California Regional Water Quality Control Board
Central Valley Region

ORDER NO. R5-2010- 0076
NPDES NO. CA0084891

WASTE DISCHARGE REQUIREMENTS
FOR
THE BOEING COMPANY
INTERIM GROUNDWATER EXTRACTION AND TREATMENT SYSTEMS
GET H-B AND SOUTHERN GROUNDWATER STUDY AREA GET
SACRAMENTO COUNTY

The following Discharger is authorized to discharge in accordance with the conditions set forth in this Order:

Discharger	The Boeing Company
Name of Facility	GET H-B and Southern Groundwater Study Area (SGSA) Groundwater Extraction and Treatment Systems
Facility Address 1 – GET H-B	10699 Mather Boulevard
	Rancho Cordova, CA 95670
	Sacramento County
Facility Address 2 - SGSA	Intersection of Douglas Road and Beta Road
	Rancho Cordova, CA 95670
	Sacramento County

The Discharger is authorized to discharge from the following discharge points as set forth below:

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
Outfall 001	Treated Groundwater from GET H-B	38º, 32', 18" N	121º, 18', 59" W	Unnamed Drainage Channel to Morrison Creek
Outfall 002	Treated Groundwater from SGSA	38º, 33', 54" N	121º, 14', 07" W	Morrison Creek

This Order was adopted by the Regional Board on:	**27 May 2010**
This Order shall become effective on:	**1 June 2010**
This Order shall expire on:	**1 June 2015**
The U.S. Environmental Protection Agency (U.S. EPA) and the Regional Board have classified this discharge as a major discharge.	
The Discharger shall file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, **not later than 180 days in advance of the Order expiration date** as application for issuance of new waste discharge requirements.	

I, Pamela C. Creedon, Executive Officer, do hereby certify the following is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 27 May 2010.

Original Signed by:

PAMELA C. CREEDON, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
REGION 5, CENTRAL VALLEY REGION

ORDER NO. R5-2010-0076
NPDES NO. CA0084891

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I. FACILITY INFORMATION

The following Discharger is authorized to discharge in accordance with the conditions set forth in this Order:

Discharger	The Boeing Company
Name of Facility	GET H-B and SGSA Groundwater Extraction and Treatment Systems
Facility Address	10699 Mather Boulevard Rancho Cordova, CA 95670 Sacramento County
Facility Contact, Title, and Phone	Mr. Bryan Meyers, (916) 803-3307
Mailing Address	11500 Elks Circle Rancho Cordova, CA 95742
Type of Facility	Groundwater Extraction and Treatment Plants
Facility Design Flows	GET H-B – 5.76 million gallons per day (mgd) – Discharge 001,Outfall 001 SGSA GET – 1.584 mgd – Discharge 002, Outfall 002 008, Outfall 002/002A

II. FINDINGS

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

A. **Background.** The Boeing Company (hereafter, Discharger) is currently discharging under Order Nos. R5-2006-015 and R5-2006-014 and National Pollutant Discharge Elimination System (NPDES) Permit Nos. CA0084891 and CA0085049. The Discharger submitted a Report of Waste Discharge, dated 14 September 2009 and supplemental information dated 23 July 2009 and applied for renewal of the NPDES permits. The two permits covered two separate treatment facilities discharging to Morrison Creek. This permit combines both discharges into a single permit.

Past rocket testing operations by the Discharger and the Aerojet-General Corporation (Aerojet) at the Inactive Rancho Cordova Test Site (IRCTS) in Rancho Cordova led the pollution of groundwater by trichloroethylene and perchlorate. The Regional Water Board adopted Cleanup and Abatement Order No. 97-093 directing the Discharger and Aerojet to investigated and develop remedial measures to contain the perchlorate plume. The Discharger and Aerojet responded with the construction of interim and final groundwater extraction and treatment facilities. The final versions of these systems are the current GET H-B and SGSA GET systems.

The Discharger requested one change in the permit conditions specified in the two previous orders. That change involves the addition of chlorine dioxide to control biofouling at the Southern Groundwater Study Area (SGSA) treatment system. A pilot study conducted in the middle of 2009 demonstrated that chlorine dioxide was successful in controlling the biofouling while maintaining a residual chlorine value of less than 0.01 milligrams per liter (mg/L).

B. **Facility Descriptions.** The Discharger currently owns and operates two groundwater extraction and treatment systems (hereafter "Facilities") that discharge treated groundwater to surface waters in accordance with an NPDES permit.

a. GET H-B (Discharge 001). GET H-B treatment facility is on the former Mather Air Force Base. The facility utilizes granular activated carbon to remove volatile organic compounds (VOCs) t to reduce concentrations of volatile organic compounds (VOCs) and resin adsorption to remove perchlorate from approximately 4000 gpm of extracted groundwater. See Attachment C-1.
b. SGSA GET (Discharge 002). The SGSA GET facility is on the IRCTS property along Beta Road and utilizes the same treatment processes as GET H-B to treat up to 1100 gpm of extracted groundwater. See Attachment C-2.

Treated groundwater is discharged from Discharges 001 and 002 to a drainage channel to Morrison Creek and Morrison Creek, respectively. Morrison Creek is tributary to the Sacramento River, waters of the United States and part of the Sacramento-San Joaquin Delta (Delta) within the American River and Sacramento River watersheds. Attachments B-1 through B-3 provide a map describing the locations of the Facilities. Attachments C-1 and C-2 provide wastewater flow schematics of the Facilities.

Treated groundwater from the SGSA GET is also used for various purposes on the Inactive Rancho Cordova Test site. The effluent can be used for dust control for development activities, for livestock watering on the IRCTS, applied to an infiltration in an area north of Morrison Creek, for dust suppression water for mining sand and gravel mining operations on the IRCTS, for landscape irrigation water on the IRCTS, and for construction and irrigation water along Douglas Road between Sunrise and Security Park. See Attachment B-3 for the location of these application areas.

C. **Legal Authorities.** This Order is issued pursuant to section 402 of the Federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the California Water Code (CWC). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4 of the CWC for discharges that are not subject to regulation under CWA section 402.

D. **Background and Rationale for Requirements**. The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and through special studies. Attachments A through F, which contain background information and rationale for Order requirements, are hereby incorporated into this Order and, thus, constitute part of the Findings for this Order.

E. **California Environmental Quality Act (CEQA).** This action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the CWC. The Department of Toxic Substances Control certified a final Negative Declaration and Initial Study for the Remedial Action Plan for Soil and Groundwater at the Inactive Rancho

Cordova Test site, which included both treatment systems, in accordance with CEQA and State CEQA Guidelines. The Board has reviewed the negative declaration and these waste discharge requirements will mitigate or avoid any significant impacts on water quality due to the discharges from the GET H-B and SGSA GET facilities.

F. **Technology-based Effluent Limitations.** The Code of Federal Regulations (CFR) at 40 CFR §122.44(a) requires that permits include applicable technology-based limitations and standards. This Order includes technology-based effluent limitations that protect the beneficial uses of the receiving waters. The Regional Water Board has considered the factors listed in CWC §13241 in establishing these requirements. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet (Attachment F).

G. **Water Quality-based Effluent Limitations.** Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where numeric water quality objectives have not been established, 40 CFR §122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a), proposed State criteria or a State policy interpreting narrative criteria supplemented with other relevant information, or an indicator parameter.

H. **Water Quality Control Plans.** The Regional Water Board adopted a *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition* (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 applies to its tributary streams. The Basin Plan does not specifically identify beneficial uses for Morrison Creek, tributary to the Sacramento River, but does identify present and potential uses for the Sacramento River. These beneficial uses are municipal and domestic supply (MUN); agricultural supply, irrigation and stock watering (AGR); water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); warm and cold migration of aquatic organisms (MIGR); warm and cold spawning (SPWN); wildlife habitat (WILD). In addition, State Water Resources Control Board (State Water Board) Resolution No. 88-63 requires that, with certain exceptions, the Regional Water Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. Thus, as discussed in detail in this Fact Sheet, beneficial uses applicable to the Sacramento River and Morrison Creek are as follows:

Discharge Point	Receiving Water Name	Beneficial Use(s)
001, 002	Morrison Creek, Tributary of the Sacramento River	Existing: MUN, AGR, REC-1, REC-2, WARM, COLD, MIGR, SPWN, WILD.

The Basin Plan includes a Wastewater Reuse Policy that encourages the reclamation and reuse of wastewater, including treated groundwater resulting from a cleanup action, where practicable. Those reuse options include municipal and industrial supply, crop irrigation, groundwater recharge, and wetland restoration. At this time, demonstrated cost-effective options that provides for reuse of the treated groundwater have been identified in the Discharger's Reuse Plan, and agreements with water users are being negotiated. As described above, there has been some limited reuse of the effluent from the SGSA GET for dust suppression, but is allowed for reuse for many purposes on the IRCTS property. The Discharger and Sacramento County had entered into an agreement whereby the water discharged from the GETs is transferred to the County. The County analyzed a project for reuse of the treated groundwater whereby the County would take the water out of the Sacramento River and transfer the water back up to eastern Sacramento County. The County determined that the project was not cost-effective and terminated the agreement. New negotiations between the Discharger, Sacramento County and other water purveyors are on-going.

Until it is feasible for the GET discharges to be reused, discharge to Morrison Creek for a limited duration is a reasonable use of the treated groundwater on an interim basis since it implements the goals of cleaning up the aquifer, restoring its beneficial uses, and preventing additional public supply wells from being polluted as other alternatives are considered.

The remediation project has a potential effect on the sustainable yield of the groundwater basin from which the extraction fields takes its water. The Discharger, in accordance with requirements of a previous version of this Order, evaluated the sustainable yield of the aquifer south of the American River in a report dated 13 September 2003. That report stated that there would be an additional drawdown due to the Dishcharger's extraction and that done by Aerojet as part of its remediation efforts, in the eastern part of Sacramento County in the vicinity of the IRCTS of up to 30 feet. Implementation of the reuse alternatives contained in the Reuse Plan will help substantially mitigate the impact of the withdrawal of groundwater for remediation purposes. The required evaluations allowed the Regional Board to determine whether there are additional environmental impacts of the Discharger's pumping and will encourage the reuse of treated groundwater consistent with the Wastewater Reuse Policy set forth in the Basin Plan.

The State Water Board adopted a *Water Quality Control Plan for Control of Temperature in the Coastal* and *Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for inland surface waters.

Requirements of this Order specifically implement the applicable Water Quality Control Plans.

I. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, which was amended on May 4, 1995 and November 9, 1999, and the CTR on May 18, 2000, which was amended on February 13, 2001. These rules include water quality criteria for priority pollutants and are applicable to this discharge.

J. **State Implementation Policy.** On March 2, 2000, State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP*).* The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Boards in their basin plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by USEPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP became effective on May 18, 2000. The SIP includes procedures for determining the need for and calculating WQBELs and requires dischargers to submit data sufficient to do so.

K. **Compliance Schedules and Interim Requirements.** This permit does not contain interim effluent limits.

L. **Antidegradation Policy.** Section 131.12 of 40 CFR requires that State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16, which incorporates the requirements of the federal antidegradation policy. Resolution 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. As discussed in detail in the Fact Sheet (Attachment F) the permitted discharge is consistent with the antidegradation provision of 40 CFR Section 131.12 and State Water Board Resolution 68-16.

M. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR § 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order.

N. **Monitoring and Reporting.** Section 122.48 of 40 CFR requires that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWC authorize the Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.

O. **Standard and Special Provisions.** Standard Provisions, which in accordance with 40 CFR §§122.41and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachment D. The Regional Water Board has also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in the attached Fact Sheet (Attachment F).

P. **Notification of Interested Parties.** The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for the discharge and has provided them with an opportunity for a public hearing and to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet (Attachment F) of this Order.

Q. **Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet (Attachment F) of this Order.

R. This Order contains restrictions on individual pollutants that are no more stringent than required by the federal CWA. Individual pollutant restrictions consist of technology-based restrictions and water quality-based effluent limitations. The technology-based effluent limitations consist of restrictions on VOCs and perchlorate. Water quality-based effluent limitations have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR section 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations are based on the CTR-SIP, which was approved by USEPA on May 1, 2001. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless “applicable water quality standards for purposes of the [Clean Water] Act” pursuant to 40 CFR section 131.21(c)(1). Collectively, this Order’s restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the CWA and the applicable water quality standards for purposes of the CWA.

IT IS HEREBY ORDERED, that Order Nos. R5-2006-0014 and R5-2006-0015 are rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in Division 7 of the CWC and regulations adopted thereunder, and the provisions of the federal CWA, and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements herein.

III. DISCHARGE PROHIBITIONS

A. Discharge of wastewater at a location or in a manner different from that described in the Findings is prohibited.

B. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Standard Provision I.G of Attachment D, Federal Standard Provisions.

