

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2005-0059

NPDES NO. CA0082511

WASTE DISCHARGE REQUIREMENTS  
FOR  
AAF-McQUAY, INC., ET AL.  
GROUNDWATER REMEDIATION SYSTEM  
TULARE COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board) finds that:

1. AAF-McQuay, Inc., a Delaware corporation, operates a groundwater cleanup system located two miles west of Visalia. AAF-McQuay, Inc., as system operator, is the primary discharger. G&H Enterprises, LLC., Danny S. Freitas and Jeannette Freitas; Fewer Ranch; the Estate of Bill B. Baniyas; Clifton G. Harris III and Charmaine L. Harris; Arthur Duarte and Katherine Duarte Family Trust; and Delbert and Geraldine Williamson and Mohr Family Revocable Living Trust, as property owners where groundwater is extracted or owners and lease holders who accept treated groundwater for irrigation, are secondary dischargers (collectively all are hereafter referred to as Discharger).
2. Waste Discharge Requirements Order No. 98-200, adopted by this Regional Board on 23 October 1998, regulates the discharge of treated groundwater to North Branch Mill Creek Ditch, a water of the United States, and to nearby farmland. The Discharger submitted a Report of Waste Discharge (ROWD), dated 4 April 2003, to renew its permit under the National Pollutant Discharge Elimination System (NPDES).
3. The Discharger's effluent consists of treated groundwater from two granular activated carbon (GAC) treatment systems. The discharge from both treatment systems to North Branch Mill Creek Ditch is via Discharges 001 and 003, as shown on Attachments A and B, a part of this Order. Treated effluent is also diverted and discharged from both of the treatment systems to ten agricultural fields. The discharge from the GAC treatment systems to the agricultural fields is designated Discharge 002.
4. Six wells are used for extraction of groundwater. Groundwater extracted from five of the wells is treated at GAC Unit No. 28B5/28G1 and discharged to Discharge 001. The Discharger's ROWD states that the average flow from this treatment unit is 0.95 million gallons per day (mgd). Groundwater from the remaining well is treated at GAC Unit No. 28E3. The ROWD reports an average flow of 0.45 mgd discharged from GAC Unit No. 28E3 to Discharge 003. Each GAC treatment unit consists of two carbon vessels that are operated in series to safeguard against VOC discharges occurring from constituent breakthrough. The treatment systems each have a design capacity sufficient to treat a maximum of 1.44 mgd.

5. The discharge to North Branch Mill Creek Ditch from GAC Unit No. 28B5/28G1 occurs at Latitude 36° 20'00" North, Longitude 119° 22' 13" West (Discharge 001). The discharge to North Branch Mill Creek Ditch from GAC Unit No. 28E3 occurs at Latitude 36° 20' 04" North, Longitude 119° 22' 49" West (Discharge 003). The site lies within the Kaweah Delta Hydrologic Area (No. 558.10) in the South Valley Floor Hydrologic Unit.

North Branch Mill Creek Ditch discharges into Cross Creek, which normally flows to the Tule River during wet years.

6. The agricultural fields (Discharge 002) are used for growing fruit, walnuts, pecans, and field crops. The agricultural fields (APNs 81-03-69, 81-03-36, 81-03-19, 81-04-27, 81-04-05, 81-04-26, 81-03-57, 81-03-22, 81-03-33) are owned by G&H Enterprises, LLC., Danny S. Freitas and Jeannette Freitas; Fewer Ranch; the Estate of Bill B. Baniyas; Clifton G. Harris III and Charmaine L. Harris; Albert Duarte and Katherine Duarte Family Trust; and Delbert and Geraldine Williamson and Mohr Family Revocable Living Trust.
7. Groundwater investigations show groundwater beneath the "east" and "west" parcels (APNs 85-02-38 and 81-03-69, respectively) to be degraded with VOCs such as 1,1-dichloroethane (1,1-DCA); 1,1-dichloroethylene (1,1-DCE); tetrachloroethylene (PCE); 1,1,1-trichloroethane (1,1,1-TCA); and trichloroethylene (TCE).

Initial monitoring studies showed that TCE was detected at concentrations as high as 17,750 µg/L near several dry wells at the east parcel. Other constituents were detected below Maximum Contaminant Levels (MCLs), including chloroform; cis-1,2-dichloroethylene (cis-1,2-DCE); and 1,1,2-trichloroethane (1,1,2-TCA). The ROWD reported influent concentrations of total VOCs have reduced over time to 7.6-8.8 µg/L.

8. Monthly effluent monitoring data submitted by the Discharger for the period of 1999 to 2003 were examined and the values of constituents are summarized below:

**TABLE 1 - TREATMENT UNIT 28B5/28G1 (DISCHARGE 001)**

Average Flow: 0.47 mgd  
 Maximum Daily Flow: 1.05 mgd  
**Design Flow: 1.44 mgd**

Constituent	Units	Average <sup>1</sup>	High <sup>1</sup>	Low <sup>1</sup>
Chloromethane	µg/L	0.25	0.52	0.25
1,1-Dichloroethylene	µg/L	0.42	2.0	0.25
cis-1,2-Dichloroethylene	µg/L	0.30	1.6	0.25
Trichloroethylene	µg/L	0.26	0.79	0.25
1,1,1 Trichloroethane	µg/L	0.25	0.25	0.25

<sup>1</sup> 50% of the reporting limit (i.e. 0.25 µg/L) was substituted for non-detect values.

**TABLE 2 - TREATMENT UNIT 28E3 (DISCHARGE 003)**

Average Flow: 0.32 mgd  
 Maximum Daily Flow: 0.66 mgd  
**Design Flow: 1.44 mgd**

Constituent	Units	Average <sup>1</sup>	High <sup>1</sup>	Low <sup>1</sup>
Chloroform	µg/L	0.26	0.74	0.25
1,1-Dichloroethylene	µg/L	0.5	2.7	0.25
Tetrachloroethylene	µg/L	0.28	1.7	0.25
Trichloroethylene	µg/L	0.28	1.6	0.25

<sup>1</sup> 50% of the reporting limit (i.e. 0.25 µg/L) was substituted for non-detect values.

9. Discharger treatment system influent monitoring data for January to September 2003 are summarized below:

<u>Constituent</u>	<u>Maximum Influent Concentration 28B5/28G1 (µg/L)</u>	<u>Maximum Influent Concentration – 28E3 (µg/L)</u>
1,1-Dichloroethylene	2.4	2.4
Trichloroethylene	35	14

10. Remediation activities at the site are proceeding under California Environmental Protection Agency, Department of Toxic Substances Control's (DTSC) Imminent and Substantial Endangerment Determination and Order No. I&S 90/91-001. DTSC is the lead agency in the site remediation activity. On 11 December 1997, DTSC approved the Final Remedial Action Plan (RAP) for the site, which established groundwater target cleanup levels for the compounds of interest at their respective MCLs.
11. The Discharger conducts short-term pumping tests at the monitoring or extraction wells. Pumped water is diverted to any one of the treatment units for treatment prior to discharge. The Discharger occasionally discharges untreated wastewater in small volumes to the agricultural fields during well development, redevelopment, or tests of well pump repairs. The discharge of untreated wastewater is limited to 100,000 gallons per 5-day period and such events would not occur more than 10 days per year. The discharges are de minimus: the worst-case scenario, discharge to the smallest field, field No. 9 of two-acres, would result in a hydraulic loading of only 270 gal/ac/day.

12. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition* (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives (WQOs), and contains implementation programs and policies to achieve WQOs for all waters of the Basin. These requirements implement the Basin Plan.
13. The United States Environmental Protection Agency (USEPA) adopted the *National Toxics Rule* (NTR) on 5 February 1993 and the *California Toxics Rule* (CTR) on 18 May 2000. These Rules contain water quality standards applicable to this discharge. The State Water Resources Control Board (State Board) adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Plan (SIP)) adopted in March 2000, which contains guidance on implementation of the NTR and the CTR.

### RECEIVING WATER BENEFICIAL USES

14. The Basin Plan at page II-2.00 states: “Existing and probable beneficial uses which currently apply to surface waters of the basins are presented in Figure II-1 and Table II-1. “North Branch Mill Creek Ditch and Cross Creek” are Valley Floor Waters. The Basin Plan designates the beneficial uses of Valley Floor Waters as:
  - agricultural supply (AGR);
  - industrial service supply (IND);
  - industrial process supply (PRO);
  - water contact recreation (REC-1);
  - non-contact water recreation (REC-2);
  - warm freshwater habitat (including spawning) (WARM);
  - wildlife habitat (WILD);
  - support of rare, threatened, or endangered species (RARE); and
  - groundwater recharge (GWR).
15. Based on the available information and on the Discharger’s application, North Branch Mill Creek Ditch, absent the discharge, is an ephemeral stream. The ephemeral nature of North Branch Mill Creek Ditch means that the designated beneficial uses must be protected, but that no credit for receiving water dilution is available. Although the discharge at times maintains aquatic habitat, constituents may not be discharged that may cause harm to aquatic life. At other times, natural flows within North Branch Mill Creek Ditch help support the aquatic life. Both conditions may exist within a short time span, where North Branch Mill Creek Ditch would be dry without the discharge and periods when sufficient background flows provide hydraulic continuity with the Tule River. The lack of dilution results in more stringent effluent limitations to protect contact recreational uses, agricultural water quality goals and aquatic life.

