

WATER QUALITY MEMORANDUM

Utah Coal Regulatory Program

May 5, 2004

TO: Internal File

THRU: Daron R. Haddock, Permit Supervisor

FROM: Dana Dean, P.E., Senior Reclamation Hydrologist

RE: 2004 First Quarter Water Monitoring, Sunnyside Cogeneration Association, Sunnyside Refuse/Slurry, C/007/0035-WQ04-1, Task #1918

- 1. Was data submitted for all of the MRP required sites?** YES NO
Identify sites not monitored and reason why, if known:

- 2. On what date does the MRP require a five-year resampling of baseline water data.**
See Technical Directive 004 for baseline resampling requirements. Consider the five-year baseline resubmittal when responding to question one above. Indicate if the MRP does not have such a requirement.

Resampling due date

The MRP states that "once every five years (prior to each application for permit renewal) one sample from each of the monitoring sites listed in Table 7-2A will be sampled and analyzed for the parameters listed in Table 7-2B". The Permittee last sampled for baseline during the third quarter of 1997. They should have sampled baseline again in 2002, but due to a misunderstanding did not. They sampled for baseline during this sampling period to comply with the requirements. The next requirement will be in 2007.

- 3. Were all required parameters reported for each site?** YES NO
Comments, including identity of monitoring site:

Including all baseline parameters.

- 4. Were irregularities found in the data?** YES NO

Comments, including identity of monitoring site:

Several parameters fell outside of 2 standard deviations from the mean. They were:

Site	Parameter	Value	Deviations from Mean	Mean
ICE-1	Dissolved Calcium	87.5 mg/l	2.03	64.44 mg/l
ICE-1	Dissolved Magnesium	114 mg/l	3.88	84.16 mg/l
CRB	Dissolved Magnesium	372 mg/l	2.34	299.19 mg/l
WELL-1	Dissolved Potassium	6.19 mg/l	6.23	2.60 mg/l

The dissolved calcium reading of 87.5 mg/l at ICE-1 is the second-highest value ever; the highest value was 88.6 mg/l in March 1998. However, there is no real effect on water quality, since the water at this site has always been “very hard” with hardness values from 427 to 884 mg/l (“very hard” is >180 mg/l). There is no water quality standard for calcium.

The dissolved magnesium reading of 114 mg/l is the highest ever at ICE-1. However, since magnesium also affects the hardness of water, this is not very alarming. There is no water quality standard for magnesium.

The dissolved magnesium at CRB has declined from a high of 401 mg/l in September 2003 to 372 mg/l. The water at this site has always been “very hard” with hardness values from 175 to 2,824 mg/l (“very hard” is >180 mg/l). There is no water quality standard for magnesium.

The dissolved potassium at WELL-1 is the highest ever, at 6.19 mg/l. There is no water quality standard for potassium and the 6.19 mg/l is still a relatively low number.

The Division will continue to monitor all of these values to ensure that there is no increasing trend.

Several routine Reliability Checks were outside of acceptable values. They were:

Site	Reliability Check	Value Should Be...	Value is...
F-2	Conductivity / Cations	>90 & <110	80
F-2	Mg/(Ca + Mg)	< 40 %	64 %
F-2	Ca/ (Ca + SO4)	> 50 %	28 %
CRB	TDS/Conductivity	>.55 & <.75	1.06
CRB	Conductivity / Cations	>90 & <110	64
CRB	Mg/(Ca + Mg)	< 40 %	57 %
CRB	Ca/ (Ca + SO4)	> 50 %	25 %
ICE-1	Conductivity / Cations	>90 & <110	81

ICE-1	Mg/(Ca + Mg)	< 40 %	68 %
ICE-1	Ca/ (Ca + SO4)	> 50 %	24 %
WELL-1	Conductivity / Cations	>90 & <110	86
WELL-1	Mg/(Ca + Mg)	< 40 %	66 %
WELL-1	Ca/ (Ca + SO4)	> 50 %	48 %

The Permittee should work with the lab to make sure that samples pass all quality checks so that the reliability of the samples does not come into question. These inconsistencies do not necessarily mean that a sample is wrong, but it does indicate that something is unusual. An analysis and explanation of the inconsistencies would help to increase confidence in the samples.

5. Were DMR forms submitted for all required sites?

1st month, YES NO
 2nd month, YES NO
 3rd month, YES NO

All DMRs reported "no flow".

6. Were all required DMR parameters reported?

YES NO

Comments, including identity of monitoring site:

All DMRs reported "no flow".

7. Were irregularities found in the DMR data?

YES NO

Comments, including identity of monitoring site:

All DMRs reported "no flow".

8. Based on your review, what further actions, if any, do you recommend?

No actions are necessary at this time.