C. Neither the discharge nor its treatment shall create a nuisance as defined in Section 13050 of the California Water Code.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Points 001 and 002

1. Final Effluent Limitations

a. Discharge Point 001

i. The discharge of effluent from the GET H-B GET facility shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location M-001,as described in the attached Monitoring and Reporting Program (Attachment E):

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow – Discharge 001	mgd	5.76	5.76	--	--
Trichloroethylene[1]	µg/L	0.5/1.7	0.75/1.7	--	--
	lbs/day	0.024/0.082	0.036/0.082	--	--
cis-1,2-dichoroethylene[1]	µg/L	0.5/6	0.75/6		
	lbs/day	0.024/0.29	0.036/0.29		
Perchlorate	µg/L	4	6	--	--
	lbs/day	0.192	0.29	--	--
Chlorform[2]	µg/L	0.5/10	0.75/10	--	--
	lbs/day	0.024/0.48	0.024/0.48	--	--
Bromodichlormethane[2]	µg/L	0.5/10	0.75/10		
	lbs/day	0.024/0.48	0.024/0.48		
pH	standard units	--	--	6.5	8.5

[1] First value is for normal operation. Second value is for the first two weeks following GAC change-out.
[2] For first two weeks following resin change-out. Afterwards the limit is 0.5 µg/L for monthly average and 0.75 µg/L for maximum daily.

b. Discharge Point 002

i. The discharge of effluent from the SGSA GET facility shall maintain compliance with the following effluent limitations at Discharge Points 002, respectively, with compliance measured at Monitoring Location M-002, respectively, as described in the attached Monitoring and Reporting Program (Attachment E):

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow – Discharge 001	mgd	1.58	1.58	--	--
Trichloroethylene[1]	µg/L	0.5/1.7	0.75/1.7	--	--
	lbs/day	0.007/0.024	0.011/0.024	--	--
cis-1,2-dichoroethylene[1]	µg/L	0.5/6	0.75/6		
	lbs/day	0.007/0.17	0.011/0.17		
Perchlorate	µg/L	4	6	--	--
	lbs/day	0.053	0.079	--	--
Chlorform[2]	µg/L	0.5/10	10	--	--
	lbs/day	0.007/0.14	0.007/0.14	--	--
Bromodichlormethane[2]	µg/L	0.5/10	0.5/10		
	lbs/day	0.007/0.14	0.007/0.14		
pH	standard units	--	--	6.5	8.5

[1] First value is for normal operation. Second value is for the first two weeks following GAC change-out.
[2] For first two weeks following resin change-out. Afterwards the limit is 0.5 µg/L.for the monthly average and 0.75 µg/L for the maximum daily.

c. **Acute Whole Effluent Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
   i. 70% minimum for any one bioassay;
   ii. 90%, median for any three consecutive bioassays.

d. **Chronic Whole Effluent Toxicity.** There shall be no chronic toxicity in the effluent discharge.

e. **Total Residual Chlorine.** Effluent total residual chlorine shall not exceed:
   i. 0.011 mg/L, as a 4-day average, and
   ii. 0.019 mg/L, as a 1-hour average

2. Interim Effluent Limitations - Not Applicable

B. Land Discharge Specifications – Same as Effluent Limitations, above.

C. Reclamation Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving surface water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. The discharge shall not cause the following in Morrison Creek:

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

2. **Dissolved Oxygen**: The monthly median of the mean daily dissolved oxygen (DO) concentration shall not fall below 85 percent of saturation in the main water mass, and the 95 percentile concentration shall not fall below 75 percent of saturation. The DO concentration shall not be reduced below 7.0 mg/L at any time.

3. **Oil and Grease**: Oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the water surface or on objects in the water, or otherwise adversely affect beneficial uses.

4. **Color**: Discoloration that causes nuisance or adversely affects beneficial uses.

5. **pH**: The ambient pH to be depressed below 6.5, nor raised above 8.5, nor changes in normal ambient pH levels to be exceeded by more than 0.5 units. A monthly averaging period may be used for determining compliance with the above 0.5 receiving water pH limitation.

6. **Temperature**: The natural receiving water temperature to increase more than 5°F.

7. **Settleable Matter**: Substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.

8. **Radioactivity**:

    a. Radionuclides to be present in concentrations that are harmful to human, plant, animal or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal or aquatic life.

    b. Concentrations of radionuclides in excess of the maximum contaminant levels (MCLs) specified in Table 4 (MCL Radioactivity) of Section 64443 of Title 22 of the California Code of Regulations.

9. Toxicity: Toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances.

10. Biostimulatory Substances: Biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.

11. Floating Material: Floating material in amounts that cause nuisance or adversely affect beneficial uses.

12. Sediment: Suspended sediment load and suspended sediment discharge rate altered in such a manner to cause nuisance or adversely affect beneficial uses.

13. Suspended Sediment: Suspended sediment concentrations that cause nuisance or adversely affect beneficial uses.

14. Taste and Order: 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.

15. Turbidity: Changes in turbidity that cause nuisance or adversely affect beneficial uses. Turbidity attributable to controllable water quality factors to exceed the following:

    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 NTUs.

16. Pesticides:

    a. Pesticides in individual or combined concentrations that adversely affect beneficial uses.

    b. Pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses.

    c. Total identifiable persistent chlorinated hydrocarbon pesticides in concentrations detectable within the accuracy of analytical methods approved by the Environmental Protection Agency or the Executive Officer.

    d. Concentrations exceeding those allowable by applicable antidegradation policies (see State Water Resources Control Board Resolution No. 68-16 and 40 C.F.R. Section 131.12.)

    e. Concentrations exceeding the lowest levels technically and economically achievable.

f. Concentrations exceeding the Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.

g. Concentrations of thiobencarb in excess of 1.0 mg/L.

17. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.

B. Groundwater Limitations – Not Applicable

VI. PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions.** The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.

2. **Regional Water Board Standard Provisions.** The Discharger shall comply with the following provisions:

   a. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by the California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to Title 23, California Code of Regulations (CCR), Division 3, Chapter 14.

   b. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

      i. Violation of any term or condition contained in this Order;
      ii. Obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;
      iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and
      iv. A material change in the character, location, or volume of discharge.

      The causes for modification include:

      i. **New regulations**. New regulations have been promulgated under Section 405(d) of the Clean Water Act, or the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued.

      ii. **Land application plans**. When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge,

to revise an existing land application plan, or to add a land application plan.

iii. **Change in sludge use or disposal practice**. Under 40 Code of Federal Regulations (CFR) 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

The Regional Water Board may review and revise this Order at any time upon application of any affected person or the Regional Water Board's own motion.

c. If a toxic effluent standard or prohibition (including any scheduled compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the CWA, or amendments thereto, for a toxic pollutant that is present in the discharge authorized herein, and such standard or prohibition is more stringent than any limitation upon such pollutant in this Order, the Regional Water Board will revise or modify this Order in accordance with such toxic effluent standard or prohibition.

The Discharger shall comply with effluent standards and prohibitions within the time provided in the regulations that establish those standards or prohibitions, even if this Order has not yet been modified.

d. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 04(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:

i. Contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or

ii. Controls any pollutant limited in the Order.

The Order, as modified or reissued under this paragraph, shall also contain any other requirements of the CWA then applicable.

e. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.

f. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or sludge use or disposal.

g. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by USEPA under Section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.

h. The discharge of any radiological, chemical or biological warfare agent or high-level, radiological waste is prohibited.

i. A copy of this Order shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.

j. Safeguard to electric power failure:

   i. The Discharger shall provide safeguards to assure that, should there be reduction, loss, failure of electric power, the discharge shall comply with the terms and conditions of this Order.

   ii. Upon written request by the Regional Water Board the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past five years on effluent quality and on the capability of the Discharger to comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Regional Water Board.

   iii. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Regional Water Board not approve the existing safeguards, the Discharger shall, within ninety days of having been advised in writing by the Regional Water Board that the existing safeguards are inadequate, provide to the Regional Water Board and USEPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Regional Water Board, become a condition of this Order.

k. The Discharger, upon written request of the Regional Water Board, shall file with the Regional Water Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events.

   The technical report shall:

i. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.

ii. Evaluate the effectiveness of present facilities and procedures and state when they became operational.

iii. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

The Regional Water Board, after review of the technical report, may establish conditions, which it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions shall be incorporated as part of this Order, upon notice to the Discharger.

l. A publicly owned treatment works (POTW) whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the Discharger shall notify the Regional Water Board by **31 January.** A copy of the notification shall be sent to appropriate local elected officials, local permitting agencies and the press. Within 120 days of the notification, the Discharger shall submit a technical report showing how it will prevent flow volumes from exceeding capacity or how it will increase capacity to handle the larger flows. The Regional Water Board may extend the time for submitting the report.

m. Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. In the event a certified laboratory is not available to the Discharger, analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by Regional Water Board staff. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Regional Water Board.

i. Unless otherwise specified, all metals shall be reported as Total Metals.

ii. Acute bioassays shall be performed in accordance with guidelines approved by the Regional Water Board and the Department of Fish and Game or in accordance with methods described in USEPA's manual for

measuring acute toxicity of effluents (EPA-821-R-02-012 and subsequent amendments).

iii. Short-term chronic bioassays shall be performed in accordance with USEPA guidelines (EPA-821-R-02-013 and subsequent amendments).

n. Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Regional Water Board and USEPA.

o. The Discharger shall conduct analysis on any sample provided by USEPA as part of the Discharge Monitoring Quality Assurance (DMQA) program. The results of any such analysis shall be submitted to USEPA's DMQA manager.

p. The Discharger shall submit technical reports as directed by the Executive Officer. 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.

q. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or sludge use or disposal.

r. The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the CWC, including, but not limited to, sections 13385, 13386, and 13387.

B. Monitoring and Reporting Program Requirements

The discharger shall comply with the Monitoring and Reporting Program, and future revisions thereto, in Attachment E of this Order.

C. Special Provisions

1. Reopener Provisions

a. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such more stringent standards.

b. If after review of effluent monitoring results it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective, or the discharge is causing groundwater degradation, this Order may be reopened and effluent limitations added for the subject constituents.

c. The Discharger may request the Executive Officer to reopen the permit to request a reduction in monitoring, if appropriate.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. **Chronic Whole Effluent Toxicity Requirements.** For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct chronic whole effluent toxicity testing, as specified in the Monitoring and Reporting Program (Attachment E). Furthermore, this Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exceeds numeric toxicity trigger levels established in this Provision, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE workplan, and take actions to mitigate the impact of the discharge and prevent recurrence of the toxicity. A TRE is a site-specific study conducted in a stepwise process to identify source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative agents of whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. This Provision includes the requirements for the Discharger to develop and submit a TRE Workplan and also the procedures for accelerated chronic toxicity monitoring and TRE initiation.

(i) **Toxicity Reduction Evaluation (TRE) Workplan. Within 90 days of the effective date of this Order,** the Discharger shall submit to the Regional Water Board a TRE Workplan for approval by the Executive Officer. The TRE Workplan shall outline the procedures for identifying the source(s) of, and reducing or eliminating effluent toxicity. The TRE Workplan shall be developed in accordance with EPA guidance and shall contain adequate detail to allow the Discharger to immediately implement a TRE as required in this Provision.

(ii) **Numeric Toxicity Trigger.** The numeric toxicity trigger is **1 TUc**[2] for any test species. The numeric toxicity trigger is not an effluent limitation, it is the toxicity threshold at which the Discharger is required to perform accelerated chronic toxicity monitoring to confirm effluent toxicity, as well as, the threshold to initiate a TRE. The accelerated monitoring specifications are described in subsection (iv), below.

(iii) **Accelerated Monitoring and TRE Initiation.** When the numeric toxicity trigger is exceeded during regular chronic toxicity monitoring, and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring to confirm the effluent toxicity as required in the Accelerated Monitoring Specifications outlined in subsection iv, below. Any exceedance of the TRE Trigger during accelerated monitoring requires the Discharger to initiate a TRE in accordance with an approved TRE Work Plan. Notwithstanding the accelerated monitoring results, if there is adequate evidence of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.

(a) In the event the numeric toxicity trigger is exceeded during accelerated monitoring, specific actions the Discharger will take to investigate and identify the cause(s) of toxicity;

(b) In the event the numeric toxicity trigger is exceeded during accelerated monitoring, specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and

(c) A schedule for these actions.

(iv) **Accelerated Monitoring Specifications.** If the TRE Trigger is exceeded during regular chronic toxicity testing, within 14-days of notification by the laboratory of the exceedance, the Discharger shall initiate accelerated monitoring to confirm effluent toxicity. Accelerated monitoring shall consist of three (3) monthly chronic toxicity tests using the species that exhibited toxicity. The following protocol shall be used for accelerated monitoring and TRE initiation:

(a) If the results of three (3) consecutive accelerated monitoring tests do not exceed the TRE Trigger, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. Notwithstanding the accelerated monitoring results, if there is adequate evidence of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.

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[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.

[2] TUc – Chronic toxicity unit. The reciprocal of the effluent concentration that causes no observable effect on the test organism in a chronic toxicity test (TUc=100/NOEC)

(b) If the source(s) of the toxicity is easily identified (i.e. temporary plant upset), the Discharger shall make necessary corrections to the facility and shall continue accelerated monitoring until three (3) consecutive accelerated tests do not exceed the TRE Trigger. Upon confirmation that the effluent toxicity has been removed, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring.

(c) If the result of any accelerated toxicity test exceeds the TRE Trigger, the Discharger shall cease accelerated monitoring and begin 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 exceedance of the TRE Trigger during accelerated monitoring, the Discharger shall submit a TRE Action Plan to the Regional Water Board including, at minimum:

1. Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including TRE WET monitoring schedule;
2. Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and
3. A schedule for these actions.

3. Best Management Practices and Pollution Prevention – Not Applicable

4. Compliance Schedules – Not Applicable

5. Construction, Operation and Maintenance Specifications

a. Operations and Maintenance Plan:

Within 60-days of startup of a GET, the Discharger shall certify in writing to the Regional Water Board that it has developed an Operation and Maintenance Plan (O&M). O&M plans have already developed for GET H-B and SGSA systems under previous versions of the permit. The Discharger shall develop and implement the O&M plan to prevent or minimize the generation and discharge of wastes and pollutants to the waters of the United States and waters of the State. The Discharger shall develop and implement an O&M plan consistent with the following objectives:

i. Operations and Maintenance

1) Maintain in-system production and wastewater treatment technologies to prevent the overflow of any floating matter or bypassing of treatment technologies.

2) Inspect the treatment systems on a routine basis in order to identify and promptly repair any damage.

3) Ensure storage and containment of chemicals or other materials to prevent spillage or release into waters of the United States, or waters of the State.

4) Implement procedures for properly containing, cleaning, and disposing of any spilled material.

ii. Recordkeeping

1) Keep records documenting the frequency of cleaning, inspections, maintenance and repairs.

v. Training

1) Adequately train all relevant facility personnel in spill prevention and how to respond in the event of a spill in order to ensure the proper clean-up and disposal of spilled material.

2) Train staff on the proper operation and cleaning of production and wastewater treatment systems, including training in feeding procedures and proper use of equipment.

The Discharger shall ensure that its operations staff are familiar with the O&M Plan and have been adequately trained in the specific procedures it requires.

b. Solids disposal specifications:

i. Collected screenings, sludges, and other solids, shall be disposed of in a manner approved by the Executive Officer and consistent *with Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, CCR, Division 2, Subdivision 1, Section 20005, et seq.

ii. Any proposed change in solids disposal from a previously approved practice (as described in this Order) shall be reported to this office at least 90 days in advance of the change.

6. Special Provisions for Municipal Facilities (POTWs Only) – Not Applicable

7. Other Special Provisions

a. 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).

b. 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 Water Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision V.B, Attachment D, 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.

c. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition or limitation contained in this Order, the Discharger shall notify the Regional Water Board by telephone (916) 464-3291 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Regional Water Board waives confirmation. The written notification shall include the information required by Federal Standard Provision V.E.1 [40 CFR §122.41(l)(6)(i)].

VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in Section IV of this Order will be determined as specified below:

A. Average Monthly Effluent Limitation (AMEL).
If the average of daily discharges over a calendar month exceeds the AMEL for a given parameter, an alleged violation will be flagged and the discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). The average of daily discharges over the calendar month that exceeds the AMEL for a parameter will be considered out of compliance for that month only. If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the discharger will be considered out of compliance for that calendar month. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month. For NDMA and 1,4-dioxane, if the approved Practical Quantitation Level (PQL) is greater than the AMEL, then compliance is met if the monthly average is less than the PQL

B. Maximum Daily Effluent Limitation (MDEL).
If a daily discharge exceeds the MDEL for a given parameter, an alleged violation will be flagged and the discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period. For any 1 day during which no sample is

taken, no compliance determination can be made for that day. For NDMA and 1,4-dioxane, if the approved Practical Quantitation Level (PQL) is greater than the MDEL, then compliance is met if the daily value is less than the PQL

C. Instantaneous Minimum Effluent Limitation.
If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, a violation will be flagged and the discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation).

D. Instantaneous Maximum Effluent Limitation.
If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, a violation will be flagged and the discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

E. Maximum 1-Hour Average.
If the analytical result of a samples collected within 1-hour are higher than the maximum 1-hour average effluent limitation for a parameter, a violation will be flagged and the discharger will be considered out of compliance for that parameter.

ATTACHMENT A – DEFINITIONS

Average Monthly Effluent Limitation (AMEL): the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL): the highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Daily Discharge: Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

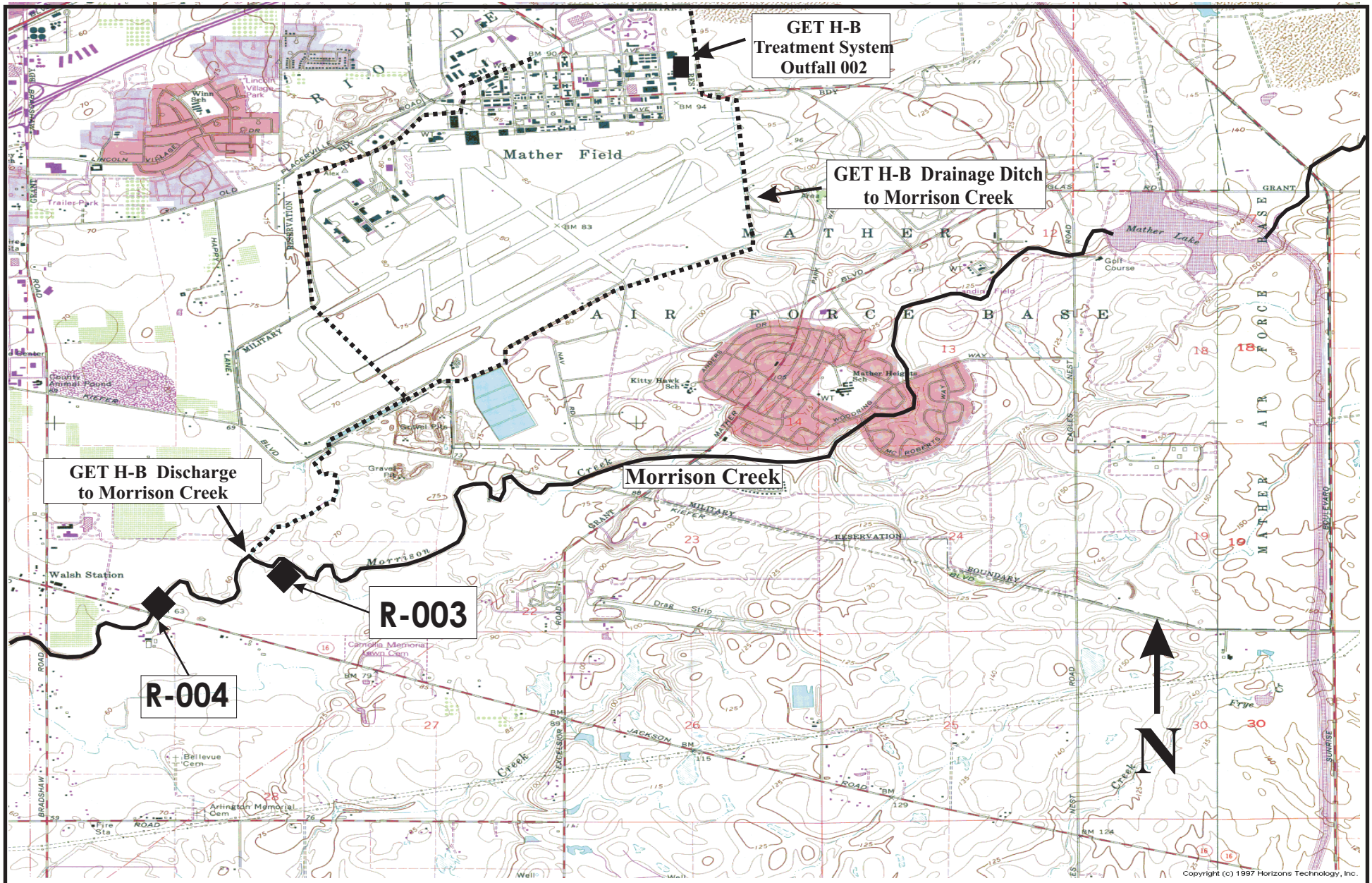
The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

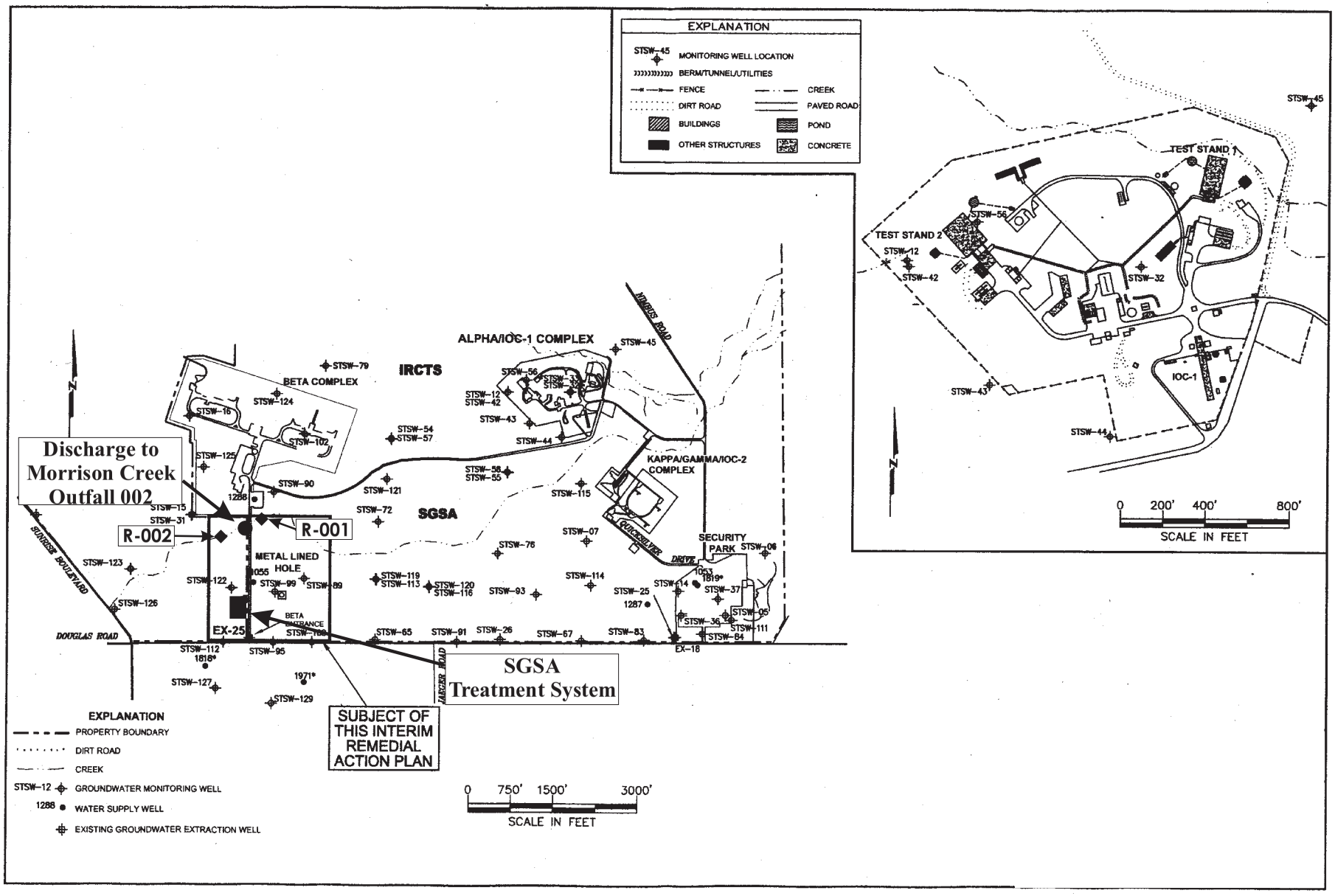
Instantaneous Maximum Effluent Limitation: the highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation: the lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

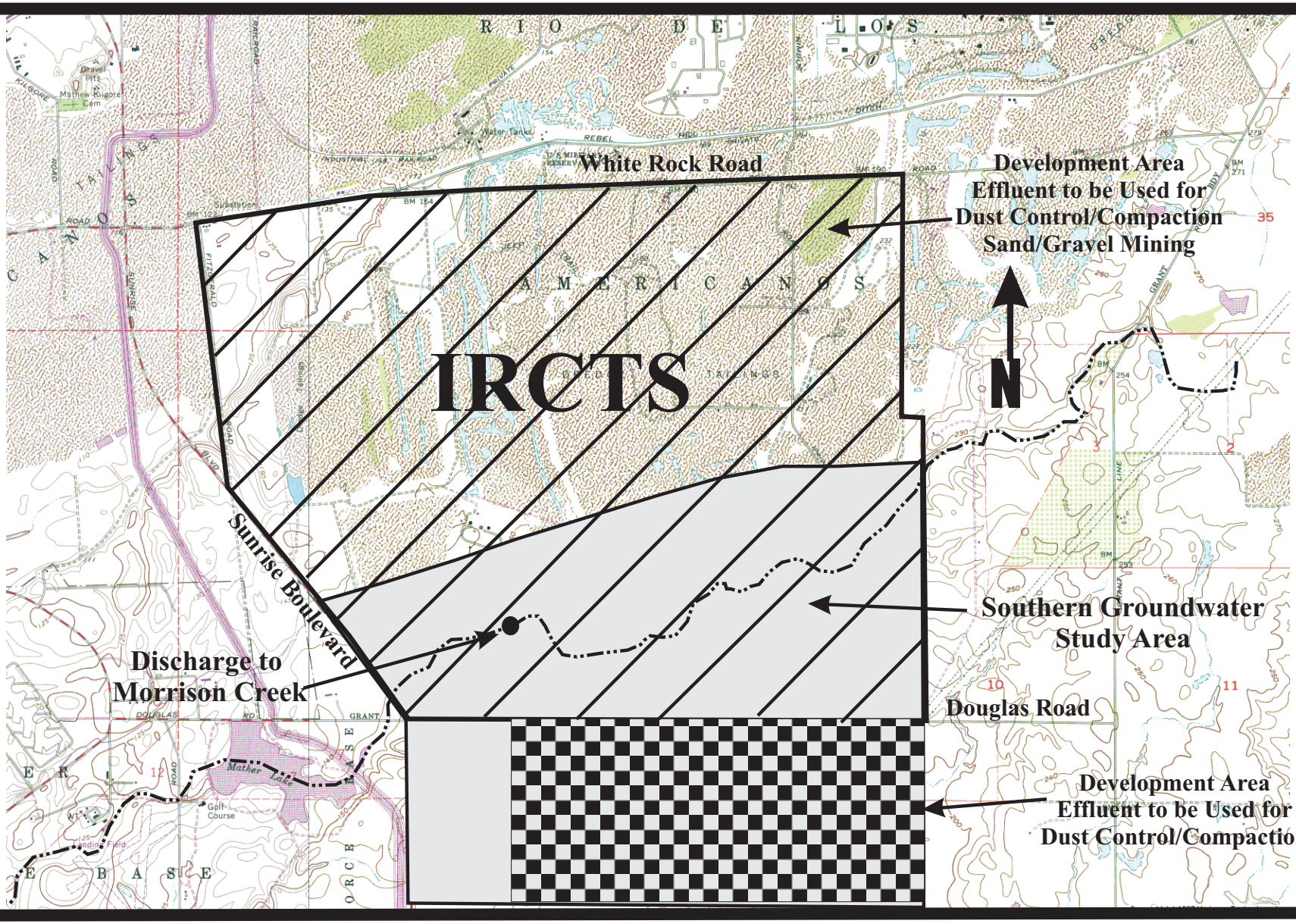
Maximum Daily Effluent Limitation (MDEL): the highest allowable daily discharge of a pollutant.



