May 14, 2009

Project 4040.027

Mr. W. Dale Harvey, Senior Engineer
California Regional Water Quality Control Board
Central Valley Region
1685 E Street
Fresno, California 93706-5910

Subject: **Tentative Waste Discharge Requirements**
Former Kendall Site, Merced, California

Dear Mr. Harvey:

On behalf of General Electric Company (GE), AMEC Geomatrix, Inc. (AMEC), is submitting these comments and requested revisions to tentative Waste Discharge Requirements (TWDRS) (and a proposed National Pollution Discharge Elimination System [NPDES] permit) for the former Kendall site located in Merced, California. The TWDRS were transmitted to GE in an April 15, 2009, e-mail from the California Regional Water Quality Control Board – Central Valley Region (RWQCB).

GE's comments are presented in two parts: (1) general comments on the TWDRS, which reference recent developments at the site since submission of the application for NPDES permit renewal, are presented below; and (2) technical comments and requested revisions to specific sections of the TWDRS are presented in Attachment 1.

GENERAL COMMENTS

A. GE submitted an application to renew the NPDES permit for the site on November 6, 2008, that included three discharges (Discharge 001, Discharge 002, and Discharge 003). GE received approval from the RWQCB to permanently shut down the 100-foot zone treatment system and its associated discharge (Discharge 001) in a May 13, 2009, letter. GE requests references to the 100-foot zone system and Discharge 001 in the TWDRS be removed except for a short explanation of the shutdown of the system in Attachment F, Section II, Facility Description. To avoid potential confusion when referencing the discharges in future correspondence, reports, etc., GE also requests the numbering scheme for the discharges remain unchanged; i.e., going forward the TWDRS will describe Discharge 001 as a former discharge and Discharge 002 and Discharge 003 as current discharges. A redline/strikeout version of the TWDRS with references to the 100-foot zone system deleted is provided in Attachment 2 for your use.

   The May 13, 2009, letter from the RWQCB indicates additional remedial work may be required if concentrations of volatile organic compounds (VOCs) in the 100-foot zone aquifer increase. If concentrations of VOCs in the 100-foot zone aquifer increase, GE will evaluate remedial action at that time. Remedial action could include restarting the 100-foot zone treatment system or a treatment system with a different discharge point.

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B. The multizone treatment system (Discharge 002) is shutdown in accordance with a March 24, 2009, letter from the RWQCB to GE. GE has discussed treatment system and discharge sampling during the shutdown with the RWQCB. The RWQCB has indicated that treatment system and discharge sampling will be unnecessary during the shutdown. GE will remove the pump installed in the extraction well for the treatment system (MW-57D) so the well can be sampled as a monitoring well using a portable submersible pump.

C. The Hartley Lateral and Doane Lateral canals are effluent-dominated water bodies. Consequently, upstream or downstream receiving water samples may not be available, depending on circumstances. In some cases the canals may only contain water originating from a treatment system discharge. The current permit contains the following language that clarifies when sampling of the receiving water is necessary: "Receiving water monitoring is not required when the discharge represents the entire flow in the receiving waters." GE requests this language be included in the new permit.

D. The current permit contains the finding that treated wastewater has been used in the past for installing extraction and monitoring wells at the site and for washing equipment associated with these activities. This use of the treated wastewater is specifically approved in the Discharge Prohibitions section. GE anticipates the need to perform similar activities in the future and requests approval for said use be included in the new permit.

GE respectfully requests that RWQCB staff respond to these comments and revise the TWDRS and attachments accordingly. GE also requests that RWQCB staff provide a copy of their revisions to the TWDRS and attachments to GE and AMEC for review prior to finalizing and eventual presentation to the RWQCB Executive Officer for approval. Please call Lisa Hamilton (610-992-7885) or Paul Deutsch (559-264-2535) if you have any questions or need additional information.

Sincerely yours,
AMEC Geomatrix, Inc.

William T. Aravanis, PE, REA
Senior Project Manager

Paul C. Deutsch
Principal Scientist

Attachments: 1 – Comments on Specific Sections of Tentative Waste Discharge Requirements
2 – Tentative Waste Discharge Requirements with 100-Foot Zone References in Redline/Strikeout

cc: Lisa Hamilton, General Electric Company
Kirk Macfarlane, General Electric Company

ATTACHMENT 1

COMMENTS ON SPECIFIC SECTIONS OF TENTATIVE WASTE DISCHARGE REQUIREMENTS

1) SECTION I, TABLE 4

Table 4. Facility Information

Discharger	General Electric Company and Wellmade Products Company
Name of Facility	Groundwater Cleanup System
Facility Address	1715 Kibby Road
	Merced, CA 95340
	Merced County
Facility Contact, Title, and Phone	Lisa A. Hamilton, Regional Office Manager (610) 992-7885
Mailing Address	640 Freedom Business Center King of Prussia, PA 19406
Type of Facility	Groundwater extraction and cleanup facility
Facility Design Flow	0.15 million gallons per day (mgd) at Discharge Point 001, 1.0 mgd at Discharge Point 002, and 1.6 mgd at Discharge Point 003

The title given for Lisa Hamilton is incorrect and should be revised to read: "Manager, MidAtlantic/Southeast/Western Regions".

2) SECTION II, B

B. Facility Description. The Discharger owns and operates the Facility. The Facility treatment systems consist of an air stripping system, up to 12 extraction wells, two off-site Granular Activated Carbon (GAC) treatment systems, 16 monitoring wells on property owned by Wellmade Products Company (WLMD), 12 additional monitoring wells outside WLMD's property, and three discharge points. Treated groundwater is discharged from Discharge Points 001, 002, and 003 (see table on cover page) to the Merced Irrigation District (MID), Hartley Lateral Canal (Hartley Canal), a water of the United States (and a tributary to Miles Creek, a tributary of the San Joaquin River from Sack Dam to mouth of Merced River) within the San Joaquin Valley Floor Hydrological Unit, Merced Hydrologic Area (No. 535.80). Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

The first sentence in the above paragraph could be construed to mean GE owns the land the treatment systems are installed on which would be inaccurate. This sentence should be revised to read: "The Discharger owns and operates the Facility equipment."

3) SECTION II, H

H. Water Quality Control Plans. The Regional Water Board adopted a *Water Quality Control Plan, Fourth Edition (Revised October 2007), for the Sacramento and San Joaquin River Basins* (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. The Basin Plan at page II-2.00 states that the "*...beneficial uses of any specifically identified water body generally apply to its tributary streams.*" The Basin Plan does not specifically identify beneficial uses for Hartley Canal. Hartley Canal discharges to Miles Creek, a tributary of the San Joaquin River from Sack Dam to the mouth of the Merced River. Upon review of the flow conditions, habitat value, and beneficial uses of Miles Creek, the Regional Water Board finds that, by the tributary rule, the beneficial uses identified in the Basin Plan for the San Joaquin River from Sack Dam to the mouth of the Merced River are applicable to Miles Creek. Discharges from the groundwater cleanup system to the Hartley Canal must be protective of the beneficial uses of Miles Creek. Therefore, beneficial uses of Miles Creek are considered applicable to Hartley Canal. The Basin Plan identifies present and potential uses for San Joaquin River from Sack Dam to mouth of Merced River as follows: municipal and domestic supply (MUN); agricultural supply (AGR); industrial process supply (PRO); water contact recreation, including canoeing and rafting (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); warm and cold migration of aquatic organisms (MIGR); warm and cold spawning, reproduction, and/or early development (SPWN); and wildlife habitat (WILD).

The above paragraph indicates that by the tributary rule the beneficial uses for Miles Creek should be applied to the Hartley Canal. The uses REC-1 (water contact recreation) and REC-2 (non-contact water recreation) are illegal in irrigation canals and would/could only occur during illegal trespassing on Merced Irrigation District (MID)property. The beneficial use REC-1 would also pose a potential health hazard due to debris, animal carcasses, agricultural runoff, and potentially harmful materials present in the Hartley Canal. The use MIGR (warm and cold water migration of aquatic organisms) is physically blocked by numerous weirs and other obstructions in the canal. GE does not believe it is the intent of the tributary rule to promulgate beneficial uses that would be illegal, hazardous, or physically impossible. Therefore, this section should be rewritten to specify which of the beneficial uses of Miles Creek will apply to the Hartley Canal. Those uses are limited to MUN, AGR, PRO, WARM, SPWN, and WILD.

