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**EXEMPT FROM FILING FEES
PURSUANT TO GOVERNMENT
CODE SECTION 6103**

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COUNTY OF SACRAMENTO and
SACRAMENTO COUNTY WATER AGENCY

BEFORE THE STATE WATER RESOURCES CONTROL BOARD
STATE OF CALIFORNIA

In Re: Petition to Revise Declaration of)	
Fully Appropriated Stream Systems)	COUNTY OF SACRAMENTO'S AND
Designation of American River,)	SACRAMENTO COUNTY WATER
Sacramento County)	AGENCY'S REQUEST FOR OFFICIAL
)	NOTICE

The County of Sacramento and Sacramento County Water Agency hereby request that the State Water Resources Control Board take official notice of the following documents, pursuant to Title 23, California Code of Regulations section 648.2:

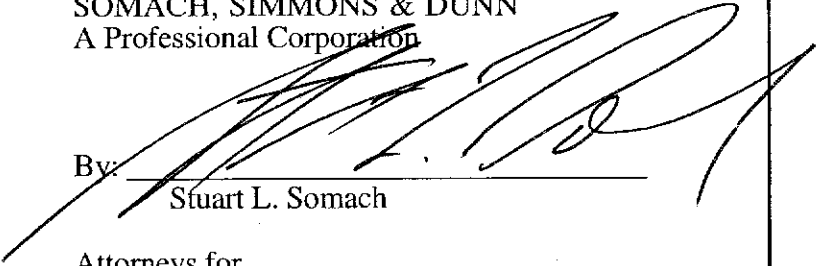
- California Regional Water Quality Control Board, Central Valley Region, Tentative Order, "NPDES No. CA 0083861, Waste Discharge Requirements for Aerojet-General Corporation Interim Groundwater Extraction and Treatment System American River Study Area and GET E/F, Sacramento County", attached hereto as Exhibit A;
- Late Revisions (July 19, 2002), prepared by the Regional Water Quality Control Board staff for "Item 11. - Aerojet-General Corporation, Interim Groundwater Extraction and Treatment System, American River Study Area and GET E/F, Sacramento County -Revision," attached hereto as Exhibit B.

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Dated: August 5, 2002

ROBERT A. RYAN, JR., COUNTY COUNSEL
COUNTY OF SACRAMENTO

SOMACH, SIMMONS & DUNN
A Professional Corporation

By: 

Stuart L. Somach

Attorneys for
COUNTY OF SACRAMENTO and
SACRAMENTO COUNTY WATER AGENCY

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PROOF OF SERVICE

I am employed in the County of Sacramento; my business address is 400 Capitol Mall, Suite 1900, Sacramento, California; I am over the age of 18 years and not a party to the foregoing action.

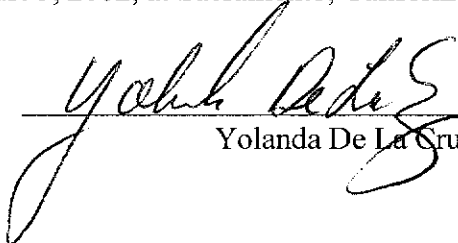
On August 5, 2002, I served the following document(s):

COUNTY OF SACRAMENTO'S AND SACRAMENTO COUNTY WATER AGENCY'S
REQUEST FOR OFFICIAL NOTICE

X (by mail) on all parties in said action listed below, in accordance with Code of Civil Procedure §1013a(3), by placing a true copy thereof enclosed in a sealed envelope in a designated area for outgoing mail, addressed as set forth below. At Somach, Simmons & Dunn, mail placed in that designated area is given the correct amount of postage and is deposited that same day, in the ordinary course of business, in a United States mailbox in the City of Sacramento, California.

SEE ATTACHED SERVICE LIST

I declare under penalty of perjury that the foregoing is true and correct under the laws of the State of California. Executed on August 5, 2002, at Sacramento, California.



Yolanda De La Cruz

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State Water Resources Control Board
Division of Water Rights
1001 I Street
Sacramento, CA 95814

EXHIBIT

A

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO.

NPDES NO. CA0083861

RENTAL

WASTE DISCHARGE REQUIREMENTS
FOR
AEROJET-GENERAL CORPORATION
INTERIM GROUNDWATER EXTRACTION AND TREATMENT SYSTEM
AMERICAN RIVER STUDY AREA AND GET E/F
SACRAMENTO COUNTY

