Item No. 7
Supporting Document No. 4

SWEETWATER AUTHORITY

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February 23, 2010

Michelle Mata
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340

REF: SCR: 01-0858,02:VASQV
COMMENTS ON TENTATIVE ORDER R9-2010-0012, NPDES NO. CA0108952

Dear Ms. Mata:

Thank you for the opportunity to comment on the referenced draft tentative order (order). We have provided general comments and suggested changes in the document itself, but I would like to address specific issues with the tentative order that remain of concern to Sweetwater Authority (Authority)

1. **New San Diego Formation well locations and discharge points**: The order mistakenly groups the discharge of the five proposed new San Diego Formation (SDF) well purge discharges with effluent discharge Eff-002. This discharge point is located in the Paradise Creek and is the correct discharge point for the SDF wells 1, 2 and 6. However, the proposed new wells are located further south in Chula Vista and will be discharged into storm drains that lead to either the Sweetwater River, the Sweetwater Marsh, or the San Diego Bay A drawing was provided showing the storm drains associated with the wells. Authority staff will be more than happy to assist you, if you need further help or clarification.

2. **Water Quality Effluent Limitation for Temperature**: The order requires that the maximum temperature of the discharge for both the plant outfalls (001a) shall not exceed the natural receiving water temperature by more than 20° F. The Reynolds Desalination Facility (plant) treats groundwater whose temperatures vary little throughout the year. As such, compliance with this requirement will be difficult if not impossible during the winter months when the receiving water temperatures fall below 60° F but the well waters (and thus the plant discharge) remain approximately 80° F. The Authority requests that the effluent limitation be calculated on a 12 month running average and that instantaneous values not be considered a violation.

3. **Water Quality Effluent Limitations for pH**: The pH range for the SDF wells 1, 2 and 6 remains between 7.0 and 9.0. The pH from the purges for these wells occasionally dips below 7.0, but the purges are infrequent and of short duration. There is no viable way to treat the purges to increase the pH during the short time that the purges occur. The Authority requests the pH range remain at 6.5 to 9.0, or as an alternative, the effluent limitation be calculated on a running annual average; and not be based on instantaneous values.

4. **Monitoring Requirements for the Plant Feed Dump**: The order requires grab samples each time the feed dump discharge is in use. Use of the feed dump is an operational requirement, with the discharge occurring every time the plant is started up, until the plant pressures stabilize. This will occur several times during the year and depending on circumstances, at all hours of the day. Compliance with this requirement will be difficult. As the quality of the well water (and thus the feed dump) is not likely to change often, the Authority requests that the monitoring frequency be changed to an annually or bi-annually.

5. **Plant Discharge Flow Limitation**: The Regional Board staff has not approved the Authority's request to increase the flow limitation from 0.8 MGD to up to 1.25 MGD without expansion of the plant. The Authority respectfully requests reconsideration of this matter. With its current capability, the plant capacity can easily be increased by 25% to 5 MGD. However, this requires an increase in the effluent flow limitation. Authority staff believes that data shows little increase in negative effects by this relatively small increase in discharge flow.

   The Authority is committed to the plant expansion, which will include the relocation of the outfall, and has demonstrated this by its certification of the expansion project Environmental Impact Report on February 24, 2010. In the interim, however, the Authority is requesting the flexibility to operate its plant at its maximum capacity (5 MGD), which will require the increase in discharge. During this critical period of regional drought, the increased production will supply much needed additional drinking water for the region at little additional cost.

6 **Groundwater Well Purge Monitoring Requirements**: Previous orders have stated that "*The discharges from groundwater well-purge water, plant feed-water dump, pressure (air) relief valves, and chlorine contact-tank overflow are intermittent and of short duration. During the reasonable potential analysis of these discharges it was noted that copper concentrations are higher than receiving water criteria, but because of the intermittent and short duration these discharges are not considered to have a reasonable potential to cause an exceedence of water quality criteria.*" This order requires quarterly grab samples for metals as well as pH monitoring with each purge. SWA staff feels that because of the small volume, these discharges contribute very little contaminant loading in the receiving waters and that no WQBEL's should be included for these points. As it stands now, in the advent of an exceedence, the Authority would feel compelled to re-sample. This strategy would be counter productive because we would be generating a well purge discharge for no other reason than to attempt to maintain compliance with our discharge permit.