4) SECTION II, H, TABLE 5

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001, 002, and 003	Hartley Lateral Canal	MUN, AGR, PRO, REC-1, REC-2, WARM, MIGR, SPWN, WILD
	Groundwater	MUN, IND, PRO, AGR

The beneficial uses REC-1, REC-2, and MIGR should be removed from the above table. See comments above on applicable beneficial uses of the Hartley Canal.

5) SECTION IV, A, 1, E

b. The additive toxicity of carbon tetrachloride, chloroform, tetrachloroethylene, and trichloroethylene in the discharge from the facility shall not exceed 1.0. The calculations shall be based on the maximum limits and the following formula as described in the Basin Plan at IV-18.00:

$$\sum_{i=1}^{n} \frac{[\text{Concentration of Toxic Substance}]_i}{[\text{Toxicological Limit for Substance in Water}]_i} < 1.0$$

Carbon tetrachloride should be removed from the above paragraph to be consistent with its removal elsewhere in the document. GE's records indicate chloroform was last detected at a treatment system well in 1996. Based on the infrequency of detection, chloroform should be deleted from the above paragraph.

6) SECTION V, A, 1, 2, 3, 9, 11, 12, 13

1. **Bacteria.** The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than ten percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.

2. **Biostimulatory Substances.** Water to contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.

3. **Chemical Constituents.** Chemical constituents to be present in concentrations that adversely affect beneficial uses.

9. **Pesticides**: a. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;
   b. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;
   c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by USEPA or the Executive Officer;
   d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 CFR 131.12e. Pesticide concentrations to exceed the lowest levels technically and economically achievable;
   f. Pesticides to be present in concentration in excess of the maximum contaminant levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15; and
   g. Thiobencarb to be present in excess of 1.0 µg/L.

11. **Suspended Sediments**. The suspended sediment load and suspended sediment discharge rate of surface waters to be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

12. **Settleable Material**. Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.

13. **Suspended Material**. Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.

None of the substances described above are constituents of concern associated with the treatment systems or included in the monitoring requirements. These substances were also not included in the provisions of the current permit. GE requests that these provisions be removed from the new permit since they are not relevant to the facility.

7) SECTION VI, C, 1, A

1. Reopener Provisions

a. This Order requires the Discharger to conduct monitoring of the effluent for arsenic (Discharge Points 001, 002, and 003), manganese (Discharge Point 002), mercury (Discharge Points 001, 002, and 003), and selenium (Discharge Points 001 and 002). After collecting at least one year of data, the Discharger shall complete a reasonable potential analysis consistent with the methodology in the SIP for arsenic, manganese, mercury, and selenium. Based on a review of the reasonable potential analysis, this Order may be reopened for addition and/or modification of effluent limitations and requirements for these constituents.

The length of time for monitoring for arsenic, mercury, and selenium described in the above paragraph and elsewhere in the document is not clear, nor is the

mechanism for terminating monitoring of these constituents clearly described. To clarify these issues, GE requests the following sentence be added to the end of the above paragraph: "GE may apply to terminate quarterly monitoring for arsenic, mercury, and selenium following collection of at least one year of data."

8) SECTION IV, C, 2, B, IV

iv. **Accelerated Monitoring Specifications.** If the monitoring trigger is exceeded during regular chronic toxicity testing, within 14-days of notification by the laboratory of the test results, the Discharger shall initiate accelerated monitoring. Accelerated monitoring shall consist of four (4) chronic toxicity tests in a six-week period (i.e. one test every two weeks) using the species that exhibited toxicity. The following protocol shall be used for accelerated monitoring and TRE initiation:

GE does not believe the accelerated monitoring specified above is justified given the 5 years of effluent monitoring data available for the site or the nature of the testing requested. The accelerated monitoring specified tacitly assumes that chronic toxicity is likely to occur in treatment system effluent. Rather, as described below, it is far more likely that a false positive result indicating toxicity when none was actually present would trigger the accelerated monitoring. The accelerated monitoring requirement should be modified to reflect the likelihood of false positive results as described below.

GE has monitored the on-site and off-site treatment systems since they were installed in 1986 and 1996, respectively. Since that time, GE has monitored the treatment system influents and effluents for a wide array of organic and inorganic constituents. The results of this monitoring show that the constituents of concern at the treatment system are very well characterized and known to be unchanging except for a gradual decrease in VOCs in the influent occurring over time. Concentrations of constituents of concern after treatment have been less than the effluent limitations consistently. These data indicate the sudden appearance of toxic materials in the treatment system effluent is very unlikely.

GE has been monitoring for chronic toxicity since 2004. During that time, 46 tests for chronic toxicity using various organisms have been performed on samples from the effluent of the treatment systems. Of these, only one sample, the sample collected in fourth quarter 2007 from the effluent of the multizone analyzed using Ceriodaphnia dubia (C. dubia), had results that indicated toxicity (reduced rate of reproduction). GE contacted the RWQCB regarding the results of this sample and was instructed to resample and retest. The results of the resampling and retesting were that no toxicity was found. This result indicates the results of the single 2007 test that indicated chronic toxicity existed were erroneous. Based on these data, chronic toxicity does not exist in the discharge from the treatment systems and is unlikely to exist in the future.

Chronic toxicity tests are statistical in nature. As such, they have a known probability, about one in twenty, of providing a false positive result (i.e., a detection of chronic toxicity due to random error when no toxicity is actually present in the sample). GE can be expected to perform approximately 45 chronic tests with various organisms over the next 5 years. The probability then that GE will pass all the tests over the 5 years without a false positive is only about 10 percent. Consequently, it is quite likely (about a 90 percent chance) that at least one false positive detection of chronic toxicity will occur over the 5-year life of the permit.

In summary, the available data indicate the constituents in the treatment system influents and effluents are well characterized and unchanging, that chronic toxicity has been absent from the effluent for at least 5 years, and that there is a high probability (about 90 percent) that a false positive detection of chronic toxicity will occur. Based on these data, the requirement that multiple accelerated tests be used to confirm a detection of chronic toxicity is not justified. Rather, a single test to confirm a detection of chronic toxicity should be required, as was previously required by the RWQCB in 2007. GE requests the RWQCB modify the accelerated testing provision requirement to include a single test.

In addition, GE requests the requirement that accelerated testing be conducted within 14 days of notification of potential chronic toxicity be modified since the requirement is impractical. GE has a long experience with chronic toxicity testing. In the past, GE has had test results indicating chronic toxicity verified by a biologist familiar with the test and statistical methods. GE intends to continue this policy. Verification involves checking the laboratory and statistical methods used during the test and reference toxicant test and comparing them to EPA accepted methodology. Fourteen days is insufficient time to verify test results, work with the laboratory to resolve any discrepancies, determine whether the test results should be deemed valid, schedule retesting, and collect samples.

In addition, GE's experience indicates the availability of the laboratory and test organisms for accelerated analysis can be problematic. A wait of several weeks for laboratory availability is typical and sometimes test organisms must be grown. Under normal circumstances, GE schedules testing months in advance to assure testing (including required concurrent reference testing) can be carried out. Therefore, while sample collection alone could probably be initiated within 14 days, sample analysis is unlikely to be available within that time period.

The requirement for testing four times within a 6-week period is also problematic. As described above, testing is normally scheduled in advance to assure availability of the laboratory and test organisms. It is very unlikely that the laboratory would have resources sufficient to fulfill this requirement within the time period required without advance notice.

GE requests the paragraph be modified as follows:

"If the monitoring trigger is exceeded during regular chronic toxicity testing, within 30 days of notification by the laboratory of the test results, the Discharger shall initiate an accelerated monitoring event. Accelerated monitoring shall consist of a chronic toxicity test using the species that exhibited toxicity. If the time periods for monitoring described in this paragraph cannot be achieved due to laboratory availability, GE will inform the RWQCB in writing and provide a schedule to perform the required monitoring for RWQCB approval. The following protocol shall be used for accelerated monitoring and TRE initiation:"

9) SECTION IV, C, 2, B, IV, A

a) If the results of four (4) consecutive accelerated monitoring tests do not exceed the monitoring trigger, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.