### EFFLUENT LIMITATIONS AND REASONABLE POTENTIAL ANALYSES

16. Effluent limitations, and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.
17. According to Section 1.2 of the SIP, the Discharger must report data for all the priority pollutants listed in the CTR. The data are used to determine the reasonable potential for these constituents to cause or contribute to an exceedance of applicable water quality criteria and to calculate effluent limitations. On 27 February 2001 the Discharger was issued a 13267 letter directing it to conduct a receiving water and effluent monitoring study in accordance with the SIP. The Discharger submitted the required monitoring data for the effluent.
18. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. Based on information included in analytical laboratory results submitted by the Discharger (see Attachment C), the discharge does not have a reasonable potential to cause or contribute to an in-stream excursion above a numeric water quality objective.
19. **pH** – The Basin Plan includes numeric water quality objectives that the pH “...*not be depressed below 6.5, raised above 8.3, or changed at any time more than 0.3 units from normal ambient pH.*” Because there is no available assimilative capacity, this Order requires that effluent pH be within the limits of 6.5 to 8.3 units.
20. **Conductivity @ 25 °C (EC)** – The Basin Plan establishes maximum effluent limitations for EC in surface water discharges as follows: “The maximum electrical conductivity of a discharge shall not exceed the quality of the source water plus 500 micromhos per centimeter or 1,000 micromhos per centimeter, whichever is more stringent. When the water is from more than one source, the EC shall be a weighted average of all sources.” This Order establishes effluent limitations for EC based on the Basin Plan requirement. The limitations for EC established in this Order are maximum limitations. The GAC treatment process does not add salts. Therefore the effluent EC should be the same as the influent EC. This Order assigns EC limitations and monitoring to gather information, and may be re-opened to include more stringent EC limitations should future monitoring indicate the need.
21. **Boron** – The Basin Plan requires that the boron concentration in all surface water discharges be less than 1.0 mg/L. This Order establishes effluent limitations for boron based on the Basin Plan requirement. The limitations for boron established in this Order are maximum limitations. The GAC treatment process does not add boron. Therefore the effluent boron concentration should be the same as the influent boron concentration. This Order assigns

boron limitations and monitoring to gather information, and may be re-opened to include more stringent boron limitations should future monitoring indicate the need.

22. **Chloride** – The Basin Plan requires that the chloride concentration in all surface water discharges be less than 175 mg/L. This Order establishes effluent limitations for chloride based on the Basin Plan requirement. The limitations for chloride established in this Order are maximum limitations. The GAC treatment process does not add chloride. Therefore the effluent chloride concentration should be the same as the influent chloride concentration.

This Order assigns chloride limitations and monitoring to gather information, and may be re-opened to include more stringent chloride limitations should future monitoring indicate the need.

23. The SIP defines Minimum Level (ML) as the concentration at which the entire analytical system must give a recognizable signal and calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all method-specified sample weights, volumes, and processing steps have been followed. MLs are synonymous to practical quantitation limits (PQLs).
24. The SIP defines Method Detection Limit (MDL) as the concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 CFR 136, Appendix B, revised as of 14 May 1999. MDLs are synonymous to detection limits.
25. The SIP requires the Discharger to report with each sample result the corresponding applicable ML and the laboratory's current MDL.

#### **TECHNOLOGY-BASED EFFLUENT LIMITATIONS**

26. Clean Water Act (CWA) section 301(b)(1) requires NPDES permits to include effluent limitations that achieve technology-based standards and any more stringent limitations necessary to meet water quality standards. Water quality standards include the Basin Plan's beneficial uses and narrative and numeric water quality objectives, State Board adopted standards and federal standards including the NTR and CTR. These standards include the Basin Plan toxicity objective and State Board Resolution 68-16. Under the CWA, the applicable technology based standard is "best available technology economically achievable/best conventional pollutant control technology" or BAT/BCT. Because there are no promulgated effluent limitations for VOCs in groundwater extracted for cleanup, technology-based limitations are established based upon consideration of the Regional Board staff's best professional judgment (BPJ). This Regional Board has a long history of regulating cleanup of VOCs in groundwater and has consistently imposed effluent limits at less than the minimum levels (MLs) for VOCs in groundwater. With respect to the specific discharges permitted herein, the following have been considered:

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- Appropriate technology for category or class of discharges
- Unique factors relating to the applicant
- Age of equipment
- Processes employed
- Engineering aspects of various control techniques
- Non-water quality environmental impacts, including energy requirements
- Cost of achieving proposed effluent reduction
- Influent, effluent, and receiving water data

GAC systems are appropriate technology for complete VOC removal from extracted groundwater. GAC systems are currently in place elsewhere in the State and monitoring data has shown that these systems are capable of consistent VOC removal to levels less than the MLs. The success of GAC systems operating under similar waste discharge requirements supports the conclusion that the limits reflect Best Practicable Treatment and Control (BPTC) /BAT. In many cases, systems that have not consistently removed VOCs to less than the MLs are not properly operated or maintained. The Discharger's GAC system has not consistently removed VOCs to less than the MLs; however, optimizing operation and maintenance procedures should bring the system into compliance with this Order's BAT limitations.

27. In addition, Clean Water Act Section 301 requires implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state law. Applicable state water quality standards include Resolution 68-16.
28. Resolution No. 68-16 requires implementation of BPTC to ensure that the highest water quality is maintained consistent with the maximum benefit to the people of the State. BPTC for groundwater cleanup of VOCs provides that the pollutants should be discharged at concentrations no higher than quantifiable levels for each pollutant. BPTC is equivalent to BAT and for VOCs subject to this Order requires meeting effluent limits set at less than MLs. Several dischargers in the Central Valley Region have implemented BPTC groundwater treatment systems and have been able to consistently treat VOCs in the wastewater to concentrations below the MLs.
29. According to the SIP, if no ML value is below the effluent limitation, the applicable ML value shall be the lowest ML value listed in Appendix 4 of the SIP. VOC concentrations below the MLs are generally considered unquantifiable. Therefore, application of technology based limitations for VOCs at ground water cleanup sites requires effluent to meet MLs. The MLs for VOC constituents of concern are listed below:

<u>Constituent</u>	<u>Units</u>	<u>ML</u>	<u>Most Stringent WQ Criteria</u>
Chloromethane	µg/L	0.5	No criteria
Chloroform	µg/L	0.5	1240
1,1-Dichloroethylene	µg/L	0.5	3.2

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<u>Constituent</u>	<u>Units</u>	<u>ML</u>	<u>Most Stringent WQ Criteria</u>
1,1-Dichloroethane	µg/L	0.5	No criteria
1,1,1-Trichloroethane	µg/L	0.5	No criteria
1,1,2-Trichloroethane	µg/L	0.5	42
Tetrachloroethylene	µg/L	0.5	840
Trichloroethylene	µg/L	0.5	81

30. Cis-1,2-dichloroethylene is not a priority pollutant, however it has been detected in groundwater and effluent at the cleanup site. California Department of Health Services lists the Detection Limits for purposes of Reporting (DLRs) for numerous organic chemicals, including cis-1,2-dichloroethylene. These DLRs are codified in Title 22, California Code of Regulations, §64445.1. The DLR for cis-1,2-dichloroethylene is 0.5 µg/L. Concentrations below this DLR are considered unquantifiable. BPTC is capable of removing cis-1,2-dichloroethylene to a concentration below the DLR of 0.5 µg/L. Thus, a technology-based limit of 0.5 µg/L is appropriate.
31. Section 1.2 of the SIP requires the Regional Board to use all available, valid, relevant, representative data and information to implement the requirements of the SIP. In addition to effluent and receiving water quality data, analysis of groundwater quality data is a valid and relevant means of determining the requirements of this Order.
32. As stated in Finding 7, numerous investigations have shown that groundwater beneath the east and west parcels is degraded with the following VOCs: 1,1-dichloroethane (1,1-DCA); 1,1-dichloroethylene (1,1-DCE); tetrachloroethylene (PCE); 1,1,1—trichloroethane (1,1,1-TCA); trichloroethylene (TCE); chloroform; cis-1,2-dichloroethylene (cis-1,2-DCE); and 1,1,2-trichloroethane (1,1,2-TCA).

Analysis of Discharger Self Monitoring Reports for the period of 1999-2003 (Tables 1 and 2) and CTR priority pollutant scans (Attachment C) indicates the following VOCs have been detected in effluent discharged from the facility at levels greater than BAT levels: chloroform, chloromethane, 1,1-DCE, cis-1,2-DCE, PCE, and TCE.

Because these VOCs have been detected in groundwater, influent, and treatment system effluent at concentrations exceeding BAT levels, technology based effluent limitations have been included in this permit.