The Authority respectfully requests that the well purges be considered of limited threat to surface waters and that the discharge requirements should fall under a general permit for limited threat discharges. If such a permit no longer exists, the Authority requests that the Regional Board staff review the need and that the well purge discharges fall under such a permit. As an alternative, the Authority respectfully points out that because of the increased number of separate discharge points for the well purges, compared to the limited number of discharge points for the plant itself, that a separate permit for the well purges be considered, and that the permit should consider the purges to be of limited threat to receiving waters and treated as such.

7. **Costs of Compliance with the Monitoring Requirements**: Attached is a spread sheet that compares the cost of monitoring under the existing permit as compared to that for a new permit. To summarize, the laboratory monitoring for the discharges is increasing roughly fourfold ($ 4,856 to $ 21,954). In addition, there are new receiving water monitoring requirements that will cost the Authority $124,000 each year to implement. This is in addition to over $400,000 spent by the Authority to date collecting data for the Regional Board staff to assist in evaluating our request for increased discharge flows.

The Sweetwater Authority appreciates the effort by the Regional Board in bringing the permit renewal to this point. There are issues that we would still like to discuss as outlined above, but the Authority does not see these issues as insurmountable. The Authority looks forward to meeting with you on Friday, February 26th, to discuss these issues in greater detail.

If you have any questions regarding the above, please contact me via phone (619) 409-6802, or email at dthomson@sweetwater.org.

Sincerely,

SWEETWATER AUTHORITY

Don R. Thomson
Director of Water Quality

Attachments

cc:
Jack Adam
Michael Garrod
Mark Hatcher
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Table 1. Cost Implications – Required Analyses

Analytical Test, Assay, or Monitoring	Unit Cost	Number of Stations	Per Time Period	Annual Cost	Cycle Cost
pH, temperature, DO	included	-	-	-	-
TSS, SS	$50	1	Month	$250	$1250
TSS, SS	$50	2	Quarter	$400	$2000
Cu, Ni, Se	$60	1	Month	$720	$3600
Cu, Ni, Se	$60	2	Quarter	$480	$2400
As, Zn	$40	2	Quarter	$640	$3200
Nitrate, TN	$35	1	Month	$420	$2100
Ammonia	$25	2	Quarter	$300	$1500
Ortho-PO_4, TP	$40	1	Month	$480	$2400
Ortho-PO_4, TP	$40	2	Quarter	$640	$3200
Salinity	$15	1	Month	$180	$900
Salinity	$15	2	Quarter	$120	$600
Benthic Macroinvertebrates	scope dependent				
Macroalgae	scope dependent				
Wetland Vegetation	scope dependent				
Topsmelt (acute)	$700	3	Annual	$2,100	$10,500
Topsmelt (Chronic)	$1500	3	Annual	$4,500	$22,500
Kelp (Chronic)	$1500	3	Annual	$4,500	$22,500
Sea Urchin	$1000	3	Annual	$3,000	$15,000
Priority Chemistry & TCDD	$2550	3	Quarter, Year 3 Only		$30,600
Totals				$18,730	$124,250

Note: Costs based on 2009 unit costs

For Reference: 2009-2010 chemistry totaled approximately $5000 annually

References

SCCWRP. 2004. Evaluation of Benthic Assessment Methodology in Southern California Bays and San Francisco Bay. Technical Report 432.