As described above, GE requests a single retest be performed. The first sentence in the above paragraph should be modified to read: "If the results of the single accelerated monitoring test does not exceed the monitoring trigger, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring."

10) SECTION IV, C, 2, B, IV, B

b) If the source(s) of the toxicity is easily identified (i.e. temporary facility upset), the Discharger shall make necessary corrections to the facility and shall continue accelerated monitoring until four (4) consecutive accelerated tests do not exceed the monitoring trigger. Upon confirmation that the effluent toxicity has been removed, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring.

As described above, conducting four consecutive accelerated tests is unwarranted. GE requests the provision be modified to read: "If the source(s) of the toxicity is easily identified (i.e., temporary facility upset), the Discharger shall make necessary corrections to the facility and shall continue accelerated monitoring until an accelerated test does not exceed the monitoring trigger."

11) SECTION IV, C, 2, B, IV, C

c) If the result of any accelerated toxicity test exceeds the monitoring trigger, the Discharger shall cease accelerated monitoring and initiate a TRE to investigate the cause(s) of, and identify corrective actions to reduce or eliminate effluent toxicity. Within thirty (30) days of notification by the laboratory of the test results exceeding

the monitoring trigger during accelerated monitoring, the Discharger shall submit a TRE Action Plan to the Regional Water Board including, at minimum:

The schedule (30 days from notification by the laboratory following accelerated monitoring) given for submittal of the TRE Action Plan is insufficient. Following notification by the laboratory that the results of accelerated monitoring indicated the presence of chronic toxicity, GE will need sufficient time to validate the laboratory data and to perform the work described in the Initial Investigation TRE Work Plan described above in Section VI, C, 2, b, iv. GE requests the second sentence of the above paragraph be modified to include a sixty day (60) day schedule for submittal of the TRE Action Plan.

The last sentence in the above paragraph should be modified to include RWQCB review and approval of the TRE Work Plan; . . . the Discharger shall submit a TRE Action Plan to the Regional Water Board for approval including, at minimum:"

12) SECTION IV, C, 2, B, IV, C, 3

Within **sixty (60) days** of notification by the laboratory of the test results, the Discharger shall submit to the Regional Water Board a TRE Work Plan for approval by the Executive Officer. The TRE Work Plan shall outline the procedures for identifying the source(s) of, and reducing or eliminating effluent toxicity. The TRE Work Plan must be developed in accordance with USEPA guidance[1].

The above paragraph indicates the time for submittal of the TRE Work Plan should be contingent on the date when data are received from the laboratory. This schedule does not allow for RWQCB review of the TRE Action Plan or the subsequent implementation of the TRE Action Plan. GE can not initiate the work described in the TRE Action plan until it is approved by the RWQCB. The first sentence of the above paragraph should be replaced with "Within sixty (60) days of completion of the work described in approved TRE Action Plan, the Discharger shall submit to the Regional Water Board a TRE Work Plan for approval by the Executive Officer."

13) SECTION VII, A

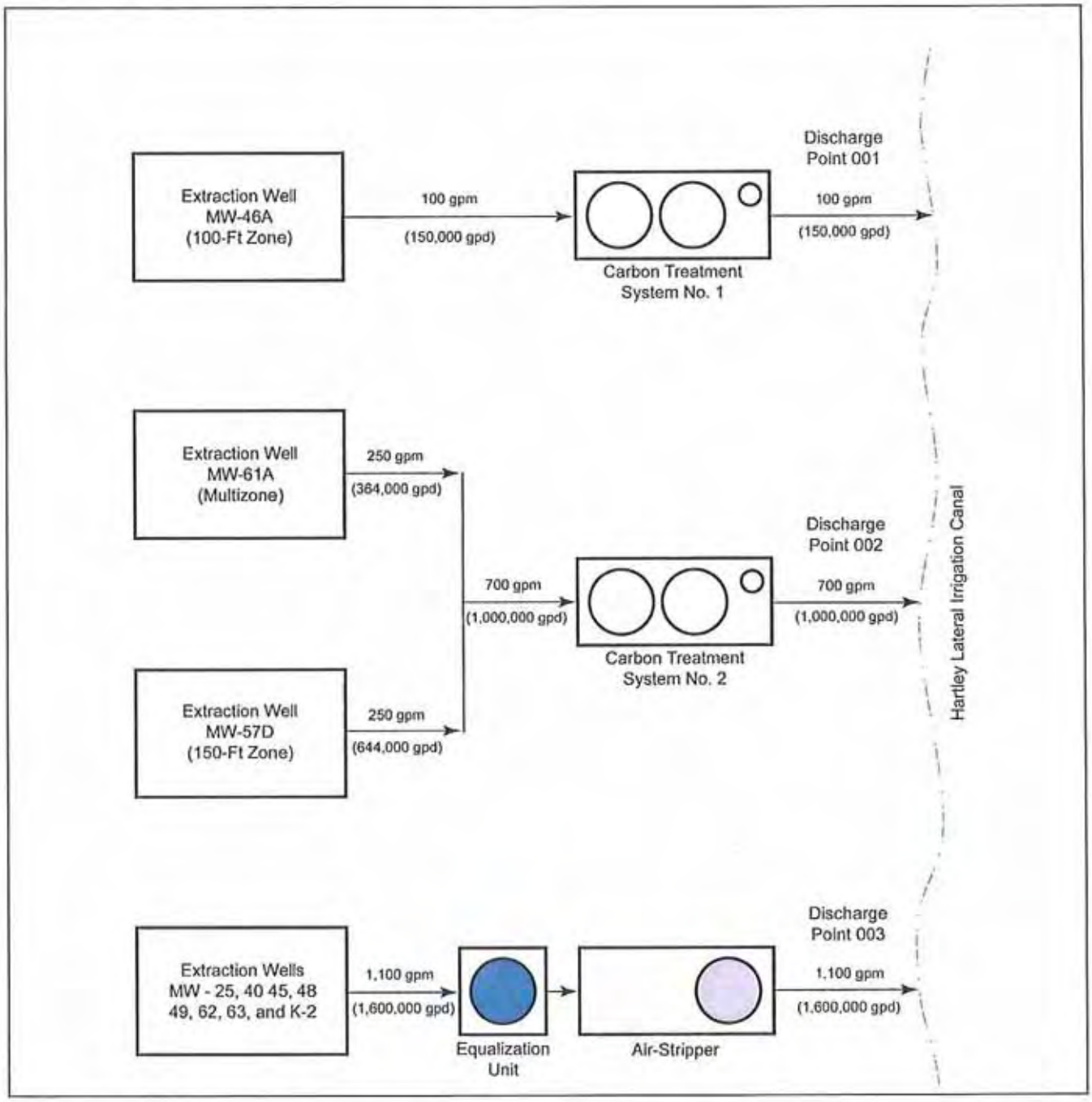
A. **Volatile Organic Compounds (VOCs) Maximum Daily Effluent Limitation.** VOCs include all typical VOCs listed in Appendix 4 of the SIP. The maximum daily effluent limitation of less than 0.5 µg/L applies to each VOC.

There are several VOC constituents listed in Appendix 4 of the SIP for which the laboratory analysis listed in the MRP does not provide a PQL of 0.5 µg/L or less. For these constituents it is not clear how compliance will be determined. GE requests the following language be inserted in the above paragraph: "In the case

[1] See Attachment F (Fact Sheet) Section VII.B.2.a. for a list of EPA guidance documents that must be considered in development of the TRE Workplan.

where the practical quantitation limit of the analysis is not 0.5 ug/L or less, the discharge shall be considered compliant if the constituent is not detected above the practical quantitation limit."

14) ATTACHMENT C – FLOW SCHEMATIC



Attachment C is a flow schematic of the three treatment systems. The attachment should be updated to show well MW-44A as one of the air stripper extraction wells.

15) ATTACHMENT D, SECTION V, C, 2

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 CFR 122.41(l)(4)(i).)

This section should be deleted as sludge reporting and disposal does not occur at the site.

16) ATTACHMENT D, SECTION V, C, 3

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 CFR 122.41(l)(4)(ii).)

