Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

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27 August 1990

In reply refer to 90RC09763

U.S. Nuclear Regulatory Commission
Nuclear Materials Safety & Safeguards Branch
Region V
1450 Maria Lane, Suite 210
Walnut Creek, CA 94596-5368

70-25

Attention: Mr. R. J. Pate, Chief

Subject: Santa Susana Field Laboratory Environmental Monitoring Bimonthly Report

Gentlemen:

Rockwell International Corporation, Rocketdyne Division (Rocketdyne) is pleased to submit the August bimonthly report describing the Santa Susana Field Laboratory Environmental Monitoring program and represents all available data obtained in the June/July time period.

Rocketdyne welcomes comments on this document. If you have any further questions, comments or suggestions, please contact Ms. Wilma Seltzer at (818) 773-5330.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

SR Lafflam

S. R. Lafflam
Director
Environmental Control
and Energy Conservation

SRL/sj-1201H

Enclosures: 1. Distribution List
2. Environmental Monitoring Bimonthly Report

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DISTRIBUTION LIST

U. S. House of Representatives

The Honorable Anthony Beilenson
The Honorable Elton Gallegly
The Honorable Howard Berman
The Honorable Robert Lagomarsino
The Honorable Carlos Moorhead

U. S. Senate

The Honorable Alan Cranston
The Honorable Pete Wilson

California Assembly

The Honorable Thomas Bane
The Honorable Marian La Follette
The Honorable Cathie Wright
The Honorable Tom McClintock
The Honorable Richard Katz
The Honorable Patrick Nolan
The Honorable Terry Friedman

California State Senate

The Honorable Ed Davis
The Honorable Gary Hart
The Honorable Art Torres

City Officials

Mr. Lin Koester, City Manager	City of Simi Valley
Mr. Steve Kueny, City Manager	City of Moorpark
Mr. Grant Brimhall, City Manager	City of Thousand Oaks
Mr. Larry Bagley, City Manager	City of Westlake Village
Ms. Cherie Paglia, City Clerk	City of Hidden Hills
Mr. David Carmany, City Manager	City of Agoura Hills
The Honorable Tom Bradley, Mayor	City of Los Angeles
Ms. Dodo Meyer	City of Los Angeles
The Honorable Joy Picus	L. A. City Council
The Honorable Hal Bernson	L. A. City Council
The Honorable Zev Yaroslavsky	L. A. City Council
Mr. William Luddy	L. A. City Planning Commission
Mr. Kenneth Topping, Director	L. A. Dist. Planning Commission

Regional Officials

Mr. Mel Blevins, Watermaster	Upper L. A. River Authority

Community/Business Groups

Ms. Evia Phillips, Exec. Director	Woodland Hills Chamber of Commerce
Mr. Robert Garvin	Canoga Park Chamber of Commerce
Ms. Rose Goldwater	United Chamber of the San Fernando Valley
Ms. Carol Henderson, Office Mgr.	Bell Canyon Homeowners Association
Ms. Barbara Johnson	Susana Knolls Homeowners, Inc.
Ms. Dinah Jasensky	Groundwater Resources Consultants, Inc.
Mr. Myron Levin	Los Angeles Times
Ms. Susan Chasen	Simi Enterprise
Ms. Gayle Demirtas	Simi Valley Library
Ms. Barbara Magnasum	Calif. State Univ., Northridge Library
Mr. Howard Kaplan	Brandeis-Bardin Institute

County Officials

Impact Analysis Section	L.A.County Region Planning Commission
The Honorable Norm Murdoch	L.A. County Dept. Region. Planning
The Honorable Michael D. Antonovich	L.A. County Board of Supervisors
The Honorable James R. Dougherty	Ventura County Board of Supervisors
The Honorable Madge L. Schaefer	Ventura County Board of Supervisors
Mr. Craig Morgan	Ventura County Fire Department
Mr. Terrence Gilday	Ventura County Environmental Health
Mr. Douglas Beach	Ventura County Resource Mgmt. Agency
Mr. Reddy Pakala	Ventura County Water Works Dist. 17
Mr. Richard Baldwin	Ventura County Air Pollution Control District

State Officials

Ms. Maxine Richey, Toxic Substance	Dept. of Health Services
Mr. Dennis Dickerson, Director	Dept. of Health Services
Mr. Hank Yacoub	Regional Water Quality Control Board
Mr. Charles Myers, Environ. Surveil.	Dept. of Health Services
Mr. Bill Watson, Radiologic Health	Dept. of Health Services
Mr. E. D. Bailey, Chief Radio. Surv.	Dept. of Health Services
Mr. G. Wong, Radiologic Health	Dept. of Health Services
Mr. J. H. Hickman, Radiologic Health	Dept. of Health Services
Mr. Scott Simpson, Chief Facil/Permit	Dept. of Health Services
Mr. Jim Ross, Chief, Haz. Waste Unit	CA Regional Water Quality Control Board
Mr. Jack S. McGurk, Chief	Dept. of Health Services

U.S. Officials

Mr. Charles Hooker	U.S. Nuclear Regulatory Commission, Reg.V
Mr. Jerry Clifford	U.S. EPA, Region IX
Mr. Scott Samuelson	Dept. of Energy (San Fran. Operations)
Ms. Karen Schwinn, Chief	U.S. EPA, Toxics & Waste Mgmt. Div.
Mr. Michael Bandrowski	U.S. EPA, Reg. IX, Air Toxics & Radiation
Mr. Gregg Dempsey	U.S. EPA, Office of Radiation Programs
Mr. R. J. Pate, Chief	U.S. Nuclear Reg. Commission, Reg. V
Mr. A. J. Adduci, ETEC Project	U.S. Dept. of Energy, San Fran. Ops.
Mr. John Semko	U.S. Dept. of Energy
Mr. James T. Davis, Environ. Safety	U.S. Dept. of Energy, San Fran. Ops.
Mr. Gary Lavagnino, EOS Div.	U.S. Dept. of Energy, San Fran. Ops.

U.S. Officials (Continued)

Mr. Roger Liddle, Fac. Mgmt. Div.	U.S. Dept. of Energy, San Fran. Ops.
Mr. Jim Hartman, Director	U.S. Dept. of Energy, San Fran. Ops.
Mr. Bill Murphie, Director	U.S. Dept. of Energy, Eng. & Fac. Mgt.
Mr. J. Deb Kobler, CEMRO-ED-EC	U.S. Army Corps of Engineers
Mr. Mike Green	NASA/HQ/NXG
Mr. Marshall Corlew (AB44)	NASA/MSFC
Mr. Wayne Wilson (AB22)	NASA/MSFC
Mr. Dennis Holweger	NASA



Environmental Monitoring Report

Santa Susana Field Laboratory
Ventura County, California

Volume 1

August
1990

Air Monitoring

Rockwell International
Rocketdyne Division

This document is printed on recycled paper

EXECUTIVE SUMMARY FOR AIR

The Santa Susana Field Laboratory (SSFL) is in the Ventura Air Pollution Control District (VAPCD) and in the past two months Rocketdyne has dealt with the District regarding several matters including the following:

- Preliminary Assessment/ Site Investigation for Rocket Fuel Test Burn Site
- Questionnaire concerning new CO_2 Laser Welding Center at SSFL Area II B/203
- Rocketdyne accepted a shipment of state-owned, abandoned metallic sodium from the Department of Health Services (DOHS) and burned it at their request using an emergency one-time only disposal permit. The burn was conducted in consultation with regulatory agencies including: the (VAPCD), the Department of Health Services (DOHS), and the Environmental Protection Agency (EPA).

PERMITS

- Permit No. 0228 Modifications - Additional Degreaser Input
- Authority-to-Construct No. 0228-110, Processing Fee
- Authority-to-Construct No. 0228-110
- Permit No. 0240, STL IV Renewal
- Application for Permit-to-Operate No. 0271-111 Additional Input
- Permit No. 0290, Sodium Pump Test Facility, Renewal Fee
- Application for Permit-to-Operate No. 1344-013, Processing Fee
- Application for Permit-to-Operate No. 1344 - Revised
- Application for Authority-to-Construct Paint Spray Booth at B/206 in Area II, SSFL

SSFL is in full compliance with the rules and regulations of the Ventura Air Pollution Control District.

Preliminary Assessment/

Site Investigation

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED-RETURN RECEIPT REQUESTED

In reply refer to 90RC09146

July 13, 1990

United States
Environmental Protection Agency
Region IX - Site Evaluation Section
1235 Mission Street (H-8-1)
San Francisco, CA 94103

Attention: Ms. Carolyn Douglas

Subject: Monthly Status Reporting for Rockwell PA/SI;
EPA I.D. CA 3890090001 and CA 1800090010

Reference: Letter No. 90RC06937 dated 6 June 1990
from S. R. Lafflam to Carolyn Douglas

Gentlemen:

As it was discussed in the above-referenced letter, airborne particulate matter sampling (PM 10) of rocket engine testing (RET) is currently being performed for Area II. Although RET is not conducted in either Area IV or Area I, ambient PM 10 monitoring has been implemented in both areas. Construction and set-up of additional 3-4 PM 10 monitors around the test stands are currently in progress. Meteorological monitoring stations are also being co-located with the Area IV and Area I ambient PM 10 monitors (see enclosure). When the meteorological stations are set up and operating, data will be gathered to determine baseline information on meteorological conditions. The PM 10 data will then be evaluated with the meteorological data and the results submitted for your review. If there are any other monitoring parameters that need to be addressed, please inform us of them.

Should any other questions arise from this matter, please contact Mr. Randy Ueshiro of my staff at (818) 773-5315.

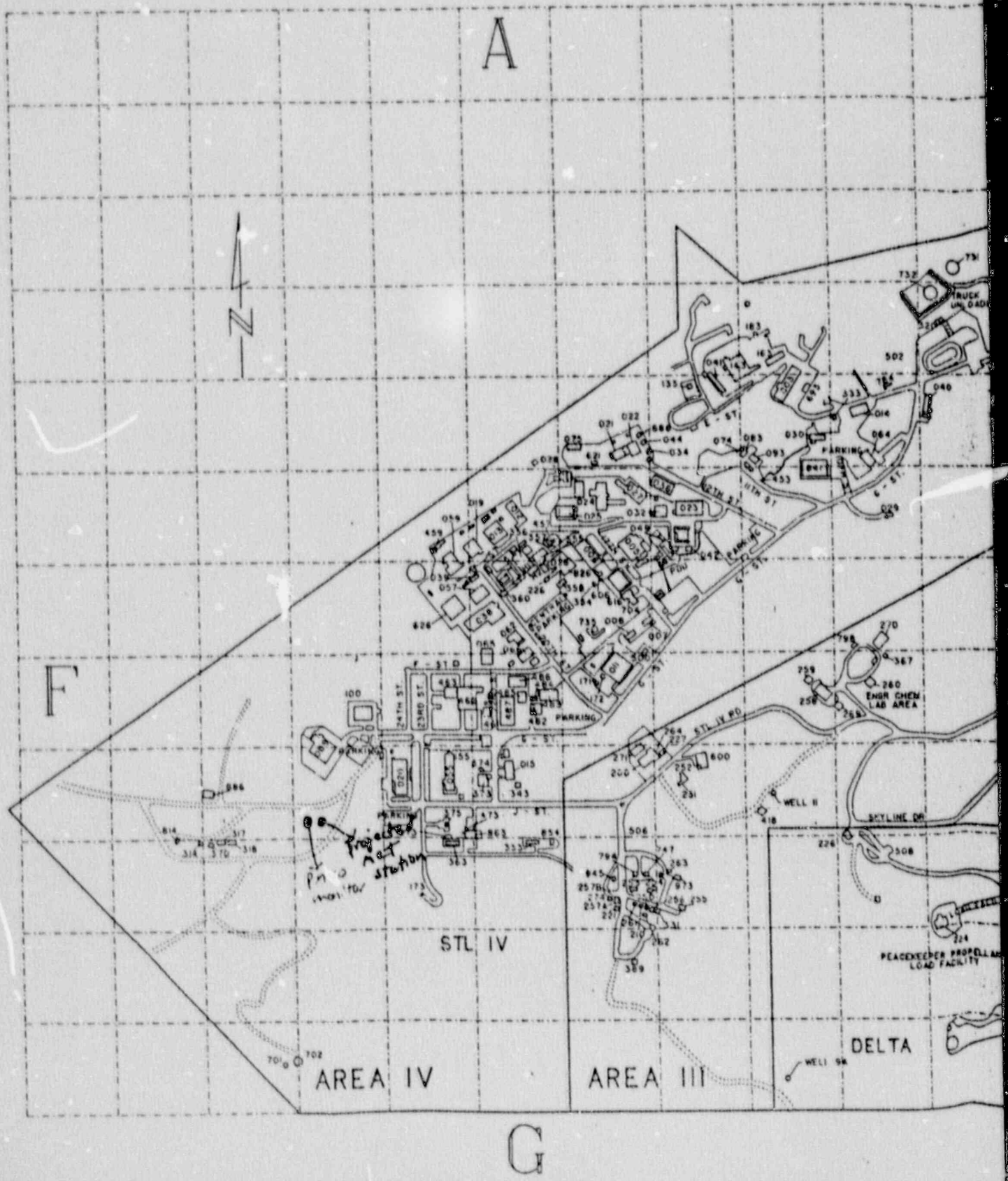
Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

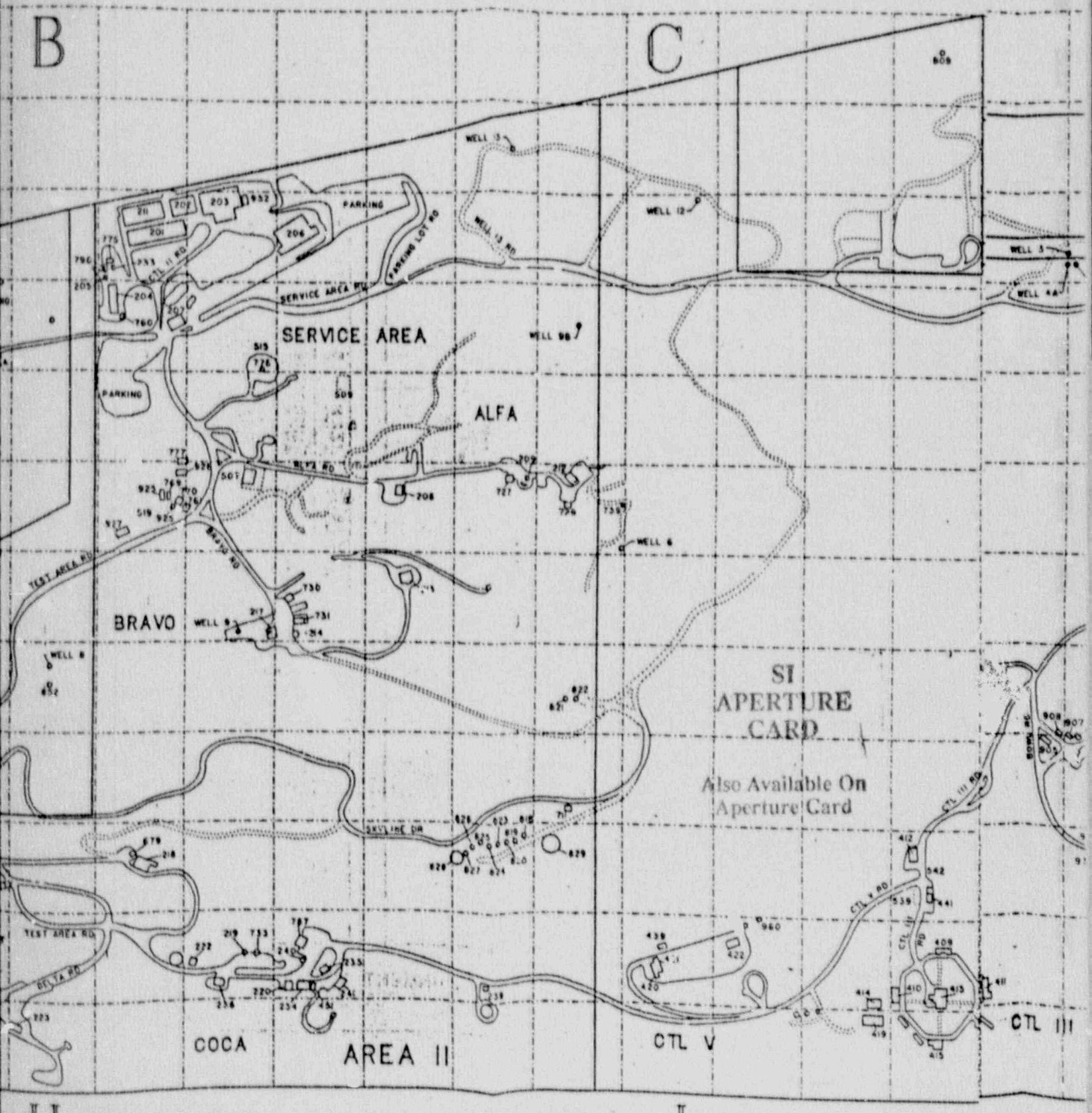
S. R. Lafflam
Director
Environmental Control and Energy Conservation

SRL:ma/Enclosure

cc: EPA/Karen Schwinn
DHS/Dennis Dickerson
VAPCD/Richard Baldwin
VCEHD/Terrence Gilday
RWQCB/James Ross
NASA-HQ/Joyce Jatko
DOE-SAN/G. Lavagnino, A. Adducí, R. Liddle
McLaren Engineering/Anthony Mongero

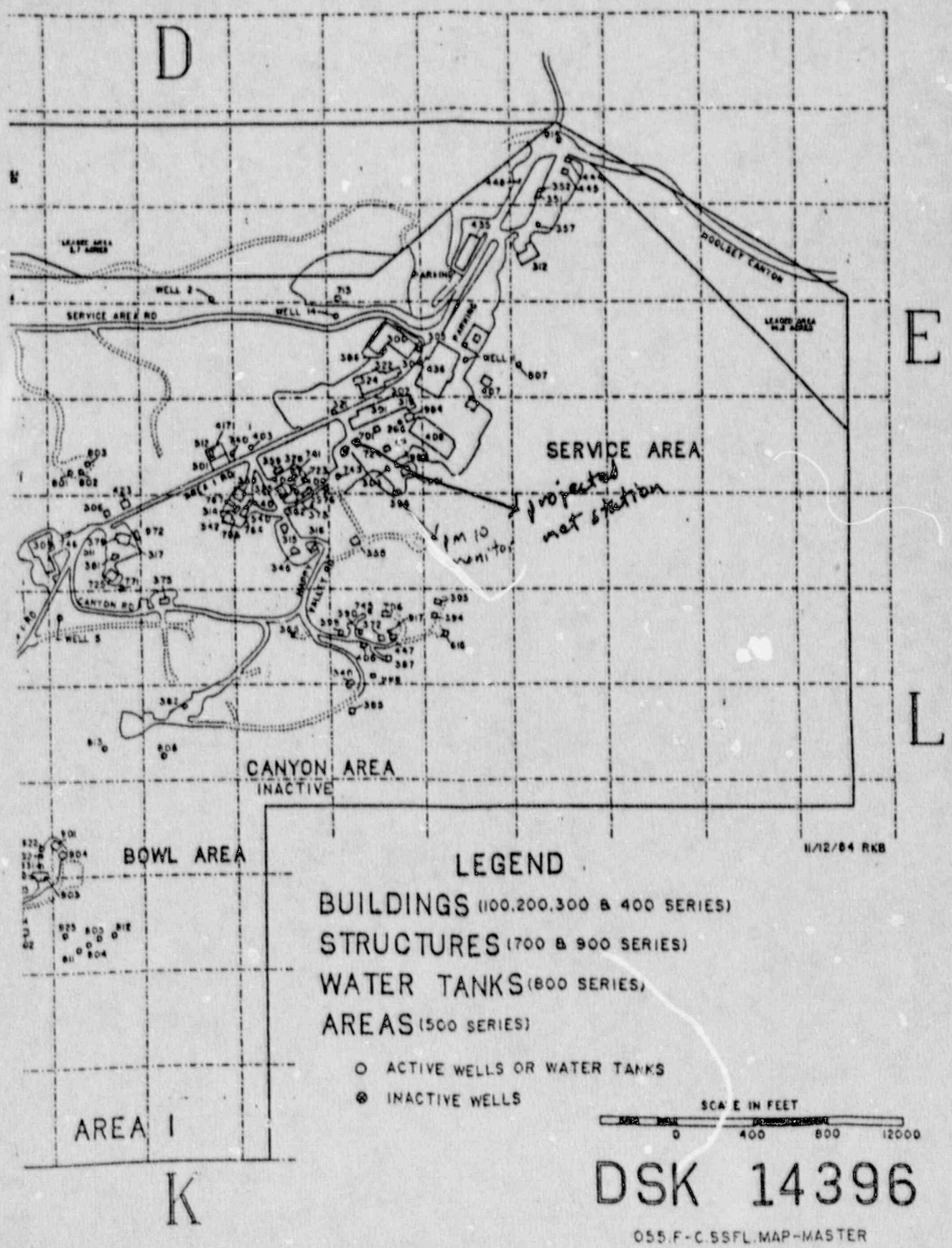

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STL IV RD
SKYLINE DR
WELL II
WELL 9R
TRUCK UNLOADI
PEACEKEEPER PROPELLA
LOAD FACILITY
Projected Met station

A SUSANA FIELD LABORATORY



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AREAS (500 SERIES)
ACTIVE WELLS OR WATER TANKS
INACTIVE WELLS
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Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED - RETURN RECEIPT REQUESTED

6 June 1990

In reply refer to 90RC06937

United States
Environmental Protection Agency
Region IX - Site Evaluation Section
1235 Mission Street (H-8-1)
San Francisco, CA 94103

Attention: Ms. Carolyn Douglas

Subject: Letter dated 1 May 1990, 90RC05860, "Rockwell Preliminary PA/SI; EPA ID CA3890090001", S. R. Lafflam to Carolyn Douglas

Gentlemen:

Enclosed is the response to the 4 April 1990 information request from your office for the Energy Technology Engineering Center (Area IV) and NASA (Area II). In a telecon on 24 May 1990 between Rockwell International Corporation, Rocketdyne Division (Rocketdyne) consultant, McLaren Engineering, and yourself, only air migration pathway information will be provided for your review on the above stated areas. The following plans and related items are hereby submitted per your request.

1. Provide a plan with a schedule for data collection.

   Rocketdyne has commenced a facility-wide risk assessment in conjunction with the Department of Health Services (DHS) to evaluate the potential risks to public health and the environment at, and adjacent to, the Rocketdyne Santa Susana Field Laboratory site in Ventura County, California. Site operations and conditions which may present a health risk will be placed into logical groupings for risk assessments. One of the first groupings to be assessed will be the rocket fuel test burn sites. A schedule for completion of this assessment is included in Attachment 1. Upon completion of the individual risk assessments for each grouping, an evaluation of cumulative risks will be performed.

   As part of the risk assessment, a continuous ambient air monitoring network has been implemented at the site (Dec. 1989). This system will ultimately involve meteorological monitoring, and airborne particulate matter sampling (PM 10) of rocket or fuel test burns.

Due to the complexity of operations in the areas designated as federal facilities of the Rocketdyne site (Area II: NASA; Area IV: Department of Energy), it is anticipated that several months of data collection will be necessary to sufficiently evaluate the site specifically for potential releases to the air migration pathway (see Attachment 1). Monthly status reports will be provided for on-going investigations (see 3 below).

2. Provide a point of contact for further discussion.

Randy Ueshiro, Senior Environmental Engineer, can be contacted at (818) 773-5315 regarding the Rocketdyne sites.

3. Establish a schedule for status reporting.

Status reports for on-going investigations will be developed on a monthly basis. These reports will be submitted to the EPA by the 15th of each month.

4. Have a final target date for all work to be submitted to EPA.

Rocketdyne will provide EPA with the HRS information needs within one month after the completion of data collection activities. As indicated in 3 above, monthly status reports will be provided for ongoing investigations.

Should you have any questions regarding this matter, please contact Mr. Randy Ueshiro at (818) 773-5315.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

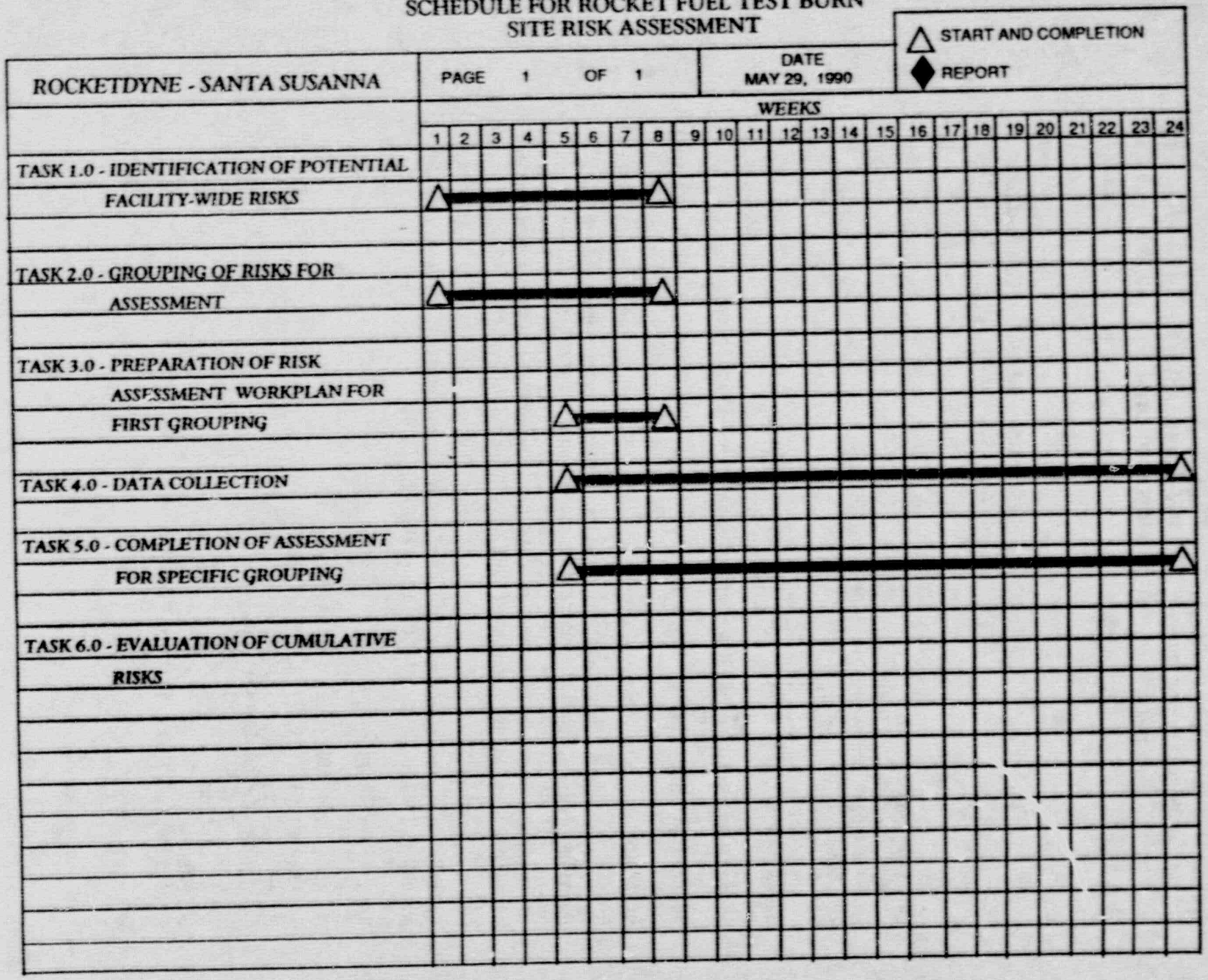
SR Lafflam

S. R. Lafflam
Director
Environmental and Energy Conservation

SRL/sj-1453

cc: EPA/Karen Schwinn
DHS/Dennis Dickerson
VAPCD/Richard Baldwin
VCEHD/Terrence Gilday
RWQCB/James Ross
NASA-HQ/Joyce Jatko
DOE-SAN/G. Lavagnino, A. Adduci, R. Liddle
McLaren Engineering/Anthony Mongero

ATTACHMENT I
SCHEDULE FOR ROCKET FUEL TEST BURN
SITE RISK ASSESSMENT



Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED - RETURN RECEIPT REQUESTED

12 June 1990

In reply refer to 90RC07855

ERC Environmental &
Energy Services Company
Environmental Sciences Division
201 Spear Street, Suite 1660
San Francisco, CA 94105

Attention: Dr. Robert G. Vranka, Senior Scientist

Subject: Data for SSFL Exposure Assessment Climatology

Reference: Application for a PSD Permit for STL-IV dated March 27, 1981

Gentlemen:

Per your request, Rockwell International Corporation, Rocketdyne Division (Rocketdyne) is providing additional information on Santa Susana Field Laboratory (SSFL) climatology. Please find enclosed Sec. 5 of the referenced document developed as an application for a prevention of significant deterioration (PSD) permit for the Systems Test Laboratory IV (STL-IV).

If there are any questions concerning this transmittal, please call Mr. Robert Melvold, of my staff, at (818) 773-5324.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

Bob Melvold for

S. R. Lafflam
Director
Environmental & Energy Conservation

SRL/sj-1467H

Enclosures as noted

APPLICATION FOR A

PREVENTION OF SIGNIFICANT DETERIORATION PERMIT

FOR

SYSTEMS TEST LABORATORY IV

SANTA SUSANA FIELD LABORATORY

VENTURA COUNTY, CALIFORNIA

MARCH 27, 1981

SUBMITTED BY

Rockwell International

Rocketdyne Division
6633 Canoga Avenue
Canoga Park, California 91304

CO_2 Laser Welding Center Installation

SSFL Bldg. 203

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED - RETURN RECEIPT REQUESTED

8 June 1990

In reply refer to 90RC07401

Ventura County
Air Pollution Control District
800 South Victoria Avenue
Ventura, CA 93009

Subject: New CO_2 Laser Welding Center at SSFL Area II B/203

Gentlemen:

Please find enclosed a Ventura County Air Pollution Control District questionnaire pursuant to State Law AB3205 submitted by Rockwell International Corporation, Rocketdyne Division (Rocketdyne). Rocketdyne plans to install a new CO_2 laser welding center in Building 203 at the Santa Susana Field Laboratory to perform research and development studies. A list of welding material, compatible filler wire, and gases slated for use in the process are provided. The gases are generally inert and non-polluting.

If you have any questions concerning this submittal, please contact Mr. R. L. Kistner at (818) 773-5317.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

S. R. Laffiam
Director
Environmental & Energy Conservation

SRL/sj-1464H

Enclosure as noted

VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT

800 South Victoria Avenue, Ventura, California, 93009
(805) 654-2806

AIR POLLUTION CONTROL DISTRICT QUESTIONNAIRE

A new State law, effective July 1, 1989, (AB 3205, Chapter 1589. Statutes 1988) requires that an applicant for a Certificate of Occupancy provide information indicating whether a permit is required from the Air Pollution Control District. This law further prohibits a City or a County from issuing a Certificate of Occupancy unless a business has complied with provisions of the law that are administered by the Air Pollution Control District.

The new law also imposes additional permitting requirements for a facility that handles hazardous materials or is within 1,000 feet of the outer boundary of a school (Kindergarten through 12th grade). Consideration may also be given if the facility is in proximity to a general acute care hospital or a long-term care facility.

To determine whether your business is subject to these new requirements, please complete this questionnaire.

Business Name (DBA)	Contact Person	Phone
Rockwell International Corp/Rocketdyne Division	R. L. Kistner	(818) 773-5317

Mailing Address	City	State	Zip
6633 Canoga Avenue (JA16)	Canoga Park	CA	91303

Street Address of Facility	City	State	Zip
Santa Susana Field Lab. Building 203, Area II - Top of Woolsey Cyn Rd.	Simi Hills near Chatsworth	CA	91311

YES	NO		
☐	☒	1.	Will the intended occupant install or use any of the equipment listed on the Listing of Air Pollution Control District Permit Categories? (See reverse side) (IF ANSWER IS YES, APPLICANT MUST CONTACT THE DISTRICT DIRECTLY)
☐	☐	2.	**Answer only if the answer to 1 above is YES:** Will the subject facility be located within 1,000 feet of the outer boundary of a school (Kindergarten through 12th grade) or an acute care hospital or a long-term health care facility?

Briefly Describe Nature of the Intended Business Activity	Indicate Permit Categories
New CO2 Laser Welding Center	None

Name of Owner or Authorized Agent	Title
Stephen R. Laflam	Director Environmental & Energy Conservation

Signature of Owner or Authorized Agent	Date	Building Inspection Plan File No.
SR Laflam	6/8/90	

I declare under penalty of perjury that, to the best of my knowledge and belief, the responses made herein are true and correct.

Initials _____

APCD USE ONLY

_____ Authorized District Signature

_____ Date

EXEMPT FROM APCD PERMIT REQUIREMENTS OR PERMIT ALREADY OBTAINED	APPROVED FOR ISSUANCE OF BUILDING PERMIT, BUT NOT FOR OCCUPANCY PERMIT	APPROVED FOR OCCUPANCY PERMIT (APCD Authority to Construct Application Received)
☐	☐	Date Received App. No. Fee Paid $
Confirming Stamp	Confirming Stamp	Confirming Stamp

DISTRIBUTION: WHITE COPY - APCD, YELLOW COPY - CITY/COUNTY PLAN CHECK, PINK COPY - APPLICANT

APCD7/89

20

Subject: NEW CO_2 LASER WELDING CENTER

The following is a list of welding material, compatible filler wire, and gases anticipated to be involved in the process:

Stainless Steel Alloys	Filler Alloys
Type 304L, 316L, 321, 347.	Type 308L, 316L, 321 347.

Nickel Cobalt Base Alloy	Filler Alloys
Inconel 625, Inconel 718 Incoloy 903, Hastelloy C Haynes 188.	Inconel 625, Inconel 718 Incoloy 88, Incoloy 903 Hastelloy C, Hastelloy W, Haynes 188.

The various gases involved in the system are divided into two categories; lasing gases and weld shielding gases.

Lasing Gases	Weld Shielding Gases
Nitrogen Helium Carbon Dioxide	Argon Helium

The lasing gases are contained in a closed loop system and maintained pure by filtration. All beam delivery ducts contain only purified, dry air and exhausts to atmosphere.

Permit No. 0228 Modifications

Additional Degreaser Input

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 695478
ROCKETDYN CNPK

Rockwell International

CERTIFIED-RETURN RECEIPT REQUESTED

In reply refer to 90RC07403

11 June 1990

Ventura County Air Pollution Control District
800 South Victoria Avenue
Ventura, CA 93009

Attention: Mr. Simeon Okoroike

Subject: Permit No. 0228-Rule 74.6 Modifications - Additional Degreaser Input

Reference: Modification Application, Rocketdyne Letter No. 90RC05651 (4/26/90) and Telecons with District Engineer Simeon Okoroike on 6/7/90, 5/29/90, & 1/31/90

Gentlemen:

Pursuant to District Rule 74.6, Rockwell International, Rocketdyne Division is hereby transmitting to the District the subject information in accordance with the understandings received from the District during the referenced telecons. In particular, the District has stated (referenced telecons of 6/7/90 and 5/29/90) that since vendors have been inundated with orders for degreaser covers and cannot complete requested installations by the regulatory deadline, receipt of sufficient documentation, such as a copy of a contractual obligation to install degreaser covers required by Rule 74.6, would be considered adequate demonstration of compliance with the rule. Such documentation is hereby provided, namely a copy of Construction Contract No. RUSMXZ90-09-6253, containing Specification No. 854 for degreaser covers #3 and #4 to be installed at SSFL, Building 301. As noted in the specification, the covers shall be of the pushbutton controlled, accordion type. In addition, a third degreaser also located at B/301 will have a sliding cover installed per the enclosed sketch. All three degreasers are listed on the subject permit.

No additional filing fee is being submitted at this time since the District noted (referenced telecon of 1/31/90) that all Rule 74.6 modifications for one permit, in this case No. 0228, would be covered by a single filing fee, already submitted via the referenced modification application. It should also be noted that the District has stated (referenced telecon of 6/7/90) that since the District has the referenced application in its possession, Rocketdyne can continue to use the affected equipment in its pre-modification state after the 12 June deadline for rule compliance and prior to issuance of the requested Authority to Construct (A/C), without being deemed non-compliant by the District. Once the A/C is received, Rocketdyne will expeditiously complete all Rule 74.6 modifications in accordance with the District instructions and the submitted specifications.

We appreciate the District's attention to this matter and if you should have further questions, please contact Mr. Bob Melvold, of my staff, at (818) 773-5324.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

S R Lafflam

S. R. Lafflam
Director
Environmental and Energy Conservation

SRL:ma

Enclosures as noted

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

June 8, 1990

Allied Signal, Inc.
Baron Blakeslee Div.
2001 N. Janice Ave.
Melrose Park IL 60160

Attn.: Ralph Johnson
Technical service Dept/dc

Dear Mr. Johnson

Enclosed are five (5) originals of Construction Contract No. R05MXZ90-09-6253 for your approval and signature execution. Please have three (3) of the originals signed by an authorized representative and returned to Rockwell International Corp., Rocketdyne Div., 6633 Canoga Ave., Canoga Park, CA 91303, Attn.: Ralph Prokenpek, Purchasing Dept., 553-055-CA08.