Unionized Ammonia Computations

Sweetwater Authority Data:
Temperature Range: From Concentrate Effluent 2007-2008
pH: Range reported from SWA, mean value of 7.7 (M. Hatcher)
Total Ammonia: Range from Concentrate Effluent 2007-2008; high value of 0.8 mg/L observed for one event
Salinity: Discharge average (8) and fully marine (34)

Case	Temp (C)	Measured pH (NBS)	Total Ammonia Nitrogen (mg/L)	Salinity (g/kg)	Ionic Strength (M)	pKa (infinite dilution)	pKa (SW)	Mole Fraction	Un-ionized Ammonia-N (mg/L)	Un-ionized Ammonia-N (ug/L)
Temperature range for when Wells 3, 4, & 5 are engaged (winter), pH range reported (from internal data), discharge and receiving environment salinities										
1	25.0	7.5	0.10	8	0.161	9.246	9.27	.01225	.00122	1.22
2	25.0	7.5	0.25	8	0.161	9.246	9.27	.01225	.00306	3.06
3	25.0	7.5	0.50	8	0.161	9.246	9.27	.01225	.00612	6.12
4	25.0	7.5	0.80	8	0.161	9.246	9.27	.01225	.00980	9.80
5	25.0	8.1	0.10	34	0.702	9.246	9.35	.03790	.00379	3.79
6	25.0	8.1	0.25	34	0.702	9.246	9.35	.03790	.00948	9.48
7	25.0	8.1	0.50	34	0.702	9.246	9.35	.03790	.01895	18.95
8	25.0	8.1	0.80	34	0.702	9.246	9.35	.03790	.03032	30.32
Temperature range for when Wells 3, 4, & 5 are engaged (winter), pH range reported (from internal data), discharge and receiving environment salinities										
9	25.0	7.5	0.10	34	0.702	9.246	9.35	.00980	.00098	0.98
10	25.0	7.5	0.25	34	0.702	9.246	9.35	.00980	.00245	2.45
11	25.0	7.5	0.50	34	0.702	9.246	9.35	.00980	.00490	4.90
12	25.0	7.5	0.80	34	0.702	9.246	9.35	.00980	.00784	7.84
13	25.0	8.1	0.10	8	0.161	9.246	9.27	.04703	.00470	4.70
14	25.0	8.1	0.25	8	0.161	9.246	9.27	.04703	.01176	11.76
15	25.0	8.1	0.50	8	0.161	9.246	9.27	.04703	.02352	23.52
16	25.0	8.1	0.80	8	0.161	9.246	9.27	.04703	.03763	37.63
Temperature range for when Wells 1,2, & 6 are active (summer), pH range reported (from internal data), discharge and receiving environment salinities										
17	28.0	7.5	0.10	8	0.161	9.155	9.18	.01507	.00151	1.51
18	28.0	7.5	0.25	8	0.161	9.155	9.18	.01507	.00377	3.77
19	28.0	7.5	0.50	8	0.161	9.155	9.18	.01507	.00753	7.53
20	28.0	7.5	0.80	8	0.161	9.155	9.18	.01507	.01206	12.06
21	28.0	8.1	0.10	34	0.702	9.155	9.26	.04642	.00464	4.64
22	28.0	8.1	0.25	34	0.702	9.155	9.26	.04642	.01160	11.60
23	28.0	8.1	0.50	34	0.702	9.155	9.26	.04642	.02321	23.21
24	28.0	8.1	0.80	34	0.702	9.155	9.26	.04642	.03713	37.13
Temperature range for when Wells 1,2, & 6 are active (summer), pH range reported (from internal data), discharge and receiving environment salinities										
25	28.0	7.5	0.10	34	0.702	9.155	9.26	.01208	.00121	1.21
26	28.0	7.5	0.25	34	0.702	9.155	9.26	.01208	.00302	3.02
27	28.0	7.5	0.50	34	0.702	9.155	9.26	.01208	.00604	6.04
28	28.0	7.5	0.80	34	0.702	9.155	9.26	.01208	.00966	9.66
29	28.0	8.1	0.10	8	0.161	9.155	9.18	.05741	.00574	5.74
30	28.0	8.1	0.25	8	0.161	9.155	9.18	.05741	.01435	14.35
31	28.0	8.1	0.50	8	0.161	9.155	9.18	.05741	.02871	28.71
32	28.0	8.1	0.80	8	0.161	9.155	9.18	.05741	.04593	45.93

Worst Case: high total ammonia concentrations, pH values at the high end of the range, and higher temperature (wells 1, 2, and 6)
Note: In all scenarios, reduction of pH to the average value of 7.7 reduces the unionized concentration to below criterion level.