33. Technology based effluent limitations for VOCs included in this Order are as follows:

<u>Constituent</u>	<u>Units</u>	<u>Limit<sup>1</sup></u>
Chloromethane	µg/L	<0.5
Chloroform	µg/L	<0.5
cis-1,2-Dichloroethylene	µg/L	<0.5

<u>Constituent</u>	<u>Units</u>	<u>Limit<sup>1</sup></u>
1,1-Dichloroethylene	µg/L	<0.5
1,1-Dichloroethane	µg/L	<0.5
1,1,1-Trichloroethane	µg/L	<0.5
1,1,2-Trichloroethane	µg/L	<0.5
Tetrachloroethylene	µg/L	<0.5
Trichloroethylene	µg/L	<0.5

<sup>1</sup> Technology Based Effluent Limit. These limits are applied as the daily maximum effluent limits for all VOC constituents and are more stringent than the most restrictive applicable water quality criterion or objective.

34. The proposed effluent limitations consider the BPJ factors in Finding No. 26, the historical performance of the on-site BAT/BPTC systems, receiving water conditions, USEPA method detection limits, and are less than or equal to California Primary Maximum Contaminant Levels, California Toxics Rule and National Toxics Rule criteria, and limits which implement applicable water quality objectives.
35. Application of BAT/BCT to achieve the effluent limits is consistent with the requirement of Resolution 68-16 that discharges meet BPTC. The permitted discharge is consistent with the anti-degradation provisions of 40 CFR 131.12 and Resolution No. 68-16. BPTC for cleanup of groundwater polluted by volatile organic constituents is removal of VOCs to a level at or below corresponding analytical quantitation limits. Some resulting degradation of the receiving water could occur if VOCs were present at concentrations below the quantitation limit, but such degradation would not be quantifiable. An analysis has not been submitted demonstrating that degradation resulting from discharges of VOCs at concentrations in excess of quantifiable levels would be consistent with the maximum benefit of the people of the State and Resolution No. 68-18. During periods of limited or no dilution, some degradation of the receiving water may occur from these pollutants, however, the discharge will not cause an exceedance of water quality objectives or cause a significant impact on the beneficial uses of groundwater and surface water. The continued remediation of polluted groundwater, and the use of the treated groundwater for irrigation and discharge to North Branch Mill Creek Ditch, both benefit the people of the State.

### GENERAL FINDINGS

36. CWC Section 13267 states, in part:

“(a) A regional board, in establishing...waste discharge requirements... may investigate the quality of any waters of the state within its region” and “(b) (1) In conducting an investigation specified in [Section 13267] subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region

that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.”

The attached Monitoring and Reporting Program is issued pursuant to the CWC Sections 13267 and 13383. The monitoring and reporting program required by this Order is necessary to assure compliance with these waste discharge requirements.

37. On 11 December 1997, the California Department of Toxic Substances Control certified a Negative Declaration for the extension and expansion of the groundwater remedial action involving groundwater extraction, treatment and discharge, pursuant to the provisions of the California Environmental Quality Act (CEQA) in accordance with Title 14, California Code of Regulations (CCR), Section 15301. The Regional Board reviewed the Negative Declaration and concurs there is not substantial evidence the project will have a significant impact on water quality.
38. The action to adopt waste discharge requirements (NPDES permit) for this facility is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) in accordance with Section 13389 of the CWC.
39. The U.S. Environmental Protection Agency (USEPA) and this Regional Board have classified this discharge as a minor discharge.
40. The Discharger and interested agencies and persons were notified of the intent to prescribe waste discharge requirements for this discharge and provided an opportunity for a public hearing and an opportunity to submit written views and recommendations.
41. All of the above and supplemental data and information in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing conditions of discharge. The Information Sheet, Monitoring and Reporting Program No. R5-2005-0059, and Attachments A through C are a part of this Order.
42. In a public meeting, all comments pertaining to the discharge were heard and considered.
43. This Order shall serve as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect upon the date of hearing, provided USEPA has no objections. If USEPA objects to the NPDES aspects of this Order, discharge to North Branch Mill Creek shall be prohibited until the objection is resolved. In the interim, the objection shall not void other aspects of this Order.

**IT IS HEREBY ORDERED** that, Order No. 98-200 is rescinded and pursuant to CWC Sections 13623, 13267, 13337, and 13383, AAF-McQuay, Inc., et al., their agents, successors and assigns, in order to meet the provisions contained in Division 7 of the CWC and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

*[Note: Other prohibitions, conditions, definitions, and some methods of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (National Pollutant Discharge Elimination System)" dated March 1991.]*

**A. Discharge Prohibitions:**

1. Discharge of material other than treated groundwater from the investigation and cleanup of groundwater pollution, or discharge of treated groundwater from the investigation of groundwater where other pollutants exist in the groundwater, or in a manner different from that described in Findings of this Order is prohibited.
2. The by-pass or overflow of untreated or partially treated groundwater, including polluted purge water, is prohibited.
3. Discharge of waste classified as 'hazardous' as defined in Section 2521(a) of Title 23, CCR, Section 2510, et seq., or 'designated', as defined in Section 13173 of the California Water Code, is prohibited.

**B. Effluent Limitations:**

1. The maximum daily flow from each treatment system shall not exceed 1.44 mgd.
2. The discharge of any untreated water from well development, redevelopment, or tests of well pump repairs to the agricultural fields shall 1) be only for a maximum of 10 days per calendar year, 2) be limited to 100,000 gallons per five-days, and 3) shall not exceed a duration of five-days per event.
3. The discharge shall not have a pH less than 6.5 standard units nor greater than 8.3 standard units.
4. Effluent discharged from Discharges 001, 002, and 003 shall not exceed the following, Table B.4 limitations:

**TABLE B.4-EFFLUENT LIMITATIONS**

Constituents	Units	Daily Maximum	Monthly Average
Conductivity	µmhos/cm	500/1000 <sup>1</sup>	-----
Boron	mg/L	-----	1.0
Chloride	mg/L	-----	175
Chloromethane	µg/L	<0.5	-----
Chloroform	µg/L	<0.5	-----
1,1-Dichloroethane (1,1-DCA)	µg/L	<0.5	-----
1,1-Dichloroethylene (1,1-DCE)	µg/L	<0.5	-----
cis-1,2-Dichloroethylene (cis-1,2-DCE)	µg/L	<0.5	-----
Tetrachloroethylene (PCE)	µg/L	<0.5	-----
1,1,1-Trichloroethane (1,1,1-TCA)	µg/L	<0.5	-----
1,1,2-Trichloroethane (1,1,2-TCA)	µg/L	<0.5	-----
Trichloroethylene	µg/L	<0.5	-----

<sup>1</sup> Maximum effluent EC concentration must be less than 1000 µmhos/cm or 500 µmhos/cm greater than source water EC, whichever is lower.

5. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
  - (a) Minimum for any one bioassay ----- 70%
  - (b) Median for any three or more consecutive bioassays -----90%

**C. Filter Waste and Solids Disposal**

1. Spent carbon, and other residual solids removed from liquid wastes or used to treat liquid wastes, shall be recycled or disposed of in a manner that is consistent with Division 3, Title 27; Chapter 15, Division 3, Title 23; and Division 4.5, Title 22 of the CCR and approved by the Executive Officer.
2. Any proposed change in filter waste use or solids disposal practice from a previously approved practice shall be reported to the Executive Officer and USEPA Regional Administrator at least **90 days** in advance of the change.

**D. Receiving Water Limitations**

Receiving Water Limitations are based upon water quality objectives contained in the Basin Plan for Valley Floor Waters. As such, they are a required part of this permit. The discharge, alone or in combination with other sources, shall not cause the following in North Branch Mill Creek Ditch:

1. Un-ionized ammonia to be present in amounts that adversely affect beneficial uses or that exceed 0.025 mg/L (as N).
2. Biostimulatory substances to be present in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
3. 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, or cause more than 10 percent of total samples taken during any 30-day period to exceed 400 MPN/100 mL.
4. Chemical constituents in concentrations that adversely affect beneficial uses.
5. Discoloration that causes nuisance or adversely affects beneficial uses.
6. Concentrations of dissolved oxygen to fall below 5.0 mg/L.
7. Floating material, including but not limited to solids, liquids, foams, and scum, in concentrations that create a nuisance or adversely affect beneficial uses.
8. Oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
9. The pH of water to fall below 6.5, exceed 8.3, or change at any time more than 0.3 units from normal ambient pH.
10. Pesticides to be present in concentrations that adversely affect beneficial uses. There shall be no increase in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses.
11. Radionuclides to be present in concentrations that are deleterious to human, plant, animal, or aquatic life nor which result in accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
12. Settleable material in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.