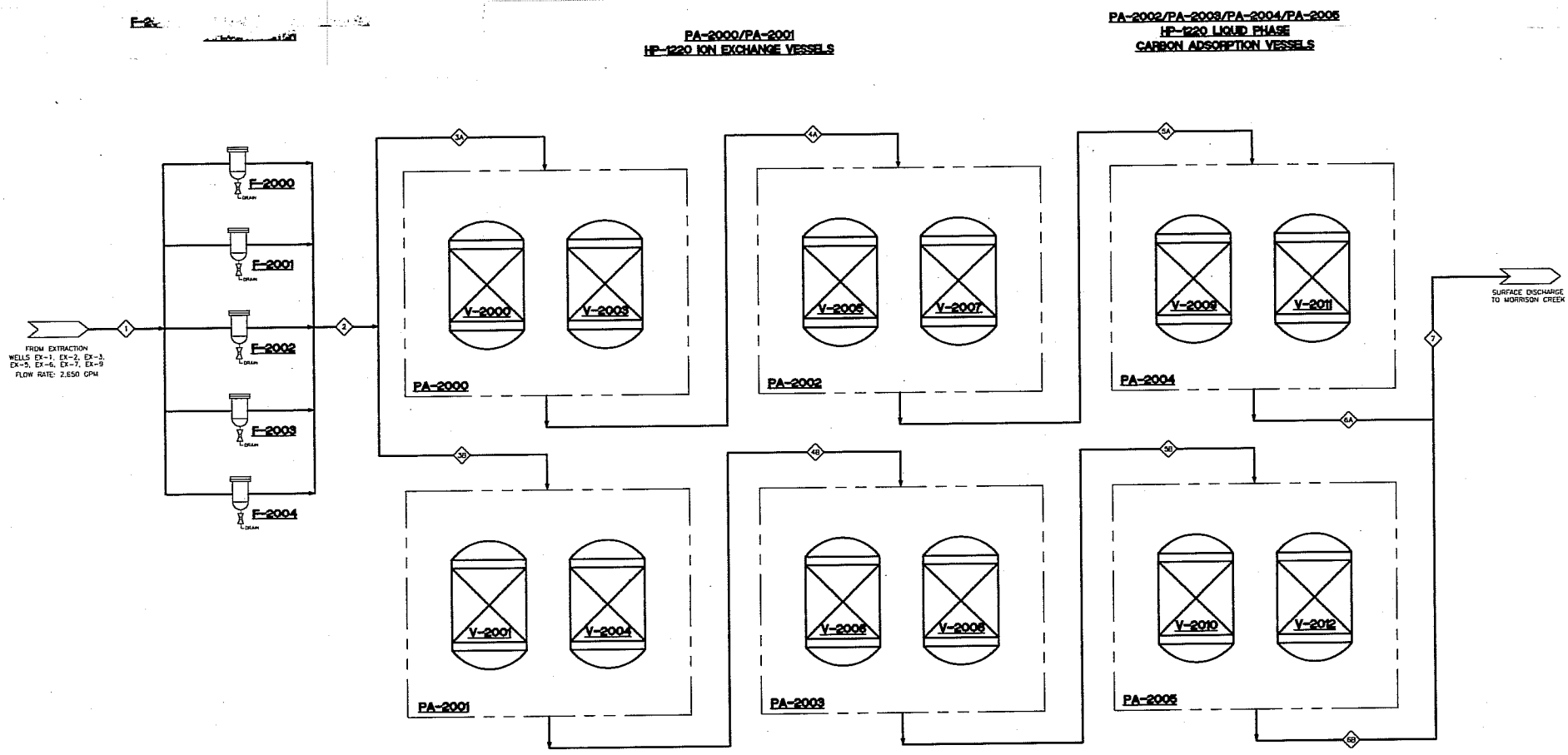
Attachment B-1
The Boeing Company
GET H-B
Inactive Rancho Cordova Test Site



Attachment B-2
The Boeing Company
Southern Groundwater Study Area Extraction and Treatment System
Inactive Rancho Cordova Test Site
Sacramento County



Attachment B-3
The Boeing Company
Southern Groundwater Study Area Extraction and Treatment System
Inactive Rancho Cordova Test Site
Sacramento County



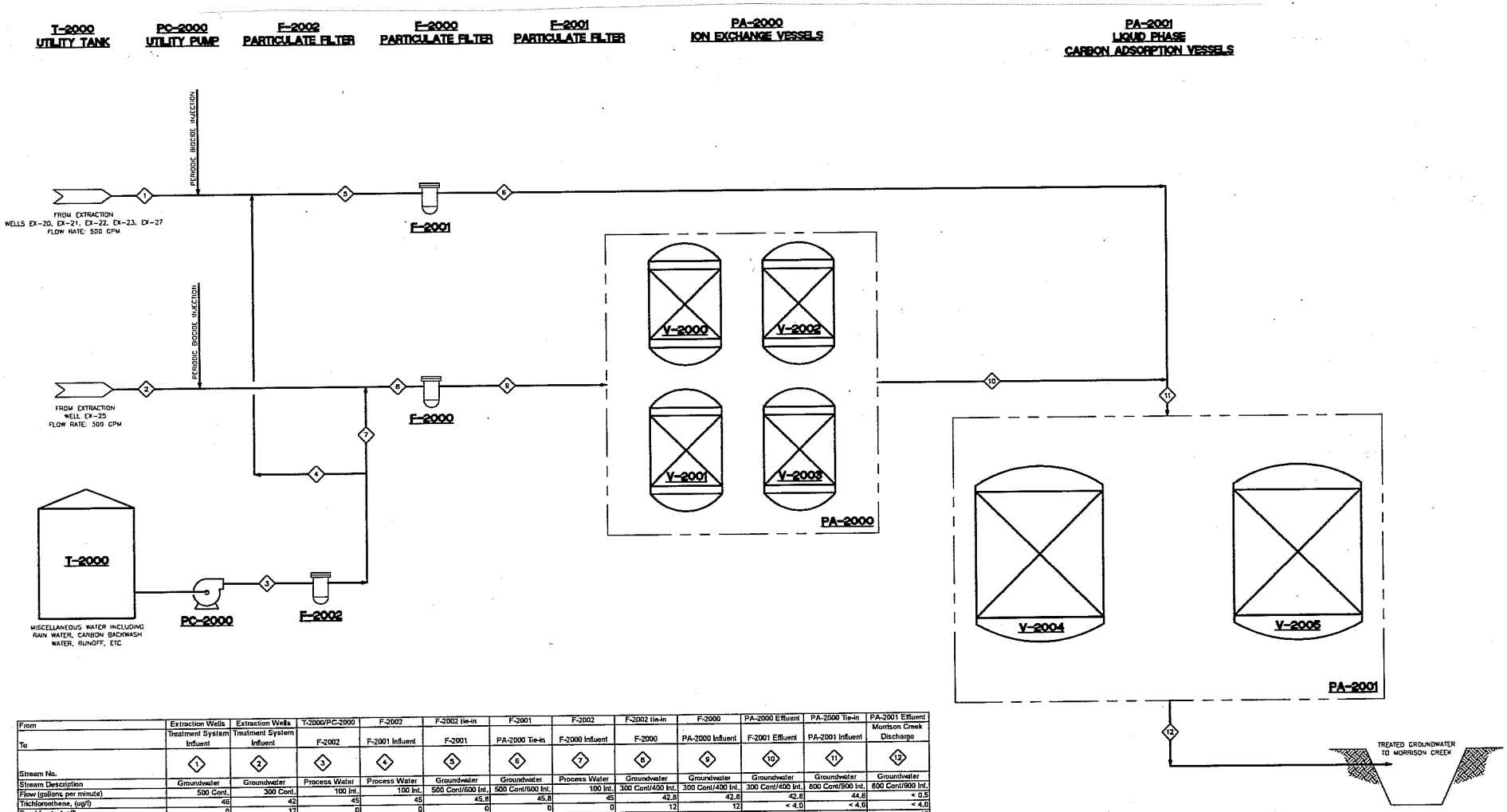
From	Extraction Wells	F-2000 thru -2004	F-2000 thru -2004	PA-2000/-2001	PA-2002/-2003	PA-2004/-2005	Discharge Tie-In
To	F-2000 thru -2004	PA-2000/-2001	PA-2000/-2001	PA-2002/-2003	PA-2004/-2005	Discharge Tie-In	Morrison Creek Discharge
Stream No.	1	2	3A 3B	4A 4B	5A 5B	6A 6B	7
Stream Description	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Flow Rate (gallons per minute)	2650 Cont.	2650 Cont.	2650 Cont.	2650 Cont.	2650 Cont.	2650 Cont.	2650 Cont.
Trichloroethene (ug/l)	1.1	1.1	1.1	1.1	<0.5	<0.5	<0.5
Perchlorate (ug/l)	208	208	208	<4.0	<4.0	<4.0	<4.0
Pressure (pounds per square inch gauge)	31	30	15	12	6	4	4
Temperature (degrees F)	68	68	68	68	68	68	68

NOTES:

1. FLOW RATES ARE AVERAGE APPROXIMATE RATES
   — — — — FOR CONTINUOUS UNLESS OTHERWISE INDICATED

Cont. = Continious
ug/l = microgram per liter

Attachment C-1
The Boeing Company
GET H-B
Inactive Rancho Cordova Test Site



From	Extraction Wells	Extraction Wells	T-2000/PC-2000	F-2002	F-2002 tie-in	F-2001	F-2002	F-2002 tie-in	F-2000	PA-2000 Effluent	PA-2000 Tie-in	PA-2001 Effluent
To	Treatment System Influent	Treatment System Influent	F-2002	F-2001 Influent	F-2001	PA-2000 Tie-in	F-2000 Influent	F-2000	PA-2000 Influent	F-2001 Effluent	PA-2001 Influent	Morrison Creek Discharge
Stream No.	1	2	3	4	5	6	7	8	9	10	11	12
Stream Description	Groundwater	Groundwater	Process Water	Process Water	Groundwater	Groundwater	Process Water	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Flow (gallons per minute)	500 Cont.	300 Cont.	100 Int.	100 Int.	500 Cont/600 Int.	500 Cont/600 Int.	100 Int.	300 Cont/400 Int.	300 Cont/400 Int.	300 Cont/400 Int.	800 Cont/900 Int.	800 Cont/900 Int.
Trichloroethene, (ug/l)	46	42	45	45	45.8	45.8	45	42.8	42.8	42.8	44.6	< 0.5
Perchlorate (ug/l)	0	12	0	0	0	0	0	12	12	< 4.0	< 4.0	< 4.0
Pressure (pounds per square inch gauge)	40	70	70	40	70	35	70	70	65	35	35	15
Temperature (degrees F)	68	68	68	68	68	68	68	68	68	68	68	68

Cont. = Continious
Int. = Intermittent
ug/l = microgram per liter

Attachment C-2
The Boeing Company
GET H-B
Inactive Rancho Cordova Test Site

ATTACHMENT D – FEDERAL STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code (CWC) and is grounds for enforcement action, for permit termination, revocation and reissuance, or denial of a permit renewal application [*40 CFR §122.41(a)*].

2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not been modified to incorporate the requirement [*40 CFR §122.41(a)(1)*].

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order [*40 CFR §122.41(c)*].

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment [*40 CFR §122.41(d)*].

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order [*40 CFR §122.41(e)*].

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges [*40 CFR §122.41(g)*].

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations [*40 CFR §122.5(c)*].

F. Inspection and Entry

The Discharger shall allow the Regional Water Quality Control Board (RWQCB), State Water Resources Control Board (SWRCB), United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to [*40 CFR §122.41(i)*] [*CWC 13383(c)*]:

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order [*40 CFR §122.41(i)(1)*];

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order [*40 CFR §122.41(i)(2)*];

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order [*40 CFR §122.41(i)(3)*];

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the CWC, any substances or parameters at any location [*40 CFR §122.41(i)(4)*].

G. Bypass

1. Definitions

   a. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility [*40 CFR §122.41(m)(1)(i)*].

   b. “Severe property damage” means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production [*40 CFR §122.41(m)(1)(ii)*].

2. Bypass not exceeding limitations – The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3 and I.G.5 below [*40 CFR §122.41(m)(2)*].

3. Prohibition of bypass – Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless [*40 CFR §122.41(m)(4)(i)*]:

    a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage [*40 CFR §122.41(m)(4)(A)*];

    b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance [*40 CFR §122.41(m)(4)(B)*]; and

    c. The Discharger submitted notice to the Regional Water Board as required under Standard Provision – Permit Compliance I.G.5 below [*40 CFR §122.41(m)(4)(C)*].

4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above [*40 CFR §122.41(m)(4)(ii)*].

5. Notice

    a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass [*40 CFR §122.41(m)(3)(i)*].

    b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below [*40 CFR §122.41(m)(3)(ii)*].

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation [*40 CFR §122.41(n)(1)*].

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph H.2 of this section are met. No determination made

during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review [*40 CFR §122.41(n)(2)*].

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that [*40 CFR §122.41(n)(3)*]:

   a. An upset occurred and that the Discharger can identify the cause(s) of the upset [*40 CFR §122.41(n)(3)(i)*];

   b. The permitted facility was, at the time, being properly operated [*40 CFR §122.41(n)(3)(i)*];

   c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b [*40 CFR §122.41(n)(3)(iii)*]; and

   d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above [*40 CFR §122.41(n)(3)(iv)*].

3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof [*40 CFR §122.41(n)(4)*].

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition [*40 CFR §122.41(f)*].

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit [*40 CFR §122.41(b)*].

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such

other requirements as may be necessary under the CWA and the CWC [*40 CFR §122.41(l)(3)*] [*40 CFR §122.61*].

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity [*40 CFR §122.41(j)(1)*].

B. Monitoring results must be conducted according to test procedures under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 unless other test procedures have been specified in this Order [*40 CFR §122.41(j)(4)*] [*40 CFR §122.44(i)(1)(iv)*].

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time [*40 CFR §122.41(j)(2)*].

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements [*40 CFR §122.41(j)(3)(i)*];

2. The individual(s) who performed the sampling or measurements [*40 CFR §122.41(j)(3)(ii)*];

3. The date(s) analyses were performed [*40 CFR §122.41(j)(3)(iii)*];

4. The individual(s) who performed the analyses [*40 CFR §122.41(j)(3)(iv)*];

5. The analytical techniques or methods used [*40 CFR §122.41(j)(3)(v)*]; and

6. The results of such analyses [*40 CFR §122.41(j)(3)(vi)*].

C. Claims of confidentiality for the following information will be denied [*40 CFR §122.7(b)*]:

1. The name and address of any permit applicant or Discharger [*40 CFR §122.7(b)(1)*]; and

2. Permit applications and attachments, permits and effluent data [*40 CFR §122.7(b)(2)*].

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, SWRCB, or USEPA within a reasonable time, any information which the Regional Water Board, SWRCB, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, SWRCB, or USEPA copies of records required to be kept by this Order [*40 CFR §122.41(h)*] [*CWC 13267*].

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, SWRCB, and/or USEPA shall be signed and certified in accordance with paragraph (2.) and (3.) of this provision [*40 CFR §122.41(k)*].

2. All permit applications shall be signed as follows:

   a. For a corporation: By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures [*40 CFR §122.22(a)(1)*];

   b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively [*40 CFR §122.22(a)(2)*]; or

   c. For a municipality, State, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for

the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA) [*40 CFR §122.22(a)(3)*].

3. All reports required by this Order and other information requested by the Regional Water Board, SWRCB, or USEPA shall be signed by a person described in paragraph (b) of this provision, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described in paragraph (2.) of this provision [*40 CFR §122.22(b)(1)*];

   b. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company (a duly authorized representative may thus be either a named individual or any individual occupying a named position) [*40 CFR §122.22(b)(2)*]; and

   c. The written authorization is submitted to the Regional Water Board, SWRCB, or USEPA [*40 CFR §122.22(b)(3)*].

4. If an authorization under paragraph (3.) of this provision is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (3.) of this provision must be submitted to the Regional Water Board, SWRCB or USEPA prior to or together with any reports, information, or applications, to be signed by an authorized representative [40 CFR §122.22(c)].

