February 14, 2002 010917

Nevada Department of Conservation and Natural Resources
Division of Environmental Protection, Waste Management Bureau
333 West Nye Lane
Carson City, NV 89710

Attention: Jeffrey C. Denison
Supervisor, RCRA Facilities

**RE: Trench 12 Final Design and Construction**
**US Ecology, Beatty, NV**

Dear Mr. Denison:

US Ecology and AquAeTer, Inc. have discussed the design, approval, and construction process for the next waste disposal trench at the Beatty facility with you and other Division (NDEP) representatives on several recent occasions. Final trench design documents have not been submitted to NDEP, but the current trench design (submitted to NDEP in 1996) and the concept for modifying that design to increase disposal capacity and simplify construction are addressed in US Ecology's RCRA Permit renewal application submitted to NDEP in early October 2001. During a January 31, 2002 conference call between US Ecology, AquAeTer, and NDEP (represented by Mr. Jon Taylor), it was agreed that US Ecology would provide to NDEP this written notification of the intent to begin Trench 12 construction in January 2003. The schedule for submittal of various design and construction related documents, as required by the 1998 RCRA Permit, is directly tied to the expected construction start date.

During the January 31st conference call, two aspects of Trench 12 design that require relatively quick resolution were identified. These design aspects are discussed below.

## ITEMS REQUIRING RESOLUTION

The Trench 12 design was submitted to NDEP in 1996 and was conditionally approved in the 1998 RCRA Permit (NEV-HW0011, Revision 1). Review of the design document package that was submitted in 1996 involved many discussions between NDEP and US Ecology to resolved identified design deficiencies. However, it now appears that some items discussed during the review process require further clarification.

### Requirement of hydraulic conductivity of soil beneath liner of $10^{-5}$ cm/sec or less.

The 1998 RCRA Permit requires that test results demonstrating that soil planned for use constructing the "soil layer" component of the trench liner system satisfy a $1 \times 10^{-5}$ cm/sec

hydraulic conductivity requirement. According to Section VIII.C.2.b of the 1998 RCRA Permit, this demonstration is required 90 days (or more) prior to trench construction.

The trench liner design (leachate collection and removal system, and leak detection system) in the 1996 design document package includes several man-made components, including two flexible membrane liners (polyethylene), drainage media, geotextiles, and a geosynthetic clay liner (bentonite bonded to geotextile). The geosynthetic clay liner is the bottom component of the liner system. This liner system rests on native soil identified as "prepared subgrade." It is US Ecology's understanding that the hydraulic conductivity requirement contained in the RCRA Permit (i.e., $1 \times 10^{-5}$ cm/sec) applies to the "prepared subgrade" component of the 1996 design. Further, we understand that the liner system shown in the 1996 design documents (as clarified by the $1 \times 10^{-5}$ cm/sec hydraulic conductivity requirement) is accepted by NDEP as an alternate to the USEPA minimum technology requirements for such liner systems.

US Ecology respectfully requests that NDEP confirm that our understanding is correct, or please guidance regarding how the hydraulic conductivity requirement applies to the liner system in the conditionally approved design.

**Sump Design**

The 1996 design identifies a nine-inch thick "prepared subgrade" layer beneath most areas of the Trench 12 bottom liner. The prepared subgrade beneath the three-leachate sumps is native soil amended with portland cement to form "soil cement." There is no prepared subgrade beneath the liner system on trench sideslopes.

The nature of the prepared subgrade component of the liner system was the subject of significant discussion during the review of the 1996 design document package. It is US Ecology's understanding that the outcome of these discussions was agreement that the prepared subgrade layer:

- satisfy a $1 \times 10^{-5}$ cm/sec hydraulic conductivity specification (as discussed above);
- be nine-inches thick beneath the trench bottom liner (except at sumps); and
- be 36-inches thick beneath the three sumps (i.e., in the areas shown as soil-cement in the 1996 design).

US Ecology respectfully requests that NDEP confirm that our understanding is correct, or please provide guidance regarding the subgrade thickness that is expected.

**SCHEDULE FOR SUBMITTALS**

US Ecology plans to complete Trench 12 final design work, including the items described above, on a schedule that will allow trench construction to begin in January 2003. The following tentative schedule for submittal of design information is planned.

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| **May 2002**: | Revised trench design drawings.<br>Installation of Trench 12 up-gradient groundwater monitoring well, (12 months prior to expected first waste placement). |
| **August 2002:** | Final trench design drawings.<br>Construction Quality Assurance (CQA) Plan.<br>Revised Landfill Report (RCRA Permit Section IV.D). |
| **September 2002**: | Results of liner material (soil and membranes) tests. |
| **October 2002:** | Subsurface survey of the south side of the Trench 12 construction area. |

US Ecology appreciates NDEP regulatory guidance provided to date on these items, and anticipates that we will continue regular communication on this subject as the design is completed and trench construction is started. We will appreciate NDEP comments on the Trench 12 design issues discussed in this letter. Should you have any questions, or require additional information, please call Jim Hancock at US Ecology at (775) 553-2203, or either of the undersigned at 303-771-9150.

Sincerely,

**AquAeTer, Inc.**

Petko A. Zlatev
Project Manager

Stephen L. Wampler, P.E., NV CEM
Project Engineer

cc: Mr. Jim Hancock – US Ecology, Beatty
Jon Taylor - NDEP