## HLWYM HEmails

**From:** Paul Bertetti
**Sent:** Wednesday, June 14, 2006 4:44 PM
**To:** Jin-Ping Gwo
**Cc:** James Winterle; Andy Campbell; Allen Fetter; Eugene Peters; Jack Guttmann; Lawrence Kokajko; Randall Fedors; Jack Parrott
**Subject:** RE: Report of Unexpected Geologic Condition
**Attachments:** EWDP24Pwellcomp0804.pdf; EWDP24PBwellcomp0306.pdf

Jack,

Some well logging information may be available from Nye County, but the flow information was taken as part of the OSTI work, and as Jack Parrott notes, will not likely be made public by DOE for some time. There are no chemistry data for now, but the well will likely be sampled in the next few months. We do have data from the 24P borehole (in the immediate vicinity of 24PB), but that well was completed at a much shallower depth (see completion diagrams attached). There is no significant difference between 24P water chemistry and that of other waters in western Fortymile Wash.

To me, the issue is not whether DOE's model runs include possible fast flow paths in a few realizations (the model does), but whether the flow system conceptual model is consistent with these observations. I am not sure what the answer is, but we should look more closely at the extent of this high transmissivity zone

Paul

-----Original Message-----
From: Jin-Ping Gwo [mailto:jxg4@nrc.gov]
Sent: Wednesday, June 14, 2006 10:39 AM
To: pbertetti@cnwra.swri.edu; Jack Parrott
Cc: jwinterle@cnwra.swri.edu; Andy Campbell; Allen Fetter; Eugene Peters; Jack Guttmann; Lawrence Kokajko; Randall Fedors
Subject: Re: Report of Unexpected Geologic Condition

Jack,

I have a couple of questions to you regarding the Nye County test at 24PB,

1. Is it possible to request the well logging data and DOE's calculations? We may want to independently analyze these data and calculations. 2. Did DOE's or Nye county's mention any water chemistry measurements? Are they to compare the geochemical signature of the well water with other wells in the area.

Paul,

Can you keep me in the loop of the planned tracer test you mentioned in the team meeting today? I'll be very interested to know if the high flow rate is associated with a larger preferential flow path or just a local either high gradient area or high conductivity zone. Thanks.

Regards,
Jack

Jin-Ping (Jack) Gwo
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Nuclear Regulatory Commission
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>>> Jack Parrott 06/12/2006 5:35 PM >>>
Lawrence,

This morning (6/12/06) DOE (April Gil) informed the NRC OR office of an unexpected geologic condition regarding the groundwater flow rate measured in one of the Nye County groundwater wells south of Yucca Mountain. The well is NC-EWDP-24PB (see location 29P on the attached map). Investigators from LBNL, LANL, and the USGS, working cooperatively with Nye Co., measured flow rates in the section of the well between 730 and 790 ft deep (fractured Bullfrog tuffs) that were higher that had been anticipated. The work was being done under the Technical Work Plan entitled "Field Studies for Determination of Transport Properties of Radioactive Solutes and Colloids using Chemical Analogs," (OSTI-LBNL-TWP-00005). Part of the work under this plan consisted of using a method of flow logging called "Flowing Fluid Electrical Conductively Logging." This method had not been used by the Project before. Later, the higher that anticipated flow rates were confirmed using a different flow logging technique called the "Distributed Thermal Perturbation Log."

While the flow rates measured were higher that expected, the Project's saturated zone group thinks that they may not be inconsistent with the higher end of the range for flow described in the saturated zone models. However, more analysis of the data sets and possibly more modeling work may be needed.

Reports of Unexpected Geologic Conditions that are considered "technically significant" are reported to the ORs under procedure AP-REG-009, "Reportable Geologic Condition." This condition is considered "non-technically significant," but was reported to the ORs as a courtesy. As part of this procedure, a written report of the condition will be formally (by letter) provided to the OR office and a copy will be sent to the State.

Jack

**Hearing Identifier:** HLW_YuccaMountain_Hold_EX
**Email Number:** 1086

**Mail Envelope Properties** (pbertetti@cnwra.swri.edu20060614164400)

**Subject:** RE: Report of Unexpected Geologic Condition
**Sent Date:** 6/14/2006 4:44:10 PM
**Received Date:** 6/14/2006 4:44:00 PM
**From:** Paul Bertetti