Should you have any questions concerning this, please feel free to contact me at (818) 700-5868.

Yours very truly,

ROCKWELL INTERNATIONAL CORP.
Rocketdyne Div.

R. Prokenpek
Buyer Specialist
Facilities Procurement

Enclosure: Contract/Spec/Exhibit (5)
Flysheet CW (1)

27

ROCKWELL INTERNATIONAL CORPORATION

CONSTRUCTION CONTRACT NO. R05MXZ90-09-6253

THIS CONTRACT entered into as of the 8TH day of JUNE, 1990, by and between ROCKWELL INTERNATIONAL CORPORATION, ROCKETDYNE DIVISION, (herein called "Rockwell") and ALLIED SIGNAL, INC., BARON BLAKESLEE DIV. 2001 N. JANICE AVE., MELROSE PARK, IL 60160 (herein called "Builder").

WITNESSETH that the parties hereto do mutually agree as follows:

1. STATEMENT OF WORK

A. Builder shall perform the following, which shall collectively hereafter be referred to as the "Work":

BUILDER SHALL FURNISH LABOR, MATERIAL, EQUIPMENT, SERVICES, SUPERVISION AND ITEMS OF EXPENSE NECESSARY TO PROVIDE DEGREASER COVERS IN ACCORDANCE WITH SPECIFICATION NO. 854, DATED APRIL 16, 1990 ATTACHED HERETO AND MADE A PART HEREOF.

SPECIFIC DEGREASER COVERS TO BE PROVIDED AND THEIR COST BREAKDOWN PER BUILDER'S QUOTATION NO. Q2569, DATED MAY 18, 1990 IS INCORPORATED IN EXHIBIT "A" TITLED "EQUIPMENT/COST BREAKDOWN" ATTACHED HERETO AND MADE A PART HEREOF.

JOB LOCATIONS : 6633 CANOGA AVE.
CANOGA PARK, CA 91303

and

SANTA SUSANA FIELD LAB
(TOP OF WOOLSEY CYN. RD.)
CHATSWORTH, CA 91311

B. The Work shall be completed on or before SEPTEMBER 28, 1990 Time is of the essence in the performance of this contract.

C. Rockwell shall pay to Builder for the performance of the Work and all of Builder's obligations hereunder a fixed price of $99,707.00, which price shall constitute total compensation to be paid to Builder for all of its undertakings hereunder including, without limitation, procurement of bonds and insurance (to the extent required hereunder).

D. Unless otherwise provided herein, all Federal, State and local taxes are included in the price stated in Paragraph C above.

2. CHANGES

A. Builder and Rockwell may at any time, without notice to or consent of any sureties, by written change agreement hereto, make changes in the Work or otherwise amend this contract.

B. Notwithstanding the foregoing, Rockwell may at any time, by written change notice to Builder and without notice to or consent of any sureties, make changes in or additions to the specifications, require additional work or services or direct the omission of work or services covered by this contract. If any such change or requirement causes any increase or decrease in the Builder's cost of, or the time required for, performance of this contract, an equitable adjustment shall be made in the contract price or performance schedule, or both, and this contract shall be modified in writing accordingly. No claim by Builder for adjustment under this Paragraph 2B shall be valid unless asserted in writing by the Builder within thirty (30) days from the date of receipt by Builder of the written order; provided, however, that Rockwell may, in its discretion, receive and act upon any such claim so made at any time prior to final payment under this contract. Nothing in this contract shall excuse Builder from proceeding with the contract as changed. Builder shall make no additions, changes, alterations or omissions except upon the written order of Rockwell given, as provided herein, before the work in which such addition, change, alteration or omission is involved is done or any services are rendered.

C. No change agreement or change notice to this contract shall be binding on either Builder or Rockwell unless in writing signed by an authorized Rockwell Procurement representative.

3. PAYMENTS

A. Upon application of Builder accompanied by written invoices, Rockwell shall make monthly payments as the Work progresses based upon the percentage of the completion of the Work as determined from estimates submitted and certified to by Builder and approved by Rockwell, provided, however, that any monthly payment shall not exceed 90 % of the contract price provided for in Paragraph 1C multiplied by the percentage of completion of the Work as of the date of the invoice, less the aggregate of all payments previously made.

B. Within thirty-five (35) days after completion of the Work and its final acceptance by Rockwell, Rockwell shall pay the unpaid balance of the contract price, less any sum that may be necessary to settle any claims which Rockwell may have against Builder, or that may be necessary to settle any outstanding obligations of Builder or of its subcontractors arising out of or incident to the performance of this contract. Prior to final payment and as a condition thereto, Builder shall furnish Rockwell with (i) a certified statement of Builder that all bills and claims have been satisfied, except as stated therein, and (ii) a release of all claims against Rockwell, arising under and by virtue of the contract, other than such claims as may be specifically excepted by

Builder with the approval of Rockwell from the operation of the release in stated amounts to be set forth therein.

4. WARRANTY

Unless otherwise agreed to in writing by the parties, Builder warrants that the Work shall be performed: in the best and most workmanlike manner by qualified, careful and efficient workers, in strict conformity with the best standard practices; shall be free from defect in workmanship and material; and shall conform with all provisions of this contract, including, but not limited to, all specifications and drawings. The provisions of this warranty, together with any applicable warranties and guarantees of Builder's subcontractors and suppliers, shall survive inspection, test and acceptance of and payment for the work performed hereunder and shall run to Rockwell, its successors, assigns and customers. Except for latent defects, fraud or such gross mistakes of Builder as amount to fraud, notice of any defect or nonconformity may be given by Rockwell to Builder at any time prior to the expiration of one (1) year after final acceptance by Rockwell of such work. Builder shall promptly perform all work required to correct such defects or nonconformities by replacement or repair, as Rockwell may direct, all at Builder's sole cost and expense. All defective or nonconforming materials which Rockwell requires to be replaced shall be removed promptly from the site of the work by Builder and at its sole expense. If Builder fails promptly to correct any nonconformity or defect, as directed by Rockwell, Rockwell may correct such defect or nonconformity, by replacement or repair, and charge the cost thereof to Builder. Work required to be corrected or replaced shall be subject to the provisions of this Paragraph and the Paragraph hereof entitled "Inspection" in the same manner and to the same extent as when such work was initially presented for final acceptance. Rockwell's right to require Builder to repair or replace any defective or nonconforming Work shall be in addition to any other rights Rockwell may have for Builder's breach of warranty and shall not be considered as an exclusive remedy.

5. INSPECTION

The Work shall be subject to inspection and test by Rockwell and its authorized representatives during manufacture and construction and at all other times and places, including without limitation the plants of Builder and any of its subcontractors and suppliers. Builder shall provide all reasonable facilities and assistance for the safety and convenience of Rockwell's inspectors. All inspections and tests shall be performed in such manner as to not unduly delay the Work. The Work shall be subject to final inspection and acceptance notwithstanding any payments or other prior inspections. Such final inspection shall be made within a reasonable time after completion of the Work.

6. REPRESENTATIVES AND EMPLOYEES

Rockwell will designate a responsible Field Representative at the site of the Work. Builder shall keep a competent superintendent continuously on the Work to whom the Field Representative may give directions with regard

to the Work from time to time. All of the employees of Builder engaged in the Work shall be subject to the rules and regulations at any time promulgated by Rockwell for the safe, orderly, and efficient conduct of all operations upon the site where the Work is to be performed; but this sentence shall not relieve Builder of his obligations to maintain a safe work site and comply with all applicable laws, rules and regulations related to safety. Rockwell shall have the right to require the removal from the Work of any employee of Builder or any of its subcontractors, who, in Rockwell's opinion, is not qualified to perform the assigned work or who is guilty of improper conduct or for any other reasons.

7. WORKMANSHIP AND MATERIALS

A. Builder represents that it has carefully examined all drawings and specifications for the Work, its surroundings, and the local conditions.

B. Unless otherwise specifically provided for in the specifications, all workmanship, equipment, materials and articles incorporated in the Work covered by this contract are to be new and of the most suitable grade of their respective kinds for the purpose intended. Where equipment, materials or articles are referred to in the specifications as "equal to" any particular standard, Rockwell shall decide the question of equality. In the manner, and to the extent required by the specifications, Builder shall furnish Rockwell for approval full information concerning the equipment, materials or articles which it contemplates incorporating in the Work. Samples of material shall be submitted for approval when required by the specification.

C. In addition to any requirement of the specifications, and prior to commencing the Work covered by this contract, Builder shall furnish Rockwell for approval a complete list of the subcontractors and the equipment, materials or articles Builder proposes to use in the performance of this contract. Builder shall use in the performance of this contract only those subcontractors and equipment, materials or articles which have been approved by Rockwell. This approval by Rockwell will not relieve Builder of its responsibility for the performance of any of such subcontractors or for any of the equipment, materials or articles incorporated or used in the Work.

8. INSURANCE AND INDEMNITY

A. Builder shall indemnify and hold Rockwell, its directors, agents, and employees harmless from all claims, actions, damages, liabilities, and expenses, including counsel fees, for injury to or death of any persons and for loss of or damage to property of any person caused in whole or in part by the acts or omissions of Builder, Builder's subcontractors, or anyone directly or indirectly employed by them arising out of or in any way connected with the performance of the Work under this contract.

B. Without limiting the indemnification of 8.A above, Builder shall assume all risk of loss of or damage to all improvements being constructed hereunder and all material, supplies and equipment used or to be used in the construction of such improvements arising from any cause

whatsoever, including the acts of Rockwell, its officers, directors, agents, and employees until all such improvements are finally accepted by Rockwell.

C. Builder shall at all times maintain and shall cause its subcontractors at all times to maintain the following listed minimum insurance coverages, limits and amounts:

(1) Worker's Compensation Insurance for statutory requirements in the states of operation and Employers' Liability Insurance with limits of $500,000 for injuries to or death of any one or more persons resulting from any one accident or occupational disease. The coverage must include "All States" endorsement.

(2) Comprehensive General Liability Insurance with combined single limit bodily injury and property damage of not less than $1 million per occurrence; including: (i) Completed operations. (ii) Contractual liability-assumed under this contract. (iii) Owner's protective. (iv) Severability of interest clause.

(3) Comprehensive Automobile Liability Insurance, covering owned, non-owned, and hired motor vehicles, with combined single limit bodily injury and property damage of not less than $1 million per occurrence.

(4) All risk installation floater or equivalent in amounts equal to the replacement cost of the Work, covering loss or damage to Work in the course of construction, including all machinery, materials, and supplies on the premises or in transit thereto, and intended to become a part of the finished Work, until final acceptance by Rockwell.

(5) Builder shall, and require its subcontractors to have all insurance policies covering the Work performed under this contract endorsed as follows: (i) Include Rockwell, its directors, officers, agents, and employees as additional insureds. (ii) Waive the right of recovery or subrogation against Rockwell, its directors, officers, agents, and employees. In addition to coverages listed herein, this waiver must be added by endorsement to all floaters or policies covering Builder's property used to perform Work under this contract with Rockwell. (iii) No cancellation or material change in the policies shall become effective except on thirty (30) days' notice thereof to Rockwell.

(6) All insurance coverages required herein set forth shall be at the sole cost and expense of Builder and all deductibles shall be assumed by, for the account of, and at the Builder's sole risk.

(7) Builder shall furnish evidence of such insurance satisfactory to Rockwell, Builder shall not commence the Work under this contract until all of the insurance required herein shall have been obtained by Builder.

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5. SPECIFICATIONS AND DRAWINGS

A. Ownership

The specifications and the accompanying drawings are the property of, and shall be returned to Rockwell at the completion of the Work, and before the Work is accepted or, if Builder does not complete the Work, shall be returned to Rockwell prior to Builder withdrawing from the site.

B. Conflicts, Omissions, Misdescriptions, Misinformation

Builder shall keep on the work a copy of the drawings and specifications and Rockwell shall at all times have access thereto. Anything mentioned in the specifications and not shown in the drawings or shown in the drawings and not mentioned in the specifications, shall be of like effect as if shown and mentioned in both. In case of difference between the drawings and the specifications, the specifications shall govern. Omissions from the drawings or specifications or the misdescription of details of work which are either necessary to carry out the intent of the drawings and specifications, or which are customarily performed, shall not relieve Builder from performing such omissions or misdescribed details of the work, but they shall be performed as if fully and correctly set forth and described in the drawings and specifications.

C. Checking of Drawings and Dimensions

Builder shall check all furnished drawings immediately upon their receipt and shall promptly notify Rockwell of any discrepancies. Figures marked on drawings shall in general be followed in preference to scale measurements. Except as Rockwell may otherwise determine, in the case of any ambiguity or inconsistency between large scale drawings and small scale drawings, the former shall govern and in the case of any ambiguity or inconsistency between the general provisions of this contract and the specifications, the former shall govern.

D. Deviations

Deviations from specifications and the drawings and the dimensions therein given, whether or not error is believed to exist, shall be made only after authority is obtained from Rockwell.

E. Interpretations

All questions regarding the figures, drawings, plans and specifications and the interpretation thereof and the resolving of conflicts or inconsistencies contained therein shall be determined by Rockwell.

F. Shop Drawings

Builder shall submit to Rockwell for approval all shop drawings as called for under the various headings of the specifications or as

otherwise required by Rockwell and in any event twenty (20) days prior to scheduled commencement of work therein described. Submission for preliminary check shall consist of two copies. Submission for final approval shall consist of eight (8) copies. These drawings shall be complete and shall contain all required detailed information. All shop drawings shall be properly noted to indicate clearly the position and placement of the items detailed in relation to Rockwell's drawings. Builder shall verify all dimensions at the project and note any discrepancies on the shop drawings. All shop drawings shall be submitted through Builder; none will be accepted from any other source. If approved by Rockwell, each copy of the drawings will be identified as having such approval by being so stamped and dated. Builder shall make any corrections required by Rockwell except any correction which constitutes a change in the work shall not be made by Builder unless directed by Rockwell as provided in the Paragraph hereof entitled "Changes." Five (5) sets of all shop drawings will be retained by Rockwell and three (3) sets will be returned to Builder. The number of copies and the submittal dates of the above drawings shall be subject to any contrary or additional provisions set forth in this specification.

G. Special Drawings

Whenever required by the specifications, Builder shall make special or detailed drawings in amplification of the drawings referred to in this contract or in furtherance of the specifications before proceeding with the work, which drawings shall be subject to the approval of Rockwell. When a drawing has been approved, Builder shall furnish Rockwell with additional blueprint copies or with the tracing or an equivalent. If a tracing is submitted, Rockwell will make such prints as required and will return the tracing to Builder. Upon completion of the work, Builder shall furnish Rockwell with one complete set of all approved drawings which shall become the property of Rockwell.

H. Maintenance Drawings

(1) During the performance of work under this contract, Builder shall record and delineate accurately on one set of black and white prints of contract drawings, which will be furnished by Rockwell, all changes in such work, which constitute departures from the original contract drawings. The set of drawings thus corrected and changed shall show the work as actually constructed. Such maintenance drawings shall be delivered to Rockwell at the earliest practicable date prior to completion of all work under the contract, in any event not later than the date of acceptance of the completed work by Rockwell.

(2) Builder shall review said maintenance drawings on the job site with the Rockwell Field Representative at weekly intervals to verify that data is properly recorded and shall include such revised drawings as may be furnished by Rockwell as the job progresses.

(3) Maintenance drawings shall show sufficient detail to convey the following information:

(i) Physical dimensions and relation to existing conditions; plan elevation and sectional dimensions both above and below grade; special care to be used in horizontal and vertical location of all underground or hidden installations; all pipe and wire sizes.

(ii) Description of materials and processes sufficient to determine financial value: State grades, thicknesses and types of materials, especially concealed parts.

(iii) Tests performed and results obtained: Show results of all on-job tests and check outs.

(iv) Operation and maintenance information: Submit schematic diagrams, control diagrams, maintenance charts, and all other similar necessary diagrams and charts where applicable.

I. The approval by Rockwell of any drawings shall not relieve Builder of any of its obligations hereunder nor excuse nor constitute a waiver of any errors, discrepancies or omissions contained therein.

10. REGULATIONS

A. Movement of personnel, equipment, and tools on and off Rockwell property and while on the site shall be in accordance with Rockwell's plant security regulations. Information as to such regulations will be made available to Builder by Rockwell.

B. It shall be Builder's responsibility to conform to good housekeeping rules by keeping all working areas, as well as the designated area which will be assigned Builder for storage of material and equipment to be used in the performance of the Work, in a clean, neat, and orderly condition.

C. All materials removed from the stock area to the working area shall be moved in such a manner as not to interfere with Rockwell's operations.

D. All material and equipment removed in the performance of this contract and which are to be returned to Rockwell shall be removed from the working area and disposed of as directed by Rockwell. All non-salvageable material and debris shall be immediately removed from the site and from Rockwell's premises and disposed of by Builder.

E. Builder shall be required to exercise extreme precautions in preventing dust, chips, droppings, water and other foreign objects from infiltrating into adjacent areas.

F. Builder shall fully cooperate with Rockwell and any other contractors doing work not covered by this contract and perform the Work hereunder so as to minimize any conflicts with such other contractors as may be

directed by Rockwell. Builder shall not commit or permit any act which will unreasonably interfere with the performance of work by other contractors or with the operations of Rockwell.

G. Builder shall also comply with any other regulations that Rockwell may issue regarding performance of the Work.

11. SAFETY AND HOUSEKEEPING

A. Accident Prevention

(1) The Work shall be performed with due regard to safety, and in strict compliance with all applicable State and local laws and ordinances, and with the rules and regulations of Rockwell copies of which will be furnished upon request. All areas and equipment shall be maintained in such condition as will permit the same to be safely used and operated.

(2) Builder shall conform to the current safety engineering practices as set forth in the "Manual of Accident Prevention in Construction" published by the Associated General Contractors of America, and in the publications of the National Safety Council, to the extent that such practices are not contrary to the requirements of subparagraph (1) above.

(3) The safety measures taken by the Builder shall be such as the nature of the work and the conditions under which it is to be performed may demand, and shall include the following:

(i) Adequate first-aid facilities and equipment.

(ii) Adequate artificial illumination during all hours that, and at all places where, natural illumination is inadequate for the work being performed.

(iii) Instructions in accident prevention to reach all employees, and the posting of bulletins relating thereto.

(iv) Such machinery guards, safe scaffolds, runways, ladders, railings, and gangplanks, including without limitation such other safety devices, equipment, and apparel as are necessary to prevent accidents or injuries.

(v) Keeping all passageways and paths normally used by workmen free from lumber, wire, debris, and other obstacles, and keeping the job as a whole in an orderly and safe condition.

(vi) Providing adequate protection and warnings around all open pits and excavations throughout progress of the work.

B. Fire Prevention

All operations under the contract shall be so performed that no fire

hazards will be needlessly created or permitted to exist. To this end, all necessary precautions shall be taken with particular reference to the following:

(1) Clearance of the site in the vicinity of structures and combustible materials, including temporary construction, trees, shrubs, vegetable growths, and other matter that might communicate fire to such structures or materials.

(2) Storage and handling of explosives, gasoline, oil, and other fuels, lubricants, chemicals, and all similar materials of an inflammable nature.

(3) Segregation and spacing of temporary structures and storage piles of lumber and other combustible construction materials.

(4) Disposition of waste materials resulting from the operations, the accumulation of which, by the nature of the materials and their location and quantity, might create or increase a fire hazard.

(5) Immediately following the initial delivery and storage of combustible materials at the site of the work, and throughout the construction period thereafter, Builder shall supply and maintain suitable means of improvised fire protection equipment, unless adequate means of such protection are then existent or made available for uninterrupted service.

C. Material Storage

Builder shall store all materials in such areas as are designated by Rockwell.

D. Dust Palliation

At all times, Builder shall effectively dust-palliate the working area, roads used in the operations and involved portions of the site. Such palliation shall consist of intermittent watering and sprinkling of such frequency as will satisfactorily allay the dust during all hours.

12. PERMITS AND LICENSES

Builder shall procure all necessary permits, licenses, and acceptances of the state, and all political subdivisions there, wherein the work is done, and of any other duly constituted public authority, and furnish such evidence of compliance therewith as Rockwell may request.

13. EXCUSABLE DELAYS

Neither party shall be liable in damages by reason of any delay in completion of the work hereunder due to causes beyond its reasonable control and without its fault or negligence, including without limitation, acts of God or of the public enemy, acts of the Government, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, unusually

severe weather and (unless Rockwell finds the materials or supplies to be furnished under a subcontract are obtainable from other sources) delays of a subcontractor due to such causes.

14. TERMINATION

A. If Builder should fail to comply with any of the provisions hereof, or in the event Builder should become the subject of a proceeding under state or federal law for relief of debtors, or if Builder makes an assignment for the benefit of creditors, Rockwell shall have the right, notwithstanding the provisions of the Paragraph hereof entitled "Excusable Delays", to hold Builder in default and cancel this contract in whole or in part.

B. Without limiting any rights which Rockwell may have by reason of any default by Builder hereunder, Rockwell reserves the right to terminate this contract in whole or in part at its convenience. In such event Rockwell shall compensate Builder, subject to deduction for previous payments (i) by reimbursing Builder for all actual expenditures and costs approved by Rockwell as having been made or incurred in performing under this contract, (ii) by reimbursing Builder for all expenditures made and costs incurred with Rockwell's prior written approval in settling or discharging outstanding commitments entered into by Builder in performing under this contract and (iii) by paying Builder as a profit, insofar as a profit is realized hereunder, an amount equal to the profit on the entire contract estimated at the time of termination, multiplied by the percentage of completion of the work. In no event, however, will the compensation to Builder exceed the total contract price less payments previously made and less the contract price of work not terminated. Upon receipt of any notice of termination, Builder shall, unless the notice otherwise directs, (i) immediately discontinue the work and the placing of all orders and subcontracts in connection with this contract, (ii) immediately cancel all existing orders and subcontracts made hereunder and (iii) immediately transfer to Rockwell all materials, supplies, work-in-process, appliances, facilities, equipment, machinery and tools acquired by Builder in connection with the performance of this contract and all plans, drawings, specifications, and other information for use in connection therewith. Notice of termination shall be given by telegraph or other writing.

15. FAILURE TO PERFORM

Should Builder, at any time during the progress of the work, refuse or neglect to supply sufficient material or labor, or fail in compliance with any provision of this contract, Rockwell shall have the right, without prejudice to any other right or remedy it may have, to provide such materials and labor, or make good such deficiencies as Rockwell may deem expedient after three (3) days' notice in writing, delivered or mailed to Builder at its last address on file with Rockwell, and Builder shall be liable for the cost and expense thereof which may be deducted by Rockwell from any money that may be due Builder.

16. PATENTS

A. Patent Indemnity

Builder hereby indemnifies Rockwell, its directors, officers, agents, employees, successors, and assigns against loss, damage or liability, including costs, expenses and attorney fees, which may be incurred on account of any suit, claim, judgment or demand involving infringement or alleged infringement upon any copyrights, trademarks or Letters Patent arising out of the performance of this contract or out of the use or disposal by or for the account of Rockwell of supplies furnished or construction work performed hereunder; provided Rockwell shall notify Builder of any suit instituted against it and, to the full extent of its ability to do so, shall permit Builder to defend the same or make settlement in respect thereof.

B. Notice and Assistance

(1) Builder shall report to Rockwell, promptly and in reasonable written detail, each claim of patent infringement based on the performance of this contract and asserted against it, or against any of its subcontractors or suppliers if it has notice thereof.

(2) In the event of litigation against Rockwell on account of any claim of infringement arising out of the performance of this contract or out of the use of any supplies furnished or construction work performed hereunder, Builder shall furnish to Rockwell, upon request, all evidence and information in its possession pertaining to the defense of such litigation.

17. LIENS AND BONDS

A. Builder shall indemnify and hold harmless Rockwell, its directors, officers, agents and employees, from all claims, demands, liabilities, costs, expenses, causes of action or suits of whatever nature arising out of the labor and materials furnished by Builder or its subcontractors under this contract. The term "subcontractor" as used in this paragraph shall mean a subcontractor of any tier.

B. Builder shall provide a performance and payment bond with good and sufficient sureties and in an amount not less than the contract price, as the same may be revised from time to time, which bond must be satisfactory to Rockwell.

C. The bonds required above shall be provided prior to the commencement of the Work, unless otherwise specified by Rockwell in writing.

18. COMPLIANCE WITH LAWS

To the extent applicable hereto, Builder shall in the performance of this contract comply with: the Fair Labor Standards Act of 1938 (29 U.S.C. 201-219); the Walsh-Healey Public Contracts Act (41 U.S.C. 35-45); the

Contract Work Hours and Safety Standards Act (40 U.S.C. 327-333); laws prohibiting the use of convict labor; all applicable federal, state, and local laws; all regulations and orders issued under any applicable law. Builder warrants that the work to be performed hereunder complies with the Occupational Safety and Health Act of 1970 (29 U.S.C. 651-678) and the Radiation Control for Health and Safety Act of 1968 (42- U.S.C. 263 b-n) and all applicable regulations and standards promulgated thereunder. Also Builder shall, while on the premises on which the Work is to be performed, comply with all applicable rules and regulations of the Occupational Safety and Health Administration and Builder shall indemnify and hold Rockwell, its directors, officers, agents and employees harmless from and against any and all claims, damages, or causes of action resulting from Builder's failure to comply with said rules and regulations.

19. SECURITY REQUIREMENTS

To the extent that this contract involves access to security information or classified areas, Builder shall comply with all applicable requirements and regulations of Rockwell and the Government.

20. SUBCONTRACTING AND ASSIGNMENT

Performance of the work may not be subcontracted, in whole or substantially in whole, by Builder, and Builder may not assign any of its rights or obligations hereunder, without in each case, prior written consent of Rockwell.

21. EFFECT OF INVALIDITY

The invalidity in whole or in part of any provisions hereof shall not affect the validity of any other provision.

22. REMEDIES

The remedies provided Rockwell herein shall be cumulative, and in addition to any other remedies provided by law or equity. A waiver of a breach of any provision hereof shall not constitute a waiver of any other breach.

23. UTILIZATION OF SMALL BUSINESS, SMALL DISADVANTAGED BUSINESS, WOMEN-OWNED BUSINESS AND LABOR SURPLUS AREA CONCERNS

To support Government policy as declared by the Congress, and as consistent with the efficient performance of this contract, Builder agrees to accomplish a maximum amount of subcontracting to small business, small disadvantaged and women-owned business concerns; and to use its best efforts to place subcontracts hereunder with subcontractors who will perform such subcontracts substantially in areas of persistent or substantial labor surplus when it can be done at prices no higher than are obtainable elsewhere observing exemptions and preferential order established by applicable Government regulations.

24. BOOKS AND RECORDS

Builder's books, records and its plants or such part thereof as may be

engaged in the performance of this contract, shall at all reasonable times be subject to inspection and audit by any authorized representative of Rockwell.

25. GRATUITIES

Builder warrants that neither it nor any of its employees, agents or representatives has offered or given any gratuities to Rockwell's employees, agents or representatives with a view toward securing this contract or securing favorable treatment with respect thereto.

26. RELEASE OF NEWS INFORMATION AND ADVERTISING

Builder shall not, without the prior written consent of Rockwell (i) make any news release, public announcement, denial or confirmation of all or any part of the subject matter of this contract, or any phase of any program hereunder; or (ii) in any manner advertise or publish the fact that Rockwell has placed this contract.

27. NOTICE TO ROCKWELL OF LABOR DISPUTES

A. Whenever Builder has knowledge that any actual or potential labor dispute is delaying or threatens to delay the timely performance of this contract, Builder shall immediately give notice thereof, including all relevant information with respect thereto, to Rockwell.

B. Builder shall insert the substance of this clause, including this subparagraph B, in any subcontract hereunder as to which a labor dispute may delay the timely performance of this contract, except that each such subcontract shall provide that in the event its timely performance is delayed or threatened by delay by any actual or potential labor dispute, the subcontractor shall immediately notify Builder of all relevant information with respect to such dispute.

28. ROCKWELL-FURNISHED ITEMS

The provisions of this paragraph shall apply if Rockwell-furnished items are to be used in the course of this contract. The delivery or performance dates for the supplies or services to be furnished by Builder under this contract are based upon the expectation that, to the extent Rockwell is to furnish items to Builder, such items will be delivered, suitable for use, to Builder at the times stated in this contract or, in the event such times are not stated, in a timely manner. In the event that Rockwell-furnished items are not delivered to Builder by such time or times, Rockwell shall, upon written request made by Builder, determine the delay occasioned Builder thereby, and equitably adjust the delivery or performance dates or the contract price, or both, and any other contractual provision affected by such delay in accordance with the procedures set forth in the Paragraph of this contract entitled "Changes"; provided Builder makes such written request to Rockwell within thirty (30) days after the date scheduled for Rockwell delivery. In the event Rockwell-furnished items are received by Builder in a condition not suitable for the intended use Builder shall, upon receipt thereof, notify

Rockwell of such fact and, as directed by Rockwell, either (i) return such items at Rockwell's expense or otherwise dispose thereof, or (ii) effect repairs or modifications. Upon completion of (i) and (ii) above, Rockwell, upon written request of Builder, shall equitably adjust the delivery or performance dates or the contract price, or both, and any other contractual provision affected by the rejection or disposition, or the repair or modification, in accordance with the procedures set forth in the Paragraph of this contract entitled "Changes"; provided Builder makes such written request to Rockwell within thirty (30) days after receipt of said items. The foregoing provisions for adjustment are Builder's exclusive remedy for such delay or condition and Rockwell shall not be in default nor liable to suit for breach of contract by reason of any delay in delivery of Rockwell-furnished items or delivery thereof in a condition not suitable for their intended use.

29. DISPUTES

Any dispute arising under this contract which is not settled by agreement of the parties may be settled by appropriate legal proceedings. Pending any decision, appeal or judgment in such proceedings or the settlement of any dispute arising under this contract, Builder shall proceed diligently with the performance of this contract in accordance with the decision of Rockwell.

30. NON-INTERFERENCE

Builder shall fully cooperate with Rockwell and all other contractors doing work on or about the construction site covered by this contract and shall perform the Work so as to minimize conflicts with said other contractors. In the event Builder unreasonably obstructs or interferes with work being performed by said other contractors, Builder shall, at its own expense, take such steps or measures deemed necessary by Rockwell to eliminate such obstruction or interference. In any event, Builder shall take such steps or measures as Rockwell may direct in writing to avoid potential obstructions or interferences or to eliminate existing obstructions or interferences.

31. EVIDENCE OF CITIZENSHIP OR IMMIGRANT STATUS

In compliance with its obligations under contracts with the United States government, Rockwell may be required to obtain information concerning citizenship or immigrant status of subcontractor personnel entering the premises of Rockwell. Builder agrees to furnish this information before commencement of work and at any time thereafter before substituting or adding new personnel to work on Rockwell's premises. Information submitted by Builder shall be certified by an authorized representative of Builder as being true and correct.

32. NOTICES

Any notice or order provided for in this contract shall be considered as having been given (i) to Rockwell, if mailed by certified mail, postage

prepaid to Rockwell International Corporation ROCKETDYNE Division, attention Purchasing Department at 6633 CANOGA AVE. CANOGA PARK, CA 91303 or (ii) to Builder if delivered personally to its superintendent at the site of the work, or if mailed by certified mail, postage prepaid to ALLIED SIGNAL, INC. BARON BLAKESLEE DIV. 2001 N. JANICE AVE., MELROSE PARK, IL 60160

33. JURISDICTION

This contract and all performance hereunder shall be governed and interpreted by the laws of the State where the work will be performed.

34. ALTERATIONS IN CONTRACT

THE PROVISIONS OF FLYSHEET CW TITLED "PLANT RULES AND REGULATIONS FOR CONSTRUCTION WORKERS" ARE ATTACHED HERETO AND MADE A PART HEREOF.

IN WITNESS WHEREOF, the parties have executed this contract as of the day and year first above written.

ROCKWELL INTERNATIONAL CORPORATION

ROCKETDYNE DIVISION

BY H. J. Potocki

H. J. POTOCKI

ITS MANAGER - FACILITIES PROCUREMENT

ALLIED SIGNAL, INC., BARON BLAKESLEE DIV.

(BUILDER)

LICENSE NO. _____

BY _____

ITS _____

ROCKWELL INTERNAL INFORMATION:

ACCOUNT NUMBER	25R NO.	FUNDING
543-24474-40981-01001	3248377	$60,300.00
543-24474-40982-01001	3248377	$29,700.00
500-17940-36512-16285	3248376	$ 9,707.00

CONTRACT NO.: R05MXZ90-09-6253

SPECIFICATION NO. 854

73U 177825

SPECIFICATION FOR DEGREASER COVERS

Rockwell International Corporation
Rocketdyne Division
6633 Canoga Avenue
Canoga Park, CA 91303

Prepared by:

D. L. Glumac
Facilities Engineering

Approved by:

S. R. Lafflam
Manager, Environmental

J. M. Taylor
Manager, F&PO

April 16, 1990

SPECIFICATION FOR DEGREASER REFURBISHMENT

1.0 This specification presents the requirements to design, fabricate, and install covers on the vapor degreasers using trichlorethane and freon.

2.0 APPLICABLE DOCUMENTS

2.1 The following documents form a part of this specification. The absence of special reference to these documents throughout this specification shall not in anyway relieve the Seller from compliance. Where the requirements of this specification appear in conflict with the requirements of the referenced document, such conflict shall be brought to the attention of the purchaser for resolution.

2.1.1 City of Los Angeles Electrical Code (1986 Edition), where applicable

2.1.2 City of Los Angeles Mechanical Code (1985 Edition), where applicable

2.1.3 South Coast Air Quality Management District (SCAQMD) Rules and Regulations (Rule 1122, in particular)

2.1.4 Ventura County Air Pollution Control District (VAPCD) Rules and Regulations (Rule 74.6, in particular)

2.1.5 U.S. Department of Labor Occupational Safety and Health Administration

3.0 TECHNICAL REQUIREMENTS

3.1 The Supplier shall furnish, install, and check out a pushbutton controlled, accordion-type cover to seal off vapors from the degreaser when the cover is closed. The enclosure shall be stainless steel.

3.2 The cover shall be motor/gearbox operated.

3.3 The cover chain shall travel on nylon/mylar track-mounted in the accordion cover framework.

3.4 The cover assembly shall contain two (2) micro switches. One (1) shall control the cover stop and one (1) shall be located to turn-off the exhaust blower (suction is below cover) so that the cover is not sucked down.

3.5 The Supplier is responsible to take his own dimensions and produce the mechanical/electrical designs which must be approved by Rocketdyne prior to start of fabrication or material procurement.

3.5.1 Internal dimensions of the four (4) degreasers are as follows:

Degreaser	Width	Depth
1	182-1/2 inches	90-1/2 inches
2	136 inches	inches
3	78-1/2 inches	54 inches
4	46-3/4 inches	28-3/4 inches

4.0 ELECTRICAL

4.1 Equipment required shall be 110-volts, 3-phase, 60-cycle rated

4.2 Equipment shall be UL listed or City of Los Angeles test lab approved prior to Rocketdyne acceptance.

5.0 MANUALS AND INSTALLATION

5.1 Supplier shall furnish two (2) sets of operating instructions and maintenance manuals.

/cyr 0767k

EXHIBIT "A"
EQUIPMENT/COST BREAKDOWN

CONTRACT NO.: R05MXZ90-09-62

The following covers are for use with Four (4) Degreasers as per specification #854 dated 4/16/90 #73U 177825.

Quotation for powered cover only for the two (2) larger of the above units. Design is for electric motor driven split type covers, driven from both ends of degreasers and closing in the center. Controls are such the both cover halves open simultaneously and will be fully open before any exhaust fan operation is permitted. The two (2) smaller units will have single covers opening from one end.