***The references to sludge should be deleted as sludge reporting is not relevant to sampling conducted at the site. The paragraph should be revised as follows: "If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under Part 136 or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted to the Regional Water Board.* (40 CFR 122.41(l)(4)(ii).)"**

17) ATTACHMENT E, SECTION III, TABLE E-2

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Chloroform	µg/L	Grab	1/quarter	1
trans-1,2-Dichloroethylene	µg/L	Grab	1/quarter	1
cis-1,2-Dichloroethylene	µg/L	Grab	1/quarter	2
Tetrachloroethylene	µg/L	Grab	1/quarter	1
Trichloroethylene	µg/L	Grab	1/quarter	1
Other VOCs[3,4]	µg/L	Grab	1/quarter	1

[1] Test method used shall be EPA Method 601, Standard Method (20th edition) 6200C, EPA Method 8260, or equivalent method with a practical quantitation limit (PQL) no greater than 0.5 µg/L.

[2] Test method used shall be Standard Method (20th edition) 6200B, EPA Method 8260, or an equivalent method with a PQL no greater than 0.5 µg/L.

[3] All typical volatile organic constituents listed in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP).

[4] VOCs = Volatile Organic Compounds

GE's records indicate chloroform was last detected at a treatment system well in 1996. Based on the infrequency of detection, chloroform should be deleted from the above table.

GE's records indicate trans-1,2-dichloroethylene (trans-1,2-DCE) has not been detected at a treatment system well since 1984. Based on the infrequency of detection, trans-1,2-DCE should be deleted from the above table.

Footnote 1 indicates a practical quantitation limit (PQL) of 0.5 ug/L is achievable for the volatile organic chemicals specifically named in the table. However, it is not achievable for all constituents listed in the SIP. Consequently, this footnote should be deleted from the row "Other VOCs" in the table.

Footnote 3 indicates analyses should include all constituents included in Appendix 4 of the SIP. As described in the approved O&M Plan, two constituents included in the SIP (acrolein and acrylonitrile) cannot be detected by the approved analytical method (EPA Method 8260). The footnote should be modified to read: "All typical volatile organic constituents listed in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP) as noted in the approved O&M Plan". This language would clarify that "typical" means the approved monitoring list contained in the O&M Plan, not all constituents described in the SIP.

18) ATTACHMENT E, SECTION IV, TABLE E-3

Table E-3. Effluent Monitoring at Monitoring Location EFF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous[1]	–
Electrical Conductivity @ 25 °C	µmhos/cm	Grab	1/quarter	2
Dissolved Oxygen	mg/L	Grab	1/quarter	2
pH	Standard Units	Grab	1/quarter	2
General Minerals[4]	mg/L	Grab	1/quarter[5]	2
Arsenic	µg/L	Grab	1/quarter	2,3
Mercury	µg/L	Grab	1/quarter	2,3
Selenium	µg/L	Grab	1/quarter	2,3
Chloroform	µg/L	Grab	1/quarter	3,6

trans-1,2-Dichloroethylene	µg/L	Grab	1/quarter	3,6
cis-1,2-Dichloroethylene	µg/L	Grab	1/quarter	7
Tetrachloroethylene	µg/L	Grab	1/quarter	3,6
Trichloroethylene	µg/L	Grab	1/quarter	3,6
Other VOCs[8,9]	µg/L	Grab	1/quarter	3,6
Priority Pollutants[10]	µg/L	Grab	4/permit lifecycle[11]	2,3

1 The Discharger may substitute daily average flow when continuous flow meter is non-operational. The Discharger must clearly indicate when the flow is measured as daily average, and describe when the continuous flow meter is non-operational.

2 Samples shall be analyzed using the methods and procedures described in 40 CFR 136, or other methods approved and specified by the Executive Officer.

3 For priority pollutant constituents with effluent limitations, detection limits shall be below the effluent limitations. If the lowest minimum level (ML) published in Appendix 4 of the SIP is not below the effluent limitation, the detection limit shall be the lowest ML. For priority pollutant constituents without effluent limitations, the detection limits shall be equal to or less than the lowest ML published in Appendix 4 of the SIP.

4 General Minerals shall include alkalinity, bicarbonate, calcium, carbonate chloride, electrical conductivity at 25 °C, hardness, hydroxide, iron, magnesium, manganese, pH, potassium, sodium, sulfate, total dissolved solids, and all major anions and cations. Analyses should be accompanied by an anion cation balance demonstrating that analyses are complete.

5 After one year of monitoring and reporting, the Discharger may request the Executive Officer to reduce the monitoring frequency.

6 Test method used shall be EPA Method 601, Standard Method (20th edition) 6200C, EPA Method 8260, or equivalent method with a practical quantitation limit (PQL) no greater than 0.5 µg/L.

7 Test method used shall be Standard Method (20th edition) 6200B, EPA Method 8260, or an equivalent method with a PQL no greater than 0.5 µg/L.

8 All typical volatile organic constituents listed in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP).

9 VOCs = Volatile Organic Compounds.

10 Concurrent with receiving surface water sampling.

11 Must be sampled during the first, third, and fourth year of the permit term; and during the first half of the fifth year, prior to application for NPDES permit renewal.

GE's records indicate chloroform was last detected at a treatment system well in 1996. Based on the infrequency of detection, chloroform should be deleted from the above table.

GE's records indicate trans-1,2-DCE has not been detected at the treatment system well since 1984. Based on the infrequency of detection, trans-1,2-DCE should be deleted from the above table.

Footnote 3 indicates the EPA methods in the permit provide detection limits equal to the effluent limitations, not below them. The language should be modified to read: "... detection limits shall be equal to or below the effluent limitations."

Footnote 6 indicates a PQL of 0.5 ug/L is achievable for the volatile organic chemicals specifically named in the table. However, it is not achievable for all constituents listed in the SIP. Consequently, this footnote should be deleted from the row "Other VOCs" in the table.

Footnote 8 indicates analyses should include all constituents included in Appendix 4 of the SIP. As described in the approved O&M Plan, two constituents included in the SIP (acrolein and acrylonitrile) cannot be detected by the approved analytical method (EPA Method 8260). The footnote should be modified to read: "All typical volatile organic constituents listed in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP) as noted in the approved O&M Plan." This language would clarify that "typical" means the approved monitoring list contained in the O&M Plan, not all constituents described in the SIP.

Footnote 11 increases the frequency of priority pollutant monitoring from once per five years to biennially. Priority pollutants have been monitored twice in 2001 and once in 2008. Based on these data, the RWQCB has determined that increased monitoring frequency for only arsenic, selenium, and mercury is warranted as only these constituents may have a reasonable potential to exceed water quality goals. Therefore, increasing the frequency of all priority pollutants is not justified and the frequency shown in the table should be changed to once per five years as described in the previous permit. Additional comments on the frequency of priority pollutant monitoring are presented in the review of Attachment F, Section VI, B, 2, c.

Based on discussions with the RWQCB, effluent monitoring is not required when the treatment system is only operated for the purpose of collecting samples from the extraction wells. GE requests an additional footnote documenting this interpretation of the requirement be added to the table. The following language is proposed: "12. Effluent monitoring is not required when the RWQCB has approved non operation of the system."

19) ATTACHMENT E, SECTION IV, TABLE E-4

Table E-4. Effluent Monitoring at Monitoring Location EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous[1]	-
Electrical Conductivity @ 25 °C	µmhos/cm	Grab	1/quarter	2
Dissolved Oxygen	mg/L	Grab	1/quarter	2
pH	Standard Units	Grab	1/quarter	2
General Minerals[4]	mg/L	Grab	1/quarter[5]	2
Arsenic	µg/L	Grab	1/quarter	2,3
Mercury	µg/L	Grab	1/quarter	2,3
Selenium	µg/L	Grab	1/quarter	2,3
Chloroform	µg/L	Grab	1/quarter	3,6

trans-1,2-Dichloroethylene	µg/L	Grab	1/quarter	3,6
cis-1,2-Dichloroethylene	µg/L	Grab	1/quarter	7
Tetrachloroethylene	µg/L	Grab	1/quarter	3,6
Trichloroethylene	µg/L	Grab	1/quarter	3,6
Other VOCs[8,9]	µg/L	Grab	1/quarter	3,6
Priority Pollutants[10]	µg/L	Grab	4/permit lifecycle[11]	2,3

1 The Discharger may substitute daily average flow when continuous flow meter is non-operational. The Discharger must clearly indicate when the flow is measured as daily average, and describe when the continuous flow meter is non-operational.