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

1. Aerojet-General Corporation (hereafter Discharger) submitted a Report of Waste Discharge, dated 27 September 2001 and supplemental information dated 20 November 2001, and applied for a revision of its authorization to discharge waste under the National Pollutant Discharge Elimination System (NPDES) from the American River Study Area (ARSA) Groundwater Extraction and Treatment System. The application requested authorization to add the discharge from the Groundwater Extraction and Treatment (GET) E/F facility to that from the existing ARSA facility.
2. The Discharger operates a rocket-testing and chemical manufacturing facility in eastern Sacramento County near Rancho Cordova and Folsom. Past discharge practices have caused the release of contaminants into the vadose zone and groundwater at the facility.
3. Concentrations of contaminants in the groundwater northwest of the Discharger's property in the vicinity of Sailor Bar Park and the Nimbus Fish Hatchery, north and south of the American River and west of Hazel Avenue (American River Study Area), respectively, include up to 4000 micrograms per liter (g/l) trichloroethylene (MCL of 5 g/l), 220 g/l cis-1,2-dichloroethylene (MCL of 6.0 g/l), 110 g/l 1,1-dichloroethylene (MCL of 5.0 g/l), and 36 g/l tetrachloroethylene (MCL of 5 g/l). Concentrations of trichloroethylene in the plume of contaminated groundwater have been detected north of Sailor Bar Park exceeding 100 g/l . This plume of contaminated groundwater is extracted and treated by the ARSA facility. The Discharger has been extracting and treating groundwater at ARSA, and discharging the treated groundwater pursuant to an NPDES permit, since 1996.

AMERICAN RIVER STUDY AREA

4. The current plume of contaminated groundwater off the Discharger's property and to the north of the American River creates or threatens to create a condition of pollution or nuisance. In response, the Executive Officer issued Cleanup and Abatement Order No. 95-715 requiring the Discharger to

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submit a plan designed to minimize the flux of contaminated groundwater past the northern boundary of Sailor Bar Park while an evaluation and construction of a system for containment, extraction, and treatment of the entire plume in the American River Study Area was being made.

To comply with the Cleanup and Abatement Order, the Discharger submitted a plan proposing to initially extract approximately 500 gpm of groundwater from three existing groundwater extraction wells, treat the water using granular activated carbon (GAC), and discharge the treated groundwater under a permit into the Sacramento Regional County Sanitation District's collection system. However, the costs for discharge to the sewer were significant prompting the Discharger to request to discharge the treated groundwater under an NPDES permit to an existing pond in Sailor Bar Park. The pond was being fed by storm and urban runoff from a small upstream watershed and by a groundwater supply well near the pond. The Board adopted an NPDES permit, Order No. 96-066, for the discharge from the interim treatment plant to the pond in Sailor Bar Park. Water quality of the discharge was no worse, and was generally better due to treatment, than the other discharges into the pond. Overflow from the pond is to an unnamed tributary to the American River. Given the very coarse soils in the drainage channel, and the numerous road crossings blocking flow, and ponding areas, a direct discharge from the pond does not reach the American River. See Attachment A, a part of this Order.

5. The interim groundwater treatment system consisted of twenty-four GAC absorber vessels each containing 2000 pounds of carbon and operated in twelve sets of two vessels in series. The plant was designed to treat 500 gpm of extracted ground water to concentrations below that which can be detected. Prior to entering the GAC vessels, the water will passed through bag filters to remove suspended particles larger than 5 microns. The discharge was in substantial compliance with the effluent and receiving water limitations found in Order No. 96-066 during its period of operation, which ceased in October 1997 to allow construction of the current system. The new system is to treat extracted groundwater from all the extraction wells in the American River Study Area (discussed further below). Order No. 98-113 revised the requirements of Order No. 96-066 to reflect the new treatment plant with discharge to Buffalo Creek.
6. The Board modified Order No. 95-715 with the adoption of Cleanup and Abatement Order No. 96-230 on 20 September 1996. Order No. 96-230 directs the Discharger to complete design, construction, and operation of a groundwater extraction system in the American River Study Area to contain and cleanup the plume of contaminated groundwater. The Discharger complied with that Order by completing construction of a treatment facility on the Discharger's property capable of treating 3500 gpm. Flow from nine extraction wells in Sailor Bar Park is pumped under the American River, combined with flows from six extraction wells on the south side of the river, and piped back to the treatment facility. The new facility came on-line in April 1998 and discharged pursuant to the NPDES permit contained in Order No. 98-113.

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The treatment plant utilizes ultraviolet/peroxide oxidation and air stripping to remove the volatile organic contaminants (VOCs), as described in Finding No. 3, above.

7. Sacramento County Department of Parks and Recreation has requested the Discharger to continue the discharge of groundwater to Sailor Bar Park pond (in Section 17, R6E, T9N, MDB&M). It was found that the continuous discharge of freshwater to the pond from the interim system, enhanced the quality of the pond. If the current park well was utilized to provide the flow for the pond, a treatment system would be required for the well since samples of water from the well have found up to 85 g/l trichloroethylene (TCE). A treatment system consisting of activated carbon canisters has been provided for removal of the TCE prior to discharge to the pond. The treatment system has shown to be effective in removing the TCE to non-detectable levels during its entire operational period. This permit requires monitoring of the water supply well treatment system. The 250 gpm flow from the water supply well will be intermittent, and will have a maximum flow of 0.18 million gallons per day (mgd).
8. The current discharge from the ARSA system consists of the main flow from the groundwater treatment plant to Buffalo Creek on the Discharger's property and the flow to the pond as described in Finding No. 7, above. Buffalo Creek discharges to the American River just upstream of the Sunrise Bridge crossing in Section 13, R6E, T9N, MDB&M. See Attachment A.
9. The Report of Waste Discharge for the ARSA facility, including data from sampling of the Sailor Bar park system and nearby groundwater wells, describes the discharge as follows:

Monthly Average Flow:	5.0 mgd
Daily Peak Flow:	5.0 mgd
Design Flow:	5.0 mgd
Average Temperature:	70°F summer; 59°F winter
pH	7.2 - 8.5

<u>Constituent</u>	<u>mg/l</u>
COD	<3
Total Suspended Solids	<6
Chlorides	40
Sulfate	12
Manganese	0.07
Aluminum	<0.16
Zinc	0.034

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Arsenic	<0.002
Lead	<0.005
Hardness (as CaCO ₃)	110
Barium	0.07
Copper	<0.0015
Chromium	<0.002
Nickel	<0.005
All Volatile Organic Contaminants	<0.0005
Perchlorate	0.008

10. Sampling for perchlorate in groundwater monitor wells in the American River Study Area was recently conducted. Concentrations ranged from non-detect (<0.004 mg/l) to 0.150 mg/l. The average concentration was 0.007 mg/l with a median of non-detect (<0.004 mg/l). The highest concentrations of perchlorate are found in the monitor wells closest to Aerojet and all wells with detections, except one, were found on the south side of the American River. Using values from monitor wells closest to the extraction wells, it is calculated that the influent to the treatment system is estimated to be around 0.007 mg/l. This is near the current Department of Health Services (DHS) Action Level for drinking water of 0.004 mg/l (January 2002) and the draft California Public Health Goal of 0.006 mg/l (Office of Environmental Health Hazard Assessment, March 2002). Sampling of the effluent from the ARSA facility since 1998 has shown that the concentration of perchlorate is in the range of 0.005-0.008 mg/l. It should be noted that there will be a minimum 30-fold dilution in the American River (flow at 250 cubic feet per second) at the maximum discharge rate of 3450 gpm, resulting in no detectable concentrations of perchlorate in the American River. The added expense of treatment to remove perchlorate is not justified for the American River Study Area facility.
11. One other contaminant of concern, other than those discussed above, which was deemed necessary for evaluation is 1,4-dioxane. This contaminant is found in some of the groundwater monitor wells south of the American River in the American River Study Area, with a maximum concentration of 0.029 mg/l. Estimated worst-case effluent concentrations for 1,4-dioxane are 0.003 mg/l. The UV/peroxide treatment system provides effective treatment for the reduction of 1,4-dioxane. For 1,4-dioxane, the California State Action Level is 0.003 mg/l and the Proposition 65 value is 0.015 mg/l. The effluent limitation is set at Action Level.
12. Another contaminant of concern is N-Nitrosodimethylamine (NDMA) which has been found in groundwater on the eastern side of Aerojet and a few wells on the western edge of Aerojet. There are no known source areas for NDMA in the vicinity or upgradient of the American River Study Area. In addition, NDMA has not been detected in monitor wells in the American River Study

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Area. This permit requires monitoring for NDMA in the treatment facility and in the American River upstream and downstream of the confluence with Buffalo Creek.

13. The Discharger submitted a Final Revised Engineering Evaluation and Cost Analysis for the American River Study Area dated 13 September 1996, a draft Quality Assurance Project Plan dated 31 January 1998, a draft revised Sampling and Analysis Plan dated 31 January 1998, and a draft Groundwater Extraction and Treatment System Effectiveness Evaluation Work Plan dated 31 January 1998. These documents were utilized in formulating the initial Order(s).
14. The Final Revised Engineering Evaluation and Cost Analysis (EE/CA) of the American River Study Area evaluated several discharge options for the treated groundwater, including providing the water for municipal and industrial use. The method of discharge covered in this permit as an interim solution, and the Discharger may utilize options considered in the EE/CA in the future. This permit would be modified as necessary.

PERMIT MODIFICATIONS – GET E/F

15. The Discharger has been operating the GET E and F extraction and treatment facilities since 1984. Operation of the GET E and F treatment facilities has been subject to the requirements of the Partial Consent Decree since its entry by federal district court in December 1989. Groundwater extracted from the separate GET E and GET F areas was combined in 2000 and is treated at a modified combined GET E/F treatment facility. The GET E/F extraction system is intended as an interim remedial measure to intercept groundwater pollution plumes prior to the plumes moving beyond the western boundary of the Discharger's property. Currently, the GET E/F treatment facility extracts and treats approximately 3600 gpm, but is being expanded to achieve an extraction and treatment capacity of 6000 gpm to achieve more complete capture of the groundwater plumes.
16. Current disposal of the GET E/F treated groundwater is by discharge to land, recharging the aquifer. However, the final remedy for the Western Groundwater Operable Unit selected in the Record of Decision (ROD) issued by USEPA in July 2001 includes the GET E/F facility and requires discharge of treated groundwater to surface water. Discharge to surface water is intended to allow for subsequent reuse of the treated groundwater to provide replacement water supplies for those lost due to the pollution in groundwater caused by the Discharger in the Rancho Cordova and surrounding areas.