One (1) Wilson motorized interlocking slat type roll cover set of the two section center closing type. Included are two cover drive motors and two sets of cover limit switches. Cover halves will be mounted on exhaust housing and tested by Baron-Blakeslee field operatives. Cover is for the pre-clean degreaser having 182-1/2" x 90-1/2" open top.----------$34,454.00

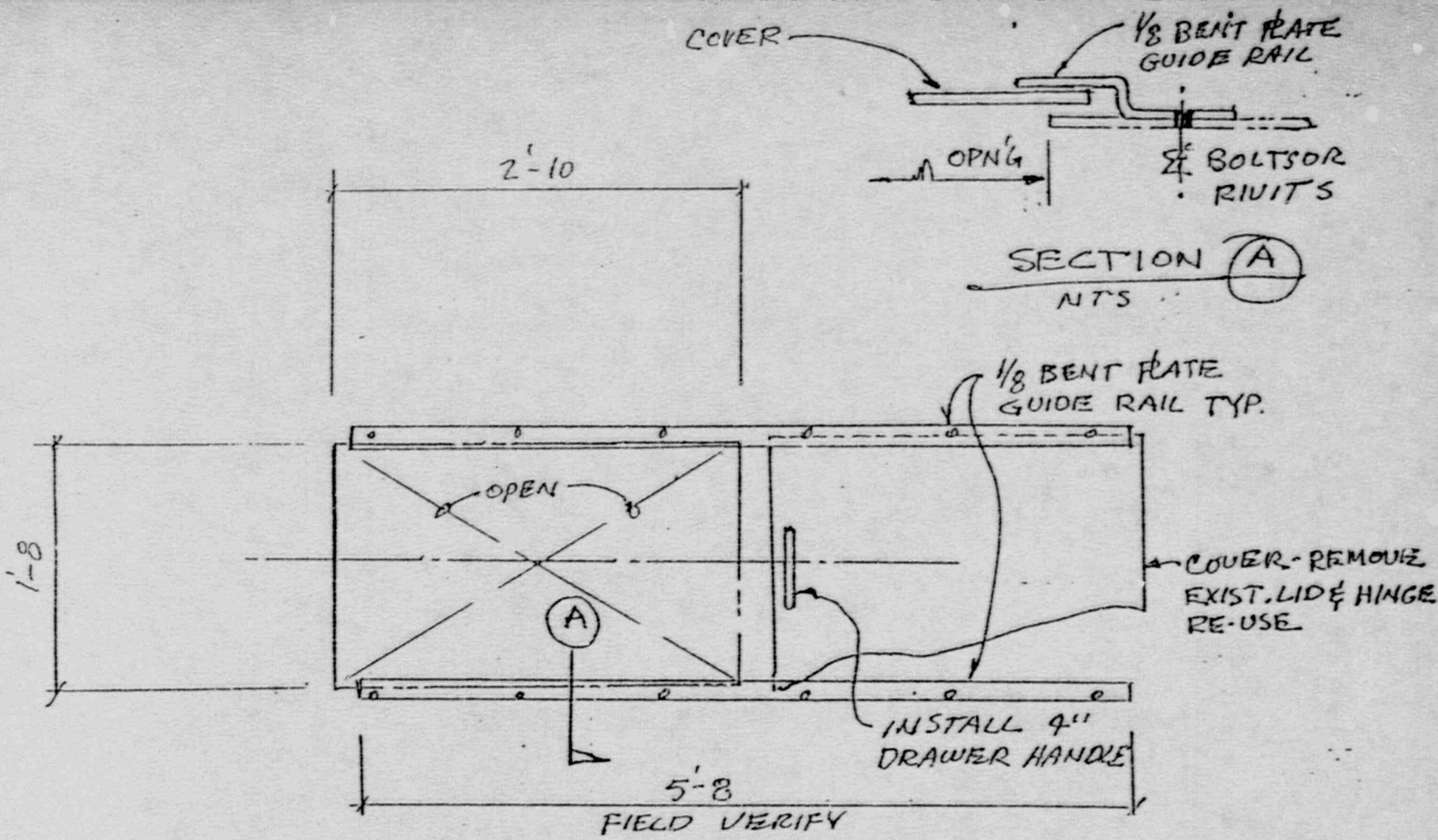
One (1) Wilson motorized interlocking slat type roll cover set of the two section center closing type. Included are two cover drive motors and two sets of cover limit switches. Cover halves will be mounted on exhaust housing and tested by Baron-Blakeslee field operatives. Cover is for the degreaser having 136" x 71" open top- $30,389.00

One (1) Wilson motorized interlocking slat type roll cover set of the single section type. Included is a single cover drive located at one end of the degreaser and one set of cover limit switches. Cover is to be mounted on exhaust housing and tested by Baron-Blakeslee field operatives. Cover is for the degreaser having 78-1/2" x 54" open top------$19,264.00

One (1) Wilson motorized interlocking slat type roll cover set of the single section type. Included is a single cover drive located at one end of the degreaser and one set of cover limit switches. Cover is to be mounted on exhaust housing and tested by Baron-Blakeslee field operatives. Cover is for the degreaser having 46-3/4" x 28-3/4" open top--$15,600.00

TERMS: NET 30 DAYS

F.O.B.: CICERO, IL 60650



PLAN - TOP DEGREASER

N0954759

LOCATION B/301
EQUIPT LAB

Authority-to-Construct

No. 0228-110

Processing Fee

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED-RETURN RECEIPT REQUESTED

In reply refer to 90RC07872

June 25, 1990

Ventura County Air Pollution Control District
800 South Victoria Avenue
Ventura, CA 93009

Attention: Simeon Okoroike

Subject: Permit No. 0228-110 Authority to Construct - Processing Fee

Reference: VAPCD Letter dated June 19, 1990

Gentlemen:

Please find enclosed a check from Rockwell International Corporation, Rocketdyne Division (Rocketdyne) in the amount of $2,760.00 for processing fees on Permit No. 0228-110. Rocketdyne has reviewed the draft copy of the Santa Susana Field Laboratory Area I Service Area Authority to Construct (A/C) in B/301 and B/324 provided by the District and found the permitted equipment listed as accurate and the permit conditions acceptable. A marked-up copy of the draft A/C has been enclosed with editorial changes indicated. Also enclosed is a copy of the permit processing fee invoice.

If you have any questions concerning this submittal, please contact Mr. Bob Melvold at (818) 773-5324.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

SR Lafflam

S. R. Lafflam
Director
Environmental and Energy Conservation

SRL:ma-1483H

Enclosures as noted

ORIGINAL

	Invoice Number	Invoice Date	Supplier Code	Gross Amount	Discount Amount	Net Amount
500 15191		6 22 90 2760.00		PERMIT PROCESSING FEES FOR AUTHORITY TO CONSTRUCT FLOW BENCH & DEGREASER MODIFICATIONS IN B/301 & B/324, SSFL.		2760.00

Detach Before Depositing

No. 05145448 60-162 433

Rockwell International
Aerospace Operations, Rocketdyne Division
Canoga Park, California

Pittsburgh National Bank
Jeannette, Pennsylvania

DATE
06/28/90

PAY
****2760.00

PAY to the order of
VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT
800 SOUTH VICTORIA AVE.
VENTURA CA 93009

JJD
XXX
5576416

Authorized Representative(s)

"05145448" :043301627: 425297"

FORM R136-F-1 REV 2/85

52

June 15, 1990

Mr. Robert Melvold
Rockwell International Corp., Rocketdyne Division
6633 Canoga Avenue
Canoga Park, CA 91303

RE: Authority to Construct #0228-110

Dear Mr. Melvold:

This is Ventura County Air Pollution Control District Authority to Construct #0228-110, effective on the above date. You are hereby authorized to construct the following items at Santa Susana Field Lab. Area I Bldg. 301 and Bldg. 324, Top of Woolsey Canyon Road, Simi Hills, Chatsworth, CA:

Cover four existing Open Front Spray Benches to Remote Reservoir Cold Cleaners, to comply with APCD Rule 74.6.

2 - 91" Wide x 28" Deep x 26" High, at Bldg.#301
1 - 88" Wide x 26" Deep x 30" High, at Bldg. #301
1 - 48" Wide x 22" Deep x 25" High, at Bldg. #324

Retrofit the following Batch Loaded Vapor Degreasers with covers to comply with APCD Rule 74.6

1 - 40 gallon capacity Branson vapor degreaser at Bldg. #301
1 - 30 gallon capacity Acoustic vapor degreaser
1 - 250 gallon capacity G.S. Blakeslee & Co. vapor degreaser

Subject to the Following Conditions:

1. The single drain hole in each cold degreaser unit shall be no more than 7.0 square inches in area.

2. The new basin for each cold degreaser unit shall be designed with a sink-like work area which is sloped sufficiently towards the drain so as to preclude pooling of solvent.

3. The removable grating used in drying cleaned parts for each cold degreaser must be designed to preclude any pooling of solvent

4. Each cold degreaser unit must be equipped with automatic drain cover to prevent solvent vapors when work is not being processed. Also the hinged window covers for each unit must

be covered when work is not processed.

5. Each cold degreaser unit must be retrofitted to achieve a freeboard of at least 6 inches.

6. The pressure of the solvent flow system for each cold degreaser unit shall be such that solvent does not splash outside of the container. Any solvent flow utilized shall be of solid fluid stream. Fine, atomized, or shower type spray must not be used.

7. All the vapor degreasers shall be equipped with covers designed to be easily operated without disturbing the vapor zone. This shall be achieved by installing a motorized interlocking slat type roller cover or any other design capable of complying with APCD Rule 74.6.2 section B.1.a.

8. Permittee shall comply with all applicable APCD Rules and Regulations.

9 Prior to construction completion, application for an APCD Permit to Operate must be filed accompanied by the appropriate filing fees.

Your application for an Authority to Construct (dated April 27, 1990) was received by this office on May 11, 1990 and was considered complete on May 23, 1990. Accordingly, the expected changes in emissions were calculated to be the following:

Emissions	Tons/Year	Pounds/Hour
Reactive Organic Compounds	0.00	-6.18
Oxides of Nitrogen	0.00	0.00
Particulate Matter	0.00	0.00
Oxides of Sulfur	0.00	0.00
Carbon Monoxide	0.00	0.00
1,1,1-trichloroethane	0.00	-2.85
Trichlorotrifluoroethane	0.00	0.00

The granting of this permit signifies that the above emissions have been evaluated based on the information provided with your application. It does not, however, either grant or imply an APCD endorsement of the equipment; nor does it guarantee compliance with APCD Rules and Regulations. Compliance of the source will be verified through on site inspection.

Please post this Authority to Construct reasonably close to the construction site and accessible to inspection personnel, in accordance with Rule 19. This Authority to Construct will become void if construction has not begun within one year.

Contact Simeon Okoroike of the Engineering Section at (805) 654-5148 if you have any questions.

Sincerely,

Richard H. Baldwin
AIR POLLUTION CONTROL OFFICER

by:

Karl E. Krause, Manager
Engineering Section

so0228

County of Ventura
Air Pollution Control District

Permit Processing Fee Invoice

Rocketdyne Division
Service Area I
Simi Valley, CA 93065

Invoice No.: 0228-110
Invoice Date: 06-19-90

Filing Fee (Rule 42.A)	$350.00
Permit Processing Fees (Rule 42.B)	
Equipment Fees	
Degreasers (Schedule E-5)	
1 - 91"x28"x26" Cold degreaser	$600.00
1 - 91"x28"x26" Cold Degreaser	$200.00
1 - 88"x26"x30" Cold Degreaser	$300.00
1 - 48"x22"x25" Cold degreaser	$300.00
Cover for 3 Vapor Degreasers	$900.00
Major Source Surcharge (Schedule E-19)	$460.00

Total Permit Processing Fee	$3,110.00
Credit For Fees Previously Paid	$350.00
Total Fees Due	$2,760.00

---

800 South Victoria Avenue
Ventura, CA 93009
(805) 654-2801

Authority-to-Construct

No. 0228-110

RESOURCE MANAGEMENT AGENCY
county of ventura

Air Pollution
Control District

Richard H. Baldwin
Air Pollution Control Officer

June 28, 1990

Mr. Robert Melvold
Rockwell International Corp., Rocketdyne Division
6633 Canoga Avenue
Canoga Park, CA 91303

RE: Authority to Construct #0228-110

Dear Mr. Melvold:

This is Ventura County Air Pollution Control District Authority to Construct #0228-110, effective on the above date. You are hereby authorized to construct the following items at Santa Susana Field Lab. Area I Bldg. 301 and Bldg. 324, Top of Woolsey Canyon Road, Simi Hills, Chatsworth, CA:

Convert four existing Open Front Spray Benches to Remote Reservoir Cold Cleaners, to comply with APCD Rule 74.6.

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Retrofit the following Batch Loaded Vapor Degreasers with covers to comply with APCD Rule 74.6

1 - 40 gallon capacity Branson vapor degreaser at Bldg. #301
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1 - 250 gallon capacity G.S. Blakeslee & Co. vapor degreaser

Subject to the Following Conditions:

1. The single drain hole in each cold degreaser unit shall be no more than 7.0 square inches in area.

2. The new basin for each cold degreaser unit shall be designed with a sink-like work area which is sloped sufficiently towards the drain so as to preclude pooling of solvent.

3. The removable grating used in drying cleaned parts for each cold degreaser must be designed to preclude any pooling of solvent

4. Each cold degreaser unit must be equipped with automatic drain cover to prevent solvent vapors when work is not being processed. Also the hinged window covers for each unit must

Government Center, Administration Building, L #1710
800 South Victoria Avenue, Ventura, CA 93009 (805) 654-2806 Fax Number (805) 654-2842

be covered when work is not processed.

5. Each cold degreaser unit must be retrofitted to achieve a freeboard of at least 6 inches.

6. The pressure of the solvent flow system for each cold degreaser unit shall be such that solvent does not splash outside of the container. Any solvent flow utilized shall be of solid fluid stream. Fine, atomized, or shower type spray must not be used.

7. All the vapor degreasers shall be equipped with covers designed to be easily operated without disturbing the vapor zone. This shall be achieved by installing a motorized interlocking slat type roller cover or any other design capable of complying with APCD Rule 74.6.2 section B.1.a.

8. Permittee shall comply with all applicable APCD Rules and Regulations.

9 Prior to construction completion, application for an APCD Permit to Operate must be filed accompanied by the appropriate filing fees.

Your application for an Authority to Construct (dated April 27, 1990) was received by this office on May 11, 1990 and was considered complete on May 23, 1990. Accordingly, the expected changes in emissions were calculated to be the following:

Emissions	Tons/Year	Pounds/Hour
Reactive Organic Compounds	0.00	-6.18
Oxides of Nitrogen	0.00	0.00
Particulate Matter	0.00	0.00
Oxides of Sulfur	0.00	0.00
Carbon Monoxide	0.00	0.00
1,1,1-trichloroethane	0.00	-2.85
Trichlorotrifluoroethane	0.00	0.00

The granting of this permit signifies that the above emissions have been evaluated based on the information provided with your application. It does not, however, either grant or imply an APCD endorsement of the equipment; nor does it guarantee compliance with APCD Rules and Regulations. Compliance of the source will be verified through on site inspection.

Please post this Authority to Construct reasonably close to the construction site and accessible to inspection personnel, in accordance with Rule 19. This Authority to Construct will become void if construction has not begun within one year.

Contact Simeon Okoroike of the Engineering Section at (805) 654-5148 if you have any questions.

Sincerely,

Richard H. Baldwin
AIR POLLUTION CONTROL OFFICER

by:

Karl E. Krause, Manager
Engineering Section

so0228

Permit No. 0240

Renewal

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED - RETURN RECEIPT REQUESTED

9 July 1990

In reply refer to 90RC08439

Ventura County
Air Pollution Control District
800 South Victoria Avenue
Ventura, CA 93009

Attention: Ms. Chris Cote

Subject: VAPCD Permit No. 0240 Renewal

Gentlemen:

Per your recent request and in accordance with renewal of Permit No. 0240, Rockwell International Corporation, Rocketdyne Division hereby submits the enclosed (1) Air Emissions Summary (Enclosure 1) for the STL-4 operations at the Santa Susana Field Laboratory; (2) a listing of emission factors, in pounds per second for NO_x, CO, and ROC, (Enclosure 2) and (3) all the pertinent test data logs from STL-4 for the most recent permitted year (Enclosure 3).

The summary consists of the number of total setups and tests for the year, total duration of engine tests, total duration of hyperflow operation and actual emissions of oxides of nitrogen, carbon monoxide and reactive organic compounds, based on the data collected during the year. Review of Enclosure 1 shows that actual emissions of NO_x, CO, and ROC were considerably less than the annual permitted limits. Also, all of the actual hourly emissions were less than the hourly permitted limits. Actual emission data were calculated on the basis of engine test durations either at ambient or altitude, with or without hyperflow, as noted in the STL-4 test report data logs. Factors of pounds of emitted pollutant per second were those used in past data submittals and presumably remain applicable. In addition, the "Vent-NO_x" data (in Enclosure 1) consist of the amount of nitrogen tetroxide vented, on an average, and summed for all the tests at a particular test cell.

The estimate of annual Freon 113 usage provided by the STL-4 engineering staff last year has been confirmed as still valid at this time, i.e., 200 gallons or 1.32 tons/year of Freon are emitted annually into the atmosphere. Also, the maximum consumption rate for Freon 113 is again figured at one gallon per hour or 12.5 pounds per hour.

If you have any questions or desire more information, please contact Mr. R. L. Kistner at (818) 773-5317.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

SR Lafflam

S. R. Lafflam
Director
Environmental & Energy Conservation

SRL/sj-1496H

Enclosures: (1) STL-4 Emissions Summary (1 October 1988 through 30 September 1989)
(2) Listing of STL-4 Emission Factors
(3) STL-4 Test Data Logs

cc: Ms. Laura Lucas, VAPCD

STL-4 AIR EMISSIONS SUMMARY

(1 OCTOBER 1988 THROUGH 30 SEPTEMBER 1989)

Annual Emissions Test Operation	Set Ups	Tests	Test Duration (Secs)	Annual Emissions (T/YR) NOX	CO	ROC
29 Axe Engine (amb)	1	2	20	2.5×10^{-3}	2.5×10^{-6}	-
29 Engine (alt)	1	2	157	1.9×10^{-3}	1.22×10^{-1}	-
29 Hyperflow	2	2	1380	-	3.73	0.67
29 Vent	-	6	-	4.8×10^{-2}	-	-
35 Test SCIT Bed (amb)	1	1	6.25*	5.97×10^{-5}	5.97×10^{-9}	-
35 Vent	-	1	- *	$5.04.10^{-4}$	-	-
37-A Martin Marietta 5# thruster (amb)	5	5	38.0 *	2.05×10^{-4}	2.05×10^{-8}	-
37-A Vent	-	5	- *	2.5×10^{-3}	-	-
37-A Martin Marietta 50# thruster (amb)	2	22	253.0 *	1.36×10^{-3}	1.36×10^{-7}	-
37-A Vent	-	22	- *	1.1×10^{-2}	-	-
37-A Gelled Propellant 400# divert eng. (amb)	8	8	8.6 *	4.64×10^{-5}	4.64×10^{-9}	-
37-A Vent	-	8	- *	4.0×10^{-3}	-	-
37-B Slave Ace Engine (amb)	3	4	15.0 *	8.1×10^{-5}	8.1×10^{-9}	-
37-B Engine (altitude)	1	1	76.0 *	3.95×10^{-5}	2.56×10^{-3}	-
37-B Hyperflow	1	1	1120 *	-	1.52	0.27
37-B Vent	-	4	- *	2.0×10^{-3}	-	-
37-B PK ACE (amb)	3	4	15.0 *	8.1×10^{-5}	8.1×10^{-9}	-
37-B Engine (alt)	1	1	135.3 *	7.0×10^{-5}	4.55×10^{-3}	-
37-B Hyperflow	1	1	1391 *	-	1.9	0.34
37-B Vent	-	4	- *	2.0×10^{-3}	-	-
Total Annual Emissions (T/Year)				7.63×10^{-2}	7.25	1.28
Permitted Annual Emissions (T/Year)				22.62	410.89	60.1
Maximum Hourly Emissions (Lbs/Hr) (Based on data log for 6-8-89, the test with greatest emissions)				6.03	4507	767
Permitted Hourly Emissions (Lbs/Hr)				432.92	8147	1470

*Used calibration factors for 37 ace engine - amb: NOX/1.08×10^{-2}, CO/1.08×10^{-6}, Vent/1 lb/test

STL-4

EMISSION FACTORS

LOCATION	POLLUTANT (LB/SEC)		
CELL 29B-AXE	NO_x	CO	ROC
Site/Ambient	0.249	2.49×10^{-5}	-
Altitude	2.41×10^{-2}	1.55	-
Hyperflow	-	5.41	0.97
Vent	0.8×10^{-2}		
Cell 37B-ACE			
Site/Ambient	1.08×10^{-2}	1.08×10^{-6}	-
Altitude	1.04×10^{-3}	6.73×10^{-2}	-
Hyperflow	-	2.71	0.49
Vent	5×10^{-4}		
Cell 35			
Same Emission Factors as Cell 37			

1496H

69

STL-IV - CELL 29B - TEST REPORT

DATE 5-18-89 TIMES-1st Run 15:41
2nd Run

TEST SETUP RUN NO's - 1st 290-H-054
2nd

A. HYPERFLOW DURATIONS (900 SECONDS MAX.)

1st Run 589 Seconds
2nd Run Seconds

B. ENGINE DURATION (900 SECONDS MAX.)

1st Run Total 10.0 Seconds At Site Condition
10.0 Seconds At Altitude
2nd Run Total Seconds At Site Condition
Seconds At Altitude

C. HYPERFLOW PERFORMANCE-STABILIZED FLOW

1st Run
Alcohol 10.69 Lbs/Sec [9 % H_2O]
Oxygen 20.28 Lbs/Sec
H_2O 52.04 Lbs/Sec [Injected]

2nd Run
Alcohol Lbs/Sec [% H_2O]
Oxygen Lbs/Sec
H_2O Lbs/Sec [Injected]

D. CALCULATED HYPERFLOW PARAMETERS

	1st Run	2nd Run	Limit
Mixture Ratio [LOX ÷ Alcohol]	1.897		1.4 to 2.1
Water Fraction [Injected H_2O ÷ Oxygen + Alcohol + Injected H_2O]	0.627		0.61 to 0.68

E. CONSUMPTION OF FUELS, OXYGEN AND INJECTED WATER

			Limit
NTO	52	Total Lbs. Consumed	(5000 lbs. max.)
MMH	32	Total Lbs. Consumed	(3000 lbs. max.)
Alcohol	6296	Total Lbs Consumed	(13,000 lbs. max.)
LOX	11945	Total Lbs. Consumed	(21,000 lbs. max.)
Injected H_2O	30,652	Total Lbs. Consumed	

Comments

F. VERIFICATIONS BY TEST ENGINEER

Limits of Sections A. ✓, B. ✓, D. ✓, E. ✓ have not been exceeded. H Patota (Test Engineer)

No more than 2 hyperflow runs within any 8-hour period. H Patota (Test Engineer)

At least 60 minutes between hyperflow runs. H Patota (Test Engineer)

♦ Test Engineer notify: ___ Director of Test, X5347; ___ Director of F&IE, X2221; ___ Environmental Specialist, X5915; within 48 hours of occurrence of any out-of-limit condition.

STL-IV - CELL 29B - TEST REPORT

DATE 6-8-89 TIMES-1st Run 14:40 2nd Run _____ TEST SETUP RUN NO's - 1st 29B-H-055 2nd _____

A. HYPERFLOW DURATIONS (900 SECONDS MAX.)

1st Run 791 Seconds
2nd Run _____ Seconds

B. ENGINE DURATION (900 SECONDS MAX.)

1st Run Total 10.0 Seconds At Site Condition
147.0 Seconds At Altitude
2nd Run Total _____ Seconds At Site Condition
_____ Seconds At Altitude

C. HYPERFLOW PERFORMANCE-STABILIZED FLOW

1st Run
Alcohol 10.69 Lbs/Sec [9 % H_2O]
Oxygen 20.28 Lbs/Sec
H_2O 52.04 Lbs/Sec [Injected]

2nd Run
Alcohol _____ Lbs/Sec [_____ % H_2O]
Oxygen _____ Lbs/Sec
H_2O _____ Lbs/Sec [Injected]

D. CALCULATED HYPERFLOW PARAMETERS

	1st Run	2nd Run	Limit
Mixture Ratio [LOX ÷ Alcohol]	1.897	_____	1.4 to 2.1
Water Fraction [Injected H_2O ÷ Oxygen ÷ Alcohol ÷ Injected H_2O]	0.627	_____	0.61 to 0.68

E. CONSUMPTION OF FUELS, OXYGEN AND INJECTED WATER

			Limit	Comments
NTO	816	Total Lbs. Consumed	(5000 lbs. max.)	
MMH	502	Total Lbs. Consumed	(3000 lbs. max.)	
Alcohol	8456	Total Lbs Consumed	(13,000 lbs. max.)	
LOX	16042	Total Lbs. Consumed	(21,000 lbs. max.)	
Injected H_2O	41164	Total Lbs. Consumed		

1.63

F. VERIFICATIONS BY TEST ENGINEER

Limits of Sections A. ✓, B. ✓, D. ✓, E. ✓ have not been exceeded. F Patota (Test Engineer)

No more than 2 hyperflow runs within any 8-hour period. F Patota (Test Engineer)

At least 60 minutes between hyperflow runs. F Patota (Test Engineer)

♦ Test Engineer notify: ___ Director of Test, X5347; ___ Director of F&IE, X2221; ___ Environmental Specialist, X5915; within 48 hours of occurrence of any out-of-limit condition.

STL-IV - CEL 7 - TEST REPORT

DATE 7-29-89 TIMES - 1st Run 12:33 TEST SETUP NO's-1st 378-4-112
2nd Run — 2nd —

A. HYPERFLOW DURATIONS (3000 SECONDS MAX.)

1st Run 1391 Seconds
2nd Run _____ Seconds

B. ENGINE DURATION (3000 SECONDS MAX.)

1st Run Total 15 Seconds At Site Condition
135.34 Seconds At Altitude
2nd Run Total _____ Seconds At Site Condition
_____ Seconds At Altitude

C. HYPERFLOW PERFORMANCE-STABILIZED FLOW

1st Setup
Alcohol 5.31 Lbs/Sec [9 % H_2O]
Oxygen 8.68 Lbs/Sec
H_2O 26.72 Lbs/Sec Injected

2nd Setup
Alcohol ∅ Lbs/Sec [% H_2O]
Oxygen ∅ Lbs/Sec
H_2O ∅ Lbs/Sec [Injected]

D. CALCULATED HYPERFLOW PARAMETERS

	1st Run	2nd Run	Limit
Mixture Ratio [LOX ÷ Alcohol]	1.63	∅	1.4 to 2.1
Water Fraction [Injected H_2O ÷ Oxygen + Alcohol + Injected H_2O]	.656	∅	0.61 to 0.68

E. CONSUMPTION OF FUELS, OXYGEN AND INJECTED WATER

		Limit	Comments
NTO 26.3	Total Lbs. Consumed	5000 Lbs	
MMH 16.1	Total Lbs. Consumed	3000 Lbs	
Alcohol 7386	Total Lbs. Consumed	21,000 Lbs	
LOX 12,074	Total Lbs. Consumed	33,000 Lbs	
Injected H_2O 37,168	Total Lbs. Consumed		

1.63

F. VERIFICATIONS BY TEST ENGINEER

Limits of Sections A. ✓, B. ✓, D. ✓, E. ✓ have not been exceeded. H Balota (Test Engineer)

No more than one hyperflow run within any 8-hour period. H Balota (Test Engineer)

At least 60 minutes between hyperflow runs. H Balota (Test Engineer)

Test Engineer Notify: ___ Director of Test, X5347; ___ Director of F&IE, X2221; ___ Environmental Specialist, X5915, within 24 hours of occurrence of any out-of-limit condition.

STL-IV - CE' 7 - TEST REPORT

DATE 6-22-89 TIMES - 1st Run 16:28 TEST SETUP NO's-1st 373-H-III
2nd Run — 2nd —

A. HYPERFLOW DURATIONS (3000 SECONDS MAX.)

1st Run 1120 Seconds
2nd Run _____ Seconds

B. ENGINE DURATION (3000 SECONDS MAX.)

1st Run Total 15.0 Seconds At Site Condition
76.0 Seconds At Altitude
2nd Run Total 0 Seconds At Site Condition
0 Seconds At Altitude

C. HYPERFLOW PERFORMANCE-STABILIZED FLOW

1st Setup
Alcohol 5.34 Lbs/Sec [9 % H_2O]
Oxygen 8.69 Lbs/Sec
H_2O 26.79 Lbs/Sec Injected

2nd Setup
Alcohol 0 Lbs/Sec [% H_2O]
Oxygen 0 Lbs/Sec
H_2O 0 Lbs/Sec [Injected]

D. CALCULATED HYPERFLOW PARAMETERS

	1st Run	2nd Run	Limit
Mixture Ratio [LOX ÷ Alcohol]	1.63	0	1.4 to 2.1
Water Fraction [Injected H_2O ÷ Oxygen + Alcohol + Injected H_2O]	0.656	0	0.61 to 0.68

E. CONSUMPTION OF FUELS, OXYGEN AND INJECTED WATER

		Limit	Comments
NTO	~~ABM~~ 15.9 Total Lbs. Consumed	5000 Lbs	
MMH	9.79 Total Lbs. Consumed	3000 Lbs	
Alcohol	5,981.4 Total Lbs. Consumed	21,000 Lbs	
LOX	~~3,000.5~~ 9735 Total Lbs. Consumed	33,000 Lbs	
Injected H_2O	30005 Total Lbs. Consumed		

1.63

F. VERIFICATIONS BY TEST ENGINEER

Limits of Sections A. ✓, B. ✓, D. ✓, E. ✓ have not been exceeded. H Patoto (Test Engineer)

No more than one hyperflow run within any 8-hour period. H Patoto (Test Engineer)

At least 60 minutes between hyperflow runs. H Patoto (Test Engineer)

Test Engineer Notify: ___ Director of Test, X5347; ___ Director of F&IE, X2221; ___ Environmental Specialist, X5915, within 24 hours of occurrence of any out-of-limit condition.

STL-IV - CELL 37 - TEST REPORT

Date: 5-12-89 Times-1st Run 16:32 -2nd Run _____ Test Setup Run Numbers-1st C375-117 -2nd _____

A. Hyperflow Durations (3000 Seconds Maximum)
1st Run ~ Seconds
2nd Run _____ Seconds

B. Engine Duration (3000 Seconds Maximum)
1st Run Total 8.6 Seconds at Site Conditions
_____ Seconds at Altitude
2nd Run Total _____ Seconds at Site Condition
_____ Seconds at Altitude

C. Hyperflow Performance - Stabilized Flow

1st Run
Alcohol ~ lbs/sec (_____% H_2O)
Oxygen _____ lbs/sec
H_2O _____ lbs/sec (Injected)

D. Number of Engine Tests: _____
Fiscal Year Cumulative
Number of Engine Tests _____ (Limit 2162)
2nd Run
Alcohol _____ lbs/sec (_____% H_2O)
Oxygen _____ lbs/sec
H_2O _____ lbs/sec (Injected)

E. Calculated Hyperflow Parameters

	1st Run	2nd Run	Limit
Mixture Ratio (LOX ÷ Alcohol)	_____	_____	1.4 to 2.1
Water Fraction (Injected H_2O ÷ LOX ÷ Alcohol ÷ Injected H_2O)	_____	_____	0.61 to 0.68

F. Consumption of Fuels, Oxygen, and Injected Water

		Limit	Comments
NTO	7.14 Total lbs Consumed		
MMH	4.38 Total lbs Consumed		
Alcohol	_____ Total lbs Consumed	(21,000 lbs. max.)	
LOX	_____ Total lbs Consumed	(33,000 lbs. max.)	
Injected H_2O	_____ Total lbs Consumed		

G. Verifications by Test Engineer
Limits of Sections A. ✓, B. ✓, D. —, E. —, and F. ✓, have not been exceeded. H Rabotin (Test Engineer)

No more than 2 hyperflow runs within any 8-hour period. H Rabotin (Test Engineer)
At least 60 minutes between hyperflow runs. H Rabotin (Test Engineer)
Number of test setups for the fiscal year do not exceed 55. H Rabotin (Test Engineer)
Test Engineer Notify: ___ Director of Test, X5347; ___ Director of F&I, X176-5372;
___ Environmental Specialist, X176-5324;
within 48 hours of occurrence of any out-of-limit condition.

STL-IV - CEL 7 - TEST REPORT

DATE 4-7-89 TIMES - 1st Run 10:18 2nd Run _____ TEST SETUP NO's-1st C37-5-116 2nd _____

A. HYPERFLOW DURATIONS (3000 SECONDS MAX.)

1st Run — Seconds
2nd Run _____ Seconds

B. ENGINE DURATION (3000 SECONDS MAX.)

1st Run Total 206 Seconds At Site Condition
— Seconds At Altitude
2nd Run Total _____ Seconds At Site Condition
_____ Seconds At Altitude

C. HYPERFLOW PERFORMANCE-STABILIZED FLOW

1st Setup
Alcohol _____ Lbs/Sec [_____ % H_2O]
Oxygen _____ Lbs/Sec
H_2O _____ Lbs/Sec Injected

2nd Setup
Alcohol _____ Lbs/Sec [_____ % H_2O]
Oxygen _____ Lbs/Sec
H_2O _____ Lbs/Sec [Injected]

D. CALCULATED HYPERFLOW PARAMETERS

	1st Run	2nd Run	Limit
Mixture Ratio [LOX ÷ Alcohol]			1.4 to 2.1
Water Fraction [Injected H_2O + Oxygen + Alcohol + Injected H_2O]			0.61 to 0.68

E. CONSUMPTION OF FUELS, OXYGEN AND INJECTED WATER

			Limit	Comments
NTO	21.48	Total Lbs. Consumed	5000 Lbs	
MMH	13.01	Total Lbs. Consumed	3000 Lbs	
Alcohol		Total Lbs. Consumed	21,000 Lbs	
LOX		Total Lbs. Consumed	33,000 Lbs	
Injected H_2O		Total Lbs. Consumed		

1.65

F. VERIFICATIONS BY TEST ENGINEER

Limits of Sections A. —, B. ✓, D. —, E. ✓ have not been exceeded. F Victor (Test Engineer)

No more than one hyperflow run within any 8-hour period. F Victor (Test Engineer)

At least 60 minutes between hyperflow runs. F Victor (Test Engineer)

Test Engineer Notify: ___ Director of Test, X5347; ___ Director of F&IE, X2221; ___ Environmental Specialist, X5915, within 24 hours of occurrence of any out-of-limit condition.

STL-IV - [illegible] 37 - TEST REPORT

DATE 4-4-89 TIMES - 1st Run 1420 2nd Run ____ TEST SETUP NO's-1st C37-3-115 2nd ____

A. HYPERFLOW DURATIONS (3000 SECONDS MAX.)

1st Run ____ Seconds
2nd Run ____ Seconds

B. ENGINE DURATION (3000 SECONDS MAX.)

1st Run Total 47 Seconds At Site Condition
____ Seconds At Altitude
2nd Run Total ____ Seconds At Site Condition
____ Seconds At Altitude

C. HYPERFLOW PERFORMANCE-STABILIZED FLOW

1st Setup
Alcohol ____ Lbs/Sec [____ % H_2O]
Oxygen ____ Lbs/Sec
H_2O ____ Lbs/Sec Injected

2nd Setup
Alcohol ____ Lbs/Sec [____ % H_2O]
Oxygen ____ Lbs/Sec
H_2O ____ Lbs/Sec [Injected]

D. CALCULATED HYPERFLOW PARAMETERS

	1st Run	2nd Run	Limit
Mixture Ratio [LOX ÷ Alcohol]			1.4 to 2.1
Water Fraction [Injected H_2O ÷ Oxygen + Alcohol + Injected H_2O]			0.61 to 0.68

E. CONSUMPTION OF FUELS, OXYGEN AND INJECTED WATER

		Limit	Comments
NTO 5.5	Total Lbs. Consumed	5000 Lbs	
MMH 3.6	Total Lbs. Consumed	3000 Lbs	
Alcohol ____	Total Lbs. Consumed 1.6	21,000 Lbs	
LOX ____	Total Lbs. Consumed	33,000 Lbs	
Injected H_2O ____	Total Lbs. Consumed		

F. VERIFICATIONS BY TEST ENGINEER

Limits of Sections A. ✓, B. ✓, D. —, E. ✓ have not been exceeded. H Patota (Test Engineer)

No more than one hyperflow run within any 8-hour period. H Patota (Test Engineer)

At least 60 minutes between hyperflow runs. H Patota (Test Engineer)

Test Engineer Notify: ____ Director of Test, X5347; ____ Director of F&IE, X2221; ____ Environmental Specialist, X5915, within 24 hours of occurrence of any out-of-limit condition.

STL-IV - [illegible]. 37 - TEST REPORT

DATE 3-7-89 TIMES - 1st Run 1348 TEST SETUP NO's-1st C37-5-114
2nd Run _____ 2nd _____

5th hot FTK

A. HYPERFLOW DURATIONS (3000 SECONDS MAX.)

1st Run — Seconds
2nd Run _____ Seconds

B. ENGINE DURATION (3000 SECONDS MAX.)

1st Run Total 38 Seconds At Site Condition
_____ Seconds At Altitude
2nd Run Total _____ Seconds At Site Condition
_____ Seconds At Altitude

C. HYPERFLOW PERFORMANCE-STABILIZED FLOW

1st Setup
Alcohol — Lbs/Sec [____ % H_2O]
Oxygen _____ Lbs/Sec
H_2O _____ Lbs/Sec Injected

2nd Setup
Alcohol — Lbs/Sec [____ % H_2O]
Oxygen _____ Lbs/Sec
H_2O _____ Lbs/Sec [Injected]

D. CALCULATED HYPERFLOW PARAMETERS

	1st Run	2nd Run	Limit
Mixture Ratio [LOX ÷ Alcohol]			1.4 to 2.1
Water Fraction [Injected H_2O + Oxygen + Alcohol + Injected H_2O]			0.61 to 0.68

E. CONSUMPTION OF FUELS, OXYGEN AND INJECTED WATER

		Limit	Comments
NTO	0.40 Total Lbs. Consumed	5000 Lbs	
MMH	0.27 Total Lbs. Consumed	3000 Lbs	
Alcohol	_____ Total Lbs. Consumed, 48	21,000 Lbs	
LOX	_____ Total Lbs. Consumed	33,000 Lbs	
Injected H_2O	_____ Total Lbs. Consumed		

F. VERIFICATIONS BY TEST ENGINEER

Limits of Sections A. —, B. ✓, D. —, E. ✓ have not been exceeded. H Rutstein (Test Engineer)

No more than one hyperflow run within any 8-hour period. H Rutstein (Test Engineer)

At least 60 minutes between hyperflow runs. H Rutstein (Test Engineer)

Test Engineer Notify: ___ Director of Test, X5347; ___ Director of F&IE, X2221; ___ Environmental Specialist, X5915, within 24 hours of occurrence of any out-of-limit condition.