13. Suspended sediment load and the suspended sediment discharge rate to be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
14. Suspended material in concentrations that cause nuisance or adversely affects beneficial uses.
15. The ambient temperature to increase more than 5°F.
16. Changes in turbidity that cause nuisance or adversely affect beneficial uses. The turbidity to increase as follows:
  - a. More than 1 Nephelometric Turbidity Units (NTUs) where natural turbidity is between 0 and 5 NTUs.
  - b. More than 20 percent where natural turbidity is between 5 and 50 NTUs.
  - c. More than 10 NTUs where natural turbidity is between 50 and 100 NTUs.
  - d. More than 10 percent where natural turbidity is greater than 100 NTU.
17. Toxic substances to be present in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
18. Taste or odor-producing substances in concentrations that cause nuisance, adversely affect beneficial uses, or impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to domestic or municipal water supplies.
19. Violation of any applicable water quality standard for receiving waters adopted by the Regional Board or the State Water Resources Control Board pursuant to the Clean Water Act and regulations adopted thereunder.

**E. Groundwater Limitations**

The discharge, in combination with other sources, shall not cause underlying groundwater to contain waste constituents in concentrations that adversely affect beneficial uses or that are greater than background water quality.

**F. Provisions**

1. The Discharger shall comply with Monitoring and Reporting Program No. R5-2005-0059, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.

When requested by USEPA, the Discharger shall complete and submit Discharge Monitoring Reports to USEPA. The submittal date shall be no later than the submittal date

specified in the Monitoring and Reporting Program for Discharger Self Monitoring Reports.

2. The Discharger shall comply with all the items of the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)", dated March 1991, which are part of this Order.
3. The Discharger must utilize USEPA approved test methods and detection limits to achieve detection levels below applicable water quality criteria. At a minimum, the Discharger shall comply with Monitoring Requirements for these constituents as outlined in Section 2.3 and 2.4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, adopted 2 March 2000 by the State Water Resources Control Board. All peaks identified by the USEPA test methods shall be reported.
4. By **30 August 2005**, the Discharger shall submit an operation and maintenance plan (O&M Plan) for review and approval by the Executive Officer. The O&M Plan shall instruct operating personnel on how to manage the day-to-day discharge operation to comply with the terms and conditions of this order. The O&M Plan shall also detail how frequently each GAC unit is serviced and also describe how valves and plumbing are clearly labeled to ensure proper operation of the GWCS by operating personnel. The O&M Plan shall also include details for the following aspects of the proposed sampling process for monitoring influent, effluent, mid-treatment, and groundwater:
  - a. Method Summary (must be USEPA approved method and capable of quantifying analytes to levels at or below those specified in Effluent Limitations and Receiving Water Limitations, above);
  - b. Proposed list of analytes;
  - c. Sample preservation, containers, handling, and storage;
  - d. Interferences and potential problems;
  - e. Sampling and analysis equipment/apparatus;
  - f. Reagents;
  - g. Preparation and sample collection procedures;
  - h. Quality assurance and quality control;
  - i. Well Purging
  - j. Filtering; and
  - k. Health and Safety.

A copy of the O&M Plan shall be kept at the GWCS office for reference by operating personnel. Key operating personnel shall be familiar with its contents.

5. Application of reclaimed wastewater to the reclamation areas shall be at reasonable rates considering the crop, soil, climate, and irrigation management system.

6. If a constituent not listed herein has toxicity criteria and is detected in two or more consecutive sampling events, this Order may be amended to establish effluent and receiving water limits for regulation of the detected constituent(s).
7. The Discharger shall conduct the **chronic toxicity testing** specified in the Monitoring and Reporting Program. If the testing indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity, the Discharger shall initiate a Toxicity Identification Evaluation (TIE) to identify the causes of toxicity. Upon completion of the TIE, the Discharger shall submit a work plan to conduct a Toxicity Reduction Evaluation (TRE) and, after Regional Board evaluation, conduct the TRE. This Order will be reopened and a chronic toxicity limitation included and/or a limitation for the specific toxicant identified in the TRE included. Additionally, if a chronic toxicity water quality objective is adopted by the State Water Resources Control Board, this Order may be reopened and a limitation based on that objective included.
8. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code, Sections 6735, 7835, and 7835.1. To demonstrate compliance with Title 16, CCR, Sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.
9. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Regional Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision D.6 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

10. The Board may modify or reopen this Order prior to its expiration date in any of the following circumstances:

- a. If present or future investigations demonstrate that the discharge governed by this Order has a reasonable potential to cause or contribute to adverse impacts on water quality and/or beneficial uses of the receiving waters;
  - b. New or revised water quality objectives (WQOs) come into effect for the receiving water. In such cases, effluent limitations in this permit will be modified as necessary to reflect updated WQOs. Adoption of effluent limitations contained in this Order is not intended to restrict in any way future modifications based on legally adopted WQOs or as otherwise permitted under federal regulations governing NPDES permit modifications;
  - c. If translator or other water quality studies provide a basis for determining that a permit condition(s) should be modified. The Discharger may request permit modification on this basis. The Discharger shall include in any such request an antidegradation and antibacksliding analysis.
11. Prior to making any change in the discharge point, place of use, or purpose of use of the wastewater, the Discharger shall obtain approval of, or clearance from the State Water Resources Control Board (Division of Water Rights).
  12. Exceedances of monthly average and daily maximum effluent limitations based on results of a single sampling event may be considered violations of the requirements of this Order. The Discharger may sample more frequently than required by the attached Monitoring and Reporting Program to provide a more representative database and possibly lower reported average constituent values to demonstrate compliance with effluent limitations.
  13. This Order assigns maximum effluent limitations for EC, boron, and chloride that are based on Basin Plan requirements. The limitations have not been assigned to allow the discharge of salts, but to place ceiling limitations on the constituents while effluent data is being collected. Boron, chloride or other salts shall not be added to the discharge.
  14. This Order may be reopened and modified to make it consistent with any Basin Plan amendments that are adopted regarding the Regional Board's policy on Effluent Dominated Water Bodies.
  15. The Discharger shall employ best practicable treatment and control (BPTC) of the discharge, including proper operation and maintenance, to comply with this Order.
  16. This Order does not pre-empt or supersede the authority of local agencies to prohibit, restrict, or control the discharge of groundwater cleanup wastewater subject to their control. Discharges allowed by this order to local irrigation storm water collection and conveyance facilities must obtain approval from the agency responsible for operation and maintenance of the facilities.

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2005-0059  
AAF-McQUAY, INC., ET AL.  
NPDES PERMIT NO. CA0082511  
GROUNDWATER REMEDIATION SYSTEM  
TULARE COUNTY

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17. The NPDES requirements of this Order expire on **28 April 2010**, and the Discharger must file a Report of Waste Discharge in accordance with Title 23, CCR, not later than 180 days in advance of such date to apply for renewal of waste discharge requirements if it wishes to continue the discharge to North Branch Mill Creek Ditch.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 29 April 2005.

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THOMAS R. PINKOS, Executive Officer

GEA: 4/29/05

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2005-0059

NPDES NO. CA0082511

MONITORING AND REPORTING PROGRAM  
FOR  
AAF-McQUAY, INC., ET AL.  
GROUNDWATER REMEDIATION SYSTEM  
TULARE COUNTY

Specific sample station locations shall be established with concurrence of the Regional Board's staff, and the Discharger shall attach a description of the stations to this Monitoring and Reporting Program. All analyses shall be performed using methods approved by USEPA and the Regional Board. In reporting data, the Discharger shall indicate whether any analysis was performed using a method not in conformance with USEPA's guidelines.

If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge the Discharger shall monitor and record influent, mid-treatment, and effluent data for all of the constituents listed below, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. For this Order, the Regional Board considers an intermittent discharge, any period of no discharge prolonged more than seven days. In no event shall the Discharger be required to monitor and record the data more often than twice the frequencies listed in the schedule.

**INFLUENT MONITORING**

Samples shall be collected prior to entering each groundwater cleanup system (GWCS) at approximately the same time as effluent samples. Influent samples shall be representative of the volume and quality of extracted groundwater. The time of collection of samples shall be recorded. Influent monitoring shall include at least the following:

<b><u>Constituents</u></b>	<b><u>Units</u></b>	<b><u>Type of Sample</u></b>	<b><u>Sampling Frequency</u></b>
Conductivity @25 C	µmhos/cm	Grab	Monthly
Chloromethane <sup>1</sup>	µg/L	Grab	Quarterly
Chloroform <sup>1</sup>	µg/L	Grab	Quarterly
1,1-Dichloroethane <sup>1</sup>	µg/L	Grab	Quarterly
1,1-Dichloroethylene <sup>1</sup>	µg/L	Grab	Quarterly
cis-1,2-Dichloroethylene <sup>2</sup>	µg/L	Grab	Quarterly
trans-1,2-Dichloroethylene <sup>1</sup>	µg/L	Grab	Quarterly
Tetrachloroethylene <sup>1</sup>	µg/L	Grab	Quarterly
1,1,1-Trichloroethane <sup>1</sup>	µg/L	Grab	Quarterly
1,1,2-Trichloroethane <sup>1</sup>	µg/L	Grab	Quarterly

Trichloroethylene <sup>1</sup>	µg/L	Grab	Quarterly
Vinyl Chloride <sup>1</sup>	µg/L	Grab	Quarterly
1,2-Dichloroethane <sup>1</sup>	µg/L	Grab	Quarterly
Other VOCs <sup>1,3,4,5</sup>	µg/L	Grab	Quarterly

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

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

<sup>3</sup> All typical volatile organic constituents listed in Appendix 4 of the SIP.