The Discharger evaluated other alternatives to discharge of the treated groundwater to surface water, such as land disposal and reuse, and determined that the alternatives were not feasible at this time. Infiltration capacity necessary for land disposal is limited. At the current application rate to land of 3600 gpm, the water is ponding in the area of discharge and not adequately infiltrating. Increasing

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the application rate to land to 6000 gpm would result in more ponding and, therefore, is not feasible. Further, the remedy selected in the ROD issued by USEPA in July 2001 requires that treated groundwater from the GET E/F facility be discharged to surface water and the extraction system is not designed to include hydraulic conditions caused by the infiltration of the extracted groundwater upgradient of the extraction field. In addition, the Department of Health Services (DHS) and local water purveyors object to the continued recharge of the GET E/F treated ground water to land. (See DHS/water purveyor comments on the Record of Decision and RI/FS.) Another disposal/reuse alternative such as direct reuse of the treated ground water for potable purposes has not been approved by DHS at this time. In addition, there currently is no demand, or infrastructure that would allow, for reuse of the water for non-potable purposes. The Discharger is required in this permit to evaluate reuse alternatives and implement those that are feasible (see Finding No. 23 and Provision E.10).

17. The Discharger proposes to discharge the groundwater treated by the GET E/F facilities to the American River. Until it is feasible for the GET E/F treated groundwater to be reused, discharge to the American River 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.
18. 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, a demonstrated cost-effective option that provides for reuse of the treated groundwater has not been identified. However, given the existing groundwater pollution affecting current and future groundwater supplies, the highest priority for this treated groundwater is the replacement of lost water supplies, unless other sources are demonstrated to be readily available. Several other potential reuse options that could prove applicable in the future should also be evaluated. The Discharger is required in Provision No. 10 to annually evaluate reuse options and submit a technical report including the evaluation, proposed reuse options and an implementation timeline, to the Executive Officer.
19. There are potential impacts on the sustainable yield of the groundwater basin from which the GET E/F extraction field takes its water because the treated groundwater is to be discharged to surface water rather than by reuse within the basin. As such, the Discharger is required in Provision No. 11 to evaluate the impacts and propose mitigation measures for any potential adverse impacts on the sustainable yield of the groundwater basin. Implementation of reuse options, as mentioned above in Finding Nos.16, 17, and 18, and evaluated in Provision No. 10, would likely significantly reduce the adverse impacts on the sustainable yield of the basin.

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20. The groundwater contaminant plumes intercepted by the GET E/F extraction field include VOCs (primarily TCE), perchlorate, and NDMA.
21. The GET E/F facility uses biological reduction to remove perchlorate, ultraviolet light to remove NDMA, and air stripping to remove VOCs. The GET E/F facility has been in operating in its current configuration since 2000. The treatment process has been shown to be effective in removing VOCs to below detection levels (0.5 µg/l), perchlorate to below 4 µg/l, and NDMA to below detection (0.002 –0.0075 µg/l). Testing of the influent and effluent to the treatment facility for full-scan analysis, including tentatively identified compound analysis, did not indicate additional contaminants of concern. A schematic of the treatment facility is included in this Order as Attachment B.
22. Initial discharge of the treated groundwater will be to Buffalo Creek. Later, the effluent from the GET E/F facility may also be discharged to Alder Creek, tributary to Lake Natoma (American River), on the Discharger's property. These two discharge locations are shown on Attachment A. A pipeline to convey the treated water from the GET E/F facility will need to be constructed prior to the discharge to Alder Creek. The Discharger is currently evaluating pipeline alternatives that would allow discharge to Alder Creek. The interim discharge to Buffalo Creek will co-mingle with the discharge from the ARSA facility, prior to leaving the Discharger's property.
23. The Report of Waste Discharge for the GET E/F, describes the discharge as follows:

Monthly Average Flow:	8.64 mgd
Daily Peak Flow:	8.64 mgd
Design Flow:	8.64 mgd
Average Temperature:	64°F summer; 60°F winter
pH	7.2 - 7.5

<u>Constituent</u>	<u>mg/l</u>
COD	<3
Total Suspended Solids	<5
Nitrate	<0.05
Chlorides	6.6
Sulfate	15
Manganese	0.07
Aluminum	<0.05
Zinc	<0.10
Arsenic	<0.002