**Created By:** pbertetti@cnwra.swri.edu

**Recipients:**
"James Winterle" <jwinterle@cnwra.swri.edu>
Tracking Status: None
"Andy Campbell" <Andy.Campbell@nrc.gov>
Tracking Status: None
"Allen Fetter" <Allen.Fetter@nrc.gov>
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"Eugene Peters" <Eugene.Peters@nrc.gov>
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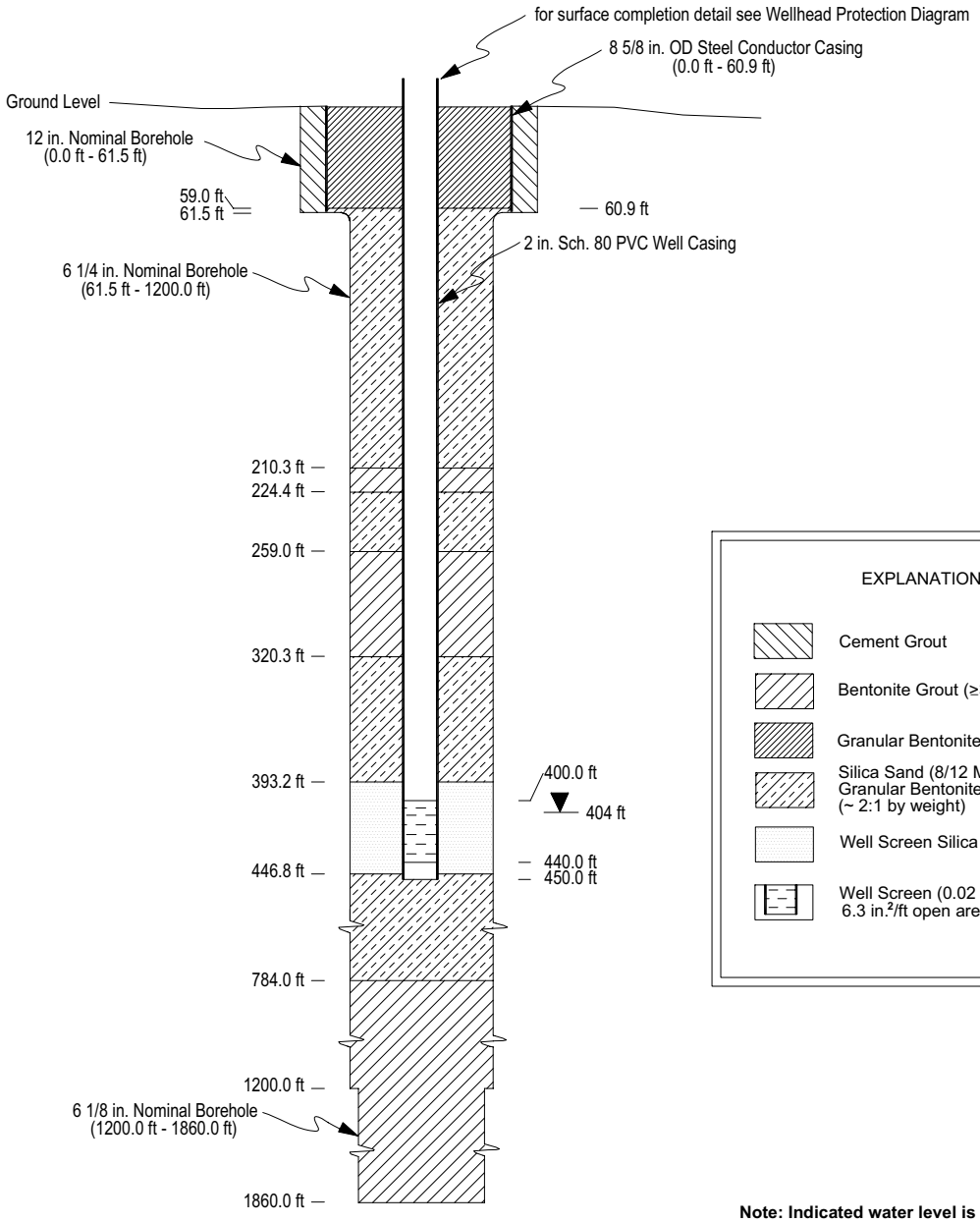
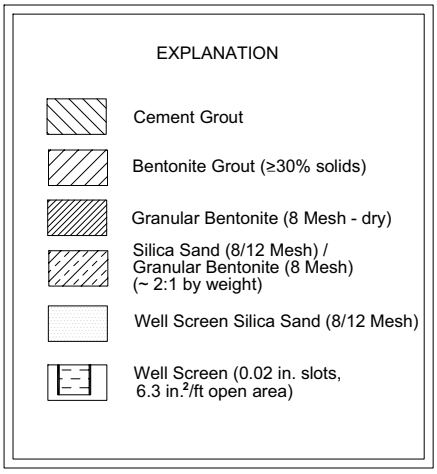
Tracking Status: None
"Randall Fedors" <Randall.Fedors@nrc.gov>
Tracking Status: None
"Jack Parrott" <Jack.Parrott@nrc.gov>
Tracking Status: None
"Jin-Ping Gwo" <Jin-Ping.Gwo@nrc.gov>
Tracking Status: None

**Post Office:**

| **Files** | **Size** | **Date & Time** |
|---|---|---|
| MESSAGE | 3942 | 6/14/2006 4:44:00 PM |
| EWDP24Pwellcomp0804.pdf | 122074 | |
| EWDP24PBwellcomp0306.pdf | 329151 | |