92

21 NOV 89

ROCKWELL INTERNATIONAL
AEROSPACE OPERATIONS
ROCKETDYNE DIVISION

CELL 35
SCIT Testbed

STL-IV - CELL 37 - TEST REPORT

Date: 1-10-89 Times-1st Run 1614
-2nd Run _____

Test Setup Run Numbers-1st C37-5-113
-2nd _____

A. Hyperflow Durations (3000 Seconds Maximum)
1st Run — Seconds
2nd Run _____ Seconds

B. Engine Duration (3000 Seconds Maximum)
1st Run Total 6.25 Seconds at Site Conditions
_____ Seconds at Altitude
2nd Run Total _____ Seconds at Site Condition
_____ Seconds at Altitude

C. Hyperflow Performance - Stabilized Flow

1st Run
Alcohol — lbs/sec (_____% H_2O)
Oxygen _____ lbs/sec
H_2O _____ lbs/sec (Injected)

D. Number of Engine Tests: _____
Fiscal Year Cumulative
Number of Engine Tests _____ (Limit 2162)
2nd Run
Alcohol _____ lbs/sec (_____% H_2O)
Oxygen _____ lbs/sec
H_2O _____ lbs/sec (Injected)

E. Calculated Hyperflow Parameters

	1st Run	2nd Run	Limit
Mixture Ratio (LOX ÷ Alcohol)	_____	_____	1.4 to 2.1
Water Fraction (Injected H_2O ÷ LOX ÷ Alcohol ÷ Injected H_2O)	_____	_____	0.61 to 0.68

F. Consumption of Fuels, Oxygen, and Injected Water

			Limit	Comments
NTO	1.0	Total lbs Consumed		_____
MMH	1.0	Total lbs Consumed		_____
Alcohol	_____	Total lbs Consumed	(21,000 lbs. max.)	_____
LOX	_____	Total lbs Consumed	(33,000 lbs. max.)	_____
Injected H_2O	_____	Total lbs Consumed		_____

G. Verifications by Test Engineer
Limits of Sections A. ✓, B. ✓, D. —, E. —, and F. ✓, have not been exceeded. Robert for T. Bam (Test Engineer)

No more than 2 hyperflow runs within any 8-hour period. Robert (Test Engineer)
At least 60 minutes between hyperflow runs. Robert (Test Engineer)
Number of test setups for the fiscal year do not exceed 55. Robert (Test Engineer)
Test Engineer Notify: ___ Director of Test, X5347; ___ Director of F&IE, A176-5372;
___ Environmental Specialist, X176-5324;
within 48 hours of occurrence of any out-of-limit condition.

Application for

Permit-to-Operate No. 0271-111

Additional Input

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYI CNPK

Rockwell International

CERTIFIED - RETURN RECEIPT REQUESTED

20 June 1990

In reply refer to 90RC07869

Ventura County Air Pollution
Control District
800 South Victoria Avenue
Ventura, CA 93009

Attention: Mr. Bill Flynn

Subject: Application for P/O No. 0271-111 - Additional Input

Reference: Telecon with Bill Flynn on 3/22/90; Rocketdyne letter No. 90RC03756 dated 3/19/90; VAPCD letter dated 2/26/90; Rocketdyne letter No. 90RC00069 dated 1/5/90; and VAPCD temporary Permit to Operate #0271-111 and Authority to Construct #0271-110

Gentlemen:

Per the referenced telecon, Rockwell International Corporation, Rocketdyne Division is providing additional input for use in the District's evaluation of the subject application. Further examination by ETEC staff of the operational requirements of the Bowl Area (Saber) Test facility has led to the conclusion that at the currently permitted (and derated) boiler firing rate of 4.9×10^6 Btu/hour efforts to perform contracted tests on schedule would be hindered. Therefore, Rocketdyne requests that the Permit to Operate (while under District evaluation) be adjusted to permit a boiler firing rate at the full design rating of 6.3×10^6 Btu/hour.

Based upon a comparative analysis of boiler emission rates listed in the referenced Authority to Construct (A/C), the increased rate of firing will not produce emissions in excess of the current A/C. As stated in the A/C, the permitted emissions of oxides of nitrogen (NOX) are based on an emission rate of 30 parts per million by volume (ppmv), corrected to 0% oxygen. The stack test results, contained in the referenced Rocketdyne letter No. 90RC00069, show an average NOX emission of 13.2 ppm at 0% oxygen, resulting in annual NOX emissions of 0.03 tons per year at the projected operational rate, less than 50% of the permitted annual emissions. Since the proposed firing rate increase is only 29% above the permitted rate, it is expected that the NOX emissions will remain well below the 30 ppmv level used in the A/C calculations.

Relative to offsets required for the additional NOX emissions generated by the higher firing rate, Rocketdyne has sufficient offsets in place, as noted in Condition 4 of the referenced A/C, to cover an even greater increase in NOX emissions than that forecast. Rocketdyne has NOX offsets in the amount of 0.30 tons per year and these offsets shall remain in place for the life of the project or until March 31, 1991, whichever is sooner. If the boiler is to be operated past this date, documentation shall be supplied to the District showing availability of the offsets past the stipulated cutoff date.

Furthermore, Rocketdyne recognizes that its selection of the full design firing rate for the boiler will subject the boiler operation to compliance with VAPCD Rule 74.15. Among its requirements, the rule limits NOX emissions for boilers with a rated heat input capacity of 5 million Btu/hour (and an annual heat input rate of 9 billion Btu/ calendar year) to 40 ppmv, a figure that the actual Saber boiler emissions will remain far below. Rocketdyne also understands that units subject to the applicable provisions of the rule shall be tested for compliance not less than once every 24 months.

Rocketdyne will continue to operate all of its emission sources in full compliance with VAPCD rules and regulations. Should you have any questions, please do not hesitate to call Mr. Bob Melvold, of my staff, at (818) 773-5324.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

SRLaffam

S. R. Laffam
Director
Environmental & Energy Conservation

SRL/sj-1481H

cc: DOE-SAN/R. Liddle, G. Lavagnino, A. Adduci

Permit No. 0290

Renewal Fee

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED-RETURN RECEIPT REQUESTED

In reply refer to 90RC08446

July 10, 1990

Ventura County Air Pollution Control District
800 South Victoria Avenue
Ventura, CA 93009

Attention: Daniel L. Searcy

Subject: VAPCD Permit No. 0290 Renewal Fees - Sodium Pump Test Facility

Gentlemen:

Please find enclosed a check from Rockwell International Corporation, Rocketdyne Division in the amount of $250.00 for the subject permit renewal fees for the period from July 1, 1990 to June 30, 1991. Also enclosed is a copy of the VAPCD permit renewal fee invoice. Environmental has reviewed the draft copy of the Permit to Operate and found the permitted equipment listed as accurate and the permit conditions acceptable.

If you have any questions concerning this matter, please contact Mr. R. L. Kistner at (818) 773-5317.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

S R Lafflam

S. R. Lafflam
Director
Environmental and Energy Conservation

SRL:ma

Enclosures as noted

County of Ventura
Air Pollution Control District

Permit Renewal Fee Invoice

Rocketdyne Division
Sodium Pump Testing
Simi Valley, CA 93065

Invoice No.: 0290-90R
Invoice Date: 06-19-90

Renewal Fee Calculations

	Tons Per Year		Pounds Per Hour	
ROC	0.00 X $43.00 = $	0.00	0.01 X $43.00 = $	0.43
NOX	0.05 X $43.00 = $	2.15	0.14 X $43.00 = $	6.02
PM	0.00 X $32.25 = $	0.00	0.01 X $32.25 = $	0.32
SO2	0.01 X $21.50 = $	0.22	0.51 X $21.50 = $	10.97
CO	0.01 X $ 4.30 = $	0.04	0.04 X $ 4.30 = $	0.17
Subtotals:	$	2.41	$	17.91

Total Annual Fee: $250.00 (Minimum Annual Fee is $ 250.00)

Total Renewal Fee: $250.00 (Renewal Fee For 4 Quarters)

Please remit a check for $250.00 made payable to the Ventura County Air Pollution Control District at the address below within 60 days of the date of this invoice. Failure to remit payment will result in your permit being voided (APCD Rule 30). Your renewed permit will be valid for the period from July 1, 1990 to June 30, 1991.

800 South Victoria Avenue
Ventura, CA 93009
(805) 654-2801

ORIGINAL

	Invoice Number	Invoice Date	Supplier Code	Gross Amount	Discount Amount	Net Amount
0700999		07 09 90				250.00

Detach Before Depositing

No. 05149646 60-142/433

Rockwell International

Aerospace Operations, Rocketdyne Division
Canoga Park, California

Pittsburgh National Bank
Jeannette, Pennsylvania

DATE 07/16/90

[redacted] ******250.00

PAY to the order of

VENTURA COUNTY
AIR POLLUTION CTL DIST
800 S VICTORIA AVE
VENTURA CA 93009

Authorized Representative(s)

FORM R136-F-1 REV 2/89

035801 ⑈05149646⑈ ⑆043301627⑆ [redacted] 425292⑈

Application for

Permit-to-Operate No. 1344-013,

Processing Fee

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED - RETURN RECEIPT REQUESTED
In reply refer to 90RC08444

5 July 1990

Ventura County
Air Pollution Control District
800 South Victoria Avenue
Ventura, CA 93009

Attention: Ms. Terri Thomas

Subject: Application for Permit to Operate #1344-013 - Process Fee

Reference: VAPCD Letter dated 9 May 1990

Gentlemen:

Please find enclosed a check from Rockwell International Corporation, Rocketdyne Division (Rocketdyne) in the amount of $600.00 for permit processing fees for Permit to Operate #1344-013. A draft copy of the permit has also been enclosed, wherein certain proposed changes in permit conditions have been incorporated. Conditions Nos. 3 and 7 have been modified to allow for mechanically presetting tower air flow rates based on nominal water flows. The water flow rates shall be monitored and if a significant change in water flow rate occurs, the air/water flow balance shall be readjusted to return the air flow rate to the permitted level. Rocketdyne believes this approach is realistic and will satisfy the District's needs.

If you have any questions concerning this application revision, please contact Mr. Bob Melvold at (818) 773-5324.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

Jennifer Crone for

S. R. Lafflam
Director
Environmental & Energy Conservation

SRL/sj-1495H
05154RC

Enclosures as noted

ORIGINAL

	Invoice Number	Invoice Date	Supplier Code	Gross Amount	Discount Amount	Net Amount
500 15191		6 29 90 600.00		PERMIT TO OPERATE #1344-013 PROCESS FEE FOR STRIPPING TOWERS AT SSFL.		600.00

Detach Before Depositing

No. 05145536 60-162/433

Rockwell International

Aerospace Operations, Rocketdyne Division
Canoga Park, California

Pittsburgh National Bank
Jeannette, Pennsylvania

DATE
07/05/90

PAY
*****600.00

PAY to the order of

VAPCD
800 SO. VICTORIA AVE.
VENTURA CA 93009

JJD
XXX
5576457

"05145536" :043301627: 4 425297"

Authorized Representative(s)

FORM A136-F-1 REV. 2/89

Ventura County Air Pollution Control District
800 South Victoria Ave Ventura, CA 93009
(805)654-2801

DRAFT PERMIT TO OPERATE
Number 1344

Valid April 1, 1990 to March 31, 1991

This Permit Has Been Issued To The Following:

Company Name / Address:

Rockwell International
6633 Canoga Ave. - Code JA16
Canoga Park, CA 91304

Facility Name / Address:

Rocketdyne Division
Santa Susana Field Laboratory
Simi Valley, CA 93065

Permission Is Hereby Granted To Operate The Following:

At Water Supply Well 9A (Delta Area), Area II:

1 - Tankinetics Air Stripping System, 200 gallon per minute capacity, consisting of:
  1 - Primary tower, 36 feet high x 36 inches diameter, with a maximum air flow rate of 260 cfm
  1 - Secondary tower, 28 feet high x 36 inches diameter, with a maximum air flow rate of 2000 cfm
  8 - Carbon canisters, 55 gallon capacity each, operated in parallel, controlling exhaust from the primary tower

At Deep Well RD-1, Happy Valley, Area I:

1 - Tankinetics Air Stripping System, 40 gallon per minute capacity, consisting of:
  1 - Primary tower, 27 feet high x 18 inches diameter, with a maximum air flow rate of 60 cfm
  1 - Secondary tower, 23 feet high x 18 inches diameter, with a maximum air flow rate of 400 cfm
  2 - Carbon canisters, 55 gallon capacity each, operated in parallel, controlling exhaust from the primary tower

At Water Supply Well 6 behind Alfa, Area I:

1 - Tankinetics Air Stripping System, 200 gallon per minute capacity, consisting of:
  1 - Primary tower, 36 feet high x 36 inches diameter, with a maximum air flow rate of 260 cfm
  1 - Secondary tower, 28 feet high x 36 inches diameter, with a maximum air flow rate of 2000 cfm
  8 - Carbon canisters, 55 gallon capacity each, operated in parallel, controlling exhaust from the primary tower

VCAPCD Permit to Operate Number 1344
Issued To Rocketdyne Division
Valid April 1, 1990 to March 31, 1991

At Water Supply Well 9, Bravo Area:

2 - Tankinetics Air Stripping Systems, 40 gallon per minute capacity each, each consisting of:
  1 - Primary tower, 27 feet high x 18 inches diameter, with a maximum air flow rate of 60 cfm
  1 - Secondary tower, 23 feet high x 18 inches diameter, with a maximum air flow rate of 400 cfm
  2 - Carbon canisters, 55 gallon capacity each, operated in parallel, controlling exhaust from the primary tower

At Area 1 Road, Area 1:

1 - Tankinetics Air Stripping System, 40 gallon per minute capacity, consisting of:
  1 - Primary tower, 27 feet high x 18 inches diameter, with a maximum air flow rate of 60 cfm
  1 - Secondary tower, 23 feet high x 18 inches diameter, with a maximum air flow rate of 400 cfm
  2 - Carbon canisters, 55 gallon capacity each, operated in parallel, controlling exhaust from the primary tower

This Permit Has Been Issued Subject To The Following Conditions:

1. Permitted Emissions:

	Tons/Year	Pounds/Hour
Reactive Organic Compounds	0.30	0.08

2. Permitted emissions are based on a maximum reactive organic compound concentration of 6 ppmv, as methane, in the exhaust from each primary tower, and 1 ppmv, as methane, in the exhaust from ~~the~~ each secondary tower. Additional controls or operational modifications will be required if these concentrations are exceeded.

3. The maximum exhaust flow rates from each tower shall not exceed the values specified in the above equipment description. Insert ⊗

4. All spent carbon must be disposed at a Class 1 Hazardous Waste Facility or reclaimed by a certified regeneration facility.

5. Samples shall be taken on a monthly basis of the influent groundwater, the primary tower effluent water, and the secondary tower effluent water from each air stripping system. These samples shall be analyzed by a certified independent laboratory for ROC.

6. Tests shall be conducted once per week of operation for ROC at the exhaust of each carbon adsorption system and at the exhaust of each secondary tower. The frequency of sampling may be adjusted based on review of the required sampling records and determination of the carbon adsorption system breakthrough period. Written approval from the APCD shall be obtained prior to modifying the sampling frequency. Tests shall be conducted using a portable analyzer approved by the APCD.

7. Permittee shall maintain records of sample analyses required by Condition 5, results of testing required by Condition 6, and [redacted] water flow rates to each air stripping system. These records shall be maintained for a period of two years and be made available to APCD personnel on request.

Within ten days after receipt of this permit, the applicant may petition the Hearing Board to review any condition that has been modified or added to the permit (Rule 22).

This permit, or a copy, shall be posted reasonably close to subject equipment and shall be readily accessible to inspection personnel from the Air Pollution Control District (Rule 19).

This permit is not transferable from one location to another unless the equipment is specifically listed as being portable (Rule 20).

In reliance upon the statement of the applicant that the operation of the equipment described herein shall meet the requirements as specified in the Rules and Regulations of the Air Pollution Control District, permission is hereby granted to operate; provided, however, the permission granted hereby shall not be construed to permit said equipment to operate in violation of any applicable State or Federal emission standard or Rules and Regulations of the District.

Richard H. Baldwin
Air Pollution Control Officer

by:

Karl E. Krause, Manager
Engineering Section

(X) The air flow rate for each tower is established by a mechanical setting based on the nominal water flow rate. If a significant change (greater than 25 percent) in water flow rate occurs, the air/water flow rate balance shall be readjusted to return the air flow rate to the permitted level.

Permit-to-Operate No. 1344

RESOURCE MANAGEMENT AGENCY
county of ventura

Air Pollution
Control District

Richard H. Baldwin
Air Pollution Control Officer



July 10, 1990

Mr. Robert Melvold
Rockwell International
Rocketdyne Division
6633 Canoga Avenue (Code JA16)
Canoga Park, CA 91304

RE: Permit to Operate #1344

Dear Mr. Melvold:

Your APCD Permit to Operate is enclosed. APCD Rule 19 requires that the permit be readily accessible to inspection personnel from the Air Pollution Control District, and be posted reasonably close to the subject equipment.

This permit differs from the previous permit in that two air stripping towers have been added. In your letter dated April 24, 1990, you indicated that the remaining two air stripping towers on Authority to Construct 1344-2 will not be constructed; therefore, the Authority to Construct has been cancelled.

A receipt for your permit processing fee is also enclosed.

Please note that this permit has been issued with specific permitted emissions, which are based on the process limits listed in the accompanying permit conditions. Prior to exceeding any of these limits, you must submit an application to the District to modify your permit. You must also submit an application to the District prior to adding or modifying any equipment on the permit.

If you have any questions on this matter, please contac. me at (805)654-2844.

Sincerely,

Terri Thomas
Engineering Section

tt1344 07391RC

Government Center, Administration Building, L #1710
800 South Victoria Avenue, Ventura, CA 93009 (805) 654-2806 Fax Number: (805) 654-2842

County of Ventura
Air Pollution Control District
800 South Victoria Avenue • Ventura, CA 93009
(805) 654-2801

PERMIT TO OPERATE

Number 1344

Valid April 1, 1990 to March 31, 1991

This Permit Has Been Issued To The Following:

Company Name / Address:

Rockwell International
6633 Canoga Ave. - Code JA16
Canoga Park, CA 91304

Facility Name / Address:

Rocketdyne Division
Santa Susana Field Laboratory
Simi Valley, CA 93065

Permission Is Hereby Granted To Operate The Following:

At Water Supply Well 9A (Delta Area), Area II:

1 - Tankinetics Air Stripping System, 200 gallon per minute capacity, consisting of:
- 1 - Primary tower, 36 feet high x 36 inches diameter, with a maximum air flow rate of 260 cfm
- 1 - Secondary tower, 28 feet high x 36 inches diameter, with a maximum air flow rate of 2000 cfm
- 8 - Carbon canisters, 55 gallon capacity each, operated in parallel, controlling exhaust from the primary tower

At Deep Well RD-1, Happy Valley, Area I:

1 - Tankinetics Air Stripping System, 40 gallon per minute capacity, consisting of:
- 1 - Primary tower, 27 feet high x 18 inches diameter, with a maximum air flow rate of 60 cfm
- 1 - Secondary tower, 23 feet high x 18 inches diameter, with a maximum air flow rate of 400 cfm
- 2 - Carbon canisters, 55 gallon capacity each, operated in parallel, controlling exhaust from the primary tower

At Water Supply Well 6 behind Alfa, Area I:

1 - Tankinetics Air Stripping System, 200 gallon per minute capacity, consisting of:
- 1 - Primary tower, 36 feet high x 36 inches diameter, with a maximum air flow rate of 260 cfm
- 1 - Secondary tower, 28 feet high x 36 inches diameter, with a maximum air flow rate of 2000 cfm
- 8 - Carbon canisters, 55 gallon capacity each, operated in parallel, controlling exhaust from the primary tower

07-10-90

At Water Supply Well 9, Bravo Area:

2 - Tankinetics Air Stripping Systems, 40 gallon per minute capacity each, each consisting of:
  1 - Primary tower, 27 feet high x 18 inches diameter, with a maximum air flow rate of 60 cfm
  1 - Secondary tower, 23 feet high x 18 inches diameter, with a maximum air flow rate of 400 cfm
  2 - Carbon canisters, 55 gallon capacity each, operated in parallel, controlling exhaust from the primary tower

At Area I Road, Area I:

1 - Tankinetics Air Stripping System, 40 gallon per minute capacity, consisting of:
  1 - Primary tower, 27 feet high x 18 inches diameter, with a maximum air flow rate of 60 cfm
  1 - Secondary tower, 23 feet high x 18 inches diameter, with a maximum air flow rate of 400 cfm
  2 - Carbon canisters, 55 gallon capacity each, operated in parallel, controlling exhaust from the primary tower

This Permit Has Been Issued Subject To The Following Conditions:

1. Permitted Emissions:

	Tons/Year	Pounds/Hour
Reactive Organic Compounds	0.30	0.08

2. Permitted emissions are based on a maximum reactive organic compound concentration of 6 ppmv, as methane, in the exhaust from each primary tower carbon adsorption system, and 1 ppmv, as methane, in the exhaust from each secondary tower. Additional controls or operational modifications will be required if these concentrations are exceeded.

3. The maximum exhaust flow rate from each tower shall not exceed the values specified in the above equipment description. The exhaust flow rate from each tower shall be established by a mechanical setting based on the water flow rate to the tower. If a change in water flow rate to any tower greater than 25% occurs, the mechanical setting shall be redetermined and adjusted to insure that the exhaust flow rate does not exceed the specified level. A description of the method used to determine the mechanical setting shall be submitted to the District for approval.

4. All spent carbon must be disposed at a Class I Hazardous Waste facility or reclaimed by a certified regeneration facility.

5. Samples shall be taken on a monthly basis of the influent groundwater, the primary tower effluent water, and the secondary tower effluent water from each air stripping system. These samples shall be analyzed by a certified independent laboratory for ROC.

6. Tests shall be conducted once per week of operation for ROC at the exhaust of each carbon adsorption system and at the exhaust of each secondary tower. The frequency of sampling may be adjusted based on review of the required sampling records and determination of the carbon adsorption system breakthrough period. Written approval from the APCD shall be obtained prior to modifying the sampling frequency. Tests shall be conducted using a portable analyzer approved by the APCD.

7. Permittee shall maintain records of sample analyses required by Condition 5, results of testing required by Condition 6, and air and water flow rates to each air stripping system. Records of mechanical settings used to limit air flow rates may be substituted for the required air flow rate records. These records shall be maintained for a period of two years and be made available to APCD personnel on request.

Within ten days after receipt of this permit, the applicant may petition the Hearing Board to review any condition that has been modified or added to the permit (Rule 22).

This permit, or a copy, shall be posted reasonably close to subject equipment and shall be readily accessible to inspection personnel from the Air Pollution Control District (Rule 19).

This permit is not transferable from one location to another unless the equipment is specifically listed as being portable (Rule 20).

In reliance upon the statement of the applicant that the operation of the equipment described herein shall meet the requirements as specified in the Rules and Regulations of the Air Pollution Control District, permission is hereby granted to operate; provided, however, the permission granted hereby shall not be construed to permit said equipment to operate in violation of any applicable State or Federal emission standard or Rules and Regulations of the District.

Richard H. Baldwin
Air Pollution Control Officer

by:

Karl E. Krause, Manager
Engineering Section

Authority-to-Construct

Paint Spray Booth

Area II, B/206

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED - RETURN RECEIPT REQUESTED

24 July 1990

In reply refer to 90RC09155

Ventura Air Pollution Control District
800 South Victoria avenue
Ventura, CA 93009

Attention: Mr. Karl Krause

Subject: Application for Authority to Construct a Paint Spray Booth at B/206 in Area II at SSFL

Gentlemen:

Rockwell International Corporation, Rocketdyne Division hereby submits the enclosed application for an Authority to Construct a paint spray booth to be used for aerospace coatings at Building 206 in Area II at the Santa Susana Field Laboratory (SSFL).

Also enclosed are an equipment summary and billing form, an emission summary sheet, a description of the proposed painting of ELV engines, an emission calculation sheet, a certification of statewide compliance, a plot map of SSFL, information on the Binks paint spray booth to be installed and a check for the filing fee in the amount of $350.00.

If you have any questions concerning this application please contact Mr. Richard Kistner at (818) 773-5317.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

Jennifer Crone for

S. R. Lafflam
Director
Environmental Control
and Energy Conservation

SRL/sj-1507H

Enclosures as noted

105

County of Ventura
Air Pollution Control District
800 South Victoria Ave • Ventura, CA 93009
(805) 654-2801

Please print or type (Press hard, you are making multiple copies)

COMPANY

1. Name of Company: ROCKWELL INTERNATIONAL CORP.-ROCKETDYNE DIVISION
2. Company Contact: R.L. KISTNER
3. Mailing Address: 6633 CANOGA AVE.
4. Title: ENVIRONMENTAL ENGINEER
5. City, State & ZIP Code: CANOGA PARK, CA 91303
6. Phone: (818) 773-5317

FACILITY

7. Name of Facility: ROCKETDYNE SANTA SUSANA FIELD LAB.
8. Facility Contact: BOB WAGNER
9. Street Address: AREA II B/206 IN SIMI HILLS - TOP OF WOOLSEY CANYON ROAD
10. Title: MANAGER
11. City, State & ZIP Code: NEAR CHATSWORTH, CA 91311
12. Phone: (818) 710-2363

13. Type of Application (Check appropriate boxes)

- ☐ Authority to Construct - New Facility
- ☒ Authority to Construct - Modified Facility
- ☐ Permit to Operate
- ☐ Emission Reduction Credit
- ☐ Transfer of Ownership
- ☐ Change in Permitted Emissions

14. Brief Description of Project: INSTALL A BINKS PAINT SPRAY BOOTH OUTSIDE B/206 AT SSFL. THE BOOTH WILL BE USED TO TOUCH UP THE PAINT FINISH OF ROCKET ENGINES AFTER ENGINES HAVE BEEN TEST-FIRED.

15. SIC Code of Facility: 3764
16. Assessor's Parcel Number of Property:
17. Number of Employees: 800

18. For Authority to Construct Applications, Complete the Following:

Construction Start Date: 7/16/90 — Construction Completion Date: 8/17/90 — Equipment/Process Start-Up Date: 8/18/90

19. For Permit to Operate Applications, (Check appropriate boxes)

- ☐ All attachments previously submitted with the Authority to Construct application are valid and no changes have been made.
- ☐ A description of equipment/process variations from the Authority to Construct is attached.

Authority to Construct number: _____

20. Send bill(s) to person designated in: number 2 ☒ number 8 ☐ number 22 ☐
Send Authority to Construct or Permit to Operate to: number 2 ☒ number 8 ☐ number 22 ☐

21. Statement of Application Preparer:
"I am familiar with the Rules and Regulations of the Ventura County Air Pollution Control District and the equipment which is the subject of this application, and I certify that the equipment listed herein complies or can be expected to comply with said Rules and Regulations when operated in the manner and under the circumstances proposed by the applicant."

Signature of Application Preparer X: Richard L. Kistner — Date: 7/24/90

22. Name (printed or typed): RICHARD L. KISTNER

23. Firm name of application preparer: ROCKWELL INTERNATIONAL CORP. ROCKETDYNE DIV.

24. Phone: (818) 773-5317

25. Address of Firm: 6633 CANOGA AVE., CANOGA PARK, CA 91303

26. Statement of Company's Responsible Person:
"I am familiar with the Rules and Regulations of the Ventura County Air Pollution Control District and I certify that the data submitted with the application in regards to the operation of the plant and/or equipment which is the subject of the application is true and that its operation will comply with said Rules and Regulations."

Signature of Company's Responsible Person X: J.T. Crone for — Title: Director

Name (printed or typed): S. R. LAFFLAM — Date: 7/24/90

APCD USE ONLY

- APCD Area
- CTAZ
- SIC Code
- Date Received
- Amount Paid $
- Receipt #
- APPLICATION NO.

APCD2043 - 4/89

AIR POLLUTION CONTROL DISTRICT

EQUIPMENT SUMMARY & BILLING FORM

(File in duplicate)
Please type or print

COMPANY NAME ROCKWELL INTERNATIONAL CORP., ROCKETDYNE DIV. DATE 7/23/90

LOCATION B/206 AREA II SSFL IN THE SIMI HILLS APPLICATION NO. _____

APCD Use Only Rule	APCD Use Only Fee	(1) Quant.	(2) Equipt.	(3) Make	(4) Model	(5) Size/Capacity	(6) Source of Power or Type of Fuel & Max BTU/Hr Input	(7) Content & Composition	(8) Usage or Consumption Per Hour
		(1)	(2)	(3)	(4)	(5)			
		1	PAINT SPRAY BOOTH -	BINKS -	AA530 -	14'W			
						9'H			
						26'D			

	EQUIPMENT/RENEWAL FEE
	PERMIT TO OPERATE FILING FEE
	TOTAL
	LESS
	NET DUE

_____ _____
Professional Engineer's Signature. Certif. No.

Appl. No. -

APCD pp-24/TW 1m 9/74

Sheet ___ of ___

(See instructions on back of sheet)

Ventura County APCD Rules Compliance Summary
800 S. Victoria Ave., Ventura, CA 93009

SEE REVERSE SIDE FOR INSTRUCTIONS

(1) Company ROCKWELL INTERNATIONAL CORP. ROCKETDYNE DIVISION (2) Application # _____ (3) Location SANTA SUSANA FIELD LAB. BLDG. 206 AREA II

(4) Equipment/Process AEROSPACE PAINT SPRAY BOOTH (7) Hrs/Day 1 (8) Days/Yr 250

(5) Rule	(6) Pollutant	Requirements (Emissions) (9) Req'd	(10) Actual Calc'd	(11) Calc Ref Pg	(12) Engr Init.	Lb. of Pollutants Per (13) Hour (Poten'l)	(14) Hour	(15) Between 8&9 a.m.	(16) Ton/Yr
	NON-REACTIVE ORGANIC								
74.13C	COATINGS	4 GAL/DAY	0.5 GAL/DAY	1					
1.a		1 GAL/HR	0.5 GAL/HR.				4.0		0.14

(4) Equipment/Process _____ (7) Hrs/Day _____ (8) Days/Yr _____

(5) Rule	(6) Pollutant	Requirements (Emissions) (9) Req'd	(10) Actual Calc'd	(11) Calc Ref Pg	(12) Engr Init.	Lb. of Pollutants Per (13) Hour (Poten'l)	(14) Hour	(15) Between 8&9 a.m.	(16) Ton/Yr

APCD:PP-1 7/81 Application Preparer's Signature R. L. KISTNER No.

Subj: Proposed Painting of ELV Engines at SSFL B/204: Facility Requirements and VAPCD (Permit) Issues

Sequence of pertinent final assembly operations: Hot Fire, E&M checkout, Paint Thrust Chamber, E&M checkout, Final Paint Touch-up. ELV "After-Hot-Fire" paint products consumption estimates per Mike Cardenas, 3rd shift Production Painter, 02/24/89:

Paint Thrust Chamber After Hot Fire
1 pt zinc chromate = 8 LB/GAL.
1-1 1/2 qt aluminum lacquer = 8 LB/GAL
1 qt acetone cleanup (most is recovered in can)

Final Paint Touch-up
Alcohol wipe-down
1/2 pt aluminum lacquer
1 qt acetone cleanup (most is recovered)

Total consumption/ENGINE
16 oz (.125 gal) zinc chromate
60-80 oz (.5-.625 gal) silver lacquer

ALUMINUM GLOSS LACQUER is made up in 8 gal batches as follows: (see Fed. Spec. TT-L-32A)

1.	Aluminum paste @12 oz/gal of clear lacquer; ref: para 5.2	- 60 oz
2.	Clear cellulose nitrate lacquer ref: para 5.2;	- 5 gal
3.	Thinner "to aid as required" ref: para 5.2;	- 3 gal = 7.5 LB/GAL.
	Total	- 8 gal = 8 LB/GAL.

At the present rate of engine production, an 8 gal batch will last approx one year. It is constantly being agitated (24 hrs per day), and during the course of a year, thinner boils off and must be added to maintain spraying consistency. The painter estimates that he may add another 4 gal of thinner over the course of a year. At the scheduled production rates for 1989 thru 1995, an 8 gal batch will be expended more quickly and very little additional thinner should be required.

Explanation of "PAINT CALCS" chart: The first part is the projected production rate in total barrels (bbls) per year and per month. The second part is the calculated monthly consumption of paint products based upon painter Mike Cardena's estimates per bbl. Lacquer is shown as a min/max, as some engines require more touch-up than others. The third part of the chart assumes that a production rate of 3 ENGS/mo will result in 6 painting days per month, and therefore the total monthly consumption of paint products will occur in only 6 days; i.e., this is the max daily concentration.

File: ELV PAINT CALCS
Page 1

ELV FINAL ASSY PAINTS

DESCRIPTION	1989	1990	1991	1992	1993	1994	1995	1996	TOTAL
RS-27 ENGINES	9	12	13	8	8	8	6	8	8	82
MB-3/RS-56 ENGINES		15	24	27	27	27	30	27	6	183
TOTAL/YR	9	27	37	35	35	35	38	35	14	265
TOTAL/MO.	.75	2.25	3.1	2.9	2.9	2.9	3.2	2.9	1.2	
ZnCr GAL/MO	.1	.3	.4	.4	.4	.4	.4	.4	.2	
LACQUER GAL/MO MIN	.4	1.1	1.6	1.5	1.5	1.5	1.6	1.5	.6	
LACQUER GAL/MO MAX	.5	1.4	1.9	1.8	1.8	1.8	2	1.8	.8	
ACETONE GAL/MO	.4	1.1	1.6	1.5	1.5	1.5	1.6	1.5	.6	
MAX PAINT DAYS/MO	2	4	6	6	6	6	6	6	2	
Zn Cr GAL/DAY MAX	.1	.1	.1	.1	.1	.1	.1	.1	.1	
LACQUER GAL/DAY MAX	.4	.4	.4	.4	.4	.4	.4	.4	.4	
ACETONE GAL/DAY MAX	.3	.3	.3	.3	.3	.3	.3	.3	.3	

CERTIFICATION OF STATEWIDE COMPLIANCE

I certify that all stationary sources which have the potential to emit 100 or more tons per year of any pollutant in California, owned or operated by me (or by any entity controlling, controlled by, or under common control with me), which are subject to emission limitations are in compliance or on a schedule for compliance with all applicable emission limitations and standards.

Jennifer Crone for SR Lafflam 7/24/90
(Signature of Applicant) (Date)

NOTE: This form is required for the following sources, which are subject to APCD Rule 26.1:

1. Any new major stationary source of Reactive Organic Compounds (ROC), Oxides of Nitrogen (NO_x) or Particulate Matter (PM), or

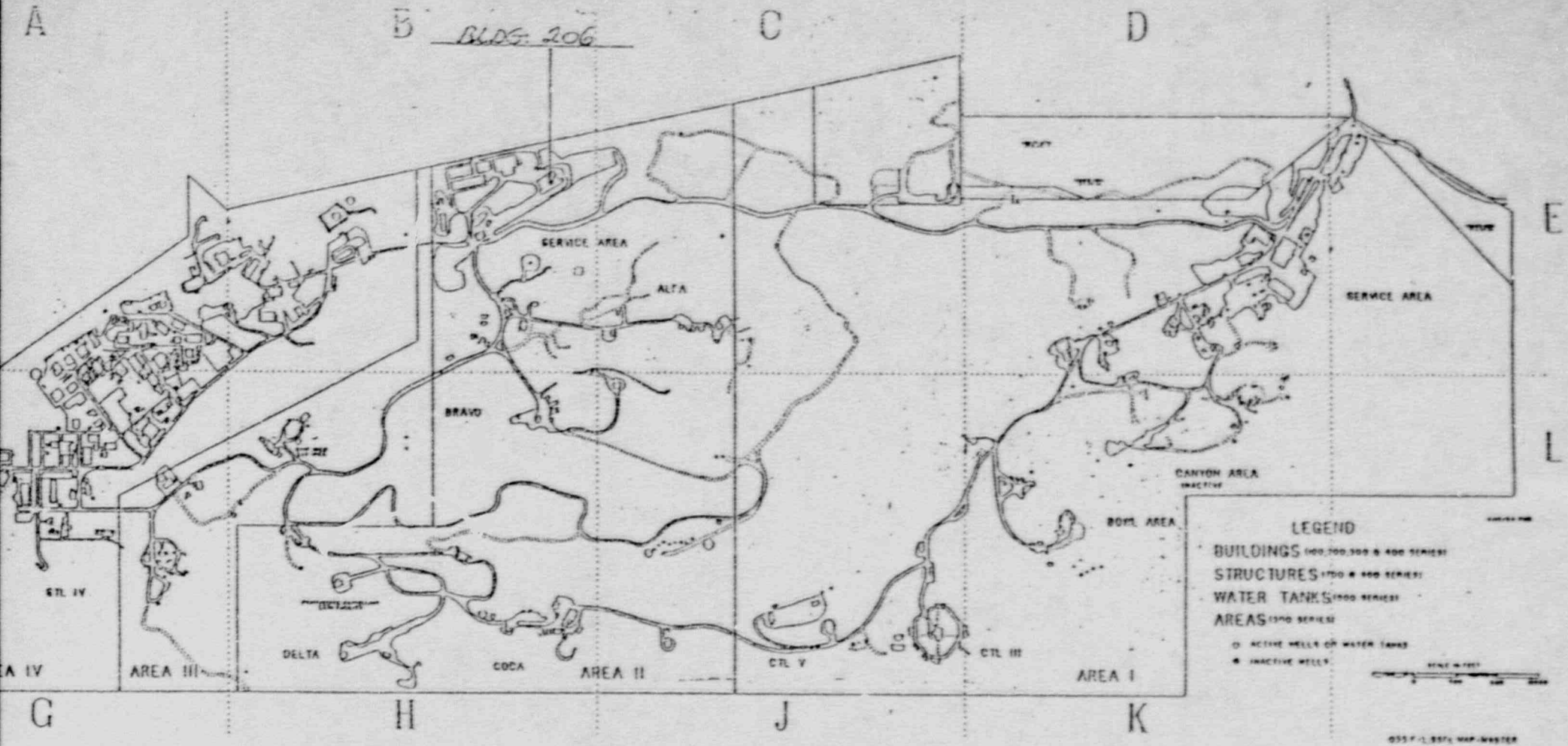
2. Any modification to a major stationary source of ROC, NO_x or PM, or

3. Any modification to a stationary source which would result in additional emissions causing the stationary source to become a major stationary source of ROC, NO_x or PM.