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Lead	<0.10
Hardness (as CaCO ₃)	110
Barium	0.1
Copper	<0.01
Chromium	<0.01
Nickel	<0.04
All Volatile Organic Contaminants	<0.0005

24. In the process of removing perchlorate, alcohol is added to the water to provide sufficient food source for biological growth. Excess alcohol is minimized, however, the low concentrations of excess alcohol react with the peroxide used in the NDMA destruction process and low concentrations of acetaldehyde and formaldehyde are formed. Concentrations of those two chemicals have been detected in the effluent from the air-stripper at concentrations up to 2 µg/l for acetaldehyde and 50 µg/l formaldehyde. Those concentrations are below the lowest adverse risk levels found of 380 µg/l (IRIS) and 100 µg/l (State of California Action Level). Effluent limitations are set at 5 for acetaldehyde and 50 µg/l for formaldehyde. In addition, it is also believed that those chemicals will be further reduced during transit to the discharge point and in the upper stretches of Buffalo Creek. Further sampling will be conducted to verify this hypothesis.

Other

25. USEPA adopted the *National Toxics Rule* on 5 February 1993 and the *California Toxics Rule* on 18 May 2000. These Rules contain water quality standards applicable to this discharge. The State Water Resources Control Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Plan), which contains guidance on implementation of the *National Toxics Rule* and the *California Toxics Rule*.
26. The Board adopted the *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins* (hereafter Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve water quality objectives for all waters of the Basin. These requirements implement the Basin Plan.
27. The Basin Plan adopted by the Board includes a Wastewater Reuse Policy 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 proved for reuse of the treated groundwater have not been identified. However, given the

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exiting groundwater contamination affecting current and future groundwater supplies, the highest priority for this treated groundwater is the replacement of lost water supplies, unless other sources are readily available. Several other potential reuse options that could prove applicable in the future should also be evaluated. The Discharge is required in Provision No. 10 to annually evaluate reuse options and develop a report to the Executive Officer regarding the evaluation.

28. 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 numeric water quality standard. Based on information submitted as part of the application and from past monitoring, the Board finds that the proposed discharge has a reasonable potential to exceed standards and objectives for the constituents discussed in the Information Sheet for the following constituents:
- a. VOCs: cis-1,2-dichloroethene, cis-1,2-dichloroethane, 1,1-dichloroethylene, chloroform, trichloroethene, and trans-1,2-dichloroethene; and effluent limitations for the constituents have been included in this Order. The two treatment systems have been designed, constructed, and have shown capable of meeting the effluent limitations.
 - b. Non-VOCs: 1,4-dioxane, formaldehyde, acetaldehyde, perchlorate, and n-nitrosodimethylamine; and effluent limitations for the constituents have been included in this Order.
 - c. This Order and the Basin Plan prohibit the discharge of toxic constituents in toxic amounts. Based on information submitted as part of the application and monitoring reports, VOCs: 1,2-dichloroethane, chloroform, cis-1,2-dichloroethene, trichloroethene, and trans-1,2-dichloroethene in the discharge, have a reasonable potential to cause or contribute to a violation of the Basin Plan narrative prohibition of the discharge of toxic substances in toxic concentrations. The Water Quality Standards: Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California; Rule (California Toxics Rule) is promulgated in the Federal Register, 40CFR Part 131, Part III. Effluent limitations for VOCs: 1,2-dichloroethane, chloroform, cis-1,2-dichloroethene, trichloroethene, and trans-1,2-dichloroethene, based on the California Toxics Rule and Best Available Technology (as described above), are included in this Order.
29. 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 objective. This Order contains provisions that:
- a. require the Discharger to provide information as to whether the levels of priority pollutants, including CTR and NTR constituents, and constituents for which drinking water maximum contaminant levels (MCL) are prescribed in the California Code of Regulations, and

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temperature in the discharge cause or contribute to an in-stream excursion above a water quality objective;

b. if the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality objective, require the Discharger to submit information necessary to calculate effluent limitations for those constituents; and

c. allow the Board to reopen this Order and include effluent limitations for those constituents.

30. The U.S. Environmental Protection Agency (EPA) and the Board have classified this discharge as a major discharge.
31. The beneficial uses of the American River downstream of the discharge are municipal and domestic, industrial, and agricultural supply; water contact and noncontact recreation; groundwater recharge, fresh water replenishment; and preservation and enhancement of fish, wildlife and other aquatic resources.
32. The beneficial uses of the underlying groundwater are municipal and domestic, industrial, and agricultural supply.
33. 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 water quality will be insignificant.
34. Effluent limitations, and toxic and pretreatment effluent standards established pursuant to Sections 301, 302, 304, and 307 of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.
35. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21100, et seq.), in accordance with Section 13389 of the California Water Code.
36. The Department of Toxic Substances Control has certified a final Negative Declaration and Initial Study for the American Rivers Study Area project in accordance with the CEQA (Public Resources Code Section 21000, et seq.), and the 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 American River Study Area treatment system.