5. Any person signing a document under paragraph (2.) or (3.) of this provision shall make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations" [*40 CFR §122.22(d)*].

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program in this Order [*40 CFR §122.41(l)(4)*].

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

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR 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)*].

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order [*40 CFR §122.41(l)(4)(iii)*].

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date [*40 CFR §122.41(l)(5)*].

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance [*40 CFR §122.41(l)(6)(i)*].

2. The following shall be included as information that must be reported within 24 hours under this paragraph [*40 CFR §122.41(l)(6)(ii)*]:

   a. Any unanticipated bypass that exceeds any effluent limitation in this Order [*40 CFR §122.41(l)(6)(ii)(A)*].

   b. Any upset that exceeds any effluent limitation in this Order [*40 CFR §122.41(l)(6)(ii)(B)*].

   c. Violation of a maximum daily discharge limitation for any of the pollutants listed in this Order to be reported within 24 hours [*40 CFR §122.41(l)(6)(ii)(C)*].

3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours [*40 CFR §122.41(l)(6)(iii)*].

F. Planned Changes

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when [*40 CFR §122.41(l)(1)*]:

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR §122.29(b) [*40 CFR §122.41(l)(1)(i)*]; or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in this Order nor to notification requirements under 40 CFR Part 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1) [*40 CFR §122.41(l)(1)(ii)*].

3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan [*40 CFR §122.41(l)(1)(iii)*].

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or SWRCB of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements [*40 CFR §122.41(l)(2)].*

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting E.3, E.4, and E.5 at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E [*40 CFR §122.41(l)(7)*].

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, SWRCB, or USEPA, the Discharger shall promptly submit such facts or information [*40 CFR §122.41(l)(8)*].

VI. STANDARD PROVISIONS – ENFORCEMENT

A. The CWA provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed $25,000 per day for each violation. The CWA provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the Clean Water Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions [*40 CFR §122.41(a)(2)*] [*CWC 13385 and 13387*].

B. Any person may be assessed an administrative penalty by the Regional Water Board for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000 [*40 CFR §122.41(a)(3)*].

C. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph,

punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both [*40 CFR §122.41(j)(5)*].

D. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Order, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six months per violation, or by both [*40 CFR §122.41(k)(2)*].

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural dischargers shall notify the Regional Water Board as soon as they know or have reason to believe [*40 CFR §122.42(a)*]:

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" [*40 CFR §122.42(a)(1)*]:

    a. 100 micrograms per liter (µg/L) [*40 CFR §122.42(a)(1)(i)*];

    b. 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony [*40 CFR §122.42(a)(1)(ii)*];

    c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge [*40 CFR §122.42(a)(1)(iii)*]; or

    d. The level established by the Regional Water Board in accordance with 40 CFR §122.44(f) [*40 CFR §122.42(a)(1)(iv)*].

2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following “notification levels" [*40 CFR §122.42(a)(2)*]:

    a. 500 micrograms per liter (µg/L) [*40 CFR §122.42(a)(2)(i)*];

    b. 1 milligram per liter (mg/L) for antimony [*40 CFR §122.42(a)(2)(ii)*];

    c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge [*40 CFR §122.42(a)(2)(iii)*]; or

d. The level established by the Regional Water Board in accordance with 40 CFR §122.44(f) [*40 CFR §122.42(a)(2)(iv)*].

B. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board of the following [*40 CFR §122.42(b)*]:

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to Sections 301 or 306 of the CWA if it were directly discharging those pollutants [*40 CFR §122.42(b)(1)*]; and

2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order [*40 CFR §122.42(b)(2)*].

Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW [*40 CFR §122.42(b)(3)*].

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (CFR) at 40 CFR Section122.48 requires that all NPDES permits specify monitoring and reporting requirements. CWC sections 13267 and 13383 also authorize the Regional Water Quality Control Board (RWQCB) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of this Regional Water Board.

B. Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. In the event a certified laboratory is not available to the Discharger, analyses performed by a noncertified laboratory will be accepted provided the laboratory institutes a Quality Assurance-Quality Control Program. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by Regional Water Board staff. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Regional Water Board.

C. All analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. Laboratories that perform sample analyses shall be identified in all monitoring reports.

D. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy.

E. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.

F. If the facility is not in operation, or there is no discharge during a required reporting period, the Discharger shall forward a letter to the Regional Water Board indicating that there has been no activity during the required reporting period.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Discharge Point Name	Monitoring Location Name	Monitoring Location Description (include Latitude and Longitude when available)
001	M-001	Effluent from GET H-B
002	M-002	Effluent from SGSA GET
	MINFA	Influent to GET H-B
	MINFB	Influent to SGSA GET
	R-001 and R-002	R-001 (upstream) and R-002 (downstream) on Morrison Creek for discharge from SGSA GET at Latitude 38º, 33', 54" N, Longitude 121º, 14', 07" W.
	R-003 and R-004	R-003 (upstream) and R-004 (downstream) on Morrison Creek for discharge from GET H-B at Latitude 38º, 32', 18" N, Longitude 121º, 18', 59" W.

III. INFLUENT MONITORING REQUIREMENTS

A. The Discharger shall monitor **MINFA and MINFB** as follows:

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
VOCs	µg/L	Grab	Monthly	[1]
Perchlorate	µg/L	Grab	Monthly	[2]

1. Test Method to be EPA Methods 601and 602 or 8010 and 8020 or 8260, or 500 Series, or an equivalent method approved by the Regional Board. with a Practical Quantitation Level no greater than 0.5 µg/L. All concentrations between the detection level and practical quantitation level shall be reported as trace.
2. Test Method to be EPA Methods 314.0 or 314.1, or an equivalent method approved by the Regional Board. with a practical quantitation Level no greater than 4.0 µg/L. All concentrations between the detection level and practical quantitation level shall be reported as trace.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Locations M-001 through M-002

1. The Discharger shall monitor wastewater discharged at **M-001** and **M-002** as follows:

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method[5]
Volatile Organics	µg/L	Grab	Monthly	[1]
Perchlorate	µg/L	Grab	Monthly	[2]
Flow[3]	mgd	Measure	Continuous	--
Temperature[3]	^{o}F(^{o}C)	Grab	Monthly	--

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method[5]
Dissolved Oxygen[3]	mg/L	Grab	Monthly	--
Turbidity	NTU	Grab	Monthly	--
Electrical Conductivity[3]	µmhos/cm	Grab	Monthly	--
pH[3]	Standard	Grab	Monthly	--
Hardness as $CaCO_3$	mg/L	Grab	Quarterly	--
Total Dissolved Solids	mg/L	Grab	Monthly	--
Acute Toxicity	% Survival	Grab	Quarterly	[4]
Chlorine Residual	mg/L	Grab	Monthly[6]	

1. Test Method to be EPA Methods 601and 602 or 8010 and 8020 or 8260, or 500 Series, or an equivalent method approved by the Regional Board with a Practical Quantitation Level no greater than 0.5 µg/L. All concentrations between the detection level and practical quantitation level shall be reported as trace.
2. Test Method to be EPA Methods 314.0 or 314.1, or an equivalent method approved by the Regional Board, with a Practical Quantitation Level no greater than 4.0 µg/L. All concentrations between the detection limit and practical quantitation level shall be reported as trace.
3. Field Measurements.
4. Acute toxicity testing shall performed as described in Whole Effluent Toxicity Testing Requirements V.A., below.
5. Parameters shall be analyzed using the analytical methods described in 40 CFR sections 136.
6. Only for M-002 and sample needs to be collected during time when chlorine is being added to treatment system.

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2. If the discharge is intermittent rather than continuous, then on the first day of each such discharge, the Discharger shall monitor and record data for all of the constituents listed above, after which the frequency of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in the schedule.

3. If no discharge occurs at a particular discharge point during the monitoring period, then samples need not be collected for that particular discharge. It must be reported under the reporting program that no sampling was conducted at a particular monitoring point due to no discharge.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. **Acute Toxicity Testing.** The Discharger shall conduct acute toxicity testing to determine whether the effluent is contributing acute toxicity to the receiving water. The Discharger shall meet the following acute toxicity testing requirements:

1. *Monitoring Frequency* – the Discharger shall perform quarterly acute toxicity testing, concurrent with effluent sampling for volatile organics and perchlorate.

2. *Sample Types* – Effluent samples shall be grab samples taken at M-001 and M-002.

3. *Test Species* – Test species shall be larval stage (0 to 14 days old) fathead minnows (Pimephales promelas).

4. *Methods* – The acute bioassay tests samples shall be conducted in accordance with EPA-821-R-02-012, Fifth Edition, or later amendment with Executive Officer approval. Temperature and pH shall be recorded at the time of bioassay sample collection. No pH adjustment may be made unless approved by the Executive Officer.

5. *Test Failure* – If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must re-sample and re-test as soon as possible, not to exceed 3 business days following notification of test failure.

B. **Chronic Toxicity Testing.** The Discharger shall conduct three species chronic toxicity testing to determine whether the effluent is contributing chronic toxicity to the receiving water. The Discharger shall meet the following chronic toxicity testing requirements:

1. *Monitoring Frequency* – the Discharger shall perform chronic toxicity testing for annually.

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 effluent monitoring locations M-001 and M-002. The receiving water control shall be a grab sample obtained from the R-001 sampling location. If no water is available at R-001, then the control sample shall be a laboratory water control.

3. *Sample Volumes* – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.

4. *Test Species* – Chronic toxicity testing measures either lethal or sublethal (e.g. reduced growth, reproduction) effects to experimental test organisms exposed to an effluent compared to that of the control organisms. The Discharger shall conduct chronic toxicity tests with:

   - The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);

   - The fathead minnow, *Pimephales promelas* (larval survival and growth test); and

   - The green alga, *Selenastrum capricornutum* (growth test).

5. *Methods* – The presence of chronic toxicity shall be estimated as specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition,* EPA/821-R-02-013, October 2002, or later amendment with Executive Officer approval.

6. *Reference Toxicant* – As required by the SIP, all chronic toxicity tests shall be conducted with concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.

7. *Dilutions* – The chronic toxicity testing shall be performed using the 100% effluent, 25% effluent/75% R-001, 10% effluent/90% R-001 and 5%effluent/95% R-001.

8. *Test Failure* – If either the reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA/821-R-02-013, October 2002, and its subsequent amendments or revisions, the Discharger must re-sample and re-test as soon as possible, but no later than fourteen (14) days after receiving notification of test failure.

C. **WET Testing Notification Requirements.** The Discharger shall notify the Regional Board within 24-hrs after the receipt of the results of an exceedance of a toxicity trigger during regular or accelerated monitoring.

D. **WET Testing Reporting Requirements.** All toxicity test reports shall include the contracting laboratory's complete report provided to the Discharger and shall be in accordance with the appropriate "Report Preparation and Test Review" sections of the method manuals. At a minimum, whole effluent toxicity monitoring shall be reported as follows:

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

    a. The results expressed in TUc, measured as 100/NOEC, and also measured as 100/LC50 100/EC_{25}, 100/IC_{25}, and 100/IC_{50}, as appropriate.

    b. The statistical methods used to calculate endpoints;

    c. The statistical output page, which includes the calculation of the percent minimum significant difference (PMSD);

    d. The dates of sample collection and initiation of each toxicity test; and

    e. The results compared to the numeric toxicity 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.

2. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the monthly discharger self-monitoring reports, reported as percent survival.

3. **TRE Reporting.** Reports for Toxicity Reduction Evaluations shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Workplan.
4. **Quality Assurance (QA).** The Discharger must provide the following information for QA purposes:
   a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.
   b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.
   c. Any information on deviations or problems encountered and how they were dealt with.

VI. LAND DISCHARGE MONITORING REQUIREMENTS

A. The total monthly flow discharged to land should be reported on a monthly basis along with the locations of the discharge.

VII. RECLAMATION MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. Surface Water Monitoring – American River, Morrison Creek and Alder Creek

1. The Discharger shall monitor Morrison Creek at R-001, R-002, R-003 and R-004 as follows:

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method[4]
Volatile Organics	µg/L	Grab	Monthly	[1]
Perchlorate	µg/L	Grab	Monthly	[2]
Temperature[3]	^{o}F(^{o}C)	Grab	Monthly	--
Dissolved Oxygen[3]	mg/L	Grab	Monthly	--
Turbidity	NTU	Grab	Monthly	--
Electrical Conductivity[3]	µmhos/cm	Grab	Monthly	--
pH[3]	Standard	Grab	Monthly	--
Total Dissolved Solids	mg/L	Grab	Monthly	--

1. Test Method to be EPA Methods 601and 602 or 8010 and 8020 or 8260, or 500 Series, or an equivalent method approved by the Regional Board. with a Practical Quantitation Level no greater than 0.5 µg/L. All concentrations between the detection level and practical quantitation level shall be reported as trace.
2. A test method with a practical quantitation level no greater than 4 µg/L. All concentrations between the detection limit and practical quantitation level shall be reported as trace.
3. Field Measurements.
4. Parameters shall be analyzed using the analytical methods described in 40 CFR sections 136.

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Stations R-00l and R-002, and R-003 and R-004. Attention shall be given to the presence or absence of:

a. Floating or suspended matter
b. Discoloration
growths
c. Bottom deposits
d. Aquatic life
e. Visible films, sheens or coatings
f. Fungi, slimes, or objectionable
g. Potential nuisance conditions

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

2. If no discharge occurs at a particular discharge point during the monitoring period, then receiving water samples associated with that discharge need not be collected for that monitoring period. It must be reported under the reporting program that no sampling was conducted at a particular monitoring point due to no discharge.

B. Groundwater Monitoring – Not Applicable

IX. OTHER MONITORING REQUIREMENTS

A. State Implementation Plan Monitoring

The State Water Resources Control Board (SWRCB) adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy or SIP). The SIP states that the Regional Water Boards will require periodic monitoring (at least once prior to issuance and reissuance of a permit) for pollutants for which criteria or objectives apply and for which no effluent limitations have been established.

Accordingly, the Regional Water Board is requiring, as part of this Monitoring and Reporting Program, that the Discharger monitor effluent and analyze the sample for all SIP constituents **one time at least 180 days but no more than 365 days prior to expiration of this Order.** The Discharger must analyze pH and hardness of the effluent at the same time as priority pollutant metals.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.

2. **Compliance Time Schedules.** For compliance time schedules included in the Order, the Discharger shall submit to the Regional Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Water Board by letter when it returns to compliance with the compliance time schedule.