A major source is defined as a stationary source which emits or has permitted emissions of 25 tons or more per year of an air contaminant.

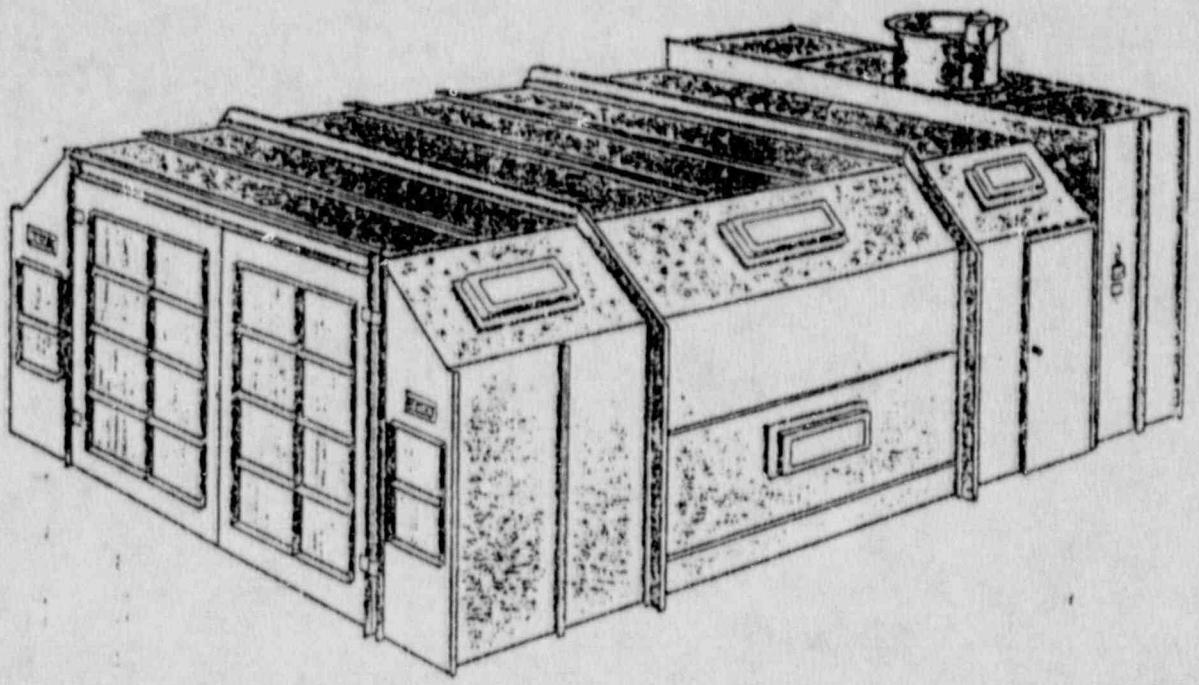
XDCERT

SANTA SUSANA FIELD LABORATORY



AUTO SPRAY BOOTHS

Andreae and Paint Arrestor Exhaust Filters



General Description of Automotive Package Spray Booths

This Binks Auto Package Spray Booth provides you with a complete automotive painting facility that requires only the "hook-up" to service to be operational. This automotive booth package of housing and equipment gives you an abundant flow-through of uniformly distributed air that is filtered at both inlet and exhaust. Optional equipment of appropriate ducting and outdoor stack components is also available.

Construction

The booth can be supplied with either solid back or with drive-thru doors. The personnel access door, 2'-6" x 6'-9", can be located on either side of the booth.

Floor mounting standard, curb mounting optional; please specify. Curb to be furnished by customer.

Package Equipment

Two types of exhaust air filters are available. Each type is Factory Mutual approved and carries a Class 2 listing by Underwriters Laboratories.

AA-booth models contain Andreae exhaust filters furnished in sufficient quantity to permit one complete replacement.

AF-models are outfitted with Paint Arrestor exhaust air filters including one complete replacement.

Additional Package Equipment

Double Mounting Ring Exhaust Fan (see description below)

Draft gauge to show when exhaust air filters need replacing.

Tight-Seal Air Filters.

Windows, Fluorescent 4-Tube Light Fixtures, Brackets

Personnel Access Door.

Caulking Gun, Compound for interior of booth.

All nuts, bolts, and fittings.

Double Mounting Ring Exhaust Fan

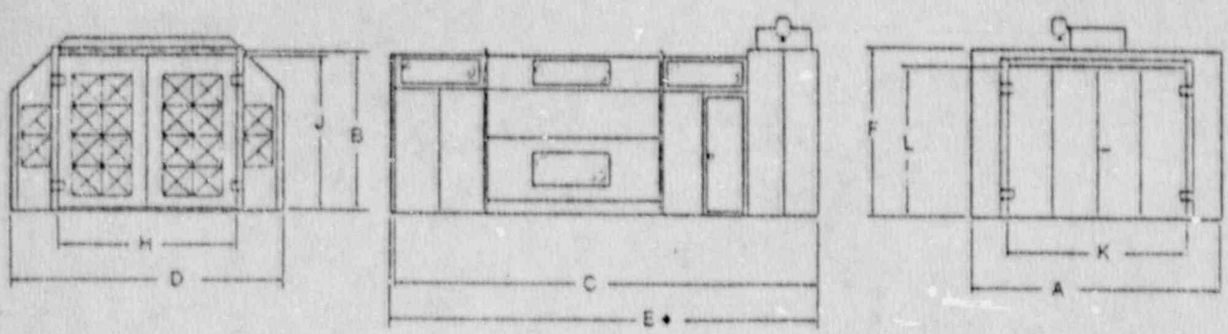
Model No. 30-4307.
Capacity: 12,200 SCFM*, 100 FPM★.
Description: 34" dia. with 3 H.P. open-type ball bearing motor. 230/460V., 60 Hz., 3 Ph.

* Air flow at .5" w.c. rated static pressure with clean filters and 25 ft. of exhaust duct length.
★ Equivalent air velocity through empty booth with clean filters and 25 ft. max. exhaust duct length.

Optional Equipment Package for Exhaust Fan

Qty.	Description	Model No.
2—	Spiral Exhaust Stacks, each 6' long, one with clean-out door, one plain. Each with 2 connector rings.	29-845 29-846
1—	Flat Roof Flange†	29-31
1—	Weather Canopy with automatic damper.	29-95
1—	Connector Ring	29-588

† For pitched roof, specify 29-35 Pitched Roof Flange.



Booth clearance, all around, 3 ft. recommended.

100 FPM Min. Face Velocity at .5" w.c. static press. with empty booth, clean filters, 25 ft. max. exhaust duct length.

Model Numbers		Work Dimensions			Overall Dimensions			Nominal Door Opening ○ Front		Back		Lights (quantity)		Shpg. Wt.
Andreae Filters	Paint Arrestor Filters	A	B	C	D	E ♦	F	H	J	X	L	L.H. ▼	L.D. ▲	Lbs.
AA-510	AF-510	Solid Back Models, 8 Window Units										0	0	4800
AA-530	AF-530											1	7	5200
AA-531 •	AF-531 •	14'-0"	9'-0"	26'-0"	15'-1"	26'-4"	9'-6"	10'-0"	8'-6"	—	—	1	7	5900
AA-550	AF-550											8	0	5400
AA-551 •	AF-551 •											8	0	6100
AA-610	AF-610	Drive-Thru Models, 8 Window Units										0	0	5300
AA-630	AF-630											1	7	5700
AA-631 •	AF-631 •	14'-0"	9'-0"	26'-0"	15'-1"	26'-4"	9'-6"	10'-0"	8'-6"	11'-6"	7'-8"	1	7	6400
AA-650	AF-650											8	0	5900
AA-651 •	AF-651 •											8	0	6600
AA-520	AF-520	Solid Back Models, 12 Window Units										0	0	4900
AA-540	AF-540											1	11	5400
AA-541 •	AF-54	14'-0"	9'-0"	26'-0"	15'-1"	26'-4"	9'-6"	10'-0"	8'-6"	—	—	1	11	6100
AA-560	AF-56											12	0	5700
AA-561 •	AF-561 •											12	0	6400
AA-620	AF-620	Drive-Thru Models, 12 Window Units										0	0	5400
AA-640	AF-640											1	11	5900
AA-641 •	AF-641 •	14'-0"	9'-0"	26'-0"	15'-1"	26'-4"	9'-6"	10'-0"	8'-6"	11'-6"	7'-8"	1	11	6600
AA-660	AF-660											12	0	6200
AA-661 •	AF-661 •											12	0	6900

• Furnished with optional equipment package for exhaust fan.
♦ When ordering Attached Air Make-up Systems, add 2'-6" to dimension.
○ For bifold rear doors, subtract 1'-6" for "pass-thru" width clearance. For width of one-piece front doors, and for all listed height openings, subtract 2" for "pass-thru" clearance.
▼ Four-tube fluorescent fixtures for Class 1, Div. 2 hazard locations.
▲ Open-type 4-tube fluorescent fixtures.

1. Fluorescent tubes not furnished. Purchase locally.
2. Explosion-proof or totally enclosed motor, and motor starter, available at extra cost.
3. Top exhaust standard. Back exhaust optional. Specify on order. Consult Binks representative if more than 25 ft. of exhaust duct are required.
4. Safety monitoring and control devices, as well as complete automatic systems, available at extra cost. Consult local codes and Binks representative for the equipment most appropriate to your operation.
5. Observation windows, clear wire-glass, available at extra cost. Specify quantity and location.
6. Special length booths available. Please consult your Binks representative.

(213) 888-1456

PRENCO/SPRAYWAY
5914 E. Washington Blvd.
Commerce, Ca. 90040

FAX # (213) 888-0974

Rockwell International Corporation
Rocketdyne Division
6633 Canoga Ave.
Canoga Park, Ca. 91303

June 21,1990

Quotation
062101GG
Reference: 730-174483

Attention: R. Prokenpek

In response to your request, we are pleased to present the following quotation for your consideration:

ONE BINKS AA-830 DRY ANDREAE FILTER TYPE AUTOMOBILE SPRAY BOOTH

BOOTH DIMENSIONS:

14' - 0" WIDE
9' - 0" HIGH
26' - 4" DEPTH OVERALL

Booth will be constructed of 18 gauge galvanized unpainted panels, each panel formed with companion flanges punched on 6" centers for bolted assembly. The booth will be furnished with rows of andreae filters, each 3' - 0" high. The media is made of special non-fire supporting paper and is formed into bouble accordian type folds with staggered holes to proved a highly efficient filter. A replacament set of filters will also be furnished.

The front of the booth will have (2) filter doors, each door to be 5'-0" wide x 8'-6" high. Each door will be provided with (8) 20" x 20" x 3" filter cells, each cell containing (1) 20" x 20" x 1" Tight Seal air filter. At each side of the doors there will be a panel 2'-0" wide x 9'-0" high, each panel to have (2) 20" x 20" x 3" filter cells, each cell containing (1) 20" x 20" x 1" Tight Seal air filter.

A 2'- 6" wide x 6'- 9" high access door will be provided for mounting on either side of the booth. Booth will be furnished with a draft gauge. Booth to be arranged for top exhaust.

EXHAUST FAN UNIT:

(1) 34" Diameter Double Ring Exhaust Fan
(1) 3 H.P., Open Type Ball Bearing Motor, 230 Volt, 60 Cycle, 3 Phrase
(1) Motor Starter and Disconnect AB-512 BACD-1-6-24 W/ NEMA-3R enclosure

Fan Capacity: 12,200 CFM @ 1/2" Static Pressure
Calculated Velocity: 100 FPM Thru Empty Booth

LIGHTING EQUIPMENT:

(12) 4 Tube, 40 Watt, 120 Volt, Open Type, Fluorescent Fixtures (Less Tubes)

Rockwell, Rocketdyne Div. Quotation#062101GG Page/

LIGHTING EQUIPMENT (CON'T)

(12) 16"x 54" R.S. Misco Wire Glass Windows

EXHAUST DUCTING:

(1) 34" Diameter Fan Ring
(1) 34" Diameter Door Joint
(1) 34" Diameter Plain Joint
(1) 34" Diameter Roof Flange (Flat)
(1) 34" Diameter Canopy

ADDITIONAL EQUIPMENT:

(1) 1/2" Solenoid Air Valve (120 Volt)
(3) Door Switches
(2) Explosion Proof, 120 Volt, 20 AMP, Light Switches
(1) 86-1001 Binks ECD air filter (at air dryer)
(2) 86-945 Binks oil and water extractors with regulator and gauge (In booth)

TOTAL PRICE FOR EQUIPMENT ONLY (F.O.B.) LOS ANGELES, CA.....$ 17,956.8

CANOPY:

One (1) galvanized canopy cover for assembly over auto booth. (22 gauge galvanized)

CANOPY DIMENSIONS:

20'- 0" WIDE
16'- 0" HIGH
30'- 0" LONG

TOTAL PRICE FOR CANOPY (F.O.B.) LOS ANGELES, CA.....$ 3,962.70

AIR DRYER:

(1) Air dryer as per plans and specs, Item list, 2,3,4,5,6.

TOTAL PRICE F.O.B. LOS ANGELES, CA.....$ 2,987.18

ORIGINAL

	Invoice		Supplier Code	Gross Amount	Discount Amount	Net Amount
	Number	Date				
0800061		07 24 90				350.00

Detach Before Depositing

No. 05151247 60-162/433

Rockwell International

Aerospace Operations, Rocketdyne Division
Canoga Park, California

Pittsburgh National Bank
Jeannette, Pennsylvania

DATE 08/02/90

PAY
******350.00

PAY to the order of

VENTURA COUNTY AIR POLLUTION
CONTROL DISTRICT
800 SOUTH VICTORIA AVENUE
VENTURA CA 93009

Authorized Representative(s)

FORM R136-F-1 REV. 2/89

Q36244 ⑈05151247⑈ ⑆043301627⑆ 3 425297⑈



Environmental Monitoring Report

Santa Susana Field Laboratory
Ventura County, California

Volume 2

August
1990

Radiological
Surface Water
Hazardous Waste Management
Remediation

Rockwell International
Rocketdyne Division

This document is printed on recycled paper

EXECUTIVE SUMMARY FOR SURFACE WATER

• NORTHWEST SLOPE RAINFALL RUN-OFF MONITORING PROGRAM

Analysis results for rainfa vent dated 29 May 1990 (0.75 ins.) for the SSFL Northwest Surface Water Runoff Monitoring Program has been submitted to the RWQCB, DOHS and EPA.

Given the low measurable rainfall on 5/29/90, the small amount of runoff generated did not facilitate sample collection for all parameters as specified in the runoff monitoring program. However, samples were collected for radioactivity analysis (gross alpha and beta, tritium and gamma scan) and pH at all sample sites except SBP2 on 5/29/90. Sufficient runoff was not collected at SPB2, therefore, no samples could be extracted.

The VOA vial samples taken at SBP1 site were damaged at the certified lab, so no results were available.

• NPDES PERMIT MONTHLY MONITORING REPORT

Attached are Rocketdyne's May and June 1990 NPDES permit reports, as submitted to the Regional Water Quality Control Board (RWQCB). These reports are required for all industrial wastewater, domestic wastewater and storm water discharged from the Santa Susana Field Laboratory (SSFL) property through the permitted discharge points on the south side of SSFL.

In May, approximately 9.6 million gallons of pond water were released from the facility during three discharge events. Two discharges were due to non-usage of water pumped out of the ground (one on May 7 and one on May 14) and one discharge was due to a rain event (on May 31).

The discharges of 7 and 14 May 1990 from R-2A Pond exceeded the pH permitted value of 9.0 with a value of 9.4. The pH value is attributed to the algae growth in the pond. Rocketdyne had conducted a study which indicates a correlation between an increase in pH and aging of naturally occurring nutrient rich pond water. The BOD for both STPs analyses for 1 May 1990 were performed by an outside certified laboratory using incorrect dilutions, so no BOD values are available for that date.

There were no discharges in June due to frequent utilization of wastewater for rocket engine testing.

The radioactivity (gross alpha and beta, and gamma scan) analyses for the 31 May 1990 discharge are included in the June monthly report. Since the discharge occurred on the last day of May, there was insufficient time for analyses results to be included in May's monthly report.

All analyses were conducted at laboratories certified for such analyses by the State Department of Health Services and in accordance with current EPA guideline procedures or as specified in Rocketdyne's NPDES permit.

QUARTERLY DOMESTIC WASTEWATER REPORT

The report for the domestic wastewater discharged at SSFL is submitted quarterly to the Regional Water Quality Control Board (RWQCB). For 1 April 1990 through 30 June 1990, Area I had an estimated average daily effluent of 16, 721 gallons/day (GPD). All effluent from Area II was pumped to Area III which had a total of 32,464 GPD.

Area I had 5,000 gallons and Area III had 15,000 gallons of wasted sludge from STP aeration tank removed and hauled to an authorized disposal site.

SSFL Northwest Surface Water Runoff Analytical Results

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED- RETURN RECEPT REQUESTED

In reply Refer to 90RC07870

29 June 1990

State of California
Regional Water Quality Control Board
101 Centre Plaza Drive
Monterey Park, CA 91754-2156

Attention: J. Ross

Subject: SSFL Northwest Surface Water Runoff and Analytical Results for Rainfall Event of 29 May 1990

Reference: Rockwell International Corporation, Rocketdyne Division SSFL Northwest Surface Water Runoff Monitoring Program Schedule Dated 2 October 1989

Gentlemen:

Please find enclosed Rockwell International Corporation, Rocketdyne Division (Rocketdyne), analytical results for samples taken of runoff generated during a rainfall event that occurred on 29 May 1990. This submittal of results is pursuant to the referenced monitoring program. Included for your reference is a map of the SSFL indicating each sample site. Below is a summary of recorded rainfall from the rain gauge located at the SSFL, Area I.

Rainfall Event	Recorded Rainfall (INCHES)
29 MAY 1990	0.75

Please note that given the low measurable rainfall on 29 May 1990, the small amount of runoff generated did not facilitate sample collection for all parameters as specified in the runoff monitoring program. However, samples were collected for radioactivity analysis (gross alpha and beta, tritium, and gamma scan) and pH at all sample sites except SBP2 (refer to map) on 29 May 1990. Sufficient run-off was not collected at SBP2, therefore no samples could be extracted. Also, relevent to SBP1, the VOA vial samples taken at the site were damaged at the certified lab, thus no results were available.

Below is a summary of sample collection at each sample site on the following rainfall date.

	Rainfall event
Sample Site	29 May 1990
SBP1	gross alpha, beta, tritium, gamma scan, BNA, grease & oil, general, metals, pH, and surfactants
SBP2	No Samples
B100	gross alpha, beta,tritium, gamma scan, general, VOA, pH, and metals
RMDF	gross alpha, beta, tritium, gamma scan, BNA, grease & oil, general, VOA, metals, pH, and surfactants
SRE	gross alpha, beta, tritium, gamma scan, BNA, grease & oil, general, VOA, metals, pH, and surfactants

Enclosed please find chemical analysis reports for samples collected for the above rainfall event. Should you have any questions regarding this report, please contact Ms. Leslie Dinius of my staff at (818) 773-5309.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

SR Lafflam

S.R. Lafflam, Director
Environmental and Energy Conservation

Enclosures: (1) SSFL Map of Sample Sites (per Northwest Surface Water Monitoring Program)
(2) Analysis Reports for Rainfall, 29 May 1990

cc: EPA Region IX/ C. Santos
DHS- TSCP Burbank/ D. Dickerson
DOE SAN/ A. Adduci, ETEC Management
DOE SAN/ R. Liddle, G. Lavagnino

NPDES Permit

Monthly Monitoring Report

May 1990

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED - RETURN RECEIPT REQUESTED

In reply refer to 90RC07399

15 June 1990

Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, CA 91754-2156

Attention: R. P. Ghirelli, Executive Officer

Subject: Monitoring Program for Industrial Wastewater

Reference: NPDES Permit CA0001309, Compliance File 6027

Gentlemen:

Pursuant to the referenced permit, whereby Rockwell International Corporation, Rocketdyne Division (Rocketdyne) is directed to conduct a monitoring program for industrial wastewater discharged from the property, we hereby submit the report for 1 May through 31 May 1990.

Approximately 9.6 million gallons of pond water were released from the facility during three discharge events. Two discharges were due to non-usage of water pumped out of the ground; while one discharge was rain induced.

The following is a listing of the May 1990 releases:

Date of Initial Release	Gallons of Water Released	Days of Discharge	Inches of Rainfall
07 May (R-2A)	3,659,800	1	0
14 May (R-2A)	1,988,000	1	0
31 May (R-2A)	3,976,200	1	0.75

The discharges of 7 and 14 May 1990 from R-2A Pond exceeded the pH permitted value of 9.0 with a value of 9.4. The pH value is attributed to the algae growth in the pond. Rocketdyne has conducted a study which indicates a correlation between an increase in pH and aging of naturally occurring, nutrient rich pond water. The BOD for both STPs analyses for 1 May 1990 were performed by an outside certified laboratory using incorrect dilutions, so no values are available.

The radioactivity (alpha, beta, gamma scan) analyses for 31 May 1990 discharge will be included in next month's report. This is due to the discharge occurring on the last day of the month of May 1990 and thus being unavailable from Rocketdyne's outside certified laboratory for submittal.

All analyses were conducted at laboratories certified for such analyses by the State Department of Health Services and in accordance with current EPA guideline procedures or as specified in Rocketdyne's NPDES permit. If you have any questions regarding this report, please contact Ms. Leslie Dinius at (818) 773-5309.

I certify under penalty of law that this document and all attachments were prepared under the 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. Executed on the fifteenth day of June 1990 at Canoga Park, California.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

S R Lafflam

S. R. Lafflam
Director
Environmental and Energy Conservation

SRL/sj-1038H

Enclosures: (1) Analyses for Domestic Sewage Monitoring Program (8 pg)
(2) NPDES DMR Forms for Domestic Sewage Monitoring (4 pg)
(3) Analyses for Effluent Discharge, R-2A Discharge Pond (12 pages)
(4) NPDES DMR Forms for Effluent Monitoring (8 pages)

cc w/encl: (1) Environmental Protection Agency/Cary Houk
(2) California Department of Health Services/J.N. Curphey
cc no/encl: (3) Department of Energy/A. Adduci, R. Liddle, G. Lavagnino, W. Murphie
(4) EPA/K. Schwinn
(5) DOHS/D. Dickerson

ABB
ASEA BROWN BOVERI

May 23, 1990

In reply, please refer to 8056-L151

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, CA 91303

ATTN: L. Dinius

PO#: R04KEZ90032628

Site: Santa Susana

Received: May 1,1990

Sample: Shipper #476173,
Collected by R. Horne

CRL lab #: 0121165101/
0121165102

C-EE lab #: 00419-02

	Fecal Coliform MPN/100 ml	BOD5 mg/l	Total Suspended Solids, mg/l	Turbidity NTU
Area 1				
Influent 1-STP-I-130	--	270.0	428.0	---
Effluent 1-STP-E-130	--	**	ND	.29
Effluent 1-STP-C-130	<2 *	--	--	---
Area 3				
Influent 3-STP-I-130	--	140.0	74.0	---
Effluent 3-STP-E-130	--	**	ND	.19
Effluent 3-STP-C-130	<2 *	--	--	---

If there are any questions, please call.

* Analysis performed by Enseco/CRL Laboratory, Ventura, California.
** Due to analysis being performed with incorrect dilutions, no value was available.

Sincerely,

Randal K. Horne

Randal K. Horne
Program Manager

ABB Environmental Services, Inc.

4765 Calle Quetzal
Camarillo, California 93012

Telephone (805) 388-5700

Fax (805) 987-3156

ABB
ASEA BROWN BOVERI

May 23, 1990 In reply, please refer to 8056-L152

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, CA 91303

ATTN: L. Dinius PO#: RO4KEZ90032628

Site: Santa Susana Received: May 8,1990

Sample: Shipper #476174, CRL lab #: VERBAL
Collected by R. Horne

C-EE lab #: 00450-01

	Fecal Coliform MPN/100 ml	BOD5 mg/l	Total Suspended Solids, mg/l	Turbidity NTU
Area 1				
Influent 1-STP-I-131	--	35.5	1190.0	---
Effluent 1-STP-E-131	--	ND	ND	.22
Effluent 1-STP-C-131	<2 *	--	--	---
Area 3				
Influent 3-STP-I-131	--	120.0	232.0	---
Effluent 3-STP-E-131	--	ND	ND	.15
Effluent 3-STP-C-131	<2 *	--	--	---

If there are any questions, please call.

* Analysis performed by Enseco/CRL Laboratory, Ventura, California.

Sincerely,

Randal K. Horne

Randal K. Horne
Program Manager

ABB Environmental Services, Inc.

4765 Calle Quetzal
Camarillo, California 93012
Telephone (805) 388-5700
Fax (805) 987-3156

ABB
ASEA BROWN BOVERI

May 24, 1990

In reply, please refer to 8056-L153

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, CA 91303

ATTN: L. Dinius

PO#: R04KEZ90032628

Site: Santa Susana

Received: May 16, 1990

Sample: Shipper #476175,
Collected by R. Raibon

CRL lab #: VERBAL

C-EE lab #: 00464-01

	Fecal Coliform MPN/100 ml	BOD5 mg/l	Total Suspended Solids, mg/l	Turbidity NTU
Area 1				
Influent 1-STP-I-132	--	138.0	280.0	---
Effluent 1-STP-E-132	--	ND	ND	.18
Effluent 1-STP-C-132	<2 *	--	--	---
Area 3				
Influent 3-STP-I-132	--	154.0	180.0	---
Effluent 3-STP-E-132	--	ND	ND	.21
Effluent 3-STP-C-132	<2 *	--	--	---

If there are any questions, please call.

* Analysis performed by Enseco/CRL Laboratory, Ventura, California.

Sincerely,

Randal K. Horne

Randal K. Horne
Program Manager

ABB Environmental Services, Inc.

4765 Calle Quetzal
Camarillo, California 93012
Telephone (805) 388-5700
Fax (805) 987-3156

ABB
ASEA BROWN BOVERI

May 31, 1990

In reply, please refer to 8056-L162

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, CA 91303

ATTN: L. Dinius

PO#: R04KEZ90032628

Site: Santa Susana

Received: May 22, 1990

Sample: Shipper #476176,
Collected by R. Raibon

CRL lab #: VERBAL

C-EE lab #: 00494-01

	Fecal Coliform MPN/100 ml	BOD5 mg/l	Total Suspended Solids, mg/l	Turbidity NTU
Area 1				
Influent 1-STP-I-133	--	130.0	1320.0	---
Effluent 1-STP-E-133	--	ND	ND	.22
Effluent 1-STP-C-133	<2 *	--	--	---
Area 3				
Influent 3-STP-I-133	--	70.0	900.0	---
Effluent 3-STP-E-133	--	ND	ND	.15
Effluent 3-STP-C-133	<2 *	--	--	---

If there are any questions, please call.

* Analysis performed by Enseco/CRL Laboratory, Ventura, California.

Sincerely,

Randal K. Horne

Randal K. Horne
Program Manager

ABB Environmental Services, Inc.

4765 Calle Quetzal
Camarillo, California 93012

Telephone (805) 388-5700

Fax (805) 987-3156

ABB
ASEA BROWN BOVERI

June 4, 1990

In reply, please refer to 8056-L169

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, CA 91303

Attn: L. Dinius

PO#: R04KEZ90032628

Site: Santa Susana

Received: May 29, 1990

Sample: Shipper #476176,
Collected by R. Raibon

CRL Lab #: VERBAL

ABB Lab #: 00514-01

	Fecal Coliform MPN/100 ml	BOD5 mg/l	Total Suspended Solids, mg/l	Turbidity NTU
Area 1				
Influent 1-STP-I-134	--	34.9	338.0	---
Effluent 1-STP-E-134	--	ND	ND	.30
Effluent 1-STP-C-134	<2 *	--	--	---
Area 3				
Influent 3-STP-I-134	--	1.7	106.0	---
Effluent 3-STP-E-134	--	ND	ND	.14
Effluent 3-STP-C-134	<2 *	--	--	---

If there are any questions, please call.

* Analysis performed by Enseco/CRL Laboratory, Ventura, California.

Sincerely,

Randal K. Horne

Randal K. Horne
Program Manager

ABB Environmental Services, Inc.

4765 Calle Quetzal
Camarillo, California 93012

Telephone (805) 388-5700

Fax (805) 987-3156

DOMESTIC SEWAGE MONITORING PROGRAM

TURBIDITY RESULTS - May 1990

Constituents	STP SITE Area I	Area III
Average effluent turbidity	0.5	0.1
Maximum effluent turbidity	1.2	0.6
Average time effluent turbidity above 5 NTU	-0-	-0-

See Monthly Turbidity Summary - Area I STP and Monthly Turbidity Summary - Area III STP data pages following for further information.

1038H

MONTHLY TURBIDITY SUMMARY

AREA I STP - May 1990

DATE	MAXIMUM READING (NTU)	>5 NTU (MINUTES)	DAILY AVERAGE (NTU)
1	0.6	0	0.6
2	0.6	0	0.6
3	0.6	0	0.5
4	0.6	0	0.3
5	0.6	0	0.4
6	0.6	0	0.4
7	0.6	0	0.4
8	0.6	0	0.4
9	0.6	0	0.6
10	0.6	0	0.6
11	0.6	0	0.4
12	1.2	0	0.7
13	0.6	0	0.6
14	0.6	0	0.4
15	0.6	0	0.5
16	0.6	0	0.3
17	0.6	0	0.5
18	0.6	0	0.4
19	0.6	0	0.4
20	0.6	0	0.3
21	0.6	0	0.4
22	0.6	0	0.3
23	0.6	0	0.4
24	0.6	0	0.5
25	0.6	0	0.5
26	0.6	0	0.5
27	0.6	0	0.5
28	0.6	0	0.6
29	0.6	0	0.6
30	0.6	0	0.4
31	0.6	0	0.6
MONTHLY DAILY AVERAGE:	0.5	TOTAL	14.6

1038H

MONTHLY TURBIDITY SUMMARY

AREA III STP - May 1990

DATE	MAXIMUM READING (NTU)	>5 NTU (MINUTES)	DAILY AVERAGE (NTU)
1	0.0	0	0.0
2	0.0	0	0.0
3	0.0	0	0.0
4	0.0	0	0.0
5	0.0	0	0.0
6	0.0	0	0.0
7	0.0	0	0.0
8	0.0	0	0.0
9	0.0	0	0.0
10	0.0	0	0.0
11	0.0	0	0.0
12	0.4	C	0.2
13	0.4	0	0.1
14	0.6	0	0.1
15	0.6	0	0.1
16	0.4	0	0.1
17	0.6	0	0.3
18	0.6	0	0.2
19	0.4	0	0.1
20	0.4	0	0.1
21	0.4	0	0.2
22	0.4	0	0.1
23	0.6	0	0.1
24	0.6	0	0.1
25	0.4	0	0.1
26	0.0	0	0.0
27	0.4	0	0.1
28	0.4	0	0.2
29	0.6	0	0.3
30	0.6	0	0.2
31	0.4	0	0.0

MONTHLY DAILY AVERAGE: 0.1 TOTAL: 2.5

1038H

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)

NAME ROCKWELL INTERNATIONAL CORP.

ADDRESS ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303

FACILITY

LOCATION

ATTN: R.W. MELVOLD (SS07)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

(2-16) CA0001309 PERMIT NUMBER

(17-19) DOM 1 DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	90	05	01	TO	90	05	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

ENCLOSURE 2

F - FINAL Rocketdyne Letter 90RC07399
DOMESTIC DISCHARGE #1
Dated 15 June 1990

Page 1 of 4

MAJOR (SUBR 04)

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (52-53)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
TURBIDITY	SAMPLE MEASUREMENT	******	******		******	0.50	0.60		0		
00070 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	NTU		WEEKLY	GRAB
BOD, 5-DAY (20 DEG. C)	SAMPLE MEASUREMENT	******	******		******	84.6	138.0		0		
00310 G 0 0 RAW SEW/INFLUENT	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	MG/L		ONCE/ 8 DAYS	GRAB
BOD, 5-DAY (20 DEG. C)	SAMPLE MEASUREMENT	******	******		******	0.0	0.0		0		
00310 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	30 DAILY MX	MG/L		WEEKLY	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******	711.2	1320.0		0		
00530 G 0 0 RAW SEW/INFLUENT	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	MG/L		WEEKLY	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******	0.0	0.0		0		
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	MG/L		WEEKLY	GRAB
COLIFORM, TOTAL GENERAL	SAMPLE MEASUREMENT	******	******		******	<2	<2		0		
74056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	2.2 MEDIAN	23 DAILY MX	MPN/ 100ML		DAILY	GRAB
BOD, 5-DAY PERCENT REMOVAL	SAMPLE MEASUREMENT	******	******		100%	******	******				
81010 K 0 0 PERCENTREMOVAL	PERMIT REQUIREMENT	******	******	**** ****	85 MONTH AV	******	******	PER-CENT		ONCE/ MONTH	CALCTD

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

S.R. LAFFLAM
DIRECTOR
ENVIRONMENTAL & ENERGY CONSERVATION

TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*

SR Laffla

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
818	773 5309	90	06	15
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if different)*

NAME ROCKWELL INTERNATIONAL CORP.

ADDRESS ROCKETDYNE DIVISION

6633 CANOGA AVENUE

CANOGA PARK CA 91303

FACILITY

LOCATION

ATTN: R.W. NELVOLD (SS07)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

CA0001309	DOM 1
PERMIT NUMBER *(2-16)*	DISCHARGE NUMBER *(17-19)*

F - FINAL
DOMESTIC DISCHARGE #1

ENCLOSURE 2
Rocketdyne Letter90RC0/39
Dated: 15 June 1990
Page 2 of 4

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	90	05	01	TO	90	05	31
	(20-21)	*(22-23)*	*(24-25)*		*(26-27)*	*(28-29)*	*(30-31)*

MAJOR (SUBR 04)

NOTE: Read instructions before completing this form.