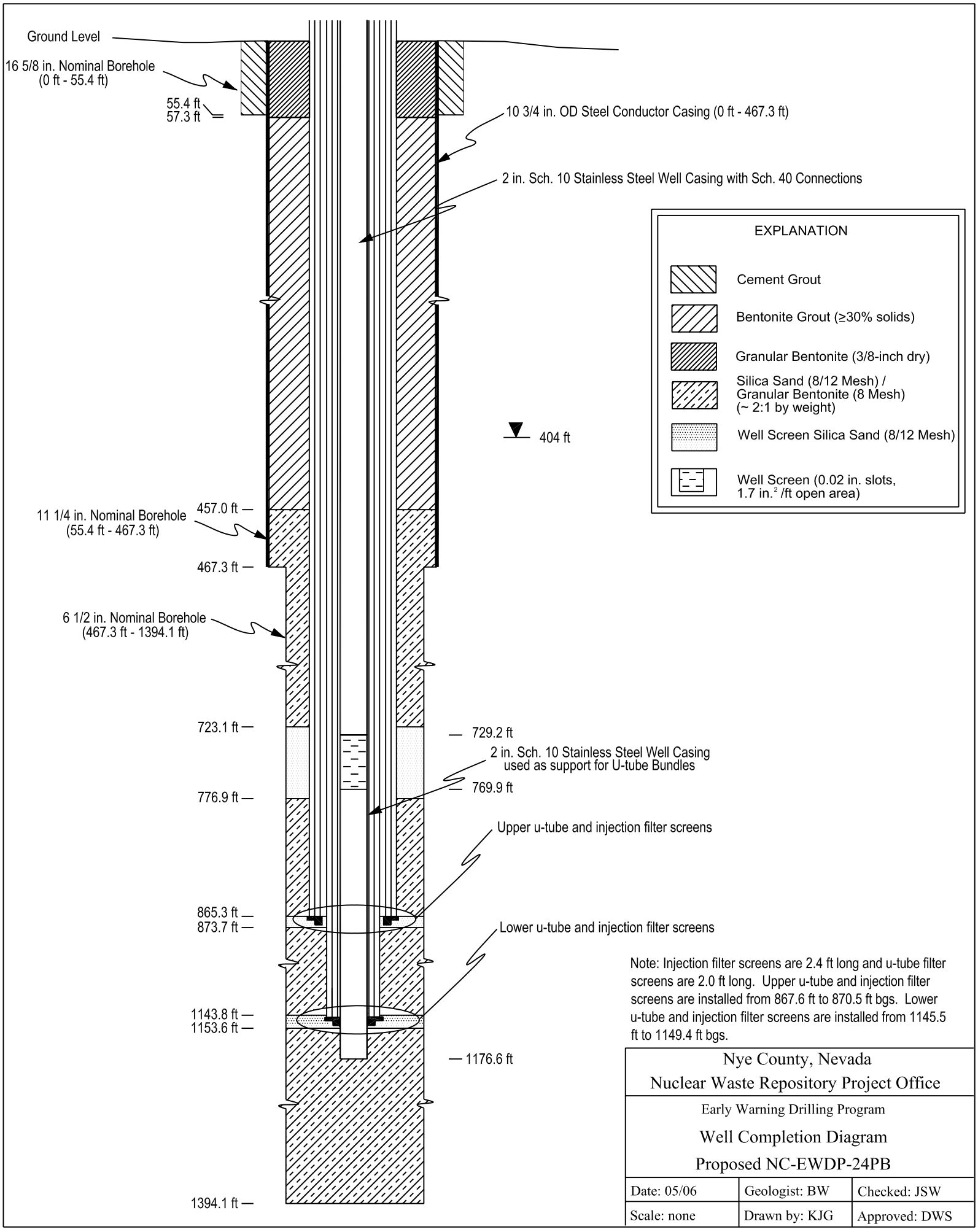
**Options**
**Priority:** Standard
**Return Notification:** No
**Reply Requested:** No
**Sensitivity:** Normal
**Expiration Date:**
**Recipients Received:**




**Note: Indicated water level is approximate open hole water level with borehole drilled to 485 ft.**

| | | |
|---|---|---|
| Nye County, Nevada<br>Nuclear Waste Repository Project Office | | |
| Early Warning Drilling Program<br>Well Completion Diagram<br>NC-EWDP-24P | | |
| Date: 08/04 | Geologist: SL | Checked: JSW |
| Scale: none | Drawn by: KJG | Approved: DPH |




Note: Injection filter screens are 2.4 ft long and u-tube filter screens are 2.0 ft long. Upper u-tube and injection filter screens are installed from 867.6 ft to 870.5 ft bgs. Lower u-tube and injection filter screens are installed from 1145.5 ft to 1149.4 ft bgs.

Nye County, Nevada

Nuclear Waste Repository Project Office

Early Warning Drilling Program

Well Completion Diagram

Proposed NC-EWDP-24PB

| | | |
|---|---|---|
| Date: 05/06 | Geologist: BW | Checked: JSW |
| Scale: none | Drawn by: KJG | Approved: DWS |