2 Samples shall be analyzed using the methods and procedures described in 40 CFR 136, or other methods approved and specified by the Executive Officer.

3 For priority pollutant constituents with effluent limitations, detection limits shall be below the effluent limitations. If the lowest minimum level (ML) published in Appendix 4 of the SIP is not below the effluent limitation, the detection limit shall be the lowest ML. For priority pollutant constituents without effluent limitations, the detection limits shall be equal to or less than the lowest ML published in Appendix 4 of the SIP.

4 General Minerals shall include alkalinity, bicarbonate, calcium, carbonate chloride, electrical conductivity at 25 °C, hardness, hydroxide, iron, magnesium, manganese, pH, potassium, sodium, sulfate, total dissolved solids, and all major anions and cations. Analyses should be accompanied by an anion cation balance demonstrating that analyses are complete.

5 After one year of monitoring and reporting, the Discharger may request the Executive Officer to reduce the monitoring frequency.

6 Test method used shall be EPA Method 601, Standard Method (20th edition) 6200C, EPA Method 8260, or equivalent method with a practical quantitation limit (PQL) no greater than 0.5 µg/L.

7 Test method used shall be Standard Method (20th edition) 6200B, EPA Method 8260, or an equivalent method with a PQL no greater than 0.5 µg/L.

8 All typical volatile organic constituents listed in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP).

9 VOCs = Volatile Organic Compounds.

10 Concurrent with receiving surface water sampling.

11 Must be sampled during the first, third, and fourth year of the permit term; and during the first half of the fifth year, prior to application for NPDES permit renewal.

GE's records indicate chloroform was last detected at a treatment system well in 1996. Based on the infrequency of detection, chloroform should be deleted from the above table.

GE's records indicate trans-1,2-DCE has not been detected at the treatment system well since 1984. Based on the infrequency of detection, trans-1,2-DCE should be deleted from the above table.

Footnote 3 indicates the EPA methods in the permit provide detection limits equal to the effluent limitations, not below them. The language should be modified to read: "... detection limits shall be equal to or below the effluent limitations."

Footnote 6 indicates a PQL of 0.5 ug/L is achievable for the volatile organic chemicals specifically named in the table. However, it is not achievable for all constituents listed in the SIP. Consequently, this footnote should be deleted from the row "Other VOCs" in the table.

Footnote 8 indicates analyses should include all constituents included in Appendix 4 of the SIP. As described in the approved O&M Plan, two constituents included in the SIP (acrolein and acrylonitrile) cannot be detected by the approved analytical method (EPA Method 8260). The footnote should be modified to read: "All typical volatile organic constituents listed in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP) as noted in the approved O&M Plan." This language would clarify that "typical" means the approved monitoring list contained in the O&M Plan, not all constituents described in the SIP.

Footnote 11 increases the frequency of priority pollutant monitoring from once per five years to biennially. Priority pollutants have been monitored twice in 2001 and once in 2008. Based on these data, the RWQCB has determined that increased monitoring frequency for only arsenic, selenium, and mercury is warranted as only these constituents may have a reasonable potential to exceed water quality goals. Therefore, increasing the frequency of for all priority pollutants is not justified and the frequency shown in the table should be changed to once per five years as described in the previous permit. Additional comments on the frequency of priority pollutant monitoring are presented in the review of Attachment F, Section VI, B, 2, c.

Based on discussions with the RWQCB, effluent monitoring is not required when the treatment system is only operated for the purpose of collecting samples from the extraction wells. GE requests an additional footnote documenting this interpretation of the requirement be added to the table. The following language is proposed: "12. Effluent monitoring is not required when the RWQCB has approved non operation of the system."

20) ATTACHMENT E, SECTION IV, TABLE E-5

Table E-5. Effluent Monitoring at Monitoring Location EFF-003

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous[1]	--
Electrical Conductivity @ 25 °C	µmhos/cm	Grab	1/quarter	2
Dissolved Oxygen	mg/L	Grab	1/quarter	2
pH	Standard Units	Grab	1/quarter	2
General Minerals[4]	mg/L	Grab	1/quarter[5]	2
Arsenic	µg/L	Grab	1/quarter	2,3
Mercury	µg/L	Grab	1/quarter	2,3
Chloroform	µg/L	Grab	1/quarter	3,6
trans-1,2-Dichloroethylene	µg/L	Grab	1/quarter	3,6

cis-1,2-Dichloroethylene	µg/L	Grab	1/quarter	[7]
Tetrachloroethylene	µg/L	Grab	1/quarter	[3,6]
Trichloroethylene	µg/L	Grab	1/quarter	[3,6]
Other VOCs[8,9]	µg/L	Grab	1/quarter	[3,6]
Priority Pollutants[10]	µg/L	Grab	4/permit lifecycle[11]	[2,3]

1 The Discharger may substitute daily average flow when continuous flow meter is non-operational. The Discharger must clearly indicate when the flow is measured as daily average, and describe when the continuous flow meter is non-operational.

2 Samples shall be analyzed using the methods and procedures described in 40 CFR 136, or other methods approved and specified by the Executive Officer.

3 For priority pollutant constituents with effluent limitations, detection limits shall be below the effluent limitations. If the lowest minimum level (ML) published in Appendix 4 of the SIP is not below the effluent limitation, the detection limit shall be the lowest ML. For priority pollutant constituents without effluent limitations, the detection limits shall be equal to or less than the lowest ML published in Appendix 4 of the SIP.

4 General Minerals shall include alkalinity, bicarbonate, calcium, carbonate chloride, electrical conductivity at 25 °C, hardness, hydroxide, iron, magnesium, manganese, pH, potassium, sodium, sulfate, total dissolved solids, and all major anions and cations. Analyses should be accompanied by an anion cation balance demonstrating that analyses are complete.

5 After one year of monitoring and reporting, the Discharger may request the Executive Officer to reduce the monitoring frequency.

6 Test method used shall be EPA Method 601, Standard Method (20th edition) 6200C, EPA Method 8260, or equivalent method with a practical quantitation limit (PQL) no greater than 0.5 µg/L.

7 Test method used shall be Standard Method (20th edition) 6200B, EPA Method 8260, or an equivalent method with a PQL no greater than 0.5 µg/L.

8 All typical volatile organic constituents listed in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP).

9 VOCs = Volatile Organic Compounds.

10 Concurrent with receiving surface water sampling.

11 Must be sampled during the first, third, and fourth year of the permit term; and during the first half of the fifth year, prior to application for NPDES permit renewal.

GE's records indicate chloroform was last detected at a treatment system well in 1996. Based on the infrequency of detection, chloroform should be deleted from the above table.

GE's records indicate trans-1,2-DCE has not been detected at the treatment system well since 1984. Based on the infrequency of detection, trans-1,2-DCE should be deleted from the above table.

Footnote 3 indicates the EPA methods in the permit provide detection limits equal to the effluent limitations, not below them. The language should be modified to read: "... detection limits shall be equal to or below the effluent limitations."

Footnote 6 indicates a PQL of 0.5 ug/L is achievable for the volatile organic chemicals specifically named in the table. However, it is not achievable for all constituents listed in the SIP. Consequently, this footnote should be deleted from the row "Other VOCs" in the table.

Footnote 8 indicates analyses should include all constituents included in Appendix 4 of the SIP. As described in the approved O&M Plan, two constituents included in the SIP (acrolein and acrylonitrile) cannot be detected by the approved analytical method (EPA Method 8260). The footnote should be modified to read: "All typical volatile organic constituents listed in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP) as noted in the approved O&M Plan." This language would clarify that "typical" means the approved monitoring list contained in the O&M Plan, not all constituents described in the SIP.

Footnote 11 increases the frequency of priority pollutant monitoring from once per five years to biennially. Priority pollutants have been monitored twice in 2001 and once in 2008. Based on these data, the RWQCB has determined that increased monitoring frequency for only arsenic, selenium, and mercury is warranted as only these constituents may have a reasonable potential to exceed water quality goals. Therefore, increasing the frequency of for all priority pollutants is not justified and the frequency shown in the table should be changed to once per five years as described in the previous permit. Additional comments on the frequency of priority pollutant monitoring are presented in the review of Attachment F, Section VI, B, 2, c.