PARAMETER *(32-37)*		*(3 Card Only)* QUANTITY OR LOADING AVERAGE *(46-53)*	MAXIMUM *(54-61)*	UNITS	*(4 Card Only)* QUALITY OR CONCENTRATION MINIMUM *(38-45)*	AVERAGE *(46-53)*	MAXIMUM *(54-61)*	UNITS	NO. EX *(62-63)*	FREQUENCY OF ANALYSIS *(64-68)*	SAMPLE TYPE *(69-70)*
SOLIDS, SUSPENDED PERCENT REMOVAL	SAMPLE MEASUREMENT	******	******		100%	******	******		0		
81011 K 0 0 PERCENTREMOVAL	PERMIT REQUIREMENT	******	******	**** ****	85 MONTH AV	******	******	PER-CENT		ONCE/ MONTH	CALCTD
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
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	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

S.R. LAFFLAM
DIRECTOR
ENVIRONMENTAL & ENERGY CONSERVATION

TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN, AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*

S R Laffla

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
818	773 5309	90	06	15
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

ENCLOSURE 2
Rocketdyne Letter 90RC07399
Dated May 23 1990
Page 3 of 4

PERMITTEE NAME/ADDRESS (Include facility Name/Location if different)
NAME ROCKWELL INTERNATIONAL CORP.
ADDRESS ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303
FACILITY
LOCATION
ATTN: R.W. MELVOLD (SSO7)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)
(2-16) CA0001309 PERMIT NUMBER
(17-19) DOM 3 DISCHARGE NUMBER

F - FINAL
DOMESTIC DISCHARGE #3

MONITORING PERIOD
FROM YEAR 90 (20-21) MO 05 (22-23) DAY 01 (24-25)
TO YEAR 90 (26-27) MO 05 (28-29) DAY 31 (30-31)

MAJOR (SUBR 04)
NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) (46-53) QUANTITY OR LOADING (54-61) AVERAGE	MAXIMUM	UNITS	(4 Card Only) (38-45) QUALITY OR CONCENTRATION (46-53) MINIMUM	AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
TURBIDITY	SAMPLE MEASUREMENT	******	******		******	0.1	0.3		0		
00070 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	STU		WEEKLY	GRAB
BOD, 5-DAY (20 DEG. C)	SAMPLE MEASUREMENT	******	******		******	86.4	154.0		0		
00310 G 0 0 RAW SEW/INFLUENT	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	MG/L		ONCE/ 6 DAYS	GRAB
BOD, 5-DAY (20 DEG. C)	SAMPLE MEASUREMENT	******	******		******	0.0	0.0		0		
00310 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	30 DAILY MX	MG/L		WEEKLY	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******	298.	900.		0		
00530 G 0 0 RAW SEW/INFLUENT	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	MG/L		WEEKLY	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******	0.0	0.0		0		
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	MG/L		WEEKLY	GRAB
COLIFORM, TOTAL GENERAL	SAMPLE MEASUREMENT	******	******		******	< 2	< 2		0		
74056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	2.2 MEDIAN	23 DAILY MX	MPN/ 100ML		DAILY	GRAB
BOD, 5-DAY PERCENT REMOVAL	SAMPLE MEASUREMENT	******	******		100%	******	******		0		
81010 K 0 0 PERCENTREMOVAL	PERMIT REQUIREMENT	******	******	**** ****	85 MONTH AV	******	******	PER-CENT		ONCE/ MONTH	CALCTD

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
S.R. LAFFLAM
DIRECTOR
ENVIRONMENTAL & ENERGY CONSERVATION
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN, AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*

SR Laffla
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: AREA CODE 818 | NUMBER 773 5309
DATE: YEAR 90 | MO 06 | DAY 15

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

ENCLOSURE 2
Rocketdyne Letter 90RC07399
Dated 15 June 1990
Page 3 of 4

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)

NAME ROCKWELL INTERNATIONAL CORP.
ADDRESS ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303
FACILITY
LOCATION
ATTN: R.W. MELVOLD (SS07)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PERMIT NUMBER (2-16)	DISCHARGE NUMBER (17-19)
CA0001309	DOM 3

F - FINAL
DOMESTIC DISCHARGE #3

MONITORING PERIOD	YEAR	MO	DAY
FROM	90 (20-21)	05 (22-23)	01 (24-25)
TO	90 (26-27)	05 (28-29)	31 (30-31)

MAJOR (SUBR 04)

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		QUANTITY OR LOADING (3 Card Only) AVERAGE (46-53)	MAXIMUM (54-61)	UNITS	QUALITY OR CONCENTRATION (4 Card Only) MINIMUM (38-45)	AVERAGE (46-53)	MAXIMUM (54-61)	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
SOLIDS, SUSPENDED PERCENT REMOVAL	SAMPLE MEASUREMENT	******	******		100%	******	******		0		
81011 K 0 0 PERCENTREMOVAL	PERMIT REQUIREMENT	******	******	**** ****	85 MONTH AV	******	******	PER-CENT		ONCE/ MONTH	CALCTD
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
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	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
S.R. LAFFLAM
DIRECTOR
ENVIRONMENTAL & ENERGY CONSERVATION
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*

SR Laff
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE AREA CODE	NUMBER	DATE YEAR	MO	DAY
818	773 5309	90	06	15

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

ABB
ASEA BROWN BOVERI

May 23, 1990

In reply, please refer to 8056-L151

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, CA 91303

ATTN: L. Dinius

PO#: R04KEZ90032628

Site: Santa Susana

Received: May 1,1990

Sample: Shipper #476173,
Collected by R. Horne

CRL lab #: 0121165101/
0121165102
C-EE lab #: 00419-02

	Fecal Coliform MPN/100 ml	BOD5 mg/l	Total Suspended Solids, mg/l	Turbidity NTU
Area 1				
Influent 1-STP-I-130	--	270.0	428.0	---
Effluent 1-STP-E-130	--	**	ND	.29
Effluent 1-STP-C-130	<2 *	--	--	---
Area 3				
Influent 3-STP-I-130	--	140.0	74.0	---
Effluent 3-STP-E-130	--	**	ND	.19
Effluent 3-STP-C-130	<2 *	--	--	---

If there are any questions, please call.

* Analysis performed by Enseco/CRL Laboratory, Ventura, California.
** Due to analysis being performed with incorrect dilutions, no value was available.

Sincerely,

Randal K. Horne

Randal K. Horne
Program Manager

ABB Environmental Services, Inc.

4765 Calle Quetzal
Camarillo, California 93012

Telephone (805) 388-5700

Fax (805) 987-3156

CHEMICAL ANALYSIS REPORT

Log Number 9005169

TO: Environmental Unit DEPT/GROUP: 543-000 PHONE: 392-5309
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90, page 107; 9005075 for Cl & boron REPORT DATE: 05/16/90

SAMPLE INFORMATION FOR 9005169

Sample Descrption: R2A Pond Discharge, General
Requester: Leslie Dinius
Requested Analysis: General Discharge Analyses
Received: 05/07/90 at 14:03:00
Sampler: L. Collins Sampler ID#: #48009 Sample Time: [illegible] 00
Sampled: 05/07/90

ANALYTE	RESULT	UNIT	MAX. LEVEL CONTAMINATE	METHOD/SOURCE
Arsenic	ND< 0.01	mg/L	0.05	304, Std Meth 16
BOD	26	mg/L	30	507, Std Meth 16
Boron	TR< 0.1	mg/L	1.0	404A, Std Meth 16
Chloride	51	mg/L	150	325.3 EPA
Fluoride	0.5	mg/L	1.0	413B, Std Meth 16
Oil & Grease	ND< 1	mg/L	15	503, Std Meth 16
pH	9.4	pH Units	6.0 to 9.0	423, Std Meth 16
Residual Chlorine	ND< 0.04	mg/L	0.1	408C, Std Met 16C
Settleable Solids	TR< 1	mg/L	0.3	209E, Std Meth 16
Sulfate	63	mg/L	300	375.4, EPA
Surfactants	0.1	mg/L	0.5	512B, Std Meth 16
Suspended Solids	8.5	mg/L	N.S.	209C, Std Meth 16
Temperature	76	deg. F	100	212, Std Meth 16
Total Dissolved Solids	576	mg/L	950	209B, Std Meth 16
Turbidity	3.0	NTU	See Notes	214, Std Meth 16

SPECIFICATION: NPDES (SSFL Discharge Limits for Waste Water)
SPECIAL NOTES: Turbidity shall not increase the natural turbidity of the receiving waters at the time of discharge.
COMMENTS: This report includes log# 9005164 to 9005175.

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified result for indication purposes only

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: _____
Chemist
Rocketdyne SSFL Analytical Chemistry

ABB
ASEA BROWN BOVERI

May 31, 1990

In reply, please refer to 8056-L160

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, CA 91303

ATTENTION: L. Dinius D-543,

REGARDING: PO# R04KEZ90032628

INVESTIGATION: 96-Hour Static Bioassay

RECEIVED: May 8, 1990

SAMPLE: Rocketdyne Shipper # 476174
ID#: 9005.164 & 9005.165
Picked up by: R. Horne

*** LAB #:** 0128124803

SITE: R-2-A Reservoir, 5/8/90

RESULTS: Bioassay

LC50 = >100 %
100% survival in undiluted sample.

* Analysis performed by ENSECO/CRL, Ventura, California.

If you have any questions, please contact me.

Sincerely,

Randal K. Horne

Randal K. Horne
Program Manager

ABB Environmental Services, Inc.

4765 Calle Quetzal
Camarillo, California 93012

Telephone (805) 388-5700

Fax (805) 987-3156

Enseco - CRL
2810 Burven Avenue, Unit A • Ventura, CA 93003
(805) 650-0546 • FAX: (805) 650-0756

ABB Environmental
4765 Calle Quetzal
Camarillo, CA., 93010
FAX # 987-3156

05/23/90

Attn: M. Grasmugg
805/388/5700

Project 1833, Job 488/410/404
Release #6863, PO #92075

Sample #: 0128124801
Received: 05/08/90
Type: Wastewater

Collector: Client
Sampling Date & Time: 05/08/90, 1010
Method: Grab

I.D.: 90001886 (1 STPC 131)

CONSTITUENT	METHOD	RESULT	UNIT	MDL
Total Fecal Coliform	SM 16th.ED-908A	Cancelled		2

Sample #: 0128124802
Received: 05/08/90
Type: Wastewater

Collector: Client
Sampling Date & Time: 05/08/90, 0950
Method: Grab

I.D.: 90001887 (3 STPC 131)

Total Fecal Coliform	SM 16th.ED-908A	Cancelled		2

Sample #: 0128124803
Received: 05/08/90
Type: Wastewater

Collector: Client
Sampling Date & Time: 05/07/90, 1320
Method: Grab

I.D.: 90001888 (48007/48008)

Bioassay-Fathead Minnow (G)	NPDES	CA.FishGame1976	0.0 TU
96 hr. LC50			>100 %
95% Confidence Interval			NA

(ND = None Detected; (G) = Grab; MDL = Minimum Detection Limit)

01281248

The Report Cover Letter is an integral part of this report.
This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited

ABB
ASEA BROWN BOVERI

May 31, 1990 In reply, please refer to 8056-L161

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, CA 91303

ATTENTION: L. Dinius D-543 **REGARDING:** PO# R04KEZ90032628

INVESTIGATION: Water Analysis - Radioactivity

SAMPLE: Rocketdyne Shipper #476174 **RECEIVED:** May 8, 1990

SITE: R2A, Santa Susana, 5/8/90 * **LAB #:** G96430-G96450

RESULTS: Radioactivity pC/Liter

	Gross Alpha	Gross Beta	Gamma Scan CS-137
R2A 9003.166/168	1.82 ± 1.85	2.57 ± 2.72	2.02 ± 3.22

* Analysis performed by United States Testing Company, Inc., Richland, Washington.

If you have any questions, please contact me.

Sincerely,

Randal K. Horne

Randal K. Horne
Program Manager

CHEMICAL ANALYSIS REPORT

Log Number 9005313

TO: Environmental Unit DEPT/GROUP: 543-000 PHONE: 392-5309
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90, page 112 REPORT DATE: 05/23/90

SAMPLE INFORMATION FOR 9005313

Sample Descrption: R2A Pond, discharge
Requester: Leslie Dinius
Requested Analysis: General
Received: 05/14/90 at 13:57:00
Sampler: L. Collins Sampler ID#: 48050 Sample Time: 13:26:00
Sampled: 05/14/90

ANALYTE	RESULT	UNIT	MAX. LEVEL CONTAMINATE	METHOD/SOURCE
Arsenic	TR< 0.01	mg/L	0.05	304, Std Meth 16
BOD	8.0	mg/L	30	507, Std Meth 16
Boron	0.1	mg/L	1.0	404A, Std Meth 16
Chloride	64	mg/L	150	325.3 EPA
Fluoride	0.6	mg/L	1.0	413B, Std Meth 16
Oil & Grease	ND< 1	mg/L	15	503, Std Meth 16
pH	9.4	pH Units	6.0 to 9.0	423, Std Meth 16
Residual Chlorine	ND< 0.04	mg/L	0.1	408C, Std Met 16C
Settleable Solids	TR< 0.1	mg/L	0.3	209E, Std Meth 16
Sulfate	42	mg/L	300	375.4, EPA
Surfactants	0.04	mg/L	0.5	512B, Std Meth 16
Suspended Solids	33	mg/L	N.S.	209C, Std Meth 16
Temperature	67	deg. F	100	212, Std Meth 16
Total Dissolved Solids	599	mg/L	950	209B, Std Meth 16
Turbidity	7.0	NTU	5.0	214, Std Meth 16

SPECIFICATION: California DHS (SSFL Discharge Limits for Waste Water)
SPECIAL NOTES: Recommended drinking water action levels, California Dept. Health Services, Aril 1989
COMMENTS: This report includes log# 9005308 to 9005319. The pH value has been reported to the Environmental Unit.

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified result for indication purposes only

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: _____
Chemist
Rocketdyne SSFL Analytical Chemistry

ABB
ASEA BROWN BOVERI

June 5, 1990

In reply, please refer to 8056-L170

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, CA 91303

ATTENTION: L. Dinius D-543,

REGARDING: PO# RO4KEZ90032628

INVESTIGATION: 96-Hour Static Bioassay

SAMPLE: Rocketdyne Shipper # N/A
ID#: 48048 & 48049
Picked up by: S. Webster

*** LAB #:** 0135103400

SITE: R-2-A Reservoir, 5/14/90

RESULTS: Bioassay

100% survival in undiluted sample.
LC50 = >100 %

* Analysis performed by Enseco-CRL, Ventura, California.

If you have any questions, please contact me.

Sincerely,

Randal K. Horne

Randal K. Horne
Program Manager

ABB Environmental Services, Inc.

4765 Calle Quetzal
Camarillo, California 93012

Telephone (805) 388-5700

Fax (805) 987-3156

Enseco - CRL
2810 Bunsen Avenue, Unit A • Ventura, CA 93003
(805) 650-0546 • FAX: (805) 650-0756

ABB Environmental
4765 Calle Quetzal
Camarillo, CA., 93010
FAX # 987-3156

05/22/90

Attn: M. Grasmugg
805/388/5700

Project #1833-01, Job #462
Release #6865, PO #92075

Sample #: 0135103400
Received: 05/15/90
Type: Wastewater

Collector: Client
Sampling Date & Time: 05/14/90, 1320
Method: Not Specified

I.D.: 90002132

CONSTITUENT	METHOD	RESULT	UNIT
Bioassay-Fathead Minnow NPDES	CA.FishGame1976	0.0	TU
96 hr. LC50		>100	%
95% Confidence Interval		NA	

Reviewed

Approved

Page: 1

[ND = None Detected; (G) = Grab; MDL = Minimum Detection Limit]

01351034

The Report Cover Letter is an integral part of this report.
This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the addressee. The contents of this report or use of this laboratory's name for advertising or publicity purposes without authorization is prohibited

ABB
ASEA BROWN BOVERI

June 6, 1990 In reply, please refer to 8056-L171

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, CA 91303

ATTENTION: L. Dinius D-543 **REGARDING:** PO# RO4KEZ90032628

INVESTIGATION: Water Analysis - Radioactivity

SAMPLE: Rocketdyne Shipper # N/A **LAB #:** G96900-G96920 *

SITE: R2A, Santa Susana, 5/14/90

RESULTS:

	Radioactivity pC/Liter	
	Gross Alpha	Gross Beta
R2A 9004.310	3.58 ± 2.88	1.95 ± 1.40

If you have any questions, please call me.

* Analysis performed by United States Testing Company, Inc., Richland, Washington.

Sincerely,

Randal K. Horne

Randal K. Horne
Program Manager

ABB Environmental Services, Inc.

4765 Calle Quetzal
Camarillo, California 93012
Telephone (805) 388-5700
Fax (805) 987-3156

ABB
ASEA BROWN BOVERI

June 11, 1990 In reply, please refer to 8056-L172

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, CA 91303

ATTENTION: L. Dinius D-543 **REGARDING:** PO# R04KEZ90032628

INVESTIGATION: Water Analysis - Radioactivity

SAMPLE: Rocketdyne Shipper # N/A **LAB #:** G96910 *

SITE: R2A, Santa Susana, 5/14/90

RESULTS: Radioactivity pC/Liter

Gamma Scan

R2A 9004.311	K-40 = 98.6 ± 142
	CS-137DA = -3.23 ± 5.83
	PB-212 = 8.04 ± 7.77

If you have any questions, please call me.

* Analysis performed by United States Testing Company, Inc., Richland, Washington.

Sincerely,

Randal K. Horne

Randal K. Horne
Program Manager

ABB Environmental Services, Inc.

4763 Calle Quetzal
Camarillo, California 93012
Telephone (805) 388-5700
Fax (805) 987-3156

CHEMICAL ANALYSIS REPORT

Log Number 9005631

TO: Environmental Unit DEPT/GROUP: 543-000 PHONE: 392-5309
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: Lb. 90 pg 126
REPORT DATE: 06/06/90

SAMPLE INFORMATION FOR 900563[illegible]

Sample Description: R2A Discharge
Requester: Leslie Dinius
Requested Analysis: General
Received: 05/31/90 at 13:12:00
Sampler: P. Pollock Sampler ID#: #1097 Sample Time: 11:45:00
Sampled: 05/31/90

ANALYTE	RESULT	UNIT	MAX. LEVEL CONTAMINATE	METHOD/SOURCE
Arsenic	0.008	mg/L	0.05	304, Std Meth 16
BOD	12	mg/L	30	307, Std Meth 16
Boron	0.1	mg/L	1.0	404A, Std Meth 16
Chloride	49	mg/L	150	325.3 EPA
Flucride	0.6	mg/L	1.0	413B, Std Meth 16
Oil & Grease	TR< 1	mg/L	15	503, Std Meth [illegible]
pH	8.6	pH Units	6.0 to 9.0	423, Std Meth [illegible]
Residual Chlorine	ND< 0.04	mg/L	0.1	408C, Std Met 16C
Settleable Solids	TR< 0.1	mg/L	0.3	209E, Std Meth 16
Sulfate	125	mg/L	300	375.4, EPA
Surfactants	0.3	mg/L	0.5	512B, Std Meth 16
Suspended Solids	6.2	mg/L	N.S.	209C, Std Meth 16
Temperature	66	deg. F	100	212, Std Meth 16
Total Dissolved Solids	534	mg/L	950	209B, Std Meth 16
Turbidity	5.8	NTU	5.0	214, Std Meth 16

SPECIFICATION: California DHS (SSFL Discharge Limits for Waste Water)
SPECIAL NOTES: Recommended drinking water action levels, California Dept. Health Services, April 1989
COMMENTS: This report include log# 9005631-9005636 & 9005660. The turbidity value has been reported to the Environmental Unit.

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified result for indication purposes only

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: _____
Chemist
Rocketdyne SSFL Analytical Chemistry

ABB
ASEA BROWN BOVERI

June 13, 1990

In reply, please refer to 8056-L173

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, CA 91303

ATTENTION: L. Dinius D-543,

REGARDING: PO# R04KEZ90032628

INVESTIGATION: 96-Hour Static Bioassay

RECEIVED: May 31, 1990

SAMPLE: Rocketdyne Shipper # 476178
ID#: 9005.649 & 9005.650
Picked up by: S. Webster

*** LAB #:** 0151172800

SITE: R-2-A Reservoir, 5/31/90

RESULTS: Bioassay

LC50 = >100 %
100% survival in undiluted sample.

* Analysis performed by ENSECO/CRL, Ventura, California.

If you have any questions, please contact me.

Sincerely,

Randal K. Horne

Randal K. Horne
Program Manager

ABB Environmental Services, Inc.

4765 Calle Quetzal
Camarillo, California 93012

Telephone (805) 388-5700

Fax (805) 987-3156

6-07-90 BOV

Enseco

Enseco - CRL
2810 Bunsen Avenue, Unit A • Ventura, CA 93003
(805) 650-0546 • FAX: (805) 650-0756

ENCLOSURE 3
Rocketdyne Letter 90RC07399
Dated 15 June 1990
Page 12 of 12

ABB Environmental
4769 Calle Quetzal
Camarillo, CA., 93010
FAX # 987-3156

06/07/90

Attn: R. Horne
805/388/5700

Project #528-1, Job #1833-0
Release #6876

Sample #: 0151172800
Received: 05/31/90
Type: Liquid

Collector: Client
Sampling Date & Time: 05/31/90 1145
Method: Grab

I.D.: 9005.649-650

CONSTITUENT	METHOD	RESULT	UNIT
Bioassay-Fathead Minnow NPDES	CA.FishGame1976	0	TU
96 hr. LC50		>100	%
95% Confidence Interval		NA	

Program Administrator:

Jeanne L. Lovelace

Program Administrator:

Leo C. Raab

(ND = None Detected; (G) = Grab; MDL = Minimum Detection Limit

0151 [illegible]

ENCLOSURE 4
Rocketdyne Letter 90RC07399
Dated 15 June 1990

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)
NAME ROCKWELL INTERNATIONAL CORP.
ADDRESS ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303
FACILITY
LOCATION
ATTN: R.W. MELVOLD (SS07)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

(2-16)	(17-19)
CA0001309 PERMIT NUMBER	FAC 2 DISCHARGE NUMBER

F - FINAL
PERIMETER TWR POND

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	90	05	01	TO	90	05	31
	(20-21)	(22-23)	(24-25)		(25-27)	(28-29)	(30-31)

NOI (C)
MAJOR (SUBR 04)
NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) (46-53) QUANTITY OR LOADING (54-61) AVERAGE	MAXIMUM	UNITS	(4 Card Only) (38-45) QUALITY OR CONCENTRATION (46-53) MINIMUM	AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
TEMPERATURE, WATER DEG. CENTIGRADE	SAMPLE MEASUREMENT	******	******		******						
00010 1 0 0 EFFLNT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	37.8 DAILY MX	DEG.C		DAILY	GRAB
TURBIDITY	SAMPLE MEASUREMENT	******	******		******						
00070 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	NTU		DAILY	GRAB
SULFATE (AS S)	SAMPLE MEASUREMENT	******	******		******						
00154 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	300 DAILY MX	MG/L		DAILY	GRAB
BOD, 5-DAY (20 DEG. C)	SAMPLE MEASUREMENT	******	******		******						
00310 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	30 DAILY MX	MG/L		DAILY	GRAB
PH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	6.0 MINIMUM	******	9.0 MAXIMUM	SU		DAILY	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******						
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	MG/L		DAILY	GRAB
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	******	******		******						
00545 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	ML/L		DAILY	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
S.R. Lafflam
Director,
Environmental & Energy Conservation
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and/or maximum imprisonment of between 6 months and 5 years.)*

SRLaf
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
818	773-5309	90	06	15
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

Rocketdyne Letter 90RC07399 Dated 15 June 1990

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

NAME ROCKWELL INTERNATIONAL CORP.
ADDRESS ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303
FACILITY
LOCATION
ATTN: R.W. MELVOLD (SS07)

CA0001309 (2-16) PERMIT NUMBER
FAC 2 (17-19) DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	90	05	01	TO	90	05	31
	(18-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

F - FINAL
PERIMETER LINE POND
Page 2 of 8
NODI (C)
MAJOR (SUBR 00)
NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
OIL AND GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	******	******		******						
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	15 DAILY MX	MG/L		DAILY	GRAB
CHLORIDE (AS CL)	SAMPLE MEASUREMENT	******	******		******						
00940 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	150 DAILY MX	MG/L		DAILY	GRAB
FLUORIDE, TOTAL (AS F)	SAMPLE MEASUREMENT	******	******		******						
00951 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	1.0 DAILY MX	MG/L		DAILY	GRAB
BORON, TOTAL (AS B)	SAMPLE MEASUREMENT	******	******		******						
01022 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	1.0 DAILY MX	MG/L		DAILY	GRAB
SURFACTANTS (MBAS)	SAMPLE MEASUREMENT	******	******		******						
38260 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	0.5 DAILY MX	MG/L		DAILY	GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT				******	******	******				
50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	REPORT DAILY MX	MGD	******	******	******	**** ****		DAILY	MEASRD
CHLORINE, TOTAL RESIDUAL	SAMPLE MEASUREMENT	******	******		******						
50060 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	0.1 DAILY MX	MG/L		DAILY	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
S.R. LAFFLAM
Director,
Environmental & Energy Conservation
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and/or maximum imprisonment of between 6 months and 5 years.)*

SR Laffla
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: AREA CODE 818 NUMBER 773-5309

DATE: YEAR 90 MO 06 DAY 15

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if different)*

NAME ROCKWELL INTERNATIONAL CORP.

ADDRESS ROCKETDYNE DIVISION

6633 CANOGA AVENUE

CANOGA PARK CA 91303

FACILITY

LOCATION

ATTN: H.W. MELVOLD (SS07)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*

DISCHARGE MONITORING REPORT *(DMR)*

PERMIT NUMBER *(2-16)*	DISCHARGE NUMBER *(17-19)*
CA0001309	PAC 2

F - FINAL

PERIMETER LINE POND

ENCLOSURE 4

Rocketdyne Letter 90RC07399

Dated 15 June 1990

Page 3 of 8

MONITORING PERIOD						
	YEAR *(20-21)*	MO *(22-23)*	DAY *(24-25)*		YEAR *(26-27)*	MO *(28-29)*	DAY *(30-31)*
FROM	90	05	01	TO	90	05	31

NODI (C)

MAJOR (SUBR 04)

NOTE: Read instructions before completing this form.

PARAMETER *(32-37)*		QUANTITY OR LOADING *(3 Card Only) (46-53)* AVERAGE	*(54-61)* MAXIMUM	UNITS	QUALITY OR CONCENTRATION *(4 Card Only) (38-45)* MINIMUM	*(46-53)* AVERAGE	*(54-61)* MAXIMUM	UNITS	NO. EX *(62-63)*	FREQUENCY OF ANALYSIS *(64-68)*	SAMPLE TYPE *(69-70)*
SOLIDS, TOTAL DISSOLVED 70295 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******						
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	950 DAILY MX	MG/L		DAILY	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

S.R.LAFFLAM

Director,

Environmental & Energy Conservation

TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN, AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*

SR Laffl[signature]

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
AREA CODE	NUMBER	YEAR	MO	DAY
818	773-5309	90	06	15

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

[redacted]

ENCLOSURE 4
Rocketdyne letter90RC07399
F - FINAL Dated 15 1990
R2A POND Page 4 of 8

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)
NAME ROCKWELL INTERNATIONAL CORP.
ADDRESS ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303
FACILITY
LOCATION
ATTN: R.W. MELVOLD (SS07)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)
(2-16) CA0001309 PERMIT NUMBER
(17-19) FAC 1 DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	90	05	01	TO	90	05	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR (SUBR 04)
NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) (46-13) QUANTITY OR LOADING (54-61) AVERAGE	MAXIMUM	UNITS	(4 Card Only) (38-45) QUALITY OR CONCENTRATION (46-53) MINIMUM	AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
TEMPERATURE, WATER DEG. CENTIGRADE	SAMPLE MEASUREMENT	******	******		******	20.9	24.4		0		
00010 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	37.8 DAILY MX	DEG.C		DAILY	GRAB
TURBIDITY	SAMPLE MEASUREMENT	******	******		******	5.3	7.0		0		
00070 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	NTU		DAILY	GRAB
SULFATE (AS S)	SAMPLE MEASUREMENT	******	******		******	76.7	125.0		0		
00154 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	300 DAILY MX	MG/L		DAILY	GRAB
BOD, 5-DAY (20 DEG. C)	SAMPLE MEASUREMENT	******	******		******	15.3	26.0		0		
00310 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	30 DAILY MX	MG/L		DAILY	GRAB
PH	SAMPLE MEASUREMENT	******	******		8.6	******	9.4		2		
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	6.0 MINIMUM	******	9.0 MAXIMUM	SU		DAILY	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******	15.9	33.0		0		
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	MG/L		DAILY	GRAB
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	******	******		******	0.10	0.1		0		
00545 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	ML/L		DAILY	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
S.R. LAFFLAM
DIRECTOR
ENVIRONMENTAL & ENERGY CONSERVATION
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and/or maximum imprisonment of between 6 months and 5 years.)*

SR Laffl
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
AREA CODE	NUMBER	YEAR	MO	DAY
818	7735309	90	06	15

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*
PLEASE SEE COVER LETTER.

EPA Form 3320-1 (Rev. 9-88) *Previous editions may be used.* (REPLACES EPA FORM T-40 WHICH MAY NOT BE USED.)

00310/900409-1102

ENCLOSURE4
Rocketdyne Letter 90RC07399
Dated 15 June 1990

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)
NAME ROCKWELL INTERNATIONAL CORP.
ADDRESS ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303
FACILITY
LOCATION
ATTN H.W. MELVOLD (SS07)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

CA0001309 (2-16) PERMIT NUMBER
FAC 1 (17-19) DISCHARGE NUMBER

F - FINAL
G2A POND

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	90	05	01	TO	90	05	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR (SUBR 04)
NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) (46-53) QUANTITY OR LOADING (54-61) AVERAGE	MAXIMUM	UNITS	(4 Card Only) (38-45) QUALITY OR CONCENTRATION (46-53) MINIMUM	AVERAGE	MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
OIL AND GREASE FREON EXTR-GRAV METH 00556 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******	1.0	1.0		0		
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	15 DAILY MX	MG/L		DAILY	GRAB
CHLORIDE (AS CL) 00940 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******	54.7	64.0		0		
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	150 DAILY MX	MG/L		DAILY	GRAB
FLUORIDE, TOTAL (AS F) 00951 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******	0.6	0.6		0		
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	1.0 DAILY MX	MG/L		DAILY	GRAB
BORON, TOTAL (AS B) 01022 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******	0.1	0.1		0		
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	1.0 DAILY MX	MG/L		DAILY	GRAB
SURFACTANTS (MBAS) 38260 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******	0.15	0.3		0		
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	0.5 DAILY MX	MG/L		DAILY	GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT 50050 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	3.21	3.98		******	******	******		0		
	PERMIT REQUIREMENT	REPORT 30DA AVG	REPORT DAILY MX	MGD	******	******	******	**** ****		DAILY	MEASRD
CHLORINE, TOTAL RESIDUAL 50060 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******	0.04	0.04		0		
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	0.1 DAILY MX	MG/L		DAILY	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
S.R. LAFFLAM
DIRECTOR
ENVIRONMENTAL & ENERGY CONSERVATION
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and/or maximum imprisonment of between 6 months and 5 years.)*

SR Laff
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
818	773 5309	90	06	15
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)

NAME ROCKWELL INTERNATIONAL CORP.

ADDRESS ROCKETDYNE DIVISION

6633 CANOGA AVENUE

CANOGA PARK CA 91303

FACILITY

LOCATION

ATTN: R.W. MELVOLD (SS07)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

(2-16) CA0001309 — PERMIT NUMBER

(17-19) FAC 1 — DISCHARGE NUMBER

F - FINAL
R2A POND

ENCLOSURE 4
Rocketdyne Letter 90RC07399
Dated 15 June 1990
Page 6 of 8

MONITORING PERIOD	YEAR	MO	DAY
FROM	90 (20-21)	05 (22-23)	01 (24-25)
TO	90 (26-27)	05 (28-29)	31 (30-31)

MAJOR (SUBR 04)

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		QUANTITY OR LOADING (3 Card Only) (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	QUALITY OR CONCENTRATION (4 Card Only) (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
SOLIDS, TOTAL DISSOLVED 70295 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******	570.0	599.0		0		
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	950 DAILY MX	MG/L		DAILY	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

S.R. LAFFLAM
DIRECTOR
Environmental &ENERGY CONSRVATION

TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN, AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*

SR Laffl[signature]

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
818	773 5309	90	06	15
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

ENCLOSURE 4
Rocketdyne Letter 90RC07399
Dated 15 June 1990
Page 7 of 8

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)
NAME ROCKWELL INTERNATIONAL CORP.
ADDRESS ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303
FACILITY
LOCATION
ATTN: R.W. MELVOLD (SSO7)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

(2-16) PERMIT NUMBER	(17-19) DISCHARGE NUMBER
CA0001309	SUM 1

F - FINAL
TOTAL MASS EMISSION

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	90	05	01	TO	90	05	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR (SUBR 04)
NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) (46-53) QUANTITY OR LOADING (54-61) AVERAGE	MAXIMUM	UNITS	(4 Card Only) (38-45) QUALITY OR CONCENTRATION (46-53) MINIMUM	AVERAGE	MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
BOD, 5-DAY (20 DEG. C)	SAMPLE MEASUREMENT	441.5	793.5		******	******	******		0		
00310 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	40035 DAILY MX	LBS/DY	******	******	******	**** ****		DAILY	CALCTD
OIL AND GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	26.8	33.2		******	******	******		0		
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	20020 DAILY MX	LBS/DY	******	******	******	**** ****		DAILY	CALCTD
CHLORIDE (AS CL)	SAMPLE MEASUREMENT	1415.1	1626.3		******	******	******		0		
00940 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	200160 DAILY MX	LBS/DY	******	******	******	**** ****		DAILY	CALCTD
FLUORIDE, TOTAL (AS F)	SAMPLE MEASUREMENT	15.04	19.91		******	******	******		0		
00951 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	1340 DAILY MX	LBS/DY	******	******	******	**** ****		DAILY	CALCTD
BORON, TOTAL (AS B)	SAMPLE MEASUREMENT	2.68	3.32		******	******	******		0		
01022 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	1340 DAILY MX	LBS/DY	******	******	******	**** ****		DAILY	CALCTD
SURFACTANTS (MBAS)	SAMPLE MEASUREMENT	4.56	9.96		******	******	******		0		
38260 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	667 DAILY MX	LBS/DY	******	******	******	**** ****		DAILY	CALCTD
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT	3.21	3.98		******	******	******		0		
50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	160 DAILY MX	MGD	******	******	******	**** ****		DAILY	CALCTD

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
S.R. LAFFLAM
DIRECTOR
ENVIRONMENTAL & ENERGY CONSERVATION
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and/or maximum imprisonment of between 6 months and 5 years.)*

SR Laff
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
AREA CODE	NUMBER	YEAR	MO	DAY
818	773 5309	90	06	15

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

EPA Form 3320-1 (Rev. 9-88) *Previous editions may be used.* (REPLACES EPA FORM T-45 WHICH MAY NOT BE USED.)

00327/900409-1102

ENCLOSURE 4
Rocketdyne Letter 90RC07399
Dated 15 June 1990
Page 8 of 8

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

F - FINAL
TOTAL MASS EMISSION

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)
NAME ROCKWELL INTERNATIONAL CORP.
ADDRESS ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303
FACILITY
LOCATION
ATTN: R.W. MELVOLD (5507)

PERMIT NUMBER (2-16): CA0001309
DISCHARGE NUMBER (17-19): SUB 1

MONITORING PERIOD
FROM YEAR 90 MO 05 DAY 01 TO YEAR 90 MO 05 DAY 31
(20-21) (22-23) (24-25) (26-27) (28-29) (30-31)

MAJOR (SUBR 04)
NOTE: Read instructions before completing this form.

PARAMETER (32-37)		QUANTITY OR LOADING (3 Card Only) AVERAGE (46-53)	MAXIMUM (54-61)	UNITS	QUALITY OR CONCENTRATION (4 Card Only) MINIMUM (38-45)	AVERAGE (46-53)	MAXIMUM (54-61)	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
SOLIDS, TOTAL DISSOLVED 70295 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	15082	17724		******	******	******		0		
	PERMIT REQUIREMENT	REPORT 30DA AVG	1267680 DAILY MX	LBS/DY	******	******	******	**** ****		DAILY	CALCTD
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
S.R. LAFFLAM
DIRECTOR
ENVIRONMENTAL & ENERGY CONSERVATION
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*

SRLaflam
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: 818 (AREA CODE) 773 5309 (NUMBER)
DATE: 90 (YEAR) 06 (MO) 15 (DAY)

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

NPDES Permit

Monthly Monitoring Report

June 1990

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED - RETURN RECEIPT REQUESTED

In reply refer to 90RC09140

15 July 1990

Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, CA 91754-2156

Attention: R. P. Ghirelli, Executive Officer

Subject: Monitoring Program for Industrial Wastewater

Reference: NPDES Permit CA0001309, Compliance File 6027

Gentlemen:

Pursuant to the referenced permit, whereby Rockwell International Corporation, Rocketdyne Division (Rocketdyne) is directed to conduct a monitoring program for industrial wastewater discharged from the property, we hereby submit the report for 1 June through 30 June 1990.

Due to frequent utilization of wastewater for rocket engine testing, there were no discharges during this reporting period.

The radioactivity (alpha, beta, gamma scan) analyses for 31 May 1990 discharge are included in this month's report. The discharge occurring on the last day of the month prevented the data from being made available for a more timely submittal.

All analyses were conducted at laboratories certified for such analyses by the State Department of Health Services and in accordance with current EPA guideline procedures or as specified in Rocketdyne's NPDES permit. If you have any questions regarding this report, please contact Ms. Leslie Dinius at (818) 773-5309.