3. The Discharger shall report to the Regional Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986.

4. **Within 24-hours** after the Discharger has received information that its discharge exceeds effluent limitations, the Discharger shall notify the Board, City of Sacramento Department of Utilities, and Carmichael Water District. Arden-Cordova Water Service shall be notified if the discharge that is in violation is to Lake Natoma.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit self-monitoring reports. Until such notification is given, the Discharger shall submit self-monitoring reports in accordance with the requirements described below.

2. The Discharger shall submit monthly, quarterly, and annual Self Monitoring Reports including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. Monthly reports shall be due on the 15th day of the second month following the end of each calendar month.

3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

4.

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	Day after permit effective date	All	Fifteenth day of second calendar month following month of sampling

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
1 / week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	Fifteenth day of second calendar month following month of sampling
1 / month	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 15 August 15 November 15 February 15
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 15 August 15 November 15 February 15
1/year	January 1 following (or on) permit effective date	January 1 through December 31	February 15

4. The Discharger shall report with each sample result the applicable Minimum Level (ML) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR Part 136.

5. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations.

6. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

5. SMRs must be submitted to the Regional Water Board, signed and certified as required by the standard provisions (Attachment D), to the address listed below:

Submit monitoring reports to:
Central Valley Regional Water Quality Control Board 11020 Sun Center Drive #200 Rancho Cordova, CA 95670-6114

C. Discharge Monitoring Reports (DMRs)

1. When requested by U.S. EPA, the Discharger shall complete and submit Discharge Monitoring Reports. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger Self Monitoring Reports.

2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharge shall submit the original DMR and one copy to the address listed below:

   State Water Resources Control Board
   Discharge Monitoring Report Processing Center
   Post Office Box 671
   Sacramento, CA 95812

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self generated or modified cannot be accepted.

D. Other Reports

1. **Annual Solids Disposal Report.** An annual solids disposal report shall be submitted with annual self-monitoring reports. The report shall describe the annual volume of solids, including spent ion exchange resin and granular activated carbon, generated by the Facility and specify the disposal practices.

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ATTACHMENT F – FACT SHEET

As described in Section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facilities:

WDID	**5A34NP00019**
Discharger	The Boeing Company
Name of Facilities	GET H-B and SGSA Groundwater Extraction and Treatment Systems
Facility Address	GET H-A: 10699 Mather Boulevard SGSA GET: Intersection of Douglas Road & Beta Road
	Rancho Cordova, CA 95670
	Sacramento County
Facility Contact, Title and Phone	Bryan Meyer, (916) 803-3307
Authorized Person to Sign and Submit Reports	Brian Anderson, (425) 373-8825
Mailing Address	11500 Elks Circle, Rancho Cordova, CA 95742
Billing Address	11500 Elks Circle, Rancho Cordova, CA 95742
Type of Facility	Groundwater Extraction and Treatment Facilities
Major or Minor Facility	Major
Threat to Water Quality	2
Complexity	B
Pretreatment Program	Not Applicable
Reclamation Requirements	Not Applicable
Facilities Permitted Flow	7.34 million gallons per day (mgd)
Facilities Design Flow	Not Applicable
Watershed	American and Sacramento Rivers
Receiving Water	Morrison Creek
Receiving Water Type	Stream

A. The Boeing Company (Boeing), along with the Aerojet-General Corporation (Aerojet) operated rocket-testing facilities on the 4000-acre Inactive Rancho Cordova Test Site in eastern Sacramento County. In order to address groundwater pollution beneath and beyond the IRCTS, Boeing and Aerojet constructed several groundwater extraction and treatment facilities (GETs). The two GETs covered under this permit are on both Elliot Homes-owned property and property leased by Boeing and Aerojet from Sacramento County on Mather Field. Boeing operates the GETs and is responsible for maintaining compliance with this Order and is responsible for the Facilities' operations and discharge to surface waters

B. The Facilities discharge directly to Morrison Creek and also to a drainage ditch tributary to Morrison Creek, tributary to the Sacramento River, waters of the United States. The Facilities are existing facilities regulated by a Regional Water Board Order.

C. The Discharger is currently discharging under Order Nos. R5-2006-015 and R5-2006-014 and National Pollutant Discharge Elimination System (NPDES) Permit Nos. CA0084891 and CA0085049. The Discharger submitted a Report of Waste Discharge, dated 114 September 2009 and supplemental information dated 23 July 2009 and applied for renewal of the NPDES permits. The two permits covered two separate treatment facilities discharging to Morrison Creek. This permit combines both discharges into a single permit.

II. FACILITIES DESCRIPTIONS

The Facilities are found both on and off the 4000-acre Inactive Rancho Cordova Test Site (IRCTS) in eastern Sacramento County, approximately 17 miles east of downtown Sacramento, in and around the City of Rancho Cordova, Sacramento County, as shown in Attachment B.

According to the Discharger's RWD, the Facilities treat extracted groundwater primarily containing volatile organics (VOCs) and/or perchlorate. These pollutants originated, for the most part, from historical rocket-testing operations on the IRCTS.

The groundwater the Facilities extract contains solvents consisting primarily of VOCs, such as trichloroethylene (TCE), and perchlorate. The VOCs are removed by granular activated carbon and the perchlorate is removed by adsorption onto resins to reduce the pollutants down to acceptable levels prior to discharge

A. Description of Wastewater and Biosolids Treatment or Controls

1. VOCs can be easily removed from the extracted groundwater using a variety of treatment processes. The Boeing Company uses carbon adsorption (GAC) to remove the VOCs. Spent GAC is trucked to a permitted destruction facility.

2. Perchlorate is removed from the extracted groundwater using ion-exchange. The ion-exchange process uses a perchlorate-specific ion exchange resin that is disposed of when the resin's capacity for taking up perchlorate is exhausted. The resin is then replaced with fresh resin and the spent resin taken to a permitted disposal facility.

3. GET H-B Facility. GET H-B is on Mather Field to the west of the IRCTS. The facility originally consisted of treatment of a single groundwater extraction well (EX-5) at a temporary facility. Later, following an agreement with Sacramento County to lease a larger parcel on Mather Field, the existing GET H-B facility was constructed to handle all of the anticipated extraction required of Boeing west of the IRCTS. The system was designed primarily to remove perchlorate, but also provides VOC treatment. This facility has been shown to remove VOCs to below detection levels (0.5 µg/L) and perchlorate to below 4 µg/L. This facility is designed to treat up to 4000 gallons per minute (gpm).

4. SGSA GET Facility. The SGSA facility is on the IRCTS near Morrison Creek. This facility was built to treat groundwater from extraction wells intercepting pollution extending south from the IRCTS. The facility uses the same processes to remove VOCs and perchlorate as the GET H-B system from 1100 gallons per minute of extracted groundwater.

B. Discharge Points and Receiving Waters

1. Treated groundwater is discharged from Discharges 001 and 002 to Morrison Creek (tributary to the Sacramento River. In the future, Sacramento County may find a reuse for the water and request Boeing to have the permit modified to allow additional discharge locations.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

1. Effluent limitations/Discharge Specifications contained in the existing Order for discharges from Discharge Point 001 and representative monitoring data since the term of the previous Order are as follows:

Parameter (units)	Average Monthly	Maximum Daily	Highest Average Monthly Discharge	Highest Daily Discharge
Perchlorate (µg/L)	4	8	<4	<4
Trichloroethylene (µg/L)	--	0.5	<0.5	<0.5

2. The RWD and Aerojet Monitoring describe the discharges as follows:

GET H-B

Constituent	Units	Maximum Daily
Flow	mgd	5.76
pH	Standard Units	7.5-8.5
COD	mg/L	<10
Total Suspended Solids	mg/L	<10
Chlorides	mg/L	3.0
Sulfate	mg/L	3.4
Manganese	mg/L	<0.02
Aluminum	mg/L	<0.050
Zinc	mg/L	0.011
Arsenic	mg/L	<0.002
Lead	mg/L	<0.003
Hardness (as $CaCO_3$)	mg/L	55
Barium	mg/L	0.037
Copper	mg/L	0.003

GET H-B

Constituent	Units	Maximum Daily
Chromium	mg/L	<0.002
Nickel	mg/L	<0.005
All VOCs	mg/L	<0.0005
Perchlorate	mg/L	<0.004

SGSA GET

Constituent	Units	Maximum Daily
Flow	mgd	1.6
pH	Standard Units	7.4-8.4
COD	mg/L	<10
Total Suspended Solids	mg/L	<10
Chlorides	mg/L	3.6
Sulfate	mg/L	6.2
Manganese	mg/L	<0.02
Aluminum	mg/L	<0.050
Arsenic	mg/L	<0.002
Lead	mg/L	<0.002
Hardness (as $CaCO_3$)	mg/L	53
Barium	mg/L	0.042
Copper	mg/L	<0.003
Chromium	mg/L	<0.002
Nickel	mg/L	<0.005
All VOCs	mg/L	<0.0005
Perchlorate	mg/L	<0.004
Zinc	mg/L	<0.050

D. Compliance Summary

GET H-A and SGSA GET discharges have been in substantial compliance with effluent limitations since the inception of the discharges from those facilities. There have been no detections of TCE or perchlorate above effluent limitations since January 2004. There have been no violations of receiving water limitations for either of the discharges.

E. Planned Changes

As stated above in Sections II(A) and II(B), in order to more easily reuse the treated groundwater, Sacramento County may request a change in the discharge locations. The County is developing a plan for reuse of the treated groundwater and has developed a CEQA document that has undergone public review. Revision of the permit will be necessary prior to making the location change.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in the proposed Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order is issued pursuant to section 402 of the Federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the California Water Code (CWC). It shall serve as a NPDES permit for point source discharges from these facilities to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4 of the CWC for discharges that are not subject to regulation under CWA section 402.

B. California Environmental Quality Act (CEQA)

This action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the CWC. The Department of Toxic Substances Control certified a final Negative Declaration and Initial Study for the American River Study Area project in accordance with CEQA and State CEQA Guidelines. The Board has reviewed the negative declaration and these waste discharge requirements will mitigate or avoid any significant impacts on water quality due to the discharges from the ARGET facility.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The Regional Water Board adopted a *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition* (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 applies to its tributary streams. The Basin Plan does not specifically identify beneficial uses for Morrison Creek, but does identify present and potential uses for the Sacramento River, to which Morrison Creek is tributary. These beneficial uses of the Sacramento Rivers are municipal and domestic supply (MUN); agricultural supply, irrigation and stock watering (AGR); water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); warm and cold migration of aquatic organisms (MIGR); warm and cold spawning (SPWN); wildlife habitat (WILD). The Sacramento River has an additional designated beneficial use of navigation (NAV). In addition, State Water Resources Control Board (State Water Board) Resolution No. 88-63 requires that, with certain exceptions, the Regional Water Board assign the municipal and domestic supply use to water bodies that do not have beneficial

uses listed in the Basin Plan. Thus, as discussed in detail in this Fact Sheet, beneficial uses applicable to the Morrison Creek are as follows:

Discharge Point	Receiving Water Name	Beneficial Use(s)
001 and 002	Morrison Creek, Tributary of the Sacramento River	Existing: MUN, AGR, IND, REC-1, REC-2, WARM, COLD, MIGR, SPWN, WILD.

The Basin Plan on page II-1.00 states: "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning…" and with respect to disposal of wastewaters states that "...disposal of wastewaters is* [not] *a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses*."
The federal Clean Water Act, Section 101(a)(2), states: "it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983." Federal Regulations, developed to implement the requirements of the Clean Water Act, create a rebuttable presumption that all waters be designated as fishable and swimable. Federal Regulations, 40 CFR Sections 131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. Section 131.3(e), 40 CFR, defines existing beneficial uses as those uses actually attained after November 28, 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 CFR Section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

In reviewing whether the existing and/or potential uses of the Sacramento River apply to Morrison Creek**,** the Regional Water Board has considered the following facts:

a. **Domestic Supply and Agricultural Supply**

The Regional Water Board is required to apply the beneficial uses of municipal and domestic supply to Morrison Creek based on State Water Board Resolution No. 88-63 which was incorporated in the Basin Plan pursuant to Regional Water Board Resolution No. 89-056.

b. **Water Contact and Noncontact Recreation and Esthetic Enjoyment**

The Regional Water Board finds that the discharges flow through residential areas, there is ready public access to the receiving waters, exclusion of the public is unrealistic and contact recreational activities currently exist along

Morrison Creek and downstream waters. Prior to flowing into the Sacramento River, Morrison Creek flows through areas of general public access, meadows, and residential and commercial areas. The Sacramento River offers considerable recreational opportunities.

c. **Preservation and Enhancement of Fish, Wildlife, and Other Aquatic Resources**

Morrison Creek flows to the Sacramento River. The Basin Plan (Table II-1) designates the Sacramento River below the American the confluence with American River as being both a cold and warm freshwater habitat; wildlife habitat; warm and cold migration of aquatic organisms; and warm spawning, reproduction, and/or early development of freshwater organisms. The Sacramento River supports significant aquatic life, and therefore these beneficial uses apply to it's tributaries

Upon review of the flow conditions, habitat values, and beneficial uses of Morrison Creek, and the facts described above, the Regional Water Board finds that the beneficial uses identified in the Basin Plan for the Sacramento River are applicable to Morrison Creek in the vicinity of the discharges.

2. **Thermal Plan.** The State Water Board adopted a *Water Quality Control Plan for Control of Temperature in Coastal and Interstate Waters and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for inland surface waters.

3. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, which was amended on May 4, 1995 and November 9, 1999, and the CTR on May 18, 2000, which was amended on February 13, 2001. These rules include water quality criteria for priority pollutants and are applicable to this discharge.

4. **State Implementation Policy.** On March 2, 2000, State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP*).* The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Boards in their basin plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by USEPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP became effective on May 18, 2000. The SIP includes procedures for determining the need for and calculating water quality-based effluent limitations (WQBELs), and requires Dischargers to submit data sufficient to do so.

5. **Compliance Schedules and Interim Requirements - Not Applicable.**

6. **Antidegradation Policy.** The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

7. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and 40 CFR Section122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. The effluent limits are at least as stringent as those in contained in the previous order. There are new facilities added in this permit, therefore anti-backsliding provisions do not apply to those new facilities.