Based on discussions with the RWQCB, effluent monitoring is not required when the treatment system is only operated for the purpose of collecting samples from the extraction wells. GE requests an additional footnote documenting this interpretation of the requirement be added to the table. The following language is proposed: "12. Effluent monitoring is not required when the RWQCB has approved non operation of the system."

21) ATTACHMENT E, SECTION V, A, 4

4. *Methods* – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.

This paragraph includes a requirement for testing of residual chlorine. GE does not treat with chlorine containing chemicals. Consequently, the requirement to test for residual chlorine is superfluous and the words" total residual chlorine" should be removed from the second sentence.

22) ATTACHMENT E, SECTION V, B, 2

2. *Sample Types* – Effluent samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent monitoring location specified in the Monitoring and Reporting Program. The receiving water control shall be a grab sample obtained from the RSW-001

sampling location, as identified in the Monitoring and Reporting Program. In the absence of receiving water (due to ephemeral nature of canal), laboratory water may be used as a control.

The paragraph above requires surface water as the dilutent for chronic testing. Surface water is normally used in chronic testing when the surface water is processed by a treatment plant so the effect on the water can be discerned. The GE treatment plants process groundwater and discharge to surface water. GE objects to the requirement for the Merced discharges to use surface water for dilution because mixing surface water with low hardness and groundwater with relatively high hardness is known to cause a delay in growth and reproduction of organisms due to the water chemistry change. This effect is known as acclimatization.

Chronic testing measures the number of days needed to for the organisms to grow and reproduce. Any delay in growth or reproduction due to acclimatization is measured by the test as toxicity even though no actual toxicity exists. GE currently uses moderately hard synthetic water prepared in accordance with EPA guidance for the test method. Guidance on selection of dilution water is provided in U. S. EPA's "Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing, July 2000 (Guidance). The Guidance section on selection of dilution water indicates "Tests can be conducted in the standard reconstituted dilution water to assess the absolute toxicity of the effluent. The WET method manuals (USEPA, 1993c; USEPA, 1994a; USEPA 1994b) describe this as the primary objective of NPDES permit-related toxicity testing". GE requests that the option to use any water prepared in accordance with approved EPA methods for the test be included in the testing provisions, consistent with GE's current permit. This change in the provision will allow the test to be performed accurately without false positive results due to acclimatization. Therefore, GE proposes the final two sentences of the paragraph be deleted.

23) ATTACHMENT E, SECTION V, D, 1

1. **Chronic WET Reporting.** Regular chronic toxicity monitoring results shall be reported to the Regional Water Board within 30 days following completion of the test, and shall contain, at minimum:

The requirement that a special report of chronic toxicity test results be prepared within 30 days of receipt of results is redundant and unnecessary. Other provisions of the Order require GE to initiate accelerated monitoring and provide work plans in the event chronic toxicity is detected. Under the current permit GE reports chronic testing results in the quarterly monitoring reports. Standard provisions require reporting within 24 hours if a potential effluent violation is detected. Consequently, the special reporting of detections required above is redundant or, in the case of non-detect results, unnecessary. The paragraph should be revised to include reporting of results in the applicable quarterly monitoring report as follows: "Regular chronic toxicity monitoring results shall

be reported to the Regional Water Board in the applicable quarterly monitoring report."

24) ATTACHMENT E, SECTION V, D, 1, E

e. The results compared to the numeric toxicity monitoring trigger.

Additionally, the monthly Discharger self-monitoring reports shall contain an updated chronology of chronic toxicity test results expressed in TUc, and organized by test species, type of test (survival, growth or reproduction), and monitoring frequency, i.e., either quarterly, monthly, accelerated, or TRE.

This provision does not apply since monthly self monitoring reports are not required. Furthermore, it is redundant since reporting of chronic toxicity is required under other provisions. This provision should be deleted except for the sentence: "The results compared to the numeric toxicity monitoring trigger."

25) ATTACHMENT E, SECTION V, D, 1

2. **Acute WET Reporting.** Acute toxicity test results shall be submitted 30 days following completion of the test and reported as percent survival.

The requirement that a special report of acute toxicity test results be prepared within 30 days of receipt of results is redundant and unnecessary. Standard provisions require reporting within 24 hours if a potential effluent violation is detected. The paragraph should be revised as follows: "Acute toxicity test results shall be submitted in the applicable quarterly monitoring report."

26) ATTACHMENT E, SECTION VIII, TABLE E-7

Table E-7. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	cfs	Estimate	1/quarter	--
Dissolved Oxygen	mg/L	Grab	1/quarter	1
pH	Standard Units	Grab	1/quarter	1
Temperature	°F	Grab	1/quarter	1
Electrical Conductivity @ 25 °C	µmhos/cm	Grab	1/quarter	1
General Minerals[3]	µg/L	Grab	1/quarter[4]	1
Priority Pollutants[5,6,7]	µg/L	Grab	4/permit lifecycle[6]	1,2

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method

1 Samples shall be analyzed using the methods and procedures described in 40 CFR 136, or other methods approved and specified by the Executive Officer.

2 For priority pollutant constituents with effluent limitations, detection limits shall be below the effluent limitations. If the lowest minimum level (ML) published in Appendix 4 of the SIP is not below the effluent limitation, the detection limit shall be the lowest ML. For priority pollutant constituents without effluent limitations, the detection limits shall be equal to or less than the lowest ML published in Appendix 4 of the SIP.

3 General Minerals shall include alkalinity, bicarbonate, calcium, carbonate chloride, electrical conductivity at 25 °C, hardness, hydroxide, iron, magnesium, manganese, pH, potassium, sodium, sulfate, total dissolved solids, and all major anions and cations. Analyses should be accompanied by an anion cation balance demonstrating that analyses are complete.

4 After one year of monitoring and reporting, the Discharger may request the Executive Officer to reduce the monitoring frequency.

5 Concurrent with effluent sampling.

6 Must be sampled during the first, third, and fourth year of the permit term; and with the application for NPDES permit renewal.

7 Monitoring required at RSW-001 only.

Footnote 2 indicates the EPA methods in the permit provide detection limits equal to the effluent limitations, not below them. The language should be modified to read: "... detection limits shall be equal to or below the effluent limitations."

In addition, footnote 2 indicates analyses should include all constituents included in Appendix 4 of the SIP. As described in the approved O&M Plan, two constituents included in the SIP (acrolein and acrylonitrile) cannot be detected by the approved analytical method (EPA Method 8260). The footnote should be modified to read: "All typical volatile organic constituents listed in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP) as noted in the approved O&M Plan." This language would clarify that "typical" means the approved monitoring list contained in the O&M Plan, not all constituents described in the SIP.

Footnote 7 - as described for Table E-5 and in the review of Attachment F, Section VI, B, 2, c, an increased frequency for priority pollutant monitoring is not justified. As described in the current permit, the frequency for priority pollutant monitoring should be once per permit.

The Hartley Lateral and Doane Lateral canals are effluent dominated water bodies. Consequently, upstream or downstream receiving water samples may not be available, depending on circumstances. In some cases the canals may only contain water originating from a treatment system discharge. The current permit contains the following language that clarifies when sampling of the receiving water is necessary: "Receiving water monitoring is not required when the discharge represents the entire flow in the receiving waters." GE requests this language be included in the new permit.

27) ATTACHMENT E, SECTION IX, TABLE E-8

Table E-8. Mid-Treatment Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Chloroform	µg/L	Grab	1/quarter	[1]
trans-1,2-Dichloroethylene	µg/L	Grab	1/quarter	[1]
cis-1,2-Dichloroethylene	µg/L	Grab	1/quarter	[2]
Tetrachloroethylene	µg/L	Grab	1/quarter	[1]
Trichloroethylene	µg/L	Grab	1/quarter	[1]
Other VOCs[3,4]	µg/L	Grab	1/quarter	[1]

[1] Test method used shall be EPA Method 601, Standard Method (20th edition) 6200C, EPA Method 8260, or equivalent method with a practical quantitation limit (PQL) no greater than 0.5 µg/L.

[2] Test method used shall be Standard Method (20th edition) 6200B, EPA Method 8260, or an equivalent method with a PQL no greater than 0.5 µg/L.

[3] All typical volatile organic constituents listed in Appendix 4 of the SIP.

[4] VOCs = Volatile Organic Compounds

GE's records indicate chloroform was last detected at a treatment system well in 1996. Based on the infrequency of detection, chloroform should be deleted from the above table.