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37. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
38. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.
39. This Order shall serve as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect upon the date of hearing, provided EPA has no objections.

IT IS HEREBY ORDERED that Order No. 98-113 is rescinded and Aerojet-General Corporation, its agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions:

1. Discharge of treated wastewater at a location or in a manner different from that described in Finding Nos. 8 and 19 is prohibited.
2. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by the attached Standard Provisions and Reporting Requirements A.13.
3. Neither the discharge nor its treatment shall create a nuisance as defined in Section 13050 of the California Water Code.
4. The discharge shall not cause the degradation of any water supply.

B. Effluent Limitations:

1. Effluent from the ARSA facility shall not exceed the following limits:

<u>Constituents</u>	<u>Units</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>
Total Copper	<u>g/l</u>	17	11
Total Lead	<u>g/l</u>	15	2.5
Total Zinc	<u>g/l</u>	110	100
Volatile Organics ¹	<u>g/l</u>	0.5 ¹	

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1,2-Dichloroethane	µg/l	0.5	0.38
Perchlorate	_g/l	18	10
1,4-dioxane	_g/l	10	3

¹ All volatile organic constituents listed in EPA Methods 8010 and 8020. The concentration of each constituent shall not exceed 0.5 _g/l.

2. Effluent from the GET E/F facility shall not exceed the following limits:

<u>Constituents</u>	<u>Units</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>
Total Copper	_g/l	17	11
Total Lead	_g/l	15	2.5
Total Zinc	_g/l	110	100
Volatile Organics ¹	_g/l	0.5 ¹	
1,2-Dichloroethane	µg/l	0.5	0.38
Perchlorate	_g/l	8	4
1,4-dioxane	µg/l	10	3
N-nitrosodimethylamine	µg/l	0.005	0.002
Acetaldehyde	µg/l	5	
Formaldehyde	µg/l	50	

¹ Volatile organic constituents listed in EPA Methods 8010 and 8020. The concentration of each constituent shall not exceed 0.5 _g/l.

3. The discharges shall not have a pH less than 6.5 nor greater than 8.5.

4. The 30-day average daily discharge flow shall not exceed 5.04 mgd for the ARSA facility and 8.64 mgd for the GET E/F facility.

5. Survival of aquatic organism in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay - - - - - 70%

Median for any three or more consecutive bioassays - - - - 90%

C. Sludge Disposal:

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1. Collected screenings, sludges, and other solids removed from liquid wastes shall be disposed of in a manner that is consistent with Chapter 15, Division 3, Title 23, of the CCR and approved by the Executive Officer.
2. Any proposed change in sludge use or disposal practice shall be reported to the Executive Officer and EPA Regional Administrator at least **90 days** in advance of the change.

D. Receiving Water Limitations:

Receiving Water Limitations are site-specific interpretations of water quality objectives from applicable water quality control plans. As such they are a required part of this permit. However, a receiving water condition not in conformance with the limitation is not necessarily a violation of this Order. The Board may require an investigation to determine the cause and culpability prior to asserting that a violation has occurred.

The discharge shall not cause the following in the receiving water:

1. Concentrations of dissolved oxygen to fall below 7.0 mg/l.
2. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on the stream bottom.
3. Oils, greases, waxes, floating material (liquids, solids, foams, and scums) or suspended material to create a nuisance or adversely affect beneficial uses.
4. Aesthetically undesirable discoloration.
5. Fungi, slimes, or other objectionable growths.
6. Turbidity to increase more than 20 percent over background levels.
7. The normal ambient pH to fall below 6.5, exceed 8.5.
8. Deposition of material that causes nuisance or adversely affects beneficial uses.
9. The normal ambient temperature to be increased more than 5°F.
10. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.

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11. Radionuclides to be present in concentrations that exceed maximum contaminant levels specified in the California Code of Regulations, Title 22; that harm human, plant, animal or aquatic life; or 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.
12. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.
13. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.
14. Violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board pursuant to the CWA and regulations adopted thereunder.

E. Provisions:

1. The Effluent Limitations for metals found in Effluent Limitation B.1 were conservatively developed, but with only a minimal amount of data. The Discharger shall be collecting additional information during required monitoring that will be used to evaluate the limits. If necessary, this permit may be reopened and the effluent limitations for metals revised based on the new data.
2. The Discharger shall comply with the Operation, Maintenance, and Monitoring Plan, Ground Water Extraction and Treatment System, American River Study Area dated **31 January 1998**. The Discharger shall submit an Operation, Maintenance, and Monitoring Plan for the GET E/F facility no later than **31 August 2002** for Executive Officer approval. The Discharger shall comply with the approved version of the plan.
3. Prior to discharge to Alder Creek, Aerojet shall complete and submit an assessment of the thermal impacts to Alder Creek and the American River from the discharge and receive approval for the discharge from the Executive Officer.
4. The Discharger shall conduct the chronic toxicity testing specified in the Monitoring and Reporting Program. If the testing indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for

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toxicity, the Discharge shall submit a work plan to conduct a Toxicity Reduction Evaluation (TRE) and upon approval conduct the TRE, and this Order will be reopened and a chronic toxicity limitation included and/or a limitation for the specific toxicant identified in the TRE included. Additionally, if a chronic toxicity water quality objective is adopted by the State Water Resources Control Board, this Order may be reopened and a limitation based on that objective included.