<sup>4</sup> VOCs = Volatile Organic Compounds.

<sup>5</sup> Monitoring for acrolein, acrylonitrile, and dichloromethane shall achieve MLs at least as low as the following: 100 µg/L for acrolein, 5 µg/L for acrylonitrile, and 5 µg/L for dichloromethane.

### MID-TREATMENT MONITORING

In order to detect breakthrough of the GAC units, samples shall be collected between each GAC unit. Mid-Treatment samples shall be representative of the volume and quality of the discharge from each GAC unit. Time of collection of samples shall be recorded. Mid-Treatment monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Chloromethane <sup>1</sup>	µg/L	Grab	Quarterly
Chloroform <sup>1</sup>	µg/L	Grab	Quarterly
1,1-Dichloroethane <sup>1</sup>	µg/L	Grab	Quarterly
1,1-Dichloroethylene <sup>1</sup>	µg/L	Grab	Quarterly
cis-1,2-Dichloroethylene <sup>2</sup>	µg/L	Grab	Quarterly
trans-1,2-Dichloroethylene <sup>1</sup>	µg/L	Grab	Quarterly
Tetrachloroethylene <sup>1</sup>	µg/L	Grab	Quarterly
1,1,1-Trichloroethane <sup>1</sup>	µg/L	Grab	Quarterly
1,1,2-Trichloroethane <sup>1</sup>	µg/L	Grab	Quarterly
Trichloroethylene <sup>1</sup>	µg/L	Grab	Quarterly
Vinyl Chloride <sup>1</sup>	µg/L	Grab	Quarterly
1,2-Dichloroethane <sup>1</sup>	µg/L	Grab	Quarterly
Other VOCs <sup>1,3,4,5</sup>	µg/L	Grab	Quarterly

<sup>1</sup> Test method used shall be EPA Method 601, Standard Method (20<sup>th</sup> edition) 6200C, EPA Method 8260, or an equivalent method with a PQL no greater than 0.5 µg/L.

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

- <sup>3</sup> All typical volatile organic constituents listed in Appendix 4 of the SIP.
- <sup>4</sup> VOCs = Volatile Organic Compounds.
- <sup>5</sup> Monitoring for acrolein, acrylonitrile, and dichloromethane shall achieve MLs at least as low as the following: 100 µg/L for acrolein, 5 µg/L for acrylonitrile, and 5 µg/L for dichloromethane.

### EFFLUENT MONITORING

Effluent samples shall be collected at each treatment system, after the discharge is treated, and prior to discharge to North Branch Mill Creek Ditch or the agricultural fields. The monitoring station for GAC Unit No. 28B5/28G1, which discharges to North Branch Mill Creek Ditch via **Discharge 001**, shall be designated **D-1**. The monitoring station for GAC Unit No. 28E3, which discharges to North Branch Mill Creek Ditch via **Discharge 003**, shall be designated **D-2**. Effluent samples shall be representative of the volume and quality of the discharge. Time of collection of samples shall be recorded. Effluent monitoring shall include at least the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>	<u>Monitoring Station<sup>1</sup></u>
Total Daily Flow	gpd	Measured	Weekly	D-1, D-2
pH	pH units	Grab	Monthly	D-1, D-2
Conductivity @ 25°C	µmhos/cm	Grab	Quarterly <sup>2</sup>	D-1, D-2
Dissolved Oxygen	mg/L	Grab	Monthly	D-1, D-2
Boron	mg/L	Grab	Quarterly <sup>2</sup>	D-1, D-2
Chloride	mg/L	Grab	Quarterly <sup>2</sup>	D-1, D-2
Copper	µg/L	Grab	Quarterly <sup>2</sup>	D-1, D-2
Chloromethane <sup>3</sup>	µg/L	Grab	Monthly	D-1, D-2
Chloroform <sup>3</sup>	µg/L	Grab	Monthly	D-1, D-2
1,1-Dichloroethane <sup>3</sup>	µg/L	Grab	Monthly	D-1, D-2
1,1-Dichloroethylene <sup>3</sup>	µg/L	Grab	Monthly	D-1, D-2
cis-1,2-Dichloroethylene <sup>4</sup>	µg/L	Grab	Monthly	D-1, D-2
trans-1,2-Dichloroethylene <sup>3</sup>	µg/L	Grab	Monthly	D-1, D-2
Tetrachloroethylene <sup>3</sup>	µg/L	Grab	Monthly	D-1, D-2
1,1,1-Trichloroethane <sup>3</sup>	µg/L	Grab	Monthly	D-1, D-2
1,1,2-Trichloroethane <sup>3</sup>	µg/L	Grab	Monthly	D-1, D-2
Trichloroethylene <sup>3</sup>	µg/L	Grab	Monthly	D-1, D-2
Vinyl Chloride <sup>3</sup>	µg/L	Grab	Monthly	D-1, D-2
1,2-Dichloroethane <sup>3</sup>	µg/L	Grab	Monthly	D-1, D-2
Other VOCs <sup>3,5,6,7</sup>	µg/L	Grab	Quarterly	D-1, D-2
Acute Toxicity <sup>8</sup>	%survival	Grab	Annually	D-1, D-2

- <sup>1</sup> Stations D-1 and D-2 represent effluent from the two treatment systems prior to discharge to North Branch Mill Creek Ditch or prior to diversion to the agricultural fields.
- <sup>2</sup> After one year of quarterly monitoring, the Discharger may submit a written request to the Executive Officer to reduce the frequency of this requirement if a baseline trend can be established from the effluent data submitted.
- <sup>3</sup> Test method used shall be EPA Method 601, Standard Method (20<sup>th</sup> edition) 6200C, EPA Method 8260, or an equivalent method with a PQL no greater than 0.5 µg/L.
- <sup>4</sup> Test method used shall be Standard Method (20<sup>th</sup> edition) 6200B, EPA Method 8260, or an equivalent method with a PQL no greater than 0.5 µg/L.
- <sup>5</sup> All typical volatile organic constituents listed in Appendix 4 of the SIP.
- <sup>6</sup> VOCs = Volatile Organic Compounds.
- <sup>7</sup> Monitoring for acrolein, acrylonitrile, and dichloromethane shall achieve MLs at least as low as the following: 100 µg/L for acrolein, 5 µg/L for acrylonitrile, and 5 µg/L for dichloromethane.
- <sup>8</sup> If the results of two consecutive monitoring events indicate that the effluent does not exhibit toxicity, the Discharger may submit a written request to the Executive Officer to reduce or eliminate this requirement.

If results of monitoring a pollutant appear to violate monthly average limitations, the frequency of sampling should be increased to daily until compliance is verified. If effluent monitoring detects a pollutant at concentrations greater than a daily maximum limitation, the Discharger should resample and reanalyze the discharge immediately after receiving knowledge of the exceedance. If the Discharger does not increase monitoring frequency for instances of apparent violation, compliance with Daily Maximum and Monthly Average limitations will be determined with available monitoring data in accordance with Provision F.12.

## CALIFORNIA TOXICS RULE MONITORING

### Priority Pollutants:

The Discharger shall monitor the effluent and receiving water twice during the term of this Permit for Metals, Volatile Organic, and Semi-Volatile Organic priority pollutants and submit results to the Regional Board **by 30 June 2007** and again at least **one year prior** to the expiration of this Order. Priority pollutants are defined as USEPA priority toxic pollutants, and consist of the constituents listed in the most recent National Toxics Rule and California Toxics Rule. Volatile Organic priority pollutants are listed in Tables 2a and 2b in Appendix 4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Bays, and Estuaries of California* (SIP). Results of sampling shall be submitted by the **first day of the second month** following sampling. Reporting shall conform with SIP Reporting Requirements, Section 2.4 et seq. In particular, the reported Minimum Levels (MLs) shall be at least as low as the lowest ML for each priority pollutant specified in Appendix 4 of the SIP. **Effluent and receiving water samples must be analyzed for pH and hardness** in order to calculate translators, which are needed for pollutants that are hardness and/or pH dependent. All analyses shall be performed at a laboratory certified by the California Department of Health Services.

<u>Constituent</u> <sup>1,2</sup>	<u>Units</u>	<u>Type of Sample</u>
Mercury	µg/L	Grab
Arsenic	µg/L	Grab
Chromium VI	µg/L	Grab
Metals	µg/L	Grab
Volatile Organics	µg/L	Grab
Semi-Volatile Organics	µg/L	Grab
Pesticides	µg/L	Grab

- 1 Constituents shall be analyzed using a method approved by USEPA. The chosen analytical method must be able to achieve the required quantitation limit for the given constituent, as specified by the MLs listed in Appendix 4 of the SIP.
- 2 Report all detected peaks.