GE's records indicate trans-1,2-DCE has not been detected at a treatment system well since 1984. Based on the infrequency of detection, trans-1,2-DCE should be deleted from the above table.

Footnote 1 indicates a PQL of 0.5 ug/L is achievable for the volatile organic chemicals specifically named in the table. However, it is not achievable for all constituents listed in the SIP. Consequently, this footnote should be deleted from the row "Other VOCs" in the table.

Footnote 3 indicates analyses should include all constituents included in Appendix 4 of the SIP. As described in the approved O&M Plan, two constituents included in the SIP (acrolein and acrylonitrile) cannot be detected by the approved analytical method (EPA Method 8260). The footnote should be modified to read: "All typical volatile organic constituents listed in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP) as noted in the approved O&M Plan." This language would clarify that "typical" means the approved monitoring list contained in the O&M Plan, not all constituents described in the SIP.

28) ATTACHMENT E, SECTION X, A, 3, B

b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

GE reports estimated values of results less than the RL but greater than the MDL as "J" values with the explanation that this reporting is equivalent to DNQ. GE has contacted several laboratories regarding the use of the nomenclature "DNQ" and has not found it to be available in standard laboratory reports. GE requests the following sentence be added to the provision to explicitly provide for reporting alternative reporting methods: "Alternative reporting nomenclature equivalent to DNQ may also be used."

29) ATTACHMENT E, SECTION X, A, 4

4. **Multiple Sample Data.** When determining compliance with an AMEL, AWEL, or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

   a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

   b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

Section 4 is not relevant to the site monitoring requirements described in the Order and should be deleted.

30) ATTACHMENT E, SECTION X, TABLE E-9

Table E-9. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	Submit with quarterly SMR
1/quarter	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 1 August 1 November 1 February 1
4/permit lifecycle	Permit effective date	Once during the first, third, and fourth years of the permit term; and during the first half of the fifth year, prior to application for NPDES permit renewal	First day of the second month following sample collection

As previously described, the row for priority pollutant monitoring should be amended to 1/permit lifecycle with consistent changes in all categories as shown below:

1/permit lifecycle	Permit effective date	Once during the first half of the fifth year, prior to application for NPDES permit renewal	November 1

31) ATTACHMENT F, TABLE F-1

Table F-1. Facility Information

WDID	5C241008001
Discharger	General Electric Company and Wellmade Products Company
Name of Facility	Groundwater Cleanup System
Facility Address	1715 Kibby Road Merced, CA 95340 Merced County
Facility Contact, Title and Phone	Lisa A. Hamilton, Regional Office Manager (610) 992-7885
Authorized Person to Sign and Submit Reports	Lisa A. Hamilton, Regional Office Manager (610) 992-7885
Mailing Address	640 Freedom Business Center King of Prussia, PA 19406
Billing Address	SAME
Type of Facility	Groundwater extraction and cleanup facility
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	B
Pretreatment Program	Not Applicable
Reclamation Requirements	Not Applicable
Facility Permitted Flow	0.15 million gallons per day (mgd) at Discharge Point 001, 1.0 mgd at Discharge Point 002, and 1.6 mgd at Discharge Point 003
Facility Design Flow	0.15 million gallons per day (mgd) at Discharge Point 001, 1.0 mgd at Discharge Point 002, and 1.6 mgd at Discharge Point 003
Watershed	San Joaquin Valley Floor Hydrological Unit, Merced Hydrologic Area (No. 535.80)
Receiving Water	Hartley Lateral Canal
Receiving Water Type	Canal

The title given for Lisa Hamilton is inaccurate. The title should be revised to read: "Manager, MidAtlantic/Southeast/Western Regions".

32) ATTACHMENT F, SECTION I, A

A. General Electric Company is the owner and operator of Groundwater Cleanup System (hereinafter Facility) including a groundwater extraction and treatment system consisting mainly of an on-site air stripping system and two off-site Granular Activated Carbon (GAC) treatment systems. General Electric Company previously owned, and Wellmade Products Company (WLMD) currently owns the property at

1715 Kibby Road, on which the air stripping system is located. Mr. Jim Lynn owns the property 1,560 feet north of East Childs Avenue and 2,640 feet east of Coffee Street on which one of the GAC treatment systems is located. Weaver Union School District owns the property at 3076 East Childs Avenue on which the other GAC treatment system is located. Both GAC treatment systems are on properties impacted by disposal practices at the WLMD property (see Section II of this Fact Sheet). Together General Electric Company and WLMD are hereinafter referred to as Discharger.

The 100-foot zone property is no longer owned by Mr. Jim Lynn. It is owned by the City of Merced. The third sentence should be amended to read: "The City of Merced owns the property 1,560 feet north of East Childs Avenue and 2,640 feet east of Coffee Street on which one of the GAC treatment systems is located."

33) ATTACHMENT F, SECTION II, B, 1

1. Discharge Point 001 is approximately 1,290 feet north of East Childs Avenue and approximately 2,600 feet east of Coffee Street in the SE ¼ of Section 27, T7S, R14E, MDB&M at a point Latitude 37° 17' 28.81" N and Longitude 120° 25' 28.39" E. Discharge Point 002 is at approximately 1,720 feet east of East Childs Avenue and Coffee Street intersection in the SE ¼ of Section 27, T7S, R14E, MDB&M at a point Latitude 37° 17' 16.14" N and Longitude 120° 25' 39.30" E. Discharge Point 003 is at approximately 1,290 feet north of East Childs Avenue and 2,610 feet east of Coffee Street in the SE ¼ of Section 27, T7S, R14E, MDB&M at a point Latitude 37° 17' 28.82" N and Longitude 120° 25' 28.23" E.

In three places in the above paragraph, latitude is given as "E" or east. This should be corrected to read "W" or west.

34) ATTACHMENT F, SECTION III, C, 1

The beneficial uses of Hartley Canal are not individually identified in the Basin Plan, but Hartley Canal discharges to Miles Creek, which flows into the San Joaquin River. Upon review of the flow conditions, habitat values, and beneficial uses of Hartley Canal, the Regional Water Board finds that the beneficial uses identified in the Basin Plan for the San Joaquin River, from Sack Dam to the mouth of Merced River, are applicable to Hartley Canal, and include: municipal and domestic supply; agricultural supply; industrial process supply; water contact recreation; non-contact water recreation; warm freshwater habitat; warm migration of aquatic organisms; cold migration of aquatic organisms; warm spawning, reproduction, and/or early development; cold spawning, reproduction, and /or early development; and wildlife habitat.

GE does not believe that the beneficial uses REC-1, REC-2, MIGR are appropriate in the Hartley Lateral Canal. Therefore, reference to these uses should be removed from the above paragraph. Please see comments on Section II, H of the Limitations and Discharge Requirements.

35) ATTACHMENT F, SECTION IV, TABLE F-5

Table F-5. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Chloroform	µg/L	--	--	<0.5	--	--
cis-1,2-Dichloroethylene	µg/L	--	--	<0.5	--	--
trans-1,2-Dichloroethylene	µg/L	--	--	<0.5	--	--
Tetrachloroethylene	µg/L	--	--	<0.5	--	--
Trichloroethylene	µg/L	--	--	<0.5	--	--
Other Volatile Organic Compounds[1]	µg/L	--	--	<0.5	--	--

[1] All typical volatile organic compounds listed in Appendix 4 of the SIP.

GE's records indicate chloroform was last detected at a treatment system well in 1996. Based on the infrequency of detection, chloroform should be deleted from the above table.

GE's records indicate trans-1,2-DCE has not been detected at the treatment system well since 1984. Based on the infrequency of detection, trans-1,2-DCE should be deleted from the above table.

36) ATTACHMENT F, SECTION IV, C, 3, F, PARAGRAPH 2

Based on one sample for each discharge point, the maximum observed effluent mercury concentrations were 0.12 µg/L (estimated value), 0.15 µg/L (estimated value), and 0.075 µg/L (estimated value) at Discharge Points 001, 002, and 003, respectively. The MDL was 0.06 µg/L and the PQL was 0.2 µg/L. The mercury results are from samples collected on the same date, 15 April 2008, as the arsenic samples discussed above and the selenium samples described below. Mercury is not expected to be found in local groundwater and all reported values are estimated values. Given this, the data is insufficient to determine whether there is a reasonable potential for the discharge to cause or contribute to an in-stream excursion above the CTR criterion for mercury. A monitoring requirement has been established for mercury in this Order to gather additional information to determine if mercury is present in the effluent. Should monitoring results indicate that the discharge has a reasonable potential to cause or contribute to an exceedance of a water quality standard, then this Order may be reopened and modified by adding appropriate effluent limitations.

