energy contractors as borehole USW VA-5, and used a modified conventional circulation system utilizing Baroid EZ Mud polymer. Details of the completion can be found in RID 7009, “NC-EWDP-33P Field”As-Built” Well Completion and Wellhead Protection Diagrams.” Water levels have been steadily declining in this piezometer since it was developed by airlifting (7/17/07 to 9/20/07), and appear to indicate disequilibrium with the conterminous potentiometric surface. Water levels in 33P Deep, 33P intermediate and 33P shallow may have been affected by the development of well GWE-33PA located approximately 70 feet to the NE, and pumped from 5/13/11 to 5/14/ 11, with approximately 6650 gallons pumped. GWE3 3PA was drilled and airlifted from 5/24/10 to 5/26/10. Water levels were not taken in wells 10P shallow, 10P deep,18P, 22PA shallow, 22PA deep, 22PB shallow, 22PB deep, 22PC shallow, 22PC deep, 22S-Z2, 23P shallow, 23P deep, after 6/7/10, and through the end of this submittal period, due to Yucca Mountain Project site access issues .
Governing QA Docs:	TP-9.9 Rev. 4
Frequency of Transmittal	As necessary
Direct Questions About Data To:	NWRPO QA Records Center