5. The Discharger shall use the best practicable cost-effective control technique currently available to limit mineralization to no more than a reasonable increment.
6. The Discharger shall comply with all the items of the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)", dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as "Standard Provision(s)."
7. The Discharger shall comply with the attached Monitoring and Reporting Program No. XX-XXX which is part of this Order, and any revisions thereto, as ordered by the Executive Officer.
8. Under Monitoring and Reporting Program No. XX-XXX, the Discharger shall report trace concentrations of constituents found during the analysis of samples. Trace values are estimates of concentrations detected between the detection level and the practical quantitation level. Trace values are not always reliable as there is a potential for interferences below the practical quantitation level. As effluent limitations specified in this permit are at or above the practical quantitation level, reporting trace values shall not be a violation of an effluent limitation. Trace values are to be used to help operate the treatment facility and to provide information to minimize violations of effluent limits."
9. Section 13267(b) of the California Water Code provides that: "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposes to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of discharging, or who proposes to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports." The monitoring and reporting program and technical reports required by this Order and the attached "Monitoring and Reporting Program, Order No. R5-XXXX-XXXX" are necessary to assure compliance with these waste discharge

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requirements. The Discharger operates the facility that discharges the waste subject to this Order.

10. By **1 October of each year** the Discharger shall submit an evaluation of the options for indirect and direct reuse of the treated groundwater. That evaluation shall consider, and make appropriate recommendations for, reuse of the water as municipal and industrial supply, crop irrigation, groundwater recharge, landscape irrigation, and wetland restoration. The recommendation for reuse shall give highest priority to the use of the treated groundwater directly or indirectly as a source for replacement supplies for the area affected by groundwater pollution emanating from the Discharger's property. The evaluation shall include a time schedule for the implementation of the recommendations. The Discharger shall implement the recommendations in accordance with the time schedule upon approval of from the Executive Officer. Based on the recommendations, the permit may be reopened to reflect changes in the discharge.
11. By **1 November 2002** the Discharger shall submit a time schedule for planning, developing, and submitting a technical report that assesses the cumulative effects on the groundwater basin caused by the withdrawal and export of the groundwater from the GET systems that discharge to surface water under this permit. The report shall include recommendations for any appropriate mitigation measures for any potential adverse impacts on the sustainable yield of the groundwater basin. The Discharger shall proceed with the preparation and development of the report in accordance with the schedule upon approval of the Executive Officer.
12. If perchlorate associated with the discharge is found in the American River exceeding 4.0 µg/l, or the current Department of Health Services Action Level or state drinking water standards (i.e., Maximum Contaminant Levels), then the Discharger shall cease the Discharge and the permit shall be reopened to make appropriate modifications to the permit and to the discharge.
13. **Within 24-hours** after the Discharger has received information that their discharge exceeds effluent limitations, the Discharger shall notify the Board, City of Sacramento Department of Utilities, and Carmichael Water District.
14. 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).
15. 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.

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16. 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, the name, address, and telephone number of the persons responsible for contact with the Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision D.6 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

I, GARY M. CARLTON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on

THOMAS R. PINKOS, Acting Executive Officer

06/04/02:AMM

Mr. Scott Goulart
Environmental Management
Aerojet-General Corporation
P.O. Box 13222
Sacramento, CA 95813-6000

***TENTATIVE REVISED NPDES PERMIT, AMERICAN RIVER STUDY AREA AND GET E/F,
AEROJET-GENERAL CORPORATION, ORDER NO. 98-113 (NPDES NO. CA0083861)***

Enclosed is a copy of the subject tentative revision to your NPDES permit. Aerojet requested revisions to allow for the discharge from the GET E/F facility to Buffalo and/or Alder Creek. The GET E/F discharge is from a groundwater extraction and treatment system designed to remove volatile organic compounds, perchlorate, and n-nitrosodimethylamine.

In response to comments received from the County of Sacramento, the City of Sacramento, and Carmichael Water District, this version of the tentative permit has been changed from the March version of the tentative permit. New Finding Nos. 15, 16, 17, 18 and 19, and Provisions 10, 11, 12, and 13 have been added to the proposed permit. The remaining Findings and Provisions were renumbered accordingly. There is some additional slight wording changes found in other sections of the proposed permit that correct errors found in the previous version. There are also a few minor edits to the receiving water section of the monitoring and reporting program.

