MEMORANDUM TO FILE

TO: KMCC File

FROM: Brian Rakvica

DATE: March 11, 2004

CC: Todd Croft, Jennifer Carr, Jeff Johnson
Jon Palm, Tamara Pelham, Alan Tinney, Leo Drozdoff

RE: KM Quarterly Meeting

1. Attendance list attached.
2. Discussed new FBR system.
   a. Currently operating at 770 gpm (but only at 30% of design perchlorate load). Discharge is ND(<20).
   b. Analytical method development is still in progress.
   c. Reviewed history of FBR.
      i. Original source of inoculants backed out. KM ended up inoculating system with microbes from several sources.
      ii. Air permit was not executed until 3/1/04. To get the system working jugs of ethanol and later totes of acetic acid were used. The eventual switch back to ethanol did cause a slight slow down with the microbes until they acclimated.
   d. KM is still fine tuning the system. Currently, the DAF system is being adjusted. KM has been trying different flocculants.
   e. Noted that the BOD is still running at ND.
   f. The on-site IX system is currently off. KM anticipates that the IX systems will remain in place until (at least) the system has completed it's 30-day test.
   g. KM anticipates being up to a flow of 950 gpm some time next week. After this they will start adding pond water to increase the concentration of the influent.
   h. Noted that the new NPDES permit has been received with a flow rate of 1000 gpm and an effluent concentration of 18 ppb.
   i. Discussed GW-11 pond water. Concentrations are 2200 ppm perchlorate and 7,000 ppm chlorate. KM is reviewing treatment options as they need to make sure that no hexavalent chromium is in the influent to the FBR. Noted that GW-11 is quite full. Estimate 30 gpm evaporation rate on average and 60 gpm evaporation rate during the summer. This evaporation should give KM some cushion in the pond in case of upset conditions in the future.
   j. Discussed if KM had considered pretreatment options for the pond water with the IX systems. KM noted that they determined this would not be

worthwhile because it would be very expensive and would not serve to reduce the chlorate load.

3. Discussed Surface Water Data and Trends.
   a. Lake Mead is currently fully mixed and is at 6 ppb.
   b. Las Vegas Wash average concentrations
      i. Seep ~80 ppb
      ii. LM-6 ~47 ppb
      iii. LM-8 ~125 ppb
      iv. Northshore Road ~180 ppb
      v. SNWA suspects that there is a reservoir of perchlorate below the fault zone.
   c. A number of spreadsheets and graphs were reviewed which presented perchlorate concentrations at various points in the Las Vegas Wash, Lake Mead and in the Colorado River.
   d. KM noted that they feel a linear scale is more appropriate on the McGinley breakthrough curves. NDEP to review. KM also wanted to noted that the words "90% efficiency" do not portray the fact that the Athens Road Well Field may be more than 90% efficient, however, there are other sources of perchlorate. Other sources may include: wastewater treatment plants, the BMI ponds, the reservoir of wash gravels, AmPac, and the alluvial units at the fault zone. Noted that at some point the load may diverge from the McGinley graph due to these differences.
   e. SNWA noted that it can theorized that there is a ~50 ppb gain in the concentration in the wash between Bostick and the Demo weir. There is a ~30 ppb gain between the Demo weir and LM-8.
   f. Noted that MWD's model predicts 4 ppb in their intake by mid-2004 and 2 ppb by mid to late 2005 if the 90% curve holds true.
   g. Colorado River at the California aqueduct
      i. November 2003 – February 2004 = ND (4 ppb)
      ii. September and October 2003 = 4.5 ppb
      iii. Noted that the concentrations tend to increase from March through August.
      iv. Noted that there is approximately a 3 month delay between Willow Beach and the intake to California.
      v. Noted that the next EPA report will include the data through March 2004.
4. Status of Proposed Additional Monitoring Wells
   a. KM had proposed to drill two wells upgradient of the Athens Road Well Field (ARW) and a line of wells along Sunset Road to better estimate mass flux at the ARW. 4 wells have been drilled thus far.
   b. KM has installed a well 100' east of ART-7 and the perchlorate concentration was 6 ppm and the drawdown was approximately 5.5'. This well is called PC-122. Between the new well PC-122 and the existing well PC-10 it is believed that no additional wells are needed to the east of ART-7.

c. KM has rehabilitated wells ART-3, -4, -6 and these are ready to go back on line.
d. Sampling in the new wells is likely to be monthly or quarterly.

5. Discussed 4th Quarter 2003 Report
   a. NDEP to forward a copy to McGinley.
   b. Discussed drawdown figure.
   c. Reviewed new data collected to supplement figures in the report.
   d. Noted that the 25 ppm contour has shrunk away from the Seep Area.
6. Discussed Seep Area Well Shut-off Criteria
   a. Noted that the Seep has already been throttled back due to the flow rate in the new NPDES permit.
   b. The Seep concentration has been steady at 14 ppm for the past 6 months.
   c. KM does not feel that it is valuable to back off on other wells at this point.
7. Discussed Contingency Plans for the FBR system
   a. Noted that any 3 of the 4 reactors can handle the full system load.
   b. The IX system will be maintained on site until KM is confident that the FBR system can be maintained and operated consistently.
8. Discussed Tours.
   a. The tour scheduled for 4/1/04 has been revised to 3/31/04 and will not include a tour of the FBR.
   b. The tour tentatively scheduled for 4/27/04 – 4/30/04 has been confirmed for 4/28/04 and may include an FBR tour.
   c. After 4/30/04 a tour will be requested by SNWA and AZ CAP.
9. Other Discussions
   a. Discussed possibly having a media event after the system is up and running. KM would prefer that it is just noted in the EPA report.
   b. Noted that Dr. Pepper (formerly of UNLV) is now working for Senator Feinstein's office on the perchlorate issue. He is likely to tour the FBR shortly.
10. Next meeting: telephone conference on 3/23/04 at 1:00 PM.