June 22, 2005

HTW BCT Meeting Minutes for Operable Unit 1
Former Fort Ord, California
June 10 , 2005

1. An HTW BCT meeting was held June 10, 2005, at the BRAC Conference Room, Former Fort Ord, California. The portion of the meeting dedicated to Operable Unit 1 (OU-1) was held from approximately10:00 a.m. to about 11:30 p.m. Attendees included the following representatives:

Gail Youngblood	US Army
Derek Lieberman	US Army
Grant Himebaugh	CA RWQCB
Roman Racca	CA DTSC
Stewart Black	CA DTSC
Dot Lofstrom	CA DTSC
Martin Hausladen	US EPA

   HGL: Bob Parkins; Roy Evans

   Mr. Racca introduced Dot Lofstrom, P.G. as the new lead for the OU-1 project at DTSC. Roman and Stewart should receive cc copies in the future.

   A summary of key issues and decisions/actions are described in the following paragraphs.

2. Contour maps: Stewart Black noted that HGL's and MacTec's SVA contour maps do not coincide where they overlap in the vicinity of the carbon tet plume. HGL will look into it with MacTec.

3. Discussion of HGL Groundwater Modeling for Pilot Study:
   a. Boundary Conditions:
      - North, South sides – no water flow boundaries
      - West – ocean is a fixed head boundary
      - East – fixed head boundary
      - Conductivities: airfield clay = 10^{-6} ft/day
        Dune sand = 15-20 ft/day
        Channel fill = 2-3 ft/day

   b. Pump tests and calibration: An earlier pump test at well 57-A was not as productive as anticipated. Well 57-A performed poorly hydraulically and well 10-A did not go deep enough to give an accurate representation of hydraulic conductivity. Consequently, the model may be under predicting drawdown, based on these results, and the actual system may have larger capture zones. Mr. Evans produced a model particle tracking figure which indicated that a tiny part of the plume may escape around one boundary well. He asked if 100% capture is required at the boundary or if some

leakage is permissible considering that actual conditions may be better than what the model predicted, i.e. the capture zones are wider, the plume size was purposely made large for the model, and any leakage will be captured by down gradient wells. Regulator responses were:
Mr Himebaugh – OK with some bleeding
Mr. Black – OK as there will be a Pilot Study in the area and the model oversized the plume to provide for over design.
Ms. Lofstrom – OK
Mr. Evans noted that the system can always be modified in the field by adding another well or possibly increasing pumping rates to provide the desired capture. Decisions regarding modifications would be made as needed as more data is acquired.

c. Presentation of Model Results: Mr. Evans described the three types of diagrams that he proposes to summarize Pilot Study modeling results, as follows:
   - Particle tracking for extraction wells to show capture zones
   - Particle tracking for injection wells to show flow paths
   - Mass transport simulations to show groundwater TCE concentrations throughout the aquifer

   All agreed that the proposed figures are OK and sufficient for the agencies to render judgment on the acceptability of a proposed design.

   Examples of figures were handed out and explained. They were:
   - Fig 3.1: Model Grid on Photo Base Map
   - Fig 3.2: Model Grid and Boundary Conditions
   - Fig 5.4: Proposed Boundary System Well Locations
   - Fig 5.5: Steady State Piezometric Surface in Vicinity of Boundary System (Layer 4)
   - Fig 5.6: Particle Tracks Showing the Capture of the Boundary Well System
   - Fig 5.7: Particle Tracks From Injection Wells
   - Fig 5.8: TCE Concentration in A-Aquifer With Boundary System in Place (3 Years From Start)
   - Fig 5.9.1: Capture Zone After Increasing Hydraulic Conductivity by 50%
   - Fig 5.9.2: Capture Zone After Decreasing Hydraulic Conductivity by 50%
   - Fig 5.9.3: Capture Zone After Decreasing Pumping and Injection by 20%

   Mr. Evans noted that sensitivity studies were run on the boundary wells making up the Pilot Study assuming conductivity was 50% greater, 50% less, and the pumping was cut by 20%. There was not much change in the results. Mr. Hausladen recommended that if results are different, then HGL should provide an explanation of how it will be addressed.

4. Implementation Sequence: Mr. Evans proposed the following sequence:

    a. Implement Stage 1 of the Phase 4 field work. This would include one extraction and one injection well. Operate the system for one to two weeks and evaluate the yield and drawdown.
    b. Implement Stage 2: This would construct the remainder of the boundary system. Stage 2 would include, if necessary, adjusting the design based on the results of Stage 1 and having an on-board review meeting.

    The Regulators agreed with the plan as presented.

5. Response to Comments on *Draft 60% Engineering Design Report Volume 1* and related abandonment of EW-OU1-48-A.
    a. Comment responses are being developed. Because of the access issues and resultant delays, the timetable for replying to these comments is slipping. HGL will attempt to provide responses by the next BCT meeting but noted that this item is lower on the priority list than the Pilot Project and the access issues.
    b. In responding to the DTSC comments on the Vol 1 report, HGL noted that the sand pack and bentonite seal at EW-OU1-48-A were less than intended and did not meet the standards specified by the Sampling Plan or the State. In addition, the well screen placement and well yield during development were not suitable for the intended use as an extraction well. This well was also installed before it was realized that the plume path was more to the west than originally believed. Consequently, HGL proposed to prepare an abandonment work plan as an addendum to the Phase 4 Plume Delineation Work Plan and to abandon the well during the next field effort. The regulators agreed with this approach and action.

6. Action:
    a. HGL will contact MACTEC to discuss data interpretation in areas of overlap and report back to the BCT.
    b. HGL will prepare a Draft Work Plan to implement the Pilot Project.
    c. HGL will prepare an addendum to the Phase 4 Plume Delineation Work Plan to describe the proposed well abandonment of EW-OU1-48-A.

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