A Notice of Public Hearing and Proof of Posting will be supplied to you soon. The tentative permit is planned to be considered by the Board for adoption at its 19 July 2002 meeting. Comments on the tentative permit should be submitted to our office no later than **9 July 2002**.

If you have any questions regarding this matter, please call me at (916) 255-3025.

ALEXANDER MACDONALD
Senior Engineer

cc: United States Environmental Protection Agency, San Francisco
U.S. Army Corps of Engineers, Sacramento
United States Fish and Wildlife Service, Sacramento
National Marine Fisheries Service, Santa Rosa
Cathy Lee, Dept. of Health Services, Office of Drinking Water, Sacramento
Dept. of Fish and Game, Region II, Rancho Cordova
Dept. of Water Resources, Central District, Sacramento
Catherine George, Office of Chief Counsel, State Water Resources Control Board
Div. of Water Quality, State Water Resources Control Board, Sacramento
Sacramento County Environmental Management, Sacramento
Sacramento County Planning Department, Sacramento

Leo Winternitz, Metropolitan Water Planning, Sacramento
John Coppola, Sacramento County Water Resources Agency, Sacramento
LaNell Little, Carmichael Water District, Carmichael
Mr. Jim Carson, Southern California Water Company, Rancho Cordova
Mr. Rob Roscoe, California-American Water Company, Sacramento
Gary Reents, City of Sacramento Department of Utilities, Sacramento

EXHIBIT

B

ITEM 11 – CONTESTED NPDES PERMITS

Item 11. – Aerojet-General Corporation, Interim Groundwater Extraction and Treatment system, American River Study Area and GET E/F, Sacramento County -- Revision

NPDES PERMIT

Page 5 Revise the last two sentences of Finding 16 to read:

“...In addition there is currently no demand, or infrastructure that would allow, forThe Discharger is required in this permit to evaluate *and make appropriate recommendations for* reuse alternatives ~~and implement those that are feasible~~”

Page 6 Revise the last sentence of Finding 17 to read:

“... American River *for a limited duration*”

Page 6 Revise the last sentence of Finding 18 to read:

“The Discharger is required in Provision No. 10 to ~~annually~~ evaluate reuse options and submit a technical report including the evaluation and appropriate recommendations for reuse options ~~and an implementation timeline to the Executive Officer.~~”

Page 6 Replace Finding 19 with:

The project has a potential effect on the sustainable yield of the groundwater basin from which the GET E/F extraction field takes its water. The Regional Board has addressed this potential effect by evaluating alternatives to allowing the proposed discharge. No feasible alternative to the proposed project exists at this time. Neither reuse nor reinjection of the treated groundwater is feasible at this time. Direct nor indirect reuse is feasible at this time and the Regional Board does not have the authority to direct the manner of compliance (e.g., to direct reinjection or reuse of the treated groundwater). The alternative of not allowing the proposed discharge to surface waters exists but poses serious environmental consequences because it would impede the cleanup of the groundwater. Pursuant to California Water Code Sections 13267 and 13383, Provisions 10 and 11 require the Discharger to submit technical reports evaluating whether there are impacts on the sustainable yield of the groundwater basin caused by the permitted activity and evaluating potential direct and indirect reuse options for the discharged water. The required evaluations will allow 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

Page 15 Replace Provision 10 with:

By 1 October 2002 the Discharger shall submit a time schedule for planning, developing, and submitting a technical report that evaluates the direct and indirect reuse of the treated groundwater from the groundwater extraction and treatment systems allowed to discharge under this permit and that makes appropriate recommendations for, reuse of the water as municipal

ITEM 11. – AEROJET-GENERAL CORPORATION, INTERIM GROUNDWATER EXTRACTION AND TREATMENT SYSTEM, AMERICAN RIVER STUDY AREA AND GET E/F, SACRAMENTO COUNTY – REVISION CONTINUED

and industrial supply, crop irrigation, groundwater recharge, landscape irrigation, and wetland restoration. The Discharger shall submit the report by **1 August 2003**. The Discharger should prepare the report in coordination with the Department of Health Services and local water purveyors, including, but not necessarily limited to Sacramento County Water Agency, California-American Water Company, and American States Water Company. This permit may be reopened to reflect changes in the discharge, as appropriate.

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Replace Provision 11 with:

By **1 October 2002** the Discharger shall submit a time schedule for planning, developing, and submitting a technical report that assesses the cumulative impacts on the groundwater basin caused by the withdrawal and export of the groundwater from the GET systems that discharge to surface water under this permit and that evaluates alternatives for addressing significant impacts identified, if any. The Discharger shall submit the report by **1 August 2003**. The Discharger should prepare its report in coordination with the Water Forum, the local water purveyors including, but not necessarily limited to Sacramento County Water Agency, California-American Water Company, and Southern California Water Company, and other responsible parties, other than Aerojet, extracting groundwater to remediate groundwater pollution. The Discharger shall proceed with the preparation of the report in accordance with the schedule upon approval of the Executive Officer.