D. Impaired Water Bodies on CWA 303(d) List

1. The Basin Plan includes a list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 CFR 130, et seq.)*." The Basin Plan also states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to WQLSs. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment*." The listing for the western portion Sacramento-San Joaquin Delta waterways includes: diazinon and chlorpyrifos, organo-chlorine Group A pesticides, mercury, and unknown toxicity. There have been no detections of mercury, diazanon, chlorpyrifos, or organo-chlorine Group A pesticides in the effluent from the GETs nor in the plumes of groundwater pollution captured by the GETs. Morrison Creek is not listed on the 303(d) list.

E. Other Plans, Policies and Regulations – Not Applicable

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

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.

The federal Clean Water Act (CWA) mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law. (33 U.S.C., Section 1311(b)(1)(C); 40 C.F.R., Section 122.44(d)(1)) NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to Federal Regulations, 40

C.F.R. section 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that "*are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality*." Federal Regulations, 40 CFR, Section 122.44(d)(1)(vi), further provide that "[w]*here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits*."

The Regional Water Board's Basin Plan, page IV-17.00 contains an implementation policy ("Policy for Application of Water Quality Objectives") that specifies that the Regional Water Board "*will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives*." This Policy complies with 40 CFR 122.44(d)(1). With respect to narrative objectives, the Regional Water Board must establish effluent limitations using one or more of three specified sources, including EPA's published water quality criteria, a proposed state criterion (*i.e*., water quality objective), or an explicit state policy interpreting its narrative water quality criteria (*i.e*., the Regional Water Board's "Policy for Application of Water Quality Objectives")(40 C.F.R. 122.44(d)(1) (vi) (A), (B) or (C)). The Basin Plan contains a narrative objective requiring that: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*". The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances that adversely affect beneficial uses. The beneficial uses include MUN, AGR, REC-1, REC-2, WARM, COLD, MIGR, SPWN, and WILD. The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The Basin Plan also limits chemical constituents in concentrations that adversely affect surface water beneficial uses. For waters designated as municipal, the Basin Plan specifies that, at a minimum, waters shall not contain concentrations of constituents that exceed Maximum Contaminant Levels (MCL) of CCR Title 22. The Basin Plan further states that, to protect all beneficial uses, the Regional Water Board may apply limits more stringent than MCLs. When a reasonable potential exists for exceeding a narrative objective, Federal Regulations mandate numerical effluent limitations and the Basin Plan clearly establishes a procedure for translating the narrative objectives into numerical effluent limitations.

A. Discharge Prohibitions

1. As stated in Section I.G of Attachment D, Federal Standard Provisions, this Order prohibits bypass from any portion of the treatment Facility. Federal Regulations, 40 CFR 122.41 (m), define "bypass" as the intentional diversion of waste streams from any portion of a treatment facility. This section of the Federal Regulations, 40 CFR 122.41 (m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Regional Water Board's prohibition of bypasses, the State Water Resources Control Board adopted

a presidential decision, Order No. WQO 2002-0015, which cites the Federal Regulations, 40 CFR 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation. In the case of United States v. City of Toledo, Ohio (63 F. Supp 2d 834, N.D. Ohio 1999) the Federal Court ruled that "any bypass which occurs because of inadequate plant capacity is unauthorized…to the extent that there are 'feasible alternatives', including the construction or installation of additional treatment capacity".

B. Technology-Based Effluent Limitations

1. Scope and Authority

a. As specified in 40 CFR Section122.44(a)(1), permits are required to include technology based effluent limitations

2. Applicable Technology-Based Effluent Limitations

a. **Volatile Organic Compounds (VOCs).** The effluent limits for VOCs are based on Best Available Technology utilizing either air stripping or carbon adsorption which have been demonstrated to readily reduce VOCs to below 0.5 µg/L. The 0.5 µg/L effluent limitation is below the Water Quality Based Effluent Limits (WQBEL) calculated below for VOCs of concern. After replacement of the GAC, there can be instances when chloroform and bromodichloromethane, found in the potable water supply used to slurry in the GAC but not in the groundwater, are found in the effluent for a short period of time. The permit allows those two VOCs to be discharged at detectable concentrations, but below their respective drinking water standards, for up to two weeks following GAC replacement. The other VOCs of concern are also allowed to be detected during that period, but at also at concentrations below their respective drinking water standards.

b. **Perchlorate**. The monthly average effluent limitation for perchlorate is established at 4 µg/L, a value that the Discharger, utilizing commercially available technology at both GET H-B and SGSA GET, has shown to be capable of technically and economically meeting on a consistent basis.

c. **Flow.** This Order contains a maximum daily and long term average effluent limitations of 5.76 for GET H-B and 1.58 for SGSA GET as reported in the Discharger's RWD. In accordance with 40 CFR Section 122.45, this Order includes mass effluent limitations based on the long term average effluent flows listed above and reported in the Discharger's RWD.

3. Final Technology-Based Effluent Limitations

Table F-1 summarizes the final technology-based effluent limitations established in this Order.

Table F-1
Summary of Technology-based Effluent Limitations
Discharge Points 001, 002

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
GET H-B Flow	mgd	5.76	--	5.76	--	--
SGSA GET Flow	mgd	1.58		1.58		
VOCs[1]	ug/L	0.5		0.75		
Perchlorate[2]	ug/L	4.0		6.0		

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

As specified in 40 CFR Section122.44(d)(1)(i), permits are required to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard. The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

a. **Beneficial Uses.** The Basin Plan at page II-2.00 states that the beneficial uses of any specifically identified water body generally applies to its tributary streams. The Basin Plan does not specifically identify beneficial uses for Morrison Creek, tributary to the Sacramento River, but does identify present and potential uses for the Sacramento River. These beneficial uses are municipal and domestic supply (MUN); agricultural supply, irrigation and stock watering (AGR); water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); warm and cold migration of aquatic organisms (MIGR); warm and cold spawning (SPWN); wildlife habitat (WILD). In addition, State Water Resources Control Board (State Water Board) Resolution No. 88-63 requires that, with certain exceptions, the Regional Water Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. Thus, as discussed in detail in this Fact Sheet, beneficial uses applicable to the Sacramento River and Morrison Creek are as follows:

Discharge Point	Receiving Water Name	Beneficial Use(s)
001, 002	Morrison Creek, Tributary of the American River	Existing: MUN, AGR, REC-1, REC-2, WARM, COLD, MIGR, SPWN, WILD.

b. **Dilution Credits/Mixing Zones.** The Regional Board finds that based on the available information that Morrison Creek, absent the discharges, are ephemeral streams, or at times the flow upstream of the discharges is significantly less than that of the discharge. The ephemeral and/or low flow nature of the creek means that the designated beneficial uses must be protected, but that no credit for receiving water dilution is available. As the discharge, at times, maintains the aquatic habitat, constituents may not be discharged that may cause harm to aquatic life. At other times, natural flows within the creeks help support the aquatic life. Dry conditions occur primarily in the summer months, but dry conditions may also occur throughout the year, particularly in low rainfall years. The lack of dilution results in more stringent effluent limitations to protect contact recreational uses, drinking water standards, agricultural water quality goals and aquatic life. Therefore, the Regional Water Board has evaluated the need for water quality-based effluent limitations for pollutants without benefit of dilution in this Order. These water quality-based effluent limitations are based on the application of water quality criteria or objectives at the points of discharge.

c. **Hardness.** The minimum effluent hardness, maximum receiving water pH limitation, and measured effluent temperature were used to develop hardness, pH, and/or temperature dependent WQBELs. These worst-case values have been chosen to protect the beneficial uses of the receiving water and are summarized below:

Hardness:	97 mg/L
pH:	8.5 standard units
Temperature:	21 °C

3. Determining the Need for WQBELs

a. Reasonable potential (RP) was determined by calculating the projected maximum effluent concentration (MEC) for each constituent and comparing it to applicable water quality criteria; if a criterion was exceeded, the discharge was determined to have reasonable potential to exceed a water quality objective for that constituent. The projected MEC is determined by multiplying the observed MEC by a factor that accounts for statistical variation. The multiplying factor is determined (for 99% confidence level and 99% probability basis) using the number of results available and the coefficient of variation (standard deviation divided by the mean) of the sample results. In accordance with the SIP, non-detect results were counted as one-half the detection level when calculating the mean. For all constituents for which the source of the applicable water quality standard is the CTR or NTR, the multiplying factor is 1. Reasonable potential

evaluation was based on the methods used in the SIP and the U.S. EPA Technical Support Document for Water Quality-Based Toxics Control [EPA/505/2-90-001].

b. 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 submitted as part of the application, in studies, and as directed by monitoring and reporting programs the Regional Water Board finds that the discharge does have a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for perchlorate. Effluent limitations for perchlorate are included in this Order.

c. The reasonable potential analysis for detected constituents is summarized below in Table F-2.

Table F-2.
RPA Summary for Detected Constituents
Discharges 001- 002

Parameter	Units	MEC[1]	99th MEC[1]	WQO/ WQC[2]	Source	RP[3]
Perchlorate	µg/L	4	4	6	California Primary MCL	Y
Copper	µg/L	3	3	10/17	CTR CCC/CMC	N
Zinc	µg/L	11	11	150	CTR CCC/CMC	N
Barium	µg/L	42	42	1000	California Primary MCL	N
Chloride	mg/L	3.6	3.6	106	Water Quality for Agriculture	N
Sulfate	mg/L	6.2	6.2	250	California Secondary MCL	N
Electrical Conductivity	umhos/cm	120	120	700	Water Quality for Agriculture	N
Total Dissolved Solids	mg/L	130	130	450	Water Quality for Agriculture	N

1. MEC: maximum effluent concentration. 99th MEC: maximum predicted effluent concentration using 99th percentile multiplier, note that multiplier is equal to "1" when applying CTR criteria.
2. WQO: water quality objective. WQC: water quality criteria.
3. Reasonable potential.

d. **pH.** The Basin Plan includes numeric water quality objectives that the pH "…not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses." The receiving water is designated as having both COLD and WARM beneficial uses. An effluent limitation for pH is included in this Order, and is based on the Basin Plan objectives for pH.

f. **Perchlorate**. Perchlorate has been determined to have a potential adverse impact on the thyroid. The California Department of Public Health has adopted a Maximum Contaminant Level for perchlorate of 6 ug/L and the California Department of Health Hazard Assessment has adopted the same value as the

Public Health Goal. Concentrations below 6 ug/L would pose a *de minimus* risk to human health.

4. WQBEL Calculations

a. The Discharger conducted monitoring for priority and non-priority pollutants. The analytical results of one comprehensive sampling event were submitted to the Regional Water Board. The results of this sampling event were used in developing the requirements of this Order. Effluent limitations are included in this Order to protect the beneficial uses of the receiving stream and to ensure that the discharge complies with the Basin Plan objective that toxic substances not be discharged in toxic amounts.

b. **Calculations for Effluent Limitations.** In calculating maximum effluent limitations, the effluent concentration allowances were set equal to the criteria/standards/objectives.

$$ECA_{acute} = CMC \qquad ECA_{chronic} = CCC$$

$$ECA_{HH} = HH$$

where: ECA_{acute} = effluent concentration allowance for acute (one-hour average) toxicity criterion
$ECA_{chronic}$ = effluent concentration allowance for chronic (four-day average) toxicity criterion
ECA_{HH} = effluent concentration allowance for human health, agriculture, or other long-term criterion/objective
CMC = criteria maximum concentration (one-hour average)
CCC = criteria continuous concentration (four-day average, unless otherwise noted)
HH = human health, agriculture, or other long-term criterion/objective

Acute and chronic toxicity ECAs were then converted to equivalent long-term averages (LTA) using statistical multipliers and the lowest is used. Additional statistical multipliers were then used to calculate the maximum daily effluent limitation (MDEL) and the average monthly effluent limitation (AMEL). The statistical multipliers were calculated using data shown in Table 1.

Human health ECAs are set equal to the AMEL and a statistical multiplier is used to calculate the MDEL.

$$MDEL = mult_{MDEL}\left[\min\left(\overbrace{M_A ECA_{acute}}^{LTA_{acut}}, \underbrace{M_C ECA_{chronic}}_{LTA_{chronic}}\right)\right]$$

$$MDEL_{HH} = \left(\frac{mult_{MDEL}}{mult_{AMEL}}\right) AMEL_{HH}$$

where: $mult_{AMEL}$ = statistical multiplier converting minimum LTA to AMEL
$mult_{MDEL}$ = statistical multiplier converting minimum LTA to MDEL
M_A = statistical multiplier converting CMC to LTA
M_C = statistical multiplier converting CCC to LTA

c. **Mass-based Effluent Limitations.** In accordance with 40 CFR 122.45(b)(2), mass-based limitations are calculated by multiplying the concentration limitation by the long-term average flow and the appropriate unit conversion factors. Mass based limits are found in Tables IV(A)(1) through IV(A)(12).

Mass-based effluent limitations, or mass emission rates (MERs), for WQBELs applicable to Discharge 001-011 are calculated as follows:

$$MER = 8.34\left(\frac{lb-L}{mg-gal}\right) \times AMEL-or-MDEL \times flow(mgd)$$

d. Final WQBELs. Table F-3 summarizes the final WQBELs contained in this Order.

Table F-3
Discharge Points 001- 002

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
perchlorate	ug/L	6				
pH	standard units	--	--	--	6.5	8.5

5. Whole Effluent Toxicity (WET)

The Basin Plan specifies a narrative objective for toxicity, requiring that “All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.” Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration and/or other appropriate methods as specified by the Regional Water Board. The survival of aquatic life in surface waters subjected to a waste discharge, or other controllable water quality factors, shall not be less than that for the same water body in areas unaffected by the waste discharge, or when necessary, for other control water that is consistent with the requirements for “experimental water” as defined in Standard Methods for the Examination of Water and Wastewater (American Public Health Association, et al. 1992).

In addition to the Basin Plan requirements, Section 4 of the SIP states that a chronic toxicity effluent limitation is required in permits for all discharges that will cause, have the reasonable potential to cause, or contribute to chronic toxicity in receiving waters.

Numeric water quality criteria, or Basin Plan numeric objectives currently are not available for many of the aquaculture drugs and chemicals used by aquaculture facilities. Therefore, the Regional Water Board uses the narrative water quality objective for toxicity from the Basin Plan as a basis for determining "reasonable potential" for discharges of these drugs and chemicals. USEPA's *Technical Support Document Water Quality-based Toxics Control* (TSD) specifies two toxicity measurement techniques that can be employed in effluent characterization; the first is Whole Effluent Toxicity (WET) testing, and the second is chemical-specific toxicity analyses. Whole effluent toxicity (WET) requirements protect the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent. The WET approach allows for protection of the narrative "no toxics in toxic amounts" criterion while implementing numeric criteria for toxicity. There are two types of WET tests: acute and chronic. An acute toxicity test is conducted over a short time period and generally measures mortality. A chronic toxicity test is conducted over a longer period of time and may measure mortality, reproduction, and growth. For fish hatcheries WET testing is used most appropriately when the toxic constituents in an effluent are not completely known; whereas chemical-specific analysis is more appropriately used when an effluent contains only one, or very few, well-known constituents.