The mercury data described above are total concentrations. As described in Section 1.3 and Appendix 3 of the State Water Resources Control Board 2005 Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, data for total mercury should be adjusted by a conversion factor before comparison with water quality criteria for dissolved constituents. The total concentration data in the above paragraph should be amended accordingly.

37) ATTACHMENT F, SECTION IV, TABLE F-6

Table F-6. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations
		Maximum Daily
Chloroform	µg/L	<0.5
cis-1,2-Dichloroethylene	µg/L	<0.5
trans-1,2-Dichloroethylene	µg/L	<0.5
Tetrachloroethylene	µg/L	<0.5
Trichloroethylene	µg/L	<0.5
Other VOCs[1]	µg/L	<0.5

[1] Other typical Volatile Organic Compounds listed in Appendix 4 of the SIP

As previously described, inclusion of chloroform and trans-1,2-DCE is not justified. Effluent limitations for these constituents should be removed from the table.

38) ATTACHMENT F, SECTION IV, D, 2, D

d. The additive toxicity of carbon tetrachloride, chloroform, tetrachloroethylene, and trichloroethylene in the discharge from the facility shall not exceed 1.0. The calculations shall be based on the maximum limits and the following formula as described in the Basin Plan at IV-18:

Carbon tetrachloride should be deleted from the above provision to be consistent with the remainder of the order. As previously discussed, specific reference to chloroform should be deleted.

39) ATTACHMENT F, SECTION VI, B, 2, A

a. Effluent monitoring frequencies and sample types for flow (continuous), electrical conductivity at 25 °C (quarterly), dissolved oxygen (quarterly), pH (quarterly), General Minerals (quarterly), carbon tetrachloride (quarterly), chloroform (quarterly), cis-1,2-dichloroethylene (quarterly), trans -1,2-dichloroethylene, (quarterly), tetrachloroethylene (quarterly), trichloroethylene (quarterly), and other VOCs (quarterly) have been retained from Order No. R5-2004-0065 to determine compliance with effluent limitations.

Carbon tetrachloride should be deleted from the above provision to be consistent with the remainder of the order. As previously discussed, specific reference to chloroform and trans-1,2-DCE should be deleted.

40) ATTACHMENT F, SECTION VI, B, 2, C

c. Priority pollutant data for the effluent has been provided by the Discharger over the term of Order No. R5-2004-0065, and was used to conduct a meaningful reasonable potential analysis. However, in accordance with Section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. Periodic priority pollutant monitoring is also necessary to provide data that would account for changes in the influent and groundwater. Thus, the monitoring frequency for priority pollutants has been established four times during the current permit term: the first, third, and fourth year of the permit term; and with the application for NPDES permit renewal.

The paragraph above indicates biennial priority pollutant data are needed to account for possible changes in groundwater constituents. The site is well characterized and it is clear that the only changes measured in groundwater constituents over time have been reductions in VOC concentrations. Based on these data, the RWQCB required a single monitoring event during the life of the current permit, not biennal monitoring.

Special studies have been included in the order where insufficient data existed to determine if a reasonable potential exists. The increased frequency of monitoring indicated is not justified for the large range of constituents where the RWQCB has determined that no reasonable potential exists. Therefore, GE requests the above paragraph be modified to read: "Thus, the monitoring frequency for priority pollutants has been established as once with the application for NPDES permit renewal."

41) ATTACHMENT F, SECTION VI, D, 1, B

b. Monitoring for priority pollutants is required (during the first, third, and fourth year of the Order term; and with the application of NPDES permit renewal) to collect the necessary data to determine reasonable potential as required in section 1.2 of the SIP. The pH and hardness (as CaCO3) of the receiving water shall also be monitored concurrently with the priority pollutants to ensure the water quality criteria are correctly adjusted for the receiving water when determining reasonable potential as specified in section 1.3 of the SIP.

The paragraph above indicates biennial data are needed. The site is well characterized and it is clear that the only changes measured in groundwater constituents over time have been reductions in VOC concentrations. The RWQCB came to this conclusion during the last permit renewal process and required a single monitoring event during the life of the permit, not biennal monitoring. The data available continue to justify a once per the life of the permit sampling frequency. Therefore, the first sentence of the above paragraph should be modified to read: "Monitoring for priority pollutants is required (with the

application of NPDES permit renewal) to collect the necessary data to determine reasonable potential as required in section 1.2 of the SIP."

42) ATTACHMENT F, SECTION VII, B, 2, A, PARAGRAPH 4

Accelerated Monitoring. The provision requires accelerated WET testing when a regular WET test result exceeds the monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is a pattern of toxicity before requiring the implementation of a TRE. Due to possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete.

There is no evidence of seasonality in any of the data that are referenced above in the fact sheet. Consequently, accelerated monitoring cannot be based on an assumed presence of seasonality. The last sentence of the above paragraph should be removed as no evidence of seasonality has been provided. GE suggests the following language be substituted: "Accelerated monitoring will be conducted in accordance with a work plan approved by the RWQCB."

43) ATTACHMENT F, SECTION VII, B, 2, A, PARAGRAPH 5

The provision requires accelerated monitoring consisting of four chronic toxicity tests every two weeks using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991* (TSD). The TSD at page 118 states, "EPA recommends if toxicity is repeatedly or periodically present at levels above effluent limits more than 20 percent of the time, a TRE should be required." Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only 1 of 5 tests are toxic, including the initial test). However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity (i.e. toxicity present exceeding the monitoring trigger more than 20 percent of the time), the Executive Officer may require that the Discharger initiate a TRE.

The TSD referenced above recommends multiple analyses for publically operated treatment works and other large scale dischargers where it is reasonable to assume that there are seasonal and other variations in the discharge. GE has submitted five sets of acute and chronic data since 2004, which indicate no toxicity exists in the discharge. Since the TSD was not intended to apply to discharges similar to GE's and toxicity has not been "repeatedly or periodically present at levels above effluent limitations more than 20 percent of the time," it is inappropriate to apply the TSD recommendation in this order. As described previously, it is far more likely that toxicity detected in a sample is due to a false positive test result. GE proposes the above paragraph be amended to state that a

single retest will be conducted and the need for a TRE will be contingent on the results of that test.

44) ATTACHMENT F, SECTION VII, B, 3, A

a. **Salinity Evaluation and Minimization Plan.** An Evaluation and Minimization Plan for salinity is required in this Order to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of salinity to Hartley Canal. For example, the Discharger should be minimizing the use of salt containing substances in their air stripper system maintenance such as additives used for pH adjustment.

GE does not use additives for pH adjustment. The last sentence of the paragraph should be deleted.

45) ATTACHMENT G

Discharge Point 001 – Reasonable Potential Analysis for Other Pollutants of Concern

Constituent, Unit	Chloride, mg/L	Electrical Conductivity, µmhos/cm	Iron, µg/L	Mn, µg/L	Sodium, mg/L	Sulfate, mg/L	TDS, mg/L				
Number of Samples	13	13	13	13	13	13	13				
LEC	4.2	280	ND	ND	21	10	220				
MEC	6.4	490	160	24	26	14	350				
Maximum Background	8	460	1800	34	26	18	340				
Numeric Basin Plan Objective	–	–	MCL 300	MCL 50	–	MCL 250	MCL 500				
Narrative Basin Plan Objective	USEPA 230 CCC 860 CMC	Ag WQ Goal 700	USEPA 1000 CCC	Ag WQ Goal 200	Ag WQ Goal 69	–	Ag WQ Goal 450				
Other factors (303d listing, bioaccum ...)	Ag WQ Goal 106	–	Ag WQ Goal 5000	–	–	–	–				
Reasonable Potential	N	N	I	N	N	N	N				

In the above table, the MEC for iron is less than the lowest applicable water quality criteria. Therefore, the conclusion of the analysis should be changed to "N", designating no reasonable potential.