I certify under penalty of law that this document and all attachments were prepared under the 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. Executed on the fifteenth day of July 1990 at Canoga Park, California.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

SR Lafflam

S. R. Lafflam
Director
Environmental Control
and Energy Conservation

SRL/sj-1038H

Enclosures: (1) Analyses for Domestic Sewage Monitoring Program (8 pg)
(2) NPDES DMR Forms for Domestic Sewage Monitoring (4 pg)
(3) Analyses for 31 May 1990 - Radioactivity
(4) NPDES DMR Forms for Effluent Monitoring (8 pages)

cc w/encl: (1) Environmental Protection Agency/Cary Houk
(2) California Department of Health Services/J.N. Curphey
cc no/encl: (3) Department of Energy/A. Adduci, R. Liddle, G. Lavagnino, W. Murphie
(4) EPA/K. Schwinn
(5) DOHS/D. Dickerson

ABB
ASEA BROWN BOVERI

June 20, 1990

In reply, please refer to 8056-L179

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, CA 91303

Attn: L. Dinius

PO#: R04KEZ90032628

Site: Santa Susana

Received: June 5, 1990

Sample: Shipper #476179,
Collected by T. Quiroz

CRL Lab #: 0156183101/
0156183102

ABB Lab #: 00546-01

	Fecal Coliform MPN/100 ml	BOD5 mg/l	Total Suspended Solids, mg/l	Turbidity NTU
Area 1				
Influent 1-STP-I-135	--	34.0	1350.0	---
Effluent 1-STP-E-135	--	ND	ND	.30
Effluent 1-STP-C-135	<2 *	--	--	---
Area 3				
Influent 3-STP-I-135	--	40.0	160.0	---
Effluent 3-STP-E-135	--	ND	ND	.14
Effluent 3-STP-C-135	<2 *	--	--	---

If there are any questions, please call.

* Analysis performed by Enseco/CRL Laboratory, Ventura, California.

Sincerely,

Randal K. Horne

Randal K. Horne
Program Manager

ABB Environmental Services, Inc.

4765 Calle Quetzal
Camarillo, California 93012

Telephone (805) 388-5700

Fax (805) 987-3156

ABB
ASEA BROWN BOVERI

June 20, 1990

In reply, please refer to 8056-L180

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, CA 91303

Attn: L. Dinius

PO#: R04KEZ90032628

Site: Santa Susana

Received: June 12, 1990

Sample: Shipper #476180,
Collected by T. Quiroz

CRL Lab #: 0163152001/
0163152002

ABB Lab #: 00571-01

	Fecal Coliform MPN/100 ml	BOD5 mg/l	Total Suspended Solids, mg/l	Turbidity NTU
Area 1				
Influent 1-STP-I-136	--	23.0	304.0	---
Effluent 1-STP-E-136	--	1.1	ND	.35
Effluent 1-STP-C-136	<2 *	--	--	---
Area 3				
Influent 3-STP-I-136	--	39.0	165.0	---
Effluent 3-STP-E-136	--	ND	ND	.08
Effluent 3-STP-C-136	<2 *	--	--	---

If there are any questions, please call.

* Analysis performed by Enseco/CRL Laboratory, Ventura, California.

Sincerely,

Randal K. Horne

Randal K. Horne
Program Manager

ABB Environmental Services, Inc.

4765 Calle Quetzal
Camarillo, California 93012

Telephone (805) 388-5700

Fax (805) 987-3156

ABB
ASEA BROWN BOVERI

June 27, 1990

In reply, please refer to 8056-L183

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, CA 91303

Attn: L. Dinius

PO#: R04KEZ90032628

Site: Santa Susana

Received: June 19, 1990

Sample: Shipper #476181,
Collected by R. Raiben

CRL Lab #: 0170174601/
0170174602

ABB Lab #: 00616-01

	Fecal Coliform MPN/100 ml	BOD5 mg/l	Total Suspended Solids, mg/l	Turbidity NTU
Area 1				
Influent 1-STP-I-137	--	7.0	487.0	---
Effluent 1-STP-E-137	--	ND	ND	.50
Effluent 1-STP-C-137	<2 *	--	--	---
Area 3				
Influent 3-STP-I-137	--	28.0	285.0	---
Effluent 3-STP-E-137	--	ND	ND	.12
Effluent 3-STP-C-137	<2 *	--	--	---

If there are any questions, please call.

* Analysis performed by Enseco/CRL Laboratory, Ventura, California.

Sincerely,

Randal K. Horne
Program Manager

ABB Environmental Services, Inc.

4765 Calle Quetzal
Camarillo, California 93012
Telephone (805) 388-5700
Fax (805) 987-3156

ABB
ASEA BROWN BOVERI

July 9, 1990

In reply, please refer to 8056-L184

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, CA 91303

Attn: L. Dinius

PO#: R04KEZ90032628

Site: Santa Susana

Received: June 27, 1990

Sample: Shipper #476182,
Collected by S. Webster

CRL Lab #: 0178161501/
0178161502

ABB Lab #: 00652-01

	Fecal Coliform MPN/100 ml	BOD5 mg/l	Total Suspended Solids, mg/l	Turbidity NTU
Area 1				
Influent 1-STP-I-138	--	69.0	157.0	---
Effluent 1-STP-E-138	--	ND	ND	.14
Effluent 1-STP-C-138	<2 *	--	--	---
Area 3				
Influent 3-STP-I-138	--	75.0	440.0	---
Effluent 3-STP-E-138	--	ND	ND	.28
Effluent 3-STP-C-138	<2 *	--	--	---

If there are any questions, please call.

* Analysis performed by Enseco/CRL Laboratory, Ventura, California.

Sincerely,

Randal K. Horne

Randal K. Horne
Program Manager

ABB Environmental Services, Inc.

4765 Calle Quetzal
Camarillo, California 93012

Telephone (805) 388-5700

Fax (805) 987-3156

DOMESTIC SEWAGE MONITORING PROGRAM

TURBIDITY RESULTS - June 1990

	STP SITE	
Constituents	Area I	Area III
Average effluent turbidity	0.4	0.2
Maximum effluent turbidity	1.2	1.2
Average time effluent turbidity above 5 NTU	-0-	-0-

See Monthly Turbidity Summary - Area I STP and Monthly Turbidity Summary - Area III STP data pages following for further information.

1038H

MONTHLY TURBIDITY SUMMARY

AREA I STP - June 1990

DATE	MAXIMUM READING (NTU)	>5 NTU (MINUTES)	DAILY AVERAGE (NTU)
1	0.6	0	0.4
2	0.4	0	0.2
3	0.4	0	0.1
4	0.6	0	0.2
5	0.6	0	0.3
6	0.6	0	0.3
7	0.6	0	0.4
8	0.4	0	0.3
9	0.6	0	0.3
10	0.6	0	0.3
11	0.6	0	0.4
12	0.6	0	0.5
13	0.6	0	0.5
14	0.6	0	0.6
15	0.6	0	0.5
16	0.6	0	0.5
17	0.6	0	0.5
18	0.6	0	0.6
19	0.6	0	0.5
20	0.6	0	0.4
21	0.4	0	0.2
22	0.4	0	0.1
23	0.4	0	0.1
24	0.4	0	0.2
25	0.4	0	0.1
26	0.6	0	0.3
27	0.6	0	0.3
28	1.0	0	0.5
29	1.0	0	0.6
30	1.2	0	0.9
MONTHLY DAILY AVERAGE:	0.4	TOTAL	11.1

1038H

MONTHLY TURBIDITY SUMMARY

AREA III STP - May 1990

DATE	MAXIMUM READING (NTU)	>5 NTU (MINUTES)	DAILY AVERAGE (NTU)
1	0.0	0	0.0
2	0.0	0	0.0
3	0.0	0	0.0
4	0.0	0	0.0
5	0.0	0	0.0
6	0.0	0	0.0
7	0.0	0	0.0
8	0.0	0	0.0
9	0.4	0	0.1
10	0.4	0	0.1
11	0.4	0	0.1
12	0.0	0	0.0
13	0.4	0	0.1
14	0.6	0	0.1
15	0.6	0	0.4
16	0.6	0	0.1
17	0.6	0	0.1
18	0.4	0	0.1
19	0.4	0	0.8
20	0.4	0	0.1
21	0.6	0	0.2
22	0.6	0	0.2
23	0.0	0	0.0
24	0.0	0	0.0
25	0.0	0	0.0
26	1.0	0	0.8
27	1.2	0	0.8
28	1.2	0	0.8
29	1.2	0	0.8
30	1.2	0	0.7

MONTHLY DAILY AVERAGE: 0.2 TOTAL: 6.4

1038H

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)

NAME ROCKWELL INTERNATIONAL CORP.

ADDRESS ROCKETDYNE DIVISION

6633 CANOGA AVENUE

CANOGA PARK CA 91303

FACILITY

LOCATION

ATTN: R.W. MELVOLD (SS07)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)
(1-26) (17-19)

CA0001309 — PERMIT NUMBER

DOM 1 — DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	90	06	01	TO	90	06	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

F - FINAL

DOMESTIC DISCHARGE #1

Enclosure 2
Rocketdyne Letter 90RC09140
Page 1 of 6
dated 7/15/90

MAJOR (SOBA 04)

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
TURBIDITY	SAMPLE MEASUREMENT	******	******		******	0.4	1.2		0		
00070 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	****** **** ****		******	REPORT 30DA AVG	REPORT DAILY MX	NTU		WEEKLY	GRAB
BOD, 5-DAY (20 DEG. C)	SAMPLE MEASUREMENT	******	******		******	33.25	69.0		0		
00310 G 0 0 RAW SEW/INFLUENT	PERMIT REQUIREMENT	******	****** **** ****		******	REPORT 30DA AVG	REPORT DAILY MX	MG/L		ONCE/ 3 DAYS	GRAB
BOD, 5-DAY (20 DEG. C)	SAMPLE MEASUREMENT	******	******		******	0.3	1.1		0		
00310 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	**** **** ****		******	REPORT 30DA AVG	30 DAILY MX	MG/L		WEEKLY	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	*** **		******	574.5	1350		0		
00530 G 0 0 RAW SEW/INFLUENT	PERMIT REQUIREMENT	******	****** **** ****		******	REPORT 30DA AVG	REPORT DAILY MX	MG/L		WEEKLY	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******	0.0	0.0		0		
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	****** **** ****		******	REPORT 30DA AVG	REPORT DAILY MX	MG/L		WEEKLY	GRAB
COLIFORM, TOTAL GENERAL	SAMPLE MEASUREMENT	******	******		******	<2	<2		0		
74056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	****** **** ****		******	2.2 MEDIAN	23 DAILY MX	CFU/ 100ML		DAILY	GRAB
BOD, 5-DAY PERCENT REMOVAL	SAMPLE MEASUREMENT	******	******		96%	******	******		0		
81010 K 0 0 PERCENTREMOVAL	PERMIT REQUIREMENT	******	****** **** ****		85 MONTH AV	******	******	PER-CENT		ONCE/ MONTH	CALCTD

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

S.R. Lafflam, Director
Environmental & Energy Conservation

TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*

SR Lafflam

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: AREA CODE 818 | NUMBER 773 5309

DATE: YEAR 90 | MO 07 | DAY 15

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if different)*

NAME ROCKWELL INTERNATIONAL CORP.
ADDRESS ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303
FACILITY
LOCATION
ATTN: R.W. MELVOLD (SS07)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16)	(17-19)
CA0001309	DOM 1
PERMIT NUMBER	DISCHARGE NUMBER

F - FINAL
DOMESTIC DISCHARGE #1
Enclosure 2
Rocketdyne Letter 90RC09140
Dated 7/15/90
Page 2 of 4

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	90	06	01	TO	90	06	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR (SUBR 04)

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		QUANTITY OR LOADING (3 Card Only) (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	QUALITY OR CONCENTRATION (4 Card Only) (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
SOLIDS, SUSPENDED PERCENT REMOVAL	SAMPLE MEASUREMENT	******	******		- 100%	******	******		0		
81011 K 0 0 PERCENTREMOVAL	PERMIT REQUIREMENT	******	******	**** ****	85 MONTH AV	******	******	PER-CENT		ONCE/ MONTH	CALCTD
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
S.R. Lafflam, Director
Environmental & Energy Conservation
TYPED OR PRINTED

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SR Laff

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
818	773 5309	90	07	15
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

EPA Form 3320-1 (Rev. 9-88) *Previous editions may be used.*
(REPLACES EPA FORM T-40 WHICH MAY NOT BE USED.)

00300/900409-1102

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)

NAME ROCKWELL INTERNATIONAL CORP.

ADDRESS ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303

FACILITY

LOCATION

ATTN: R.W. HELVOLD (SS07)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

(2-16) CA0001309 PERMIT NUMBER

(17-19) 003 DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	90	06	01	TO	90	06	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

P - FINAL

DOMESTIC DISCHARGE 03
Enclosure 2
Rocketdyne Letter 90RC09140
Dated 7/15/90
Page 3 of 4

MAJOR (SUBR 09)

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		QUANTITY OR LOADING (3 Card Only) (46-53) AVERAGE	QUANTITY OR LOADING (54-61) MAXIMUM	UNITS	QUALITY OR CONCENTRATION (3 Card Only) (38-45) MINIMUM	QUALITY OR CONCENTRATION (46-53) AVERAGE	QUALITY OR CONCENTRATION (54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
TURBIDITY	SAMPLE MEASUREMENT	******	******		******	0.2	1.2		0		
00070 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	NTU		WEEKLY	GRAB
BOD, 5-DAY (20 DEG. C)	SAMPLE MEASUREMENT	******	******		******	45.5	75.0		0		
00310 G 0 0 RAW SEW/INFLUENT	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	MG/L		ONCE/ 3 DAYS	GRAB
BOD, 5-DAY (20 DEG. C)	SAMPLE MEASUREMENT	******	******		******	0.0	0.0		0		
00310 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	30 DAILY MX	MG/L		WEEKLY	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******	262.5	440		0		
00530 G 0 0 RAW SEW/INFLUENT	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	MG/L		WEEKLY	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******	0.0	0.0		0		
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	MG/L		WEEKLY	GRAB
COLIFORM, TOTAL GENERAL	SAMPLE MEASUREMENT	******	******		******	<2	<2		0		
74056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	2.2 MEDIAN	23 DAILY MX	MPN/ 100ML		DAILY	GRAB
BOD, 5-DAY PERCENT REMOVAL	SAMPLE MEASUREMENT	******	******		100%	******	******		0		
81010 K 0 0 PERCENTREMOVAL	PERMIT REQUIREMENT	******	******	**** ****	85 MONTH AV	******	******	PER-CENT		ONCE/ MONTH	CALCTD

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

S.R. Lafflam, Director
Environmenatl & Energy Conservation
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN, AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*

SR Lafflam
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
AREA CODE	NUMBER	YEAR	MO	DAY
818	773 5309	90	07	15

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if different)*

NAME ROCKWELL INTERNATIONAL CORP.
ADDRESS ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303
FACILITY
LOCATION
ATTN: R.W. MELVOLD (SS07)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

PERMIT NUMBER *(2-16)*	DISCHARGE NUMBER *(17-19)*
CA0001309	DOM 3

MONITORING PERIOD

	YEAR *(20-21)*	MO *(22-23)*	DAY *(24-25)*		YEAR *(26-27)*	MO *(28-29)*	DAY *(30-31)*
FROM	90	06	01	TO	90	06	30

F - FINAL
DOMESTIC DISCHARGE #3
Enclosure 2
Rocketdyne Letter 90RC09140
Dated 7/15/90
Page 4 of 4
MAJOR (SUBR 04)

NOTE: Read instructions before completing this form.

PARAMETER *(32-37)*		QUANTITY OR LOADING *(3 Card Only)* AVERAGE *(46-53)*	MAXIMUM *(54-61)*	UNITS	QUALITY OR CONCENTRATION *(4 Card Only)* MINIMUM *(38-45)*	AVERAGE *(46-53)*	MAXIMUM *(54-61)*	UNITS	NO. EX *(62-63)*	FREQUENCY OF ANALYSIS *(64-68)*	SAMPLE TYPE *(69-70)*
SOLIDS, SUSPENDED PERCENT REMOVAL	SAMPLE MEASUREMENT	******	******		100%	******	******		0		
81011 K 0 0 PERCENTREMOVAL	PERMIT REQUIREMENT	******	******	**** ****	85 MONTH AV	******	******	PER-CENT		ONCE/ MONTH	CALCTD
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

S.R. Lafflam, Director
Environmental & Energy
Conservation

TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*

SR Lafflam

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE AREA CODE	NUMBER	DATE YEAR	MO	DAY
818	773 5309	90	07	15

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

ABB
ASEA BROWN BOVERI

June 14, 1990 In reply, please refer to 8056-L174

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, CA 91303

ATTENTION: L. Dinius D-543 **REGARDING:** PO# RO4KEZ90032628

INVESTIGATION: Water Analysis - Radioactivity

SAMPLE: Rocketdyne Shipper #476178 **LAB #:** G98200

SITE: R2A, Santa Susana, 5/31/90

RESULTS:

	Radioactivity pC/Liter	
	Gross Alpha	Gross Beta
R2A 9005.659	3 12 ± 2.84	4.25 ± 1.98

Gamma Scan

CS-137DA 2.94 ± 4.86

If you have any questions, please contact me.

* Analysis performed by United States Testing Company, Inc., Richland, Washington.

Sincerely,

Randal K Horne

Randal K. Horne
Program Manager

ABB Environmental Services, Inc.

4765 Calle Quetzal
Camarillo, California 93012
Telephone (805) 388-5700
Fax (805) 987-3156

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

F - FINAL
PERIMETER LIKE POND
Enclosure 4
Rocketdyne Letter 90RC09140
Dated 7/15/90
NODI(C) Page 1 of 8
MAJOR (SUBR C4)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)
NAME ROCKWELL INTERNATIONAL CORP.
ADDRESS ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303
FACILITY
LOCATION
ATTN: R.W. MELVOLD (SS07)

(2-16) CA0001309 PERMIT NUMBER
(17-19) FAC 2 DISCHARGE NUMBER

MONITORING PERIOD
FROM YEAR 90 MO 06 DAY 01 (20-21) (22-23) (24-25)
TO YEAR 90 MO 06 DAY 30 (26-27) (28-29) (30-31)

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) (46-53) QUANTITY OR LOADING (54-61) AVERAGE	MAXIMUM	UNITS	(4 Card Only) (38-45) QUALITY OR CONCENTRATION (46-53) MINIMUM	AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-58)	SAMPLE TYPE (69-70)
TEMPERATURE, WATER DEG. CENTIGRADE 00010 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******						
	PERMIT REQUIREMENT	******	****** **** ****		******	REPORT 30DA AVG	37.8 DAILY MX	DEG.C		DAILY	GRAB
TURBIDITY 00070 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******						
	PERMIT REQUIREMENT	******	****** **** ****		******	REPORT 30DA AVG	REPORT DAILY MX	NTU		DAILY	GRAB
SULFATE (AS S) 00154 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******						
	PERMIT REQUIREMENT	******	****** **** ****		******	REPORT 30DA AVG	300 DAILY MX	MG/L		DAILY	GRAB
BOD, 5-DAY (20 DEG. C) 00310 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******						
	PERMIT REQUIREMENT	******	****** **** ****		******	REPORT 30DA AVG	30 DAILY MX	MG/L		DAILY	GRAB
PH 00400 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******			******					
	PERMIT REQUIREMENT	******	****** **** ****		6.0 MINIMUM	******	9.0 MAXIMUM	SU		DAILY	GRAB
SOLIDS, TOTAL SUSPENDED 00530 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******						
	PERMIT REQUIREMENT	******	****** **** ****		******	REPORT 30DA AVG	REPORT DAILY MX	MG/L		DAILY	GRAB
SOLIDS, SETTLEABLE 00545 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******						
	PERMIT REQUIREMENT	******	****** **** ****		******	REPORT 30DA AVG	REPORT DAILY MX	ML/L		DAILY	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
S.R. Lafflam, Director
Environmental & Energy Conserv
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN, AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: AREA CODE 818 NUMBER 773 5309
DATE: YEAR 90 MO 07 DAY 15

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)

NAME ROCKWELL INTERNATIONAL CORP.

ADDRESS ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303

FACILITY

LOCATION

ATTN: R.W. MELVOLD (SS07)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

(2-16) PERMIT NUMBER: CA0001309

(17-19) DISCHARGE NUMBER: FAC 2

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	90	06	01	TO	90	06	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

F - FINAL
PERIMETER LINE POND
Enclosure 4
Rocketdyne Letter 90RC09140
Dated 7/15/90
NODI (C) Page 2 of 8
MAJOR (SUBR 04)

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) (45-53) QUANTITY OR LOADING (54-61) AVERAGE	MAXIMUM	UNITS	(4 Card Only) (38-45) QUALITY OR CONCENTRATION (46-53) MINIMUM	(54-61) AVERAGE	MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
OIL AND GREASE FREON EXTR-GRAV METH 00556 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******						
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	15 DAILY MX	MG/L		DAILY	GRAB
CHLORIDE (AS CL) 00940 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******						
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	150 DAILY MX	MG/L		DAILY	GRAB
FLUORIDE, TOTAL (AS F) 00951 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******						
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	1.0 DAILY MX	MG/L		DAILY	GRAB
BORON, TOTAL (AS B) 01022 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******						
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	1.0 DAILY MX	MG/L		DAILY	GRAB
SURFACTANTS (MBAS) 38260 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******						
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	0.5 DAILY MX	MG/L		DAILY	GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT 50050 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT				******	******	******				
	PERMIT REQUIREMENT	REPORT 30DA AVG	REPORT DAILY MX	MGD	******	******	******	**** ****		DAILY	MEASRD
CHLORINE, TOTAL RESIDUAL 50060 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******						
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	0.1 DAILY MX	MG/L		DAILY	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

S. R. Lafflam, Director
Environmental & Energy Conservation

TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*

SR Lafflam

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
AREA CODE	NUMBER	YEAR	MO	DAY
818	773 5309	90	07	15

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)

NAME ROCKWELL INTERNATIONAL CORP.
ADDRESS ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303
FACILITY
LOCATION
ATTN: R.W. MELVOLD (SS07)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

(2-16)	(17-19)
CA0001309	PAC 2
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD							
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	90	06	01	TO	90	06	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

F - FINAL
PERIMETER LINE POND
Enclosure 4
Rocketdyne Letter 90RC09140
NODI(C) Dated 7/15/90
Page 3 of 8
MAJOR (SUBR 04)

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
SOLIDS, TOTAL DISSOLVED	SAMPLE MEASUREMENT	******	******		******						
70295 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	950 DAILY MX	MG/L		DAILY	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
S.R. Lafflam, Director
Environmental & Energy Conservation
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*

SR Lafflam
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
818	773 5309	90	07	15
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)

NAME ROCKWELL INTERNATIONAL CORP.

ADDRESS ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303

FACILITY

LOCATION

ATTN: R.W. MELVOLD (SS07)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

(2-16) PERMIT NUMBER: CA0001309

(17-19) DISCHARGE NUMBER: PAC 1

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	90	06	01	TO	90	06	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

F - FINAL

R2A POND Enclosure 4
Rocketdyne Letter 90RC09140
Dated 7/15/90

NODI (C) Page 4 of 8

MAJOR (SUBR 04)

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) (46-53) QUANTITY OR LOADING (54-61) AVERAGE	MAXIMUM	UNITS	(4 Card Only) (38-45) QUALITY OR CONCENTRATION (46-53) MINIMUM	AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
TEMPERATURE, WATER DEG. CENTIGRADE	SAMPLE MEASUREMENT	******	******		******						
00010 1 0 0	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	37.8 DAILY MX	DEG.C		DAILY	GRAB
EFFLUENT GROSS VALUE											
TURBIDITY	SAMPLE MEASUREMENT	******	******		******						
00070 1 0 0	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	NTU		DAILY	GRAB
EFFLUENT GROSS VALUE											
SULFATE (AS S)	SAMPLE MEASUREMENT	******	******		******						
00154 1 0 0	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	300 DAILY MX	MG/L		DAILY	GRAB
EFFLUENT GROSS VALUE											
BOD, 5-DAY (20 DEG. C)	SAMPLE MEASUREMENT	******	******		******						
00310 1 0 0	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	30 DAILY MX	MG/L		DAILY	GRAB
EFFLUENT GROSS VALUE											
PH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 0	PERMIT REQUIREMENT	******	******	**** ****	6.0 MINIMUM	******	9.0 MAXIMUM	SU		DAILY	GRAB
EFFLUENT GROSS VALUE											
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******						
00530 1 0 0	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	MG/L		DAILY	GRAB
EFFLUENT GROSS VALUE											
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	******	******		******						
00545 1 0 0	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	REPORT DAILY MX	ML/L		DAILY	GRAB
EFFLUENT GROSS VALUE											

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

S.R. Lafflam, Director
Environmental & Energy Conservation

TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN, AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 13 3. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*

S R Laff

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
818	773 5309	90	07	15
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)

NAME ROCKWELL INTERNATIONAL CORP.

ADDRESS ROCKETDYNE DIVISION

6633 CANOGA AVENUE

CANOGA PARK CA 91303

FACILITY

LOCATION

ATTN: R.W. MELVOLD (SS07)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

(2-16) CA0001309 PERMIT NUMBER

(17-19) FAC 1 DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	90	06	01	TO	90	06	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

F - FINAL

R2A POND

NODI (C)

MAJOR (SUBR 04)

Enclosure 4
Rocketdyne Letter 90RC09140
Dated 7/15/90
Page 5 of 8

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) (46-53) QUANTITY OR LOADING (54-61) AVERAGE	MAXIMUM	UNITS	(4 Card Only) (38-45) QUALITY OR CONCENTRATION (46-53) MINIMUM	AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
OIL AND GREASE FREON EXTR-GRAV METH 00556 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******						
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	15 DAILY MX	MG/L		DAILY	GRAB
CHLORIDE (AS CL) 00940 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******						
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	150 DAILY MX	MG/L		DAILY	GRAB
FLUORIDE, TOTAL (AS F) 00951 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******						
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	1.0 DAILY MX	MG/L		DAILY	GRAB
BORON, TOTAL (AS B) 01022 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******						
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	1.0 DAILY MX	MG/L		DAILY	GRAB
SURFACTANTS (MBAS) 38260 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******						
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	0.5 DAILY MX	MG/L		DAILY	GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT 50050 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT				******	******	******				
	PERMIT REQUIREMENT	REPORT 30DA AVG	REPORT DAILY MX	MGD	******	******	******	**** ****		DAILY	MEASRD
CHLORINE, TOTAL RESIDUAL 50060 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******						
	PERMIT REQUIREMENT	* ****	******	**** ****	******	REPORT 30DA AVG	0.1 DAILY MX	MG/L		DAILY	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

S.R. Lafflam, Director
Environmental & Energy Conservation

TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and/or maximum imprisonment of between 6 months and 5 years.)*

SR Lafflam

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
818	773 5309	90	07	15
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if different)*

NAME ROCKWELL INTERNATIONAL CORP.

ADDRESS ROCKETDYNE DIVISION

6633 CANOGA AVENUE

CANOGA PARK CA 91303

FACILITY

LOCATION

ATTN: R.R. MELVOLD (SS07)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16) CA0001309 PERMIT NUMBER

(17-19) PAC 1 DISCHARGE NUMBER

F - FINAL
R2A POND

NODI (C)

MAJOR (SUBR 04)

Enclosure 4
Rocketdyne Letter 90RC09140
Dated 7/15/90
Page 6 of 8

MONITORING PERIOD

FROM YEAR 90 MO 06 DAY 01 *(20-21) (22-23) (24-25)* TO YEAR 90 MO 06 DAY 30 *(26-27) (28-29) (30-31)*

NOTE: Read instructions before completing this form.

PARAMETER *(32-37)*		QUANTITY OR LOADING — *(3 Card Only)* AVERAGE *(46-53)*	MAXIMUM *(54-61)*	UNITS	QUALITY OR CONCENTRATION — *(4 Card Only)* MINIMUM *(38-45)*	AVERAGE *(46-53)*	MAXIMUM *(54-61)*	UNITS	NO. EX *(62-63)*	FREQUENCY OF ANALYSIS *(64-68)*	SAMPLE TYPE *(69-70)*
SOLIDS, TOTAL DISSOLVED	SAMPLE MEASUREMENT	******	******		******						
70295 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT 30DA AVG	950 DAILY MX	MG/L		DAILY	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
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	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

S.R. Lafflam, Director
Environmental & Energy Conservation

TYPED OR PRINTED

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SR Laffla

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
818	773 5309	90	07	15
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

F - FINAL
TOTAL MASS EMISSION

Enclosure 4
Rocketdyne Letter 90RC09140
Dated 7/15/90
Page 7 of 8

NODI (C)
MAJOR (SUBR 09)

NOTE: Read instructions before completing this form.

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)

NAME ROCKWELL INTERNATIONAL CORP.
ADDRESS ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303
FACILITY
LOCATION
ATTN: H.W. MELVOLD (SS07)

(2-16) PERMIT NUMBER	(17-19) DISCHARGE NUMBER
CA0001309	SUM 1

MONITORING PERIOD

	YEAR (20-21)	MO (22-23)	DAY (24-25)		YEAR (26-27)	MO (28-29)	DAY (30-31)
FROM	90	06	01	TO	90	06	30

PARAMETER (32-37)		(3 Card Only) (46-53) QUANTITY OR LOADING (54-61) AVERAGE	MAXIMUM	UNITS	(4 Card Only) (38-45) QUALITY OR CONCENTRATION (46-53) MINIMUM	AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
BOD, 5-DAY (20 DEG. C) 00310 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT				******	******	******				
	PERMIT REQUIREMENT	REPORT 30DA AVG	40035 DAILY MX	LBS/DY	******	******	******	******		DAILY	CALCTD
OIL AND GREASE FREON EXTR-GRAV METH 00556 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT				******	******	******				
	PERMIT REQUIREMENT	REPORT 30DA AVG	20020 DAILY MX	LBS/DY	******	******	******	******		DAILY	CALCTD
CHLORIDE (AS CL) 00940 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT				******	******	******				
	PERMIT REQUIREMENT	REPORT 30DA AVG	200160 DAILY MX	LBS/DY	******	******	******	******		DAILY	CALCTD
FLUORIDE, TOTAL (AS F) 00951 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT				******	******	******				
	PERMIT REQUIREMENT	REPORT 30DA AVG	1300 DAILY MX	LBS/DY	******	******	******	******		DAILY	CALCTD
BORON, TOTAL (AS B) 01022 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT				******	******	******				
	PERMIT REQUIREMENT	REPORT 30DA AVG	1340 DAILY MX	LBS/DY	******	******	******	******		DAILY	CALCTD
SURFACTANTS (MBAS) 38260 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT				******	******	******				
	PERMIT REQUIREMENT	REPORT 30DA AVG	667 DAILY MX	LBS/DY	******	******	******	******		DAILY	CALCTD
FLOW, IN CONDUIT OR THRU TREATMENT PLANT 50050 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT				******	******	******				
	PERMIT REQUIREMENT	REPORT 30DA AVG	160 DAILY MX	MGD	******	******	******	******		DAILY	CALCTD

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

S.R.Lafflam, Director
Environmental & Energy Conserv

TYPED OR PRINTED

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SR Lafflam
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
818	773 5309	90	07	15
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if different)*

NAME ROCKWELL INTERNATIONAL CORP.
ADDRESS ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303
FACILITY
LOCATION
ATTN: R.W. MELVOLD (SS07)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16)	(17-19)
CA0001309	SUM 1
PERMIT NUMBER	DISCHARGE NUMBER

F - FINAL
TOTAL MASS EMISSION

Enclosure 4
Dated 7/15/90
Rockwetdyne Letter 90RC09140
Page 8 of 8

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	90	06	01	TO	90	06	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

NODI (C)
MAJOR (SUBR 04)

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING AVERAGE (46-53)	MAXIMUM (54-61)	UNITS	(4 Card Only) QUALITY OR CONCENTRATION MINIMUM (38-45)	AVERAGE (46-53)	MAXIMUM (54-61)	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
SOLIDS, TOTAL DISSOLVED 70295 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT				******	******	******				
	PERMIT REQUIREMENT	REPORT 30DA AVG	1267680 DAILY MX	LBS/DY	******	******	******	*******		DAILY	CALCTD
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
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	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
S.R. Lafflam, Director
Environmental & Energy Conservation
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*

SR Laffe
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
818	773 5309	90	07	15
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

NPDES Limits

EFFLUENT LIMITATIONS

1. The discharge shall be limited to filtered domestic waste water and industrial waste water only, as proposed.

2. The discharge of an effluent in excess of the following limits is prohibited:

Constituent	Units	Discharge Limitations Maximum
Total dissolved solids	mg/L lbs/day*	950 1,267,680
BOD_5 20°C	mg/L lbs/day*	30 40,035
Oil and grease	mg/L lbs/day*	15 20,020
Chloride	mg/L lbs/day	150 200,160
Sulfate	mg/L lbs/day*	300 400,320
Fluoride	mg/L lbs/day*	1.0 1,340
Boron	mg/L lbs/day*	1.0 1,340
Surfactants (as MBAS)	mg/L lbs/day*	0.5 667
Residual chlorine	mg/L	0.1

3. The daily discharge rate shall be obtained from the following calculation for any calendar day:

$$\text{Daily discharge rate} = \frac{8.34}{N} \sum_{1}^{N} Q_i C_i$$

in which N is the number of samples analyzed in any calendar day. Q_i and C_i are the flow rate (MGD) and the constituent concentration (mg/L) respectively, which are associated with each of the N grab samples which may be taken in any calendar day. If a composite sample is taken, C_i is the concentration measured in the composite sample and Q_i is the average flow rate occurring during the period over which samples are composited.

---

* Based on total waste flow of 160 million gallons per day

4. The pH of wastes discharged shall at all times be within the range 6.0 to 9.0.

5. The temperature of wastes discharged shall not exceed 100°F.

6. Wastes discharged shall not contain visible oil or grease, and shall not cause the appearance of grease, oil or oily slick, or persistent foam in the receiving waters or on channel banks, walls, inverts or other structures.

7. Wastes discharged shall not cause the formation of sludge deposits.

8. Neither the disposal nor any handling of waste shall cause pollution or nuisance.

9. Wastes discharged shall not damage flood control structures or facilities.

10. This discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Regional Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. 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 Board will revise and modify this Order in accordance with such more stringent standards.

11. Wastes discharged shall not increase the natural turbidity of the receiving waters at the time of discharge.

12. Oil, oily material, chemicals, refuse, and other wastes shall not be stored or placed where they could be picked up by rainfall and discharged to surface waters.

13. The wastes discharged shall not contain phenols, mercaptans, or other substances in concentrations which would impart taste, odors, color, foaming or other objectionable characteristics to receiving waters.

14. The wastes discharged shall not cause receiving waters to contain any substance in concentrations toxic to human, animal, plant or fish life.

15. Radioactivity shall not exceed the limits specified in Title 17, Chapter 5, Subchapter 4, Group 3, Article 3, Seciton 30269, of the California Administrative Code.

16. Domestic wastes discharged to watercourses shall at all times be adequately disinfected. For the purpose of this requirement, the wastes shall be considered adequately disinfected if the median number of coliform organisms at some point in the treatment process does not exceed 2.2 per 100 milliliters and the number of coliform organisms does not exceed 23 per 100 milliliters in more than one sample within any thirty day period. The median value shall be determined from samples taken on seven sampling days each week, at least one sample per sampling day, collected at a time when waste water flow and characteristics are most demanding on the treatment facilities and disinfection procedures.

17. Domestic wastes discharged to watercourses shall have received treatment equivalent to that of a filtered waste water.

    Filtered waste water means an oxidized, coagulated, clarified waste water which had been passed through natural undisturbed soils or filter media, such as sand or diatomaceous earth, so that the turbidity as determined by an approved laboratory method does not exceed an average operating turbidity of two turbidity units and does not exceed five turbidity units more than five percent of the time during any twenty-four hour period.

    Nothing herein shall be construed to prevent the use of any alternative treatment process(es) provided that they can be demonstrated to the satisfaction of the Executive Officer to achieve compliance with the effluent limitations and requirements.

18. The average final effluent concentrations shall not exceed fifteen percent by weight of the average sewage treatment plant influent concentrations of BOD_5 20°C and suspended solids during periods of discharge.

19. Wastes discharged shall not contain heavy metals, arsenic or cyanide in concentrations in excess of the mandatory limits contained in the current California Department of Health Drinking Water Standards.

20. The toxicity of the effluent shall be such that in a standard ninety-six hour static or flow through bioassay in undiluted effluent at least ninety percent of test organisms shall survive at least ninety percent of the time with no single test producing seventy percent of survival.

Quarterly Monitoring Report

SSFL Discharged Domestic Waste

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED-RETURN RECEIPT REQUESTED

15 July 1990

In reply refer to 90RC09144

Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, CA 91754-2156

Attention: R. P. Ghirelli, Executive Officer

Subject: File CI2500

Gentlemen:

Pursuant to Los Angeles Water Quality Control Board Resolution 59-68, whereby Rockwell International Corporation, Rocketdyne Division (Rockwell) is directed to conduct a monitoring program for domestic waste discharged at the Santa Susana Field Laboratory, we hereby submit the quarterly monitoring report for 1 April through 30 June 1990.

Requirements and discharge specifications as prescribed in Resolution 59-68 have been complied with during this report period.

The information contained herein has been provided to the undersigned by employees of Rockwell who have direct knowledge of the matters contained herein, and to the best of the undersigned's information and belief, the information is true and correct.

If you have any questions about the material provided herein, please contact Ms. Leslie Dinius at (818) 773-5309.