### RECEIVING WATER MONITORING

All receiving water samples shall be grab samples. Samples shall be collected at approximately the same time as the collection of effluent samples. Receiving water monitoring is not required if flow upstream of the discharge is so low that collected samples would not be representative of the quality of the receiving water. No-flow or low-flow receiving water conditions that preclude sampling shall be reported in quarterly monitoring reports. Receiving water monitoring shall include at least the following and be performed at the sample stations associated with the approved discharge point in use:

<u>Station</u>	<u>Description</u>
R - 1	100 feet upstream from Discharge 001
R - 2	100 feet downstream from the point of Discharge 001
R - 3	100 feet downstream from the point of Discharge 003

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>	<u>Monitoring Station</u>
Estimated Flow	cfs	Estimation	Monthly	R-1, R-2, R-3
pH	pH units	Grab	Monthly	R-1, R-2, R-3
Conductivity @ 25°C	µmhos/cm	Grab	Monthly	R-1, R-2, R-3
Dissolved Oxygen	mg/L	Grab	Monthly	R-1, R-2, R-3
Copper	µg/L	Grab	Monthly	R-1, R-2, R-3
Chloromethane <sup>1</sup>	µg/L	Grab	Monthly	R-1, R-2, R-3
Chloroform <sup>1</sup>	µg/L	Grab	Monthly	R-1, R-2, R-3
1,1-Dichloroethane <sup>1</sup>	µg/L	Grab	Monthly	R-1, R-2, R-3
1,1-Dichloroethylene <sup>1</sup>	µg/L	Grab	Monthly	R-1, R-2, R-3
cis-1,2-Dichloroethylene <sup>2</sup>	µg/L	Grab	Monthly	R-1, R-2, R-3
trans-1,2-Dichloroethylene <sup>1</sup>	µg/L	Grab	Monthly	R-1, R-2, R-3
Tetrachloroethylene <sup>1</sup>	µg/L	Grab	Monthly	R-1, R-2, R-3

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>	<u>Monitoring Station</u>
1,1,1-Trichloroethane <sup>1</sup>	µg/L	Grab	Monthly	R-1, R-2, R-3
1,1,2-Trichloroethane <sup>1</sup>	µg/L	Grab	Monthly	R-1, R-2, R-3
Trichloroethylene <sup>1</sup>	µg/L	Grab	Monthly	R-1, R-2, R-3
Vinyl Chloride <sup>1</sup>	µg/L	Grab	Monthly	R-1, R-2, R-3
1,2-Dichloroethane <sup>1</sup>	µg/L	Grab	Monthly	R-1, R-2, R-3
Other VOCs <sup>1,3,4,5</sup>	µg/L	Grab	Quarterly	R-1, R-2, R-3

- <sup>1</sup> Test method used shall be EPA Method 601, Standard Method (20<sup>th</sup> edition) 6200C, EPA Method 8260, or an equivalent method with a PQL no greater than 0.5 µg/L.
- <sup>2</sup> Test method used shall be Standard Method (20<sup>th</sup> edition) 6200B, EPA Method 8260, or an equivalent method with a PQL no greater than 0.5 µg/L.
- <sup>3</sup> All typical volatile organic constituents listed in Appendix 4 of the SIP.
- <sup>4</sup> VOCs = Volatile Organic Compounds.
- <sup>5</sup> Monitoring for acrolein, acrylonitrile, and dichloromethane shall achieve MLs at least as low as the following: 100 µg/L for acrolein, 5 µg/L for acrylonitrile, and 5 µg/L for dichloromethane.

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Stations R-1, R-2, and R-3. Attention shall be given to the presence or absence of:

- |                                       |   |
|---------------------------------------|---|
| a. Floating or suspended matter       | b. Discoloration                          |
| c. Bottom deposits                    | d. Aquatic life                           |
| e. Visible films, sheens, or coatings | f. Fungi, slimes or objectionable growths |
| g. Potential nuisance conditions      | h. Livestock in or near receiving water   |

Notes on receiving water conditions shall be summarized in the monitoring report.

### THREE SPECIES CHRONIC TOXICITY MONITORING

Chronic toxicity monitoring shall be conducted to determine whether the effluent is contributing toxicity in the receiving water. The testing shall be conducted as specified in EPA/821/R-02/013, or later amendment. Chronic toxicity samples shall be collected at the last point of discharge prior to its entering the receiving water. Time of samples collection shall be recorded. The effluent tests must be conducted with concurrent reference toxicant tests. Monthly laboratory reference toxicant tests may be substituted upon approval. Both the reference toxicant and effluent tests must meet all test acceptability criteria as specified in the chronic manual. If the test acceptability

criteria are not achieved, then the Discharger must re-sample and re-test within 14 days. Chronic toxicity monitoring shall include the following:

Species: Pimephales promelas, Ceriodaphnia dubia, and Selenastrum capricornutum  
 Frequency: One time no more than 365 days and no less than 180 days prior to expiration of this Order

Dilution Series:

	<u>Dilutions (%)</u>					<u>Controls</u>	
	<u>100</u>	<u>50</u>	<u>25</u>	<u>12.5</u>	<u>6.25</u>	<u>Receiving Water</u>	<u>Lab Water</u>
% Effluent	100	50	25	12.5	6.25	0	0
% Dilution Water*	0	50	75	87.5	93.75	100	0
% Lab Water	0	0	0	0	0	0	100

\*Dilution water may be uncontaminated receiving water, a standard synthetic (reconstituted) water, or another acceptable dilution water as defined in Section 7 of EPA/821/R-02/013.

### IRRIGATION VOLUME DOCUMENTATION

Records of the volume of discharge to the irrigation fields shall be maintained on a weekly basis and copies submitted with the quarterly monitoring reports.

### REPORTING

Monthly monitoring results may be submitted with quarterly monitoring results as described below unless the results show an apparent violation. If results show an apparent violation, monthly results must be submitted to the Regional Board by the **1<sup>st</sup> day of the second month** following sample collection until the apparent violation is resolved. Quarterly monitoring results shall be submitted by the **1<sup>st</sup> day of the second month** following the end of each calendar quarter (i.e., by 1 February, 1 May, 1 August, and 1 November) following each calendar quarter. Annual monitoring results shall be submitted by 1 February of each year.

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements. The highest daily maximum for the month should be determined and recorded.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

By **1 February** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

- a. The names and telephone numbers of persons to contact regarding the Facility for emergency and routine situations.
- b. A statement certifying when monitoring instruments and devices were last calibrated (for purposes of assuring compliance with this Order), including identification of who performed the calibration (Standard Provision C.6).
- c. A statement certifying whether the current operation and maintenance manual and contingency plan reflect the Facility as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.
- d. Both tabular and graphical summaries of the monitoring data obtained during the previous year.

Monitoring data shall also be submitted in electronic format acceptable to the Executive Officer (e.g. Microsoft Excel). The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

In reporting results for volatile organics, a complete list of all substances, which are tested for and reported on by the testing laboratory, shall be provided to the Regional Board. Detection limits shall equal or be more precise than effluent constituent limits included in the adopted waste discharge requirements, or equal to EPA detection limits for the 500 series method, whichever is lower.

The Discharger shall state in its quarterly monitoring reports whether breakthrough of the carbon vessels is estimated to occur during the current quarter and, if so, the anticipated month.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provision D.6.

The Discharger shall implement the above monitoring program on the first day of the month following effective date of this Order.

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THOMAS R. PINKOS, Executive Officer

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29 April 2005  
(Date)

## INFORMATION SHEET

ORDER NO. R5-2005-0059  
NPDES NO. CA0082511  
AAF-McQUAY, INC., ET AL.  
GROUNDWATER REMEDIATION SYSTEM  
TULARE COUNTY

### **BACKGROUND INFORMATION**

Due to pollution of groundwater underlying two neighboring industrial sites in Visalia, identified as the west and east parcels, AAF-McQuay, Inc., is engaged in an extensive groundwater cleanup effort. AAF-McQuay, Inc. assumed the lead for remediation in December 1990.

AAF-McQuay, Inc., as system operator, is the primary discharger. G&H Enterprises, LLC., Danny S. Freitas and Jeannette Freitas; Fewer Ranch; The Estate of Bill B. Baniias; Clifton G. Harris III and Charmaine L. Harris; Arthur Duarte and Katherine Duarte Family Trust; and Delbert and Geraldine Williamson and Mohr Family Revocable Living Trust, as property owners where groundwater is extracted or owners and lease holders who accept treated groundwater for irrigation, are secondary dischargers responsible for assuring that irrigation practices do not cause nuisance or adversely impact plume containment and cleanup.

Past industrial activities at the “west” and “east” parcels, contributed to groundwater degradation. The west parcel of 20 acres is at 6941 West Goshen Avenue (APN 081-03-69). In 1966, the Bostitch Division of Textron, Inc. developed a portion of the 20-acre parcel and manufactured nail and staple products and fastening devices. About 10 acres of the property was used as cropland. The manufacturing operations stopped in 1982. In 1986, The Stanley Works purchased the property and, as Stanley Bostitch, Inc., a Rhode Island corporation, started manufacturing coiled nail products and discharged rinse waters containing residual solution from acid and alkaline baths into dry wells. Stanley Bostitch, Inc. discontinued operation of the facility in 2001.