D. Final Effluent Limitations

1. 40 CFR Section122.45 states that:

   "…All pollutants limited in permits shall have limitations…expressed in terms of mass except…[f]or pH, temperature, radiation, or other pollutants which cannot appropriately be expressed by mass…Pollutants limited in terms of mass additionally may be limited in terms of other units of measurement, and the permit shall require the permittee to comply with both limitations."

2. Tables F-4 and F-5summarizes the final technology-based and water quality-based effluent limits established in this Order.

Table F-4
Summary of Final Effluent Limitations
Discharge Points 001 through 002

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow – Discharge 001	mgd	5.76	5.76	--	--
Flow – Discharge 002	mgd	1.58	1.58		
Trichloroethylene	µg/L	0.5/1.7	1.7		
Cis-1,2-dichloroethylene	µg/L	0.5/6	6		
Chloroform	µg/L	0.5/10	10		

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Bromodichloromethane	µg/L	0.5/10	10		
Perchlorate	ug/L	4	6		
pH	pH	--	--	6.5	8.5

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

G. Reclamation Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

1. The Clean Water Act, Section 303(a-c), required states to adopt numeric criteria where they are necessary to protect designated uses. The Regional Water Board adopted numeric criteria in the Basin Plan. The Basin Plan is a regulatory reference for meeting the state and federal requirements for water quality control (40 CFR 131.20). State Water Board Resolution No. 68-16, the Antidegradation Policy, does not allow changes in water quality less than that prescribed in Water Quality Control Plans (Basin Plans). The Basin Plan states that; "The numerical and narrative water quality objectives define the least stringent standards that the Regional Water Board will apply to regional waters in order to protect the beneficial uses." This Order contains Receiving Water Limitations based on the Basin Plan numerical and narrative water quality objectives for Biostimulatory Substances, Chemical Constituents, Color, Dissolved Oxygen, Floating Material, Oil and Grease, pH, Pesticides, Radioactivity, Salinity, Sediment, Settleable Material, Suspended Material, Tastes and Odors, Temperature, Toxicity and Turbidity.

b. Numeric Basin Plan objectives for bacteria, dissolved oxygen, pH, temperature, and turbidity are applicable to this discharge and have been incorporated as Receiving Surface Water Limitations. Rational for these numeric receiving surface water limitations are as follows:

   a. **Bacteria.** The Basin Plan includes a water quality objective that "*[I]n water designated for contact recreation (REC-1), the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml.*" Numeric Receiving Water Limitations for bacteria are included in this Order and are based on the Basin Plan objective.

b. **Dissolved Oxygen.** The Basin Plan includes a water quality objective that "[*F]or water bodies outside of the legal boundaries of the Delta, the monthly median of the mean daily dissolved oxygen (DO) concentrations shall not fall below 85 percent of saturation in the main water mass, and the 95 percentile concentration shall not fall below 75 percent of saturation. The dissolved oxygen concentrations shall not fall below the following minimum levels at any time – Waters designated WARM – 5.0 mg/L, Waters designated COLD – 7.0 mg/L, and Waters designated SPAWN – 7.0 mg/L.* The American River is designated as having WARM, COLD, and SPAWN designated uses. Numeric Receiving Water Limitations for dissolved oxygen are included in this Order and are based on the Basin Plan objective.

c. **pH.** The Basin Plan includes water quality objectives that the pH "…not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses." The American River is designated as having both COLD and WARM beneficial uses. The change in pH of 0.5 (standard pH units) is not included as necessary to protect aquatic life in U.S. EPA's Ambient Criteria for the Protection of Freshwater Aquatic Life as long as pH does not fall below 6.5 or exceed 8.5 units. Therefore, an averaging period of 30 days has been applied to the Basin Plan receiving water objective for changes in pH. Numeric Receiving Water Limitations for pH are included in this Order and are based on the Basin Plan objectives for pH.

d. **Temperature.** The Basin Plan includes water quality objectives that prohibit the temperature ". . . of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water." The American River is designated having both COLD and WARM beneficial uses. Receiving Water Limitations for temperatures are included in this Order and are based on the Basin Plan objectives for temperature.

e. **Turbidity.** The Basin Plan includes a water quality objective that "[I]*ncreases in turbidity attributable to controllable water quality factors shall not exceed the following limits:*

- *Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU.*
- *Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent.*
- *Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs.*
- *Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent."*

A numeric Receiving Surface Water Limitation for turbidity is included in this Order and is based on the Basin Plan objective for turbidity.

B. Groundwater – Not Applicable

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Section 122.48 of 40 CFR requires all NPDES permits to specify recording and reporting of monitoring results. Sections 13267 and 13383 of the CWC authorize the Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program, Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for this facility

A. Influent Monitoring

The Order establishes influent monitoring requirements to allow the Discharger to monitor the treatment efficiency of the treatment systems and make sure that influent concentrations are within the design parameters of the treatment systems. As such, monitoring is required for volatile organics and perchlorate.

B. Effluent Monitoring

Pursuant to the requirements of 40 CFR 122.44(i)(2) effluent monitoring is required for all
constituents with effluent limitations. The Monitoring and Reporting Requirements include effluent monitoring requirements in Attachment E, Section IV.

C. Whole Effluent Toxicity Testing

1. **Acute Toxicity.** Quarterly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity (Effluent Limitations IV.A.1.e.).

2. **Chronic Toxicity**. Quarterly chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

D. Receiving Water Monitoring

1. **Surface Water**. Receiving water monitoring is required to demonstrate compliance with the Receiving Water Limitations.

2. **Groundwater – Not Applicable**

   Groundwater monitoring associated with the treatment facilities is not required. Extensive groundwater monitoring is conducted by the Discharger to meet

compliance associated with groundwater cleanup requirements established by the Regional Water Board and USEPA under other programs.

F. Other Monitoring Requirements

1. Solids Disposal Monitoring

This Order requires an annual solids disposal report describing the annual volume of solids generated by the Facilities and specifying the disposal practices. Solids disposal reporting is required to evaluate compliance with Construction, Operation, and Maintenance Specifications, Section VI.C.5.a, of this Order.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions.** In accordance with 40 CFR section 122.41and 122.42, the Federal Standard Provisions provided in Attachment D of this Order apply to this discharge.

2. **Regional Water Board Standard Provisions.** In addition to the Federal Standard Provisions (Attachment D), the Discharger must comply with the Regional Water Board Standard Provisions provided in Standard Provisions VI.A.2.

   40 CFR Section 122.41(a)(1) and (b) through (n) establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. 40 CFR Section 123.25(a)(12) allows the State to omit or modify conditions to impose more stringent requirements. In accordance with Section 123.35, this Order omits federal conditions that address enforcement authority specified in 40CFR Sections 122.41(j)(5) and (k)(2) because the enforcement authority under the CWC is more stringent . In lieu of these conditions, this Order incorporates by reference CWC Section13387(e) .

B. Special Provisions

1. Reopener Provisions

a. **Special Provisions VI.C.1.a.** Conditions that necessitate a major modification of a permit are described in 40 CFR section 122.62, which include the following:

   i. When standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision. Therefore, if more stringent applicable water quality standards are promulgated or approved pursuant to section 303 of the Federal Water Pollution Control Act or amendments thereto, the Regional Water Board will

revise and modify this Order in accordance with such more stringent standards.

ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.

b. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a chronic toxicity limitation based on that objective.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. **Chronic Whole Effluent Toxicity Requirements (Special Provisions VI.C.2.a.).** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at III-8.00.) Based on quarterly whole effluent chronic toxicity testing performed by the Discharger from January 2004 through September 2009, the does not have a reasonable potential to cause or contribute to an to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

Special Provisions VI.C.2.a. requires the Discharger to develop a Toxicity Reduction Evaluation (TRE) work plan in accordance with EPA guidance. In addition, the provision establishes a numeric toxicity trigger, requirements for accelerated monitoring to confirm effluent toxicity, and a protocol for requiring the Discharger to initiate a TRE.

TRE Trigger. A numeric TRE Trigger of > 1 TUc (where TUc = 100/NOEC) is applied in the provision, because this Order does not allow any dilution for the chronic condition. Therefore, a TRE is triggered when the effluent exhibits toxicity at 100% effluent.

Accelerated Monitoring. The provision requires accelerated WET testing when a regular WET test result exceeds the TRE Trigger to confirm effluent toxicity prior to requiring implementation of a TRE.

TRE Guidance. The Discharger is required to prepare the TRE work plan in accordance with USEPA guidance. Numerous guidance documents are available, as identified below:

- Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants, *(EPA/833B-99/002), August 1999.*

- Generalized Methodology for Conducting Industrial TREs*, (EPA/600/2-88/070), April 1989.*

- Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures, *Second Edition, EPA 600/6-91/005F, February 1991.*

- Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I*, EPA 600/6-91/005F, May 1992.*

- Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting acute and Chronic Toxicity, *Second Edition, EPA 600/R-92/080, September 1993.*

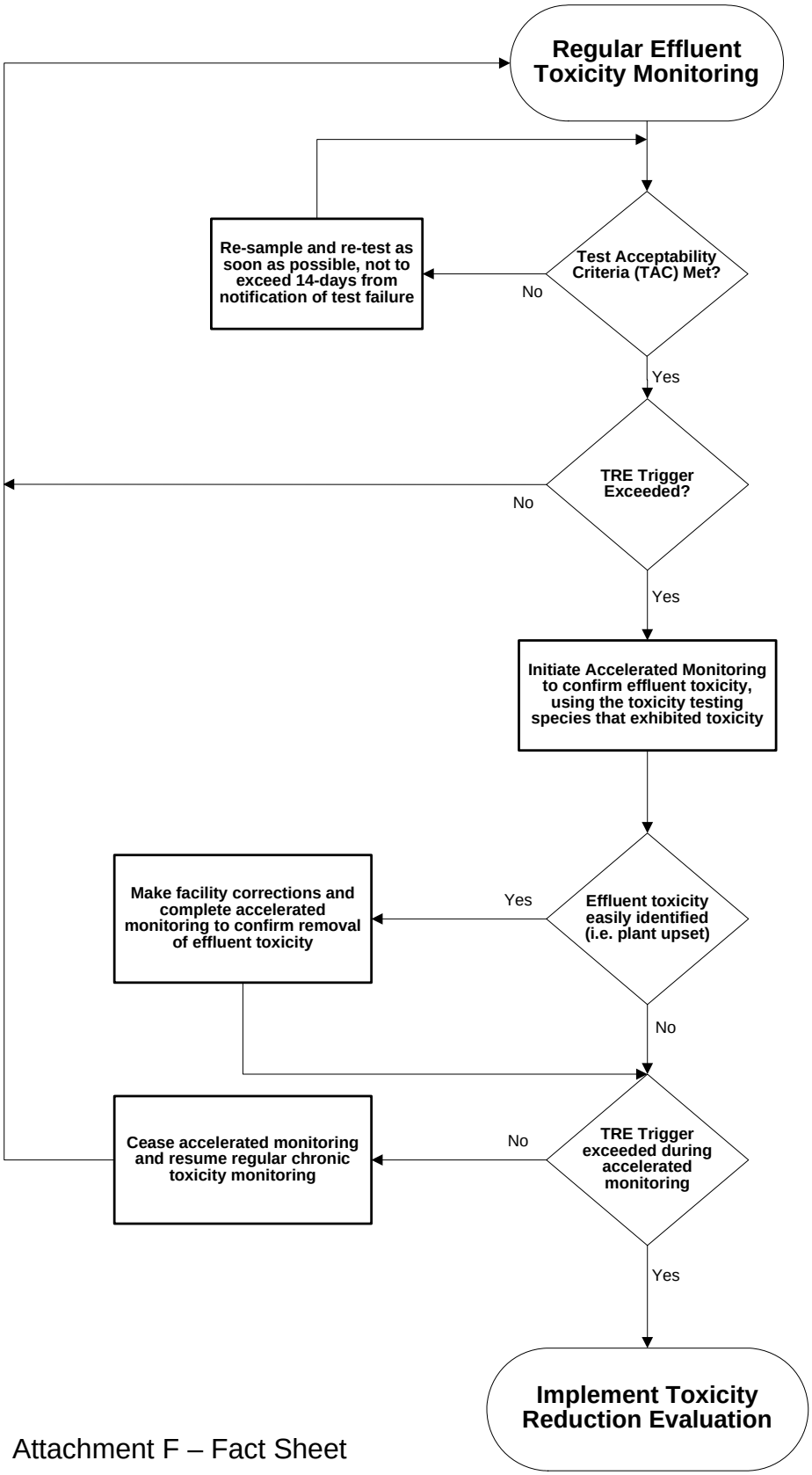
- Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity*, Second Edition, EPA 600/R-92/081, September 1993.*

- Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition, EPA-821-R-02-012, October 2002.*

- Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, EPA-821-R-02-013, October 2002.*

- Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991

Figure F-15
WET Accelerated Monitoring Flow Chart



3. Best Management Practices and Pollution Prevention – Not Applicable

4. Compliance Schedules- Not Applicable

5. Construction, Operation, and Maintenance Specifications

a. **Provisions VI.C.5.a,b.** Solid waste disposal provisions in this Order are based on the requirements of CCR Title 27 and prevention of unauthorized discharge of solid wastes into waters of the United States or waters of the State. Other construction, operation, and maintenance specifications are to prevent other unauthorized discharges to waters of the United States or waters of the State.

6. Special Provisions for Municipal Facilities (POTWs Only) – Not Applicable

7. Other Special Provisions

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, Central Valley Region (Regional Water Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the Aerojet-General Corporation Groundwater Extraction and Treatment Systems. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments should be submitted either in person or by mail to the Executive Office at the Regional Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices by 5:00 p.m. on February xx, 2010**.**

C. Public Hearing

The Regional Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date:	**26/27/28 May 2010**
Time:	8:30 am
Location:	Regional Water Quality Control Board 11020 Sun Center Dr #200 Rancho Cordova, CA

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our web address is http://www.waterboa rds.ca.gov/centralvalley/ where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

The RWD, related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (916) 464-3291.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Alexander MacDonald at (916) 464-4625.