The east parcel of 10 acres is at 6707 West Goshen Avenue (APN 085-02-38). From 1961 to 1974, McQuay Perfex Corporation manufactured heating, ventilation, and air conditioning equipment at this site. From 1976 to 1982, SSP Agricultural Equipment, Inc. manufactured wind machine parts at the plant. SnyderGeneral Corporation assumed the assets and liabilities of McQuay Perfex Corporation in 1984. In 1994, SnyderGeneral Corporation was acquired in a stock purchase by the O.Y.L. Group. The acquisition resulted in a name change from SnyderGeneral to AAF-McQuay, Inc. From 1982 to 1996 the plant was used to manufacture extruded plastic products by SunStar Plastics Engineering Corporation and Pepco Water Conservation Products, Inc. Since 1996, the plant has been leased by R. Lang, Inc. for storage of home improvement products for retail distribution.

In 1984, Tulare County sampled the on-site water well and detected trichloroethylene (TCE). Between 1984 and 1987, 16 on-site monitoring wells were installed and TCE; 1,1-dichloroethylene (1,1-DCE); tetrachloroethylene (PCE); and 1,1-dichloroethane (1,1-DCA) were detected above Maximum Contaminant Levels (MCLs). Other detected constituents were below the MCLs.

The Regional Board and the California Department of Toxic Substances Control (DTSC) determined that operations at the Stanley Bostitch facility and the facility adjacent and east of Stanley Bostitch, the east parcel, contributed to the degradation of groundwater by VOCs through the discharge of process wastewater to dry wells. The dry wells at the west parcel were abandoned in 1983 and "clean-closed" by removal of the surface casings, excavation and removal of soils to a depth of 20 feet, and backfill of the excavated area with grout in 1986. The dry wells at the east parcel were abandoned in 1980 and "clean-closed" in the Spring of 1990.

AAF-McQuay, Inc., assumed lead responsibility of cleanup and currently operates the groundwater extraction, treatment, and disposal system and discharges treated groundwater to North Branch Mill Creek Ditch at two locations (Discharge 001 and 003) and to ten agricultural fields (Discharge 002). Currently groundwater is extracted from six wells located on property owned by the secondary dischargers listed above. Treatment is by two sets of activated carbon treatment tanks. Each set has two vessels operated in series.

North Branch Mill Creek Ditch is an ephemeral stream tributary to Cross Creek that flows to the Tule River during wet years. Effluent discharged to North Branch Mill Creek Ditch is used for irrigation at various points below the outfalls and for groundwater recharge. Agricultural uses of North Branch Mill Creek Ditch waters are primarily for field crops and a few orchards.

The soils in the uppermost strata of the site range from loam to sandy loam. Because of their granitic parent material, these soils are typically coarse textured. The surficial deposits in the uppermost strata comprise soils that are primarily sandy silt and silty sand. The surficial deposits extend to depths of about 10 to 20 feet below ground surface with an average thickness of about 15 feet.

Based on the information obtained from the *Lines of Equal Elevation of Water in Wells in Unconfined Aquifer*, published by the Department of Water Resources in 1996, the depth of groundwater in the region is 75 to 90 feet below ground surface. During the past 10 years, the regional groundwater table has dropped about 50 feet largely due to overdraft pumping for agricultural purposes. Groundwater flow is normally towards the west, southwest with a hydraulic gradient of about 10 feet per mile. During the pumping season, large cones of depression in the potentiometric surfaces form around the pumping wells.

Average annual precipitation in the area is 12 inches and the annual pan evaporation is 77 inches, based on climatological data collected from 1960 to 1987 by the Department of Water Resources.

Remediation activities at the site are proceeding under California Environmental Protection Agency, Department of Toxic Substances Control's (DTSC) Imminent and Substantial Endangerment Determination and Order No. I&S 90/91-001.

DTSC is the lead agency in the site remediation activity. On 11 December 1997, DTSC approved the Final Remedial Action Plan (RAP) for the site, which established groundwater target cleanup levels for the compounds of interest at their respective MCLs.

The Discharger conducts short-term pumping tests at the monitoring or extraction wells. Pumped water would be diverted to any one of the treatment units for treatment prior to discharge. The Discharger also proposes occasional discharge of untreated wastewater of small volumes to the agricultural fields during well development, redevelopment, or tests of well pump repairs. The discharge of untreated wastewater would be limited to 100,000 gallons per 5-day period and such events would not occur more than 10 days per year. Such discharges appear to be insignificant. If spread out on the smallest field, field No. 9 of two acres, the flow would result in a hydraulic loading of only 270 gal/ac/day.

### **COMPLIANCE HISTORY**

Receiving water data collected under the previous Order includes two sampling events in 1999. One sample was taken at receiving water sampling station R-2 (100 feet downstream from Discharge 001/treatment unit 28B5/28G1) on 9 September 1999 and one sample was taken at receiving water sampling station R-3 (100 feet downstream from Discharge 003/treatment unit 28E3) on 15 December 1999. In the R-2 sample, 1,1-dichloroethylene was detected at 1.1 µg/L, and cis-1,2-dichloroethylene was detected at 0.77 µg/L. In the R-3 sample 1,1-dichloroethylene was detected at 0.66 µg/L.

A Notice of Violation was issued to the Discharger on 16 November 1999 for exceeding the monthly median concentration for selected volatile organic compounds to North Branch Mill Creek Ditch in August and September 1999. The violation occurred due to breakthrough of the carbon treatment unit No. 28B5/28G1. Fresh carbon was placed in the polish vessel of the unit on 22 October 1999. Regional Board staff conducted a review of the Discharger's monitoring data for 1998 and 1999. The results indicated that breakthrough of the 28B5/28G1 treatment unit occurs approximately every six months and breakthrough on the 28E3 treatment unit occurs approximately annually. In response to this the Discharger accelerated the schedule for replacing carbon in the treatment units.

### **BENEFICIAL USES OF THE RECEIVING WATER**

The Basin Plan designates the beneficial uses of Valley Floor Waters, such as North Branch Mill Creek Ditch and Cross Creek (Hydrologic Area 558.10) as:

- agricultural supply (AGR);
- industrial service supply (IND);
- industrial process supply (PRO);
- water contact recreation (REC-1);
- non-contact water recreation (REC-2);
- warm freshwater habitat (WARM);
- wildlife habitat (WILD);
- support of rare, threatened, or endangered species (RARE); and
- groundwater recharge (GWR).

The beneficial uses of the underlying groundwater, as identified in the Basin Plan, are municipal and domestic, industrial service, industrial process, and agricultural supply.

### REASONABLE POTENTIAL ANALYSIS

A reasonable potential analysis was conducted using all monitoring data submitted by the Discharger. Discharger monitoring data for VOCs are included in Attachment C. An effluent limitation is included where there exists the reasonable potential to exceed a Technology Based Effluent Limit (TBEL), specified in Finding 33, or cause an exceedance of applicable water quality objectives in North Branch Mill Creek Ditch (whichever is more stringent). Table 1 summarizes the reasonable potential analysis for detected constituents.

TABLE 1 – REASONABLE POTENTIAL ANALYSIS SUMMARY

Constituent	Units	MEC	WQO	TBEL	RP
Copper (Discharge 001)	µg/L	11	14.1 <sup>1</sup>	-	N
Copper (Discharge 003)	µg/L	-	9.7 <sup>1</sup>	-	N
Chloromethane	µg/L	0.52	-	<0.5	Y
Chloroform	µg/L	0.75	1240	<0.5	Y
cis-1,2-Dichloroethylene	µg/L	1.6	-	<0.5	Y
1,1-Dichloroethylene	µg/L	2.7	3.2	<0.5	Y
1,1-Dichloroethane	µg/L	-	-	<0.5	Y <sup>2</sup>
1,1,1-Trichloroethane	µg/L	2	-	<0.5	Y
1,1,2-Trichloroethane	µg/L	-	42	<0.5	Y <sup>2</sup>
Tetrachloroethylene	µg/L	1.7	840	<0.5	Y
Trichloroethylene	µg/L	1.6	81	<0.5	Y

<sup>1</sup> The water quality objective for copper is hardness dependent. Hardness from the two discharge points was different so two water quality objectives were calculated for copper (one for each discharge point) using the two hardness values. Lowest observed hardness from Discharge 001 was 170 mg/L and lowest observed hardness from Discharge 003 was 110 mg/L.

<sup>2</sup> Reasonable potential finding based on groundwater investigations showing the presence of these constituents. See Finding 7.

In accordance with the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (hereafter referred to as the SIP), on 19 July 2001 and 25 March 2002 the Discharger reported analytical results for 126 priority pollutants, pH, and hardness in the effluent. The Discharger also submitted analytical results for each of the 17 TCDD congeners listed in Table 4 of the SIP. The Discharger was unable to submit receiving water data due to extremely infrequent upstream flows. The existing data have MLs for many of the VOCs that are higher than those required by Section 2.4 of the SIP (i.e. the reported MLs were too high to determine whether or not VOCs are present in the discharge at levels which could cause exceedances of applicable water quality objectives).

The above information is necessary to determine whether constituents in the discharge, in addition to those specified in Table 1 have the reasonable potential to cause or contribute to an exceedance of water quality criteria for North Branch Mill Creek Ditch. Therefore, instead of requiring a Priority Pollutant Analysis once during the permit term, this Order requires an initial analysis (**by 30 June 2007**), and an analysis within one year of Order expiration (see Monitoring and Reporting Program, **California Toxics Rule Monitoring**). However further dioxin monitoring is not required. The Discharger submitted dioxin monitoring previously as required, and no dioxins were detected in its effluent. The Implementation Policy allows the Regional Board to exempt the Discharger from further dioxin monitoring because it is a low volume discharger, and dioxin has not been detected in its effluent during previous monitoring events.

This Order also contains provisions that allow the Regional Board to reopen the Order and insert limitations based on Priority Pollutant Analysis monitoring.

## EFFLUENT LIMITATIONS AND MONITORING

Federal regulations, 40 CFR Part 122.44 (d)(1)(i), require that NPDES permit effluent limitations control all pollutants which are or may be discharged at a level which will cause or have the reasonable potential to cause or contribute to an in-stream excursion above any State water quality standard, including any narrative criteria for water quality. Beneficial uses, together with their corresponding water quality objectives or federally promulgated water quality criteria, are defined per federal regulations as water quality standards.

State Water Resources Control Board Resolution No. 68-18 requires implementation of Best Practicable Treatment and Control (BPTC) to ensure that the highest water quality is maintained consistent with the maximum benefit to the people of the State. Federal Regulations require

effluent limits representing best available technology economically feasible (BAT) for all toxic pollutants. For treatment of VOCs in groundwater, BAT is consistent with BPTC. BAT based on Regional Board staff's best professional judgment, and BPTC for groundwater degraded by VOCs, provides that the pollutants should be discharged at concentrations less than quantifiable levels for each pollutant.

The effluent limitations consider BPTC for VOC removal, the historical performance of the on-site treatment systems, receiving water conditions, and USEPA Method quantitation limits and are less than California Primary Maximum Contaminant Levels.

### **Changes From Previous Order No. 98-200 (Effluent Limitations)**

**Volatile Organic Compounds.** Previous Order No. 98-200 assigned VOC monthly median limitations that were less than current detection levels (<0.5 µg/L), but assigned a daily maximum of 5 µg/L for these constituents. This Order assigns daily maximum BAT/BPTC limitations for VOCs that are less than the current detection levels (<0.5 µg/L), and does not contain a monthly median limitation. Also, technology based limitations for chloromethane are included in this Order because it was detected in the effluent at a concentration that is greater than current applicable technology based effluent limitations of <0.5 µg/L.

Previous Order No. 98-200 assigned VOC daily maximum limitations of 5 µg/L for discharge to adjacent land areas (Discharge 002). This Order requires that all discharges, including those to adjacent land, meet BAT/BPTC requirements described above.

See the "Technology Based Effluent Limitations" section of this Information Sheet for additional information.

**Conductivity Limitations.** The Basin Plan establishes maximum effluent limitations for EC in surface water discharges as follows: "The maximum electrical conductivity of a discharge shall not exceed the quality of the source water plus 500 micromhos per centimeter or 1,000 micromhos per centimeter, whichever is more stringent. When the water is from more than one source, the EC shall be a weighted average of all sources." This Order establishes effluent limitations for EC based on the Basin Plan requirement.

**Boron Limitations.** The Basin Plan requires that the boron concentration in all surface water discharges be less than 1.0 mg/L. This Order establishes effluent limitations for boron based on the Basin Plan requirement.

**Chloride Limitations.** The Basin Plan requires that the chloride concentration in all surface water discharges be less than 175 mg/L. This Order establishes effluent limitations for chloride based on the Basin Plan requirement.

### **Technology Based Effluent Limits**

Section 1.4 of the SIP requires that water quality based effluent limits be compared to technology based effluent limits and that the more protective limit be applied in the permit. Therefore, technology based effluent limits must be developed for each constituent detected in the effluent or groundwater at the site<sup>1</sup>. For establishing BAT based upon BPJ, 40 CFR 125 requires consideration of several specific factors. The following factors were considered:

Appropriate Technology for Category or Class of Discharges, Processes Employed, Engineering Aspects of Various Control Techniques. GAC treatment systems are commonly used to remove VOCs from extracted groundwater at cleanup sites. Systems are designed to remove VOCs to nondetectable concentrations. Properly operated and maintained systems perform reliably and ensure essentially complete removal of VOCs. The Discharger employs GAC systems.

Age of Equipment. GAC units were installed in 1993 and have not been upgraded.

Influent, Effluent, and Receiving Water Data. GAC systems are currently in place elsewhere in the State and monitoring data has shown that these systems are capable of consistent VOC removal to levels less than the MLs.

Unique Factors Relating To The Applicant. The Discharger has not identified any unique factors that would justify discharges equaling or exceeding quantifiable concentrations of VOCs.

Non-Water Quality Environmental Impacts, Including Energy Requirements; Cost Of Achieving Proposed Effluent Reduction. The systems currently in place reliably remove VOCs to nondetectable concentrations of <0.5 µg/L, therefore, implementation of the proposed limits would not create additional non-water quality impacts, or financial costs for the Discharger.

The above supports a conclusion that the limits of <0.5 µg/L as a daily maximum reflect BPTC/BAT.

The technology based standard for cleanup of VOCs in groundwater with GAC treatment systems is that all effluent should be discharged with unquantifiable levels of VOCs in the effluent. For priority pollutants the MLs listed in Appendix 4 of the SIP represent the minimum quantifiable levels of these constituents and serve as the technology based effluent limits. For non-priority pollutants (cis-1,2-dichloroethylene), California Department of Health Services publishes Detection Limits for purposes of Reporting (DLRs) which establish minimum

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<sup>1</sup> All VOCs detected in the groundwater, influent, or effluent were considered in this analysis.

quantifiable levels for numerous organic chemicals. The DLR for cis-1,2-dichloroethylene serves as the technology based effluent limitation (TBEL). A summary of the TBELs is listed below in Table 2:

**TABLE 2 - TBELS**

<b>Constituent</b>	<b>Source</b>	<b>TBEL</b>
Chloromethane	SIP MLs	<0.5 µg/L
Chloroform	SIP MLs	<0.5 µg/L
cis-1,2-Dichloroethylene	CA Health Services DLRs	<0.5 µg/L
1,1-Dichloroethylene	SIP MLs	<0.5 µg/L
1,1-Dichloroethane	SIP MLs	<0.5 µg/L
1,1,1-Trichloroethane	SIP MLs	<0.5 µg/L
1,1,2-Trichloroethane	SIP MLs	<0.5 µg/L
Tetrachloroethylene	SIP MLs	<0.5 µg/L
Trichloroethylene	SIP MLs	<0.5 µg/L

## **MONITORING**

This Monitoring and Reporting Program (MRP) has the following differences from the previous MRP No. 98-200:

**Influent and Mid-treatment Monitoring.** Quarterly influent and Mid-treatment VOC monitoring is required. This information will assist in determining VOC levels in influent, and associated prediction of breakthrough. Quarterly frequency is reasonable given that the breakthrough is predicted every 6-months to 1-year.

**Priority Pollutants.** Two separate Priority Pollutant sampling events are required to provide CTR data pursuant to the requirements of the SIP. See “Reasonable Potential Analysis,” of this Information Sheet.

**Toxicity.** Annual acute toxicity monitoring and once per permit term chronic toxicity are required to assess the toxicity of the discharge on receiving waters.

## **RECEIVING WATER LIMITATIONS**

This Order includes Receiving Water Limitations for: bacteria, biostimulatory substances, chemical constituents (lead, arsenic, barium, copper, cyanide, iron, manganese, silver and zinc), color, floating material, oil and grease, pH, pesticides, radioactivity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, turbidity, chloride,

conductivity, and dissolved oxygen based on the applicable narrative and numeric water quality objectives contained in the Basin Plan.

### **Antidegradation and CEQA Considerations**

The permitted discharge is consistent with the anti-degradation provisions of 40 CFR 131.12 and Resolution No. 68-16. BPTC for cleanup of groundwater degraded by volatile organic constituents and extracted for treatment is removal of VOCs to a level at or below corresponding analytical quantitation limits. Some resulting degradation of the receiving waters could occur if VOCs are present at concentrations below the quantitation limits, but such degradation would not be quantifiable. The Discharger has not submitted an analysis to the Regional Board demonstrating that degradation resulting from discharges of VOCs at concentrations in excess of quantifiable levels would be consistent with the maximum benefit of the people of the state and Resolution No. 68-18. During periods of limited or no dilution, some degradation of the receiving water may occur from these pollutants, however, the discharge will not cause an exceedance of water quality objectives or cause a significant impact on the beneficial uses of groundwater and surface water. The continued remediation of degraded groundwater, and the use of the treated groundwater for irrigation and discharge to North Branch Mill Creek Ditch, both benefit the people of the state.

The action to adopt waste discharge requirements (NPDES permit) for this facility is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) in accordance with Section 13389 of the California Water Code.

GEA: 4/29/05