I do declare under penalty that the foregoing is correct. Executed on the fifteenth day of July 1990 at Canoga Park, California.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

SR Lafflam

S. R. Lafflam, Manager
Environmental Unit
Facilities & Plant Operations

SRL/sj-1130H

Enclosure: Sewage Treatment Plant Operations Summary, SSFL (1 page)

cc w/encl: DOHS/Brian Neilsen
DOE/R. Liddle, G. Lavagnino, A. Adduci, W. Murphie

MONITORING REPORT FOR ROCKWELL INTERNATONAL - Santa Susana Domestic Wastes (File 58-168)
Reference File CI 2500, Pursuant to L.A. W.Q.C.B. Resolution 59-68

Reporting Period	Estimated Average Daily Effluent (GPD) (2)			Wasted Sludge from STP Aeration Tank Hauled to Other Disposal Sites (1)
	Area I	Area II	Area III	
1 APRIL 1990 TO 30 JUNE 1990	16,721	ALL EFFLUENT PUMPED TO AREA III	32,464	AREA I: 5,000 GALLONS AREA III: 15,000 GALLONS

(1) Wasted Activated Sludge from Aeration Tank Hauled by: DAISY INDUSTRIES (LOS ANGELES CITY HEALTH DEPARTMENT PERMIT #30-30-48801 MAR) - 24400l VENTURA BLVD.
CALABASAS, CA 91302 - (818) 716-5295

Delivered to: CITY OF LOS ANGELES - INDUSTRIAL WASTE
UNIMPROVED EXTENSION OF LOUISE AVENUE (MANHOLES #8 & #10)
400 FT. SOUTH OF VICTORY BLVD.
VAN NUYS, CA
TELEPHONE: (818) 345-2107

(2) Effluent: Treated domestic waste from tertiary sewage treatment plant with chlorination. Effluent from Area I STP discharged to R-I reclaim pond, effluent from Area II & III STP's discharged to R-2 reclaim pond.

EXECUTIVE SUMMARY FOR HAZARDOUS WASTE MANAGEMENT

- EXTREMELY HAZARDOUS WASTE DISPOSAL PERMIT RENEWAL

Rockwell International Corporation, Rocketdyne Division (Rocketdyne) has applied to the Department of Health Services (DOHS) for a California Extremely Hazardous Waste Disposal Permit renewal. An annual allowable limit for each material is listed on the application.

Proposed disposal facilities are listed as are container types and disposal methods to be used.

- DOHS - METALLIC SODIUM SHIPMENT

The State of California, Department of Health Services requested Rockwell International Corporation, Rocketdyne Division (Rocketdyne), as the only permitted location for the disposal of Extremely Hazardous Waste in the state, to accept a shipment of approximately 285 lbs. of metallic sodium metal found illegally abandoned by an unknown, responsible party in Butte county. An emergency permit was issued for this one-time treatment of off-site waste and the material was accepted at the Rockwell/Department of Energy Sodium Burn Facility for treatment and disposal.

- TRANSPORTED HAZARDOUS WASTE

For the months of June 1990/July 1990, Rockwell International Corporation, Rocketdyne Division (Rocketdyne) transported hazardous waste to Treatment, Storage and Disposal Facilities located in California, Texas, Nevada, Arkansas and Utah. Monthly reporting of waste shipments were sent to the appropriate agencies for compliance notifications.

Extremely Hazardous Waste

Disposal Permit Renewal

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED-RETURN RECEIPT REQUESTED

09 July 1990

In reply refer to 90RC08445

State of California
Department of Health Services
Toxic Substances Division
1405 N. San Fernando Road
Burbank, Ca. 91504

Attention: Mr. Athar Khan

Subject: Extremely Hazardous Waste Disposal Permit Renewal

Gentlemen:

Please find enclosed Rockwell International Corporation, Rocketdyne Division's renewal applications for the California Extremely Hazardous Waste Disposal Permit.

Should you have any questions please contact Mr. Matt Ratliff, of my staff, at (818) 773-5331.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

SR Lafflam

S.R. Lafflam, Director
Environmental & Energy Conservation

Enclosure as noted

87

WASTE PRODUCER, PLEASE CHECK APPLICABLE PERMIT REQUEST:

For Office Use Only:
Permit # _____
Date Handled _____
Date Sent _____

_____ New Permit

_X_ Renewal Permit (Current Permit No. 3-890613-20 Date 6-13-90)

_____ Amendment and (Current Permit No. _____ Date _____)

_____ Verbal Permit (No. _____ Date _____)
(If given verbal emergency permit by telephone)

CALIFORNIA DEPARTMENT OF HEALTH SERVICES
Hazardous Materials Management Section

Section Offices:

714/744 P Street
Sacramento, CA 95814
(916) 322-2337

2151 Berkeley Way
Berkeley, CA 94704
(415) 540-2043

5545 East Shields Avenue
Fresno, CA 93727
(209) 291-6476

107 South Broadway
Rm. 7012
Los Angeles, CA 90012
(213) 620-2380

APPLICATION FOR
CALIFORNIA EXTREMELY HAZARDOUS WASTE DISPOSAL PERMIT*

Please type or print clearly. Provide all information requested, since omissions will result in delay or denial of permit. Allow 15 days process time from day of receipt.

WASTE PRODUCER:

Name of Firm ROCKWELL INTERNATIONAL CORPORATION, Rocketdyne Division

Street and No. (Or P.O. Box) 6633 Canoga Avenue, M/S 543-JA16

City Canoga Park State CA Zip Code 91303

Telephone No. (818 773-5322 County L.A.

Pick Up Address (If Different) Santa Susana Field Laboratory (SSFL)
Woolsey Canyon Road, Simi Hills, CA E.P.A. I.D.# CAD093365435
CA1800090010, CAD000629972, CA3890090001

Applicant Gary Colbert Title Environmental Engineer

PROPOSED HAULER:

SEE ATTACHED

Hauler Reg. No. _____

PROPOSED DISPOSAL (OR OTHER) FACILITY:

SEE ATTACHED

PROPOSED METHOD OF DISPOSAL:

Burial __ Ponding __ Storage __ Other (Specify) _____

Treatment (Specify type) Incineration

Recycle (Specify method of reuse) Refining, Triple Distillation

*Required for handling or disposal of extremely hazardous waste (Section 66570, Title 22, CAC).

CALIFORNIA DEPARTMENT OF HEALTH SERVICES
Hazardous Waste Management Branch

APPLICATION FOR
CALIFORNIA EXTREMELY HAZARDOUS WASTE DISPOSAL PERMIT

DESCRIPTION OF WASTE (Including Composition with Upper and Lower Concentration of Hazardous Components)	CONCENTRATION Upper	Lower	Units, % or ppm	QUANTITY (For year's permit give estimated quantity per disposal and per year)
PCB Capacitors/Spill Residual				
PCB Oil	5	0	%	50 lbs/yr
Inert Solids/Metals	100	95	%	500 lbs/yr

(Attach page(s) for additional wastes)

DESCRIPTION OF PACKAGING: (Packaging, Containerization)

Drums X Cartons ____ Bottles ____ Tank Truck ____

Other ____
Specify method of packaging small containers

Packaging, containerization, and transport of the material shall be in accordance with Title 49, Code of Federal Regulations for hazardous materials, and with regulations of the California Highway Patrol, Title 13, California Administrative Code, for intrastate transport of hazardous materials and, for PCB-containing wastes, in accordance with U.S.E.P.A. regulations set forth in Title 40 CFR Part 761.

PERMIT TO BE USED FOR: (Length of Time)

Single Disposal ____

One Year Maximum for Multiple Disposals X

PERMIT RENEWALS: (Application for renewal of a one-year blanket permit, using this form, must be received at least 15 days prior to expiration date to keep permit in effect).

Signature of Applicant SRLaffl, S. R. Lafflam, Director, Environmental & Energy Conservation

Company and City ROCKWELL INTERNATIONAL CORPORATION, Rocketdyne Division

Date 09 July 1990

1/22/81

PROPOSED HAULERS

Diposal Control Service
Liquid Waste Management
1369 West 9th Street
Upland, CA 91786
CAT080034184; Hauler #919

Ensco, Inc.
American Oil Road
Eldorado, AK 71730
ARD069748192;
Hauler#810PC708

Custom Environmental Transport
7200 Rollins
Deer Park, TX 77536
DED980918858; Hauler #698

ChemicalWaste Management
1704 West First Street
Azusa, CA 91702
CAD008302903; Hauler #0428

PROPOSED DISPOSAL (OR OTHER) FACILITIES

Chemical Waste Management
1704 West First Street
Azusa, CA 91702
CAD008302903

ENSCO, Inc.
American Oil Road
El Dorado, AK
ARD069748192

Rollins Environmental Svc., (TX) Inc.
2027 Battleground Road
Deer Park, TX
TXD055141378

Eticam
2095 Newlands Drive East
Fernley, Nevada 89408
NVD980895338

U. S. Pollution Control, Inc.
8960 North Highway 40
Lake Point, UT 84074
UTD991301748

Encycle, Texas Inc.
5500 Up River road
Corpus Christi, TX 78407
TXD008117186

CALIFORNIA DEPARTMENT OF HEALTH SERVICES
Hazardous Waste Management Branch

APPLICATION FOR CALIFORNIA EXTREMELY HAZARDOUS WASTE PERMIT

Company Rockwell/Rocketdyne City Canoga Park Date 7/9/90

ADDITIONAL WASTES

Description of Waste (including Composition with Upper and Lower Concentrations of Hazardous Components)	Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number	Units
WASTE	Beryllium Wipe Rags			☐	☐		
	Beryllium	2	0	X	☐		
	Inert Solids/Rags	100	98	X	☐		
				☐	☐		
				☐	☐		

On Year's Permit: Per Disposal (est'd) 5 lbs; Per Year (est'd) 20 lbs

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other Lab Pack for Incineration

PROPOSED METHOD OF DISPOSAL: ☐ Burial ☐ Ponding ☐ Storage** ☒ Incineration ☐ Other (Specify): ____
☐ Treatment (Specify): ____
☐ Recycling (Specify method of reuse): ____

Description of Waste (including Composition with Upper and Lower Concentrations of Hazardous Components)	Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number	Units
WASTE	Bromine Solution			☐	☐		
	Bromine	60	10	X	☐		
	Water	60	30	X	☐		
	Inert Liquids	60	0	X	☐		
				☐	☐		

On Year's Permit: Per Disposal (est'd) 5 gals; Per Year (est'd) 30 gals

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other Lab Pack for Incineration

PROPOSED METHOD OF DISPOSAL: ☐ Burial ☐ Ponding ☐ Storage** ☒ Incineration ☐ Other (Specify): ____
☐ Treatment (Specify): ____
☐ Recycling (Specify method of reuse): ____

Description of Waste (including Composition with Upper and Lower Concentrations of Hazardous Components)	Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number	Units
WASTE	Chlorine Solution			☐	☐		
	Chlorine	60	10	X	☐		
	Water	60	30	X	☐		
	Inert Liquids	60	0	X	☐		
				☐	☐		

On Year's Permit: Per Disposal (est'd) 5 gals; Per Year (est'd) 100 gals

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other Lab Pack for Incineration

PROPOSED METHOD OF DISPOSAL: ☐ Burial ☐ Ponding ☐ Storage** ☒ Incineration ☐ Other (Specify): ____
☐ Treatment (Specify): ____
☐ Recycling (Specify method of reuse): ____

Hazardous Waste Management Branch

APPLICATION FOR CALIFORNIA EXTREMELY HAZARDOUS WASTE PERMIT

Company Rockwell/Rocketdyne City Canoga Park Date 7/2/90

ADDITIONAL WASTES

Description of Waste (Including Composition with Upper and Lower Concentration of Hazardous Components)	Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
WASTE	1,1-Dimethylhydrazine Solutic		4	☐	☐		
	1,1-Dimethylhydrazine	45	1	X	☐		
	Water	99	55	X	☐		
				☐	☐		
				☐	☐		

On Year's Permit: Per Disposal (est'd) 30 gals Per Year (est'd) 120 gals

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other

PROPOSED METHOD OF DISPOSAL: ☐ Burial ☐ Ponding ☐ Storage** ☒ Incineration ☐ Other (Specify):
☐ Treatment (Specify):
☐ Recycling (Specify method of reuse):

Description of Waste (Including Composition with Upper and Lower Concentration of Hazardous Components)	Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
WASTE				☐	☐		
	Fluorine	60	1	X	☐		
				☐	☐		
				☐	☐		
				☐	☐		

On Year's Permit: Per Disposal (est'd) 2 lbs Per Year (est'd) 10 lbs

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other Lab Pack for Incineration

PROPOSED METHOD OF DISPOSAL: ☐ Burial ☐ Ponding ☐ Storage** ☐ Incineration ☐ Other (Specify):
☐ Treatment (Specify):
☐ Recycling (Specify method of reuse):

Description of Waste (Including Composition with Upper and Lower Concentration of Hazardous Components)	Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
	Hydrazine Solution			☐	☐		
	Monomethyl Hydrazine	45	1	X	☐		
WASTE	Water	99	55	X	☐		
				☐	☐		
				☐	☐		

On Year's Permit: Per Disposal (est'd) 30 gals Per Year (est'd) 180 gals

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other

PROPOSED METHOD OF DISPOSAL: ☐ Burial ☐ Ponding ☐ Storage** ☒ Incineration ☐ Other (Specify):
☐ Treatment (Specify):
☐ Recycling (Specify method of reuse):

CALIFORNIA DEPARTMENT OF HEALTH SERVICES
Hazardous Waste Management Branch

APPLICATION FOR CALIFORNIA EXTREMELY HAZARDOUS WASTE PERMIT

Company Rockwell/Rocketdyne City Canoga Park Date 7/2/90

ADDITIONAL WASTES

WASTE

Description of Waste: (Including Composition with Upper and Lower Concentration of Hazardous Components)

Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
Lithium Hydride	100	99	X			

On Year's Permit: Per Disposal (est'd): 62 lbs Per Year (est'd): 100 lbs

Description of Packaging, Containerization and Transport: ☐ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other

PROPOSED METHOD OF DISPOSAL: ☐ Burial ☐ Ponding ☐ Storage** ☐ Incineration ☐ Other (Specify): ____
☒ Treatment (Specify): Thermal Treatment
☐ Recycling (Specify method of reuse): ____

WASTE

Description of Waste: (Including Composition with Upper and Lower Concentration of Hazardous Components)

Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
Magnesium	100	90	X			

On Year's Permit: Per Disposal (est'd): 55 lbs Per Year (est'd): 110 lbs

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Carton ☐ Bottles ☐ Tank Truck ☐ Other

PROPOSED METHOD OF DISPOSAL: ☐ Burial ☐ Ponding ☐ Storage** ☐ Incineration ☐ Other (Specify): ____
☐ Treatment (Specify): ____
☐ Recycling (Specify method of reuse): ____

WASTE

Description of Waste: (Including Composition with Upper and Lower Concentration of Hazardous Components)

Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
Mercury Contaminated Rags						
Mercury	1	0	X			
Inert Solids/Rags	100	99	X			

On Year's Permit: Per Disposal (est'd): 20 lbs Per Year (est'd): 100 lbs

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other

PROPOSED METHOD OF DISPOSAL: ☐ Burial ☐ Ponding ☐ Storage** ☐ Incineration ☐ Other (Specify): ____
☒ Treatment (Specify): Stabilization
☐ Recycling (Specify method of reuse): ____

CALIFORNIA DEPARTMENT OF HEALTH SERVICES
Hazardous Waste Management Branch

APPLICATION FOR CALIFORNIA EXTREMELY HAZARDOUS WASTE PERMIT

Company Rockwell/Rocketdyne City Canoga Park Date 7/2/90

ADDITIONAL WASTES

WASTE

Description of Waste: (Including Composition with Upper and Lower Concentrations of Hazardous Components)

Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
Potassium	100	99	X			

On Year's Permit:
Per Disposal (est'd) 62 lbs
Per Year (est'd) 500 lbs

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other

PROPOSED METHOD OF DISPOSAL
☐ Burial ☐ Ponding ☐ Storage** ☐ Incineration ☐ Other (Specify):
☒ Treatment (Specify): Thermal Treatment
☐ Recycling (Specify method of reuse):

WASTE

Description of Waste: (Including Composition with Upper and Lower Concentrations of Hazardous Components)

Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
Sodium	100	99	X			

On Year's Permit:
Per Disposal (est'd) 62 lbs
Per Year (est'd) 3000 lbs

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other

PROPOSED METHOD OF DISPOSAL
☐ Burial ☐ Ponding ☐ Storage** ☐ Incineration ☐ Other (Specify):
☒ Treatment (Specify): Thermal Treatment
☐ Recycling (Specify method of reuse):

WASTE

Description of Waste: (Including Composition with Upper and Lower Concentrations of Hazardous Components)

Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
Arsenic Trioxide						
Arsenic	74	72	X			
Oxygen	28	26	X			

On Year's Permit:
Per Disposal (est'd) 2 lbs
Per Year (est'd) 10 lbs

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other Lab Pack for Incineration or Stabilization

PROPOSED METHOD OF DISPOSAL
☐ Burial ☐ Ponding ☐ Storage** ☐ Incineration ☐ Other (Specify):
☒ Treatment (Specify): Stabilization
☐ Recycling (Specify method of reuse):

CALIFORNIA DEPARTMENT OF HEALTH SERVICES
Hazardous Waste Management Branch

APPLICATION FOR CALIFORNIA EXTREMELY HAZARDOUS WASTE PERMIT

Company Rockwell/Rocketdyne City Canoga Park Date 7/5/90

ADDITIONAL WASTES

Description of Waste: (Including Composition with Upper and Lower Concentrations of Hazardous Components)	Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
WASTE				☐	☐		
	Mercuric Chloride			☒	☐		
				☐	☐	On Year's Permit:	
				☐	☐	Per Disposal (est'd) 2 lbs	
				☐	☐	Per Year (est'd) 10 lbs	

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other

PROPOSED METHOD OF DISPOSAL: ☐ Burial ☐ Ponding ☐ Storage** ☒ Incineration ☐ Other (Specify): ____
☒ Treatment (Specify): Stabilization
☐ Recycling (Specify method of reuse): ____

Description of Waste: (Including Composition with Upper and Lower Concentrations of Hazardous Components)	Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
WASTE	Thallium Wipe Rags			☐	☐		
	Thallium	2	0	☒	☐		
	Inert Solids/Rags	100	98	☒	☐	On Year's Permit:	
				☐	☐	Per Disposal (est'd) 20 lbs	
				☐	☐	Per Year (est'd) 140 lbs	

Description of Packaging, Containerization and Transport: ☐ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other

PROPOSED METHOD OF DISPOSAL: ☐ Burial ☐ Ponding ☐ Storage** ☒ Incineration ☐ Other (Specify): ____
☐ Treatment (Specify): ____
☐ Recycling (Specify method of reuse): ____

Description of Waste: (Including Composition with Upper and Lower Concentrations of Hazardous Components)	Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
	Solvent Rinse			☐	☐		
	Water	98		☒	☐		
WASTE	Vinyl Chloride	700	500	☐	☒	On Year's Permit:	
	Acetone	85,000	78,000	☐	☒	Per Disposal (est'd) 55 gal	
	Chloroform	7,500	6,000	☐	☒	Per Year (est'd) 220 gal	

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other

PROPOSED METHOD OF DISPOSAL: ☐ Burial ☐ Ponding ☐ Storage** ☐ Incineration ☐ Other (Specify): ____
☐ Treatment (Specify): ____
☒ Recycling (Specify method of reuse): Refining, Triple Distillation

CALIFORNIA DEPARTMENT OF HEALTH SERVICES
Hazardous Waste Management Branch

APPLICATION FOR CALIFORNIA EXTREMELY HAZARDOUS WASTE PERMIT

Company Rockwell/Rocketdyne City Canoga Park Date 7/9/90

ADDITIONAL WASTES

Description of Waste (including Composition with Upper and Lower Concentration of Hazardous Components)	Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
WASTE	Cadmium Wipe Rags			☐	☐		
	Cadmium	2	0	X	☐		
	Inert Solids/Rags	100	98	X	☐		
				☐	☐		
				☐	☐		

On Year's Permit: Per Disposal (est'd): 20 lbs Per Year (est'd): 100 lbs

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other

PROPOSED METHOD OF DISPOSAL: ☐ Burial ☐ Ponding ☐ Storage** ☒ Incineration ☐ Other (Specify):
☐ Treatment (Specify):
☐ Recycling (Specify method of reuse):

Description of Waste (including Composition with Upper and Lower Concentration of Hazardous Components)	Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
WASTE	Acid Rinse Solution			☐	☐		
	Hydrofluoric Acid	2	0	X	☐		
	Sulfuric Acid	8	3	X	☐		
	Nitric Acid	8	3	X	☐		
	Water	94	82	X	☐		

On Year's Permit: Per Disposal (est'd): 1000 gals Per Year (est'd): 10,000 gals

Description of Packaging, Containerization and Transport: ☐ Drums ☐ Cartons ☐ Bottles ☒ Tank Truck ☐ Other

PROPOSED METHOD OF DISPOSAL: ☐ Burial ☐ Ponding ☐ Storage** ☐ Incineration ☐ Other (Specify):
☐ Treatment (Specify):
☒ Recycling (Specify method of reuse): Neutralization for Metal Reclamation

Description of Waste (including Composition with Upper and Lower Concentration of Hazardous Components)	Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
WASTE				☐	☐		
				☐	☐		
				☐	☐		
				☐	☐		
				☐	☐		

On Year's Permit: Per Disposal (est'd): Per Year (est'd):

Description of Packaging, Containerization and Transport: ☐ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other

PROPOSED METHOD OF DISPOSAL: ☐ Burial ☐ Ponding ☐ Storage** ☐ Incineration ☐ Other (Specify):
☐ Treatment (Specify):
☐ Recycling (Specify method of reuse):

WASTE PRODUCER, PLEASE CHECK APPLICAB PERMIT REQUEST:

____ New Permit 3-890613-06

X Renewal Permit (Current Permit No. ____ Date 6-13-90)

____ Amendment and (Current Permit No. ____ Date ____)

____ Verbal Permit (No. ____ Date ____)
(If given verbal emergency permit by telephone)

For Office Use Only:
Permit # ____
Date Handled ____
Date Sent ____

CALIFORNIA DEPARTMENT OF HEALTH SERVICES
Hazardous Materials Management Section

Section Offices:

714 744 P Street
Sacramento, CA 95814
(916) 322-2337

2151 Berkeley Way
Berkeley, CA 94704
(415) 540-2043

5545 East Shields Avenue
Fresno, CA 93727
(209) 291-6676

107 South Broadway
Rm. 7012
Los Angeles, CA 90012
(213) 620-2380

APPLICATION FOR
CALIFORNIA EXTREMELY HAZARDOUS WASTE DISPOSAL PERMIT*

Please type or print clearly. Provide all information requested, since omissions will result in delay or denial of permit. Allow 15 days process time from day of receipt.

WASTE PRODUCER:

Name of Firm Rockwell International Corporation/Rocketdyne Division

Street and No. (Or P.O. Box) 6633 Canoga Avenue (T485/D543)

City Canoga Park State CA Zip Code 91303

Telephone No. (818) 710-3409 County Los Angeles

Pick Up Address (If Different) Same as above

EPA I.D.# CAD074103771

Applicant Matt Ratliff Title Environmental Engineer

PROPOSED HAULER: See attached sheet

Hauler Reg. No. ____

PROPOSED DISPOSAL (OR OTHER) FACILITY: See attached sheet

PROPOSED METHOD OF DISPOSAL:

Burial ___ Ponding ___ Storage ___ Other (Specify) ____

Treatment (Specify type) Incineration

Recycle (Specify method of reuse) Refining

97 *Required for handling or disposal of extremely hazardous waste (Section 66370, Title 22, CAC).

CALIFORNIA DEPARTMENT OF HEALTH SERVICES
Hazardous Waste Management Branch

APPLICATION FOR
CALIFORNIA EXTREMELY HAZARDOUS WASTE DISPOSAL PERMIT

DESCRIPTION OF WASTE (Including Composition with Upper and Lower Concentration of Hazardous Components)	CONCENTRATION Upper	Lower	Units, % or ppm	QUANTITY (For year's permit give estimated quantity per disposal and per year)
Mercury Contamination				
Mercury	20	0	%	50 lbs
Inert Solids/Trash	100	80	%	

(Attach page(s) for additional wastes)

DESCRIPTION OF PACKAGING: (Packaging, Containerization)

Drums X Cartons ____ Bottles ____ Tank Truck ____

Other _____
Specify method of packaging small containers

Packaging, containerization, and transport of the material shall be in accordance with Title 49, Code of Federal Regulations for hazardous materials, and with regulations of the California Highway Patrol, Title 13, California Administrative Code, for intrastate transport of hazardous materials and, for PCB-containing wastes, in accordance with U.S.E.P.A. regulations set forth in Title 40 CFR Part 761.

PERMIT TO BE USED FOR: (Length of Time)

Single Disposal ____

One Year Maximum for Multiple Disposals X

PERMIT RENEWALS: (Application for renewal of a one-year blanket permit, using this form, must be received at least 15 days prior to expiration date to keep permit in effect)

Signature of Applicant S. R. Lafflam, Director, Environmental & Energy Conservation

Company and City Rockwell International Corporation, Rocketdyne Division

Date 09 July 1990

PROPOSED HAULERS

Diposal Control Service
Liquid Waste Management
1369 West 9th Street
Upland, CA 91786
CAT080034184; Hauler #919

Ensco, Inc.
American Oil Road
Eldorado, AK 71730
ARD069748192;
Hauler#810PC708

Custom Environmental Transport
7200 Rollins
Deer Park, TX 77536
DED980918858; Hauler #698

ChemicalWaste Management
1704 West First Street
Azusa, CA 91702
CAD008302903; Hauler #0428

PROPOSED DISPOSAL (OR OTHER) FACILITIES

Chemical Waste Management
1704 West First Street
Azusa, CA 91702
CAD008302903

ENSCO, Inc.
American Oil Road
El Dorado, AK
ARD069748192

Rollins Environmental Svc., (TX) Inc.
2027 Battleground Road
Deer Park, TX
TXD055141378

Eticam
2095 Newlands Drive East
Fernley, Nevada 89408
NVD980895338

U. S. Pollution Control, Inc.
8960 North Highway 40
Lake Point, UT 84074
UTD991301748

Encycle, Texas Inc.
5500 Up River road
Corpus Christi, TX 78407
TXD008117186

CALIFORNIA DEPARTMENT OF HEALTH SERVICES
Hazardous Waste Management Branch

APPLICATION FOR CALIFORNIA EXTREMELY HAZARDOUS WASTE PERMIT

Company Rockwell Int'l/Rocketdyne Div. City Canoga Park Date 7/9/90

ADDITIONAL WASTES

Description of Waste (Including Composition with Upper and Lower Concentration of Hazardous Components)	Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
WASTE	PCB Capacitors/Transformers			☐	☐		
	PCB Oil	5	0	X	☐		
	PCB Solids/Trans/Soil	5	0	X	☐	On Year's Permit: Per Disposal (est'd): 200 lbs	
	Capacitor/Steel	100	90	X	☐	Per Year (est'd): 600 lbs	
				☐	☐		

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other

PROPOSED METHOD OF DISPOSAL: ☐ Burial ☐ Ponding ☐ Storage** ☒ Incineration ☐ Other (Specify): _____
☐ Treatment (Specify): _____
☐ Recycling (Specify method of reuse): _____

Description of Waste (Including Composition with Upper and Lower Concentration of Hazardous Components)	Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
WASTE				☐	☐		
				☐	☐		
				☐	☐	On Year's Permit: Per Disposal (est'd):	
				☐	☐	Per Year (est'd):	
				☐	☐		

Description of Packaging, Containerization and Transport: ☐ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other

PROPOSED METHOD OF DISPOSAL: ☐ Burial ☐ Ponding ☐ Storage** ☐ Incineration ☐ Other (Specify): _____
☐ Treatment (Specify): _____
☐ Recycling (Specify method of reuse): _____

Description of Waste (Including Composition with Upper and Lower Concentration of Hazardous Components)	Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
WASTE				☐	☐		
				☐	☐		
				☐	☐	On Year's Permit: Per Disposal (est'd):	
				☐	☐	Per Year (est'd):	
				☐	☐		

Description of Packaging, Containerization and Transport: ☐ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other

PROPOSED METHOD OF DISPOSAL: ☐ Burial ☐ Ponding ☐ Storage** ☐ Incineration ☐ Other (Specify): _____
☐ Treatment (Specify): _____
☐ Recycling (Specify method of reuse): _____

WASTE PRODUCER, PLEASE CHECK APPLICABLE PERMIT REQUEST:

____ New Permit

__X__ Renewal Permit (Current Permit No. 3-890613-19 Date 6-13-90)

____ Amendment and (Current Permit No. _____ Date _____)

____ Verbal Permit (No. _____ Date _____)
(If given verbal emergency permit by telephone)

For Office Use Only:
Permit # _____
Date Needed _____
Date Sent _____

CALIFORNIA DEPARTMENT OF HEALTH SERVICES
Hazardous Materials Management Section

Section Offices:

714 744 P Street
Sacramento, CA 95814
(916) 322-2337

2151 Berkeley Way
Berkeley, CA 94704
(415) 540-2043

5545 East Shields Avenue
Fresno, CA 93727
(209) 251-8678

107 South Broadway
Rm. 7012
Los Angeles, CA 90012
(213) 620-2380

APPLICATION FOR
CALIFORNIA EXTREMELY HAZARDOUS WASTE DISPOSAL PERMIT*

Please type or print clearly. Provide all information requested, since omissions will result in delay or denial of permit. Allow 15 days process time from day of receipt.

WASTE PRODUCER: Name of Firm Rockwell International Corporation/Rocketdyne Division

Street and No. (Or P.O. Box) 6633 Canoga Avenue (T485/D543)

City Canoga Park State CA Zip Code 91303

Telephone No. (818) 710-3409 County Los Angeles

Pick Up Address (If Different) 8900 De Soto Avenue

Canoga Park, CA 91303

EPA I.D.# CAD008368987

Applicant Matt Ratliff Title Environmental Engineer

PROPOSED HAULER: See attached sheet

Hauler Reg. No. _____

PROPOSED DISPOSAL (OR OTHER) FACILITY: See attached sheet

PROPOSED METHOD OF DISPOSAL: Burial__ Ponding __ Storage __ Other (Specify) _____

Treatment (Specify type) Incineration

Recycle (Specify method of reuse) Refining

*Required for handling or disposal of extremely hazardous waste (Section 66570, Title 22, CAC).

CALIFORNIA DEPARTMENT OF HEALTH SERVICES
Hazardous Waste Management Branch

APPLICATION FOR
CALIFORNIA EXTREMELY HAZARDOUS WASTE DISPOSAL PERMIT

DESCRIPTION OF WASTE (Including Composition with Upper and Lower Concentration of Hazardous Components)	CONCENTRATION Upper	Lower	Units, % or ppm	QUANTITY (For year's permit give estimated quantity per disposal and per year)
"Beryllium Rags"				2400 lbs
Rags and Inert Solids	100	98	%	
Beryllium Fines	2	0	%	

(Attach page(s) for additional wastes)

DESCRIPTION OF PACKAGING: (Packaging, Containerization)

Drums X Cartons ____ Bottles ____ Tank Truck ____

Other ____
Specify method of packaging small containers

Packaging, containerization, and transport of the material shall be in accordance with Title 49, Code of Federal Regulations for hazardous materials, and with regulations of the California Highway Patrol, Title 13, California Administrative Code, for intrastate transport of hazardous materials and, for PCB-containing wastes, in accordance with U.S.E.P.A. regulations set forth in Title 40 CFR Part 761.

PERMIT TO BE USED FOR: (Length of Time)

Single Disposal ____

One Year Maximum for Multiple Disposals X

PERMIT RENEWALS: (Application for renewal of a one-year blanket permit, using this form, must be received at least 15 days prior to expiration date to keep permit in effect).

Signature of Applicant: S R Lafflam, S. R. Lafflam, Director, Environmental & Energy Conservati

Company and City: Rockwell International, Rocketdyne Division

Date: 07/06/90

1/22/81

PROPOSED HAULERS

Diposal Control Service
Liquid Waste Management
1369 West 9th Street
Upland, CA 91786
CAT080034184; Hauler #919

Ensco, Inc.
American Oil Road
Eldorado, AK 71730
ARD069748192;
Hauler#810PC708

Custom Environmental Transport
7200 Rollins
Deer Park, TX 77536
DED980[illegible]858; Hauler #698

ChemicalWaste Management
1704 West First Street
Azusa, CA 91702
CAD008302903; Hauler #0428

PROPOSED DISPOSAL (OR OTHER) FACILITIES

Chemical Waste Management
1704 West First Street
Azusa, CA 91702
CAD008302903

ENSCO, Inc.
American Oil Road
El Dorado, AK
ARD069748192

Rollins Environmental Svc., (TX) Inc.
2027 Battleground Road
Deer Park, TX
TXD055141378

Eticam
2095 Newlands Drive East
Fernley, Nevada 89408
NVD980895338

U. S. Pollution Control, Inc.
8960 North Highway 40
Lake Point, UT 84074
UTD991301748

Encycle, Texas Inc.
5500 Up River road
Corpus Christi, TX 78407
TXD008117186

CALIFORNIA DEPARTMENT OF HEALTH SERVICES

Hazardous Waste Management Branch

APPLICATION FOR CALIFORNIA EXTREMELY HAZARDOUS WASTE PERMIT

Company Rockwell Int'l/Rocketdyne Div. City Canoga Park Date 7/9/90

ADDITIONAL WASTES

WASTE

Description of Waste: (Including Composition with Upper and Lower Concentration of Hazardous Components)	Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
	Potassium Ferricyanate	5	0	X			
	Inert Solids and Rags	99	95	X			

On Year's Permit: Per Disposal (est'd): 200 lbs Per Year (est'd): 800 lbs

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other

PROPOSED METHOD OF DISPOSAL: ☐ Burial ☐ Ponding ☐ Storage** ☐ Incineration ☒ Other (Specify): Deactivation

☐ Treatment (Specify): _____

☐ Recycling (Specify method of reuse): _____

WASTE

Description of Waste: (Including Composition with Upper and Lower Concentration of Hazardous Components)	Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
	Mercury Contamination	2	0	X			
	Inert Solids and Rags	100	98	X			

On Year's Permit: Per Disposal (est'd): 50 lbs Per Year (est'd): 200 lbs

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other

PROPOSED METHOD OF DISPOSAL: ☒ Burial ☐ Ponding ☐ Storage** ☐ Incineration ☐ Other (Specify): _____

☒ Treatment (Specify): Stabilization

☐ Recycling (Specify method of reuse): _____

WASTE

Description of Waste: (Including Composition with Upper and Lower Concentration of Hazardous Components)	Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
	PCB Capacitors/Transformer						
	PCB Oil	5	0	X			
	Inert Solids and Metal	100	90	X			

On Year's Permit: Per Disposal (est'd): 400 lbs Per Year (est'd): 700 lbs

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck ☐ Other

PROPOSED METHOD OF DISPOSAL: ☐ Burial ☐ Ponding ☐ Storage** ☒ Incineration ☐ Other (Specify): _____

☐ Treatment (Specify): _____

☐ Recycling (Specify method of reuse): _____

CALIFORNIA DEPARTMENT OF HEALTH SERVICES
Hazardous Waste Management Branch

APPLICATION FOR CALIFORNIA EXTREMELY HAZARDOUS WASTE PERMIT

Company Rockwell Int'l/Rocketdyne Div. City Canoga Park Date 7/9/90

ADDITIONAL WASTES

WASTE

Description of Waste: (Including Composition with Upper and Lower Concentration of Hazardous Components)

Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
Copper Cyanide Solution	98	20	X			

On Year's Permit:
Per Disposal (est'd): 100 lbs
Per Year (est'd): 400 lbs

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck
☒ Other Lab Pack for Incineration

PROPOSED METHOD OF DISPOSAL
☐ Burial ☐ Ponding ☐ Storage** ☐ Incineration ☐ Other (Specify): _____
☒ Treatment (Specify): Reclamation of Metals/Deactivation of Cyanide
☐ Recycling (Specify method of reuse): _____

WASTE

Description of Waste: (Including Composition with Upper and Lower Concentration of Hazardous Components)

Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
Potassium Cyanide Solution	98	20	X			
Sodium Cyanide Solution	98	20	X			

On Year's Permit:
Per Disposal (est'd): 100 lbs
Per Year (est'd): 400 lbs

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck
☒ Other Lab Pack for Incineration

PROPOSED METHOD OF DISPOSAL
☐ Burial ☐ Ponding ☐ Storage** ☐ Incineration ☐ Other (Specify): _____
☒ Treatment (Specify): Deactivation of Cyanide
☐ Recycling (Specify method of reuse): _____

WASTE

Description of Waste: (Including Composition with Upper and Lower Concentration of Hazardous Components)

Waste Component(s)	Upper	Lower	%	ppm	QUANTITY On One Time Basis: Number:	Units:
Gold Cyanide	98	50	X			

On Year's Permit:
Per Disposal (est'd): 20-40 lbs
Per Year (est'd): 100 lbs

Description of Packaging, Containerization and Transport: ☒ Drums ☐ Cartons ☐ Bottles ☐ Tank Truck
☐ Other

PROPOSED METHOD OF DISPOSAL
☐ Burial ☐ Ponding ☐ Storage** ☐ Incineration ☐ Other (Specify): _____
☒ Treatment (Specify): Reclamation of Precious Metals/Deactivation of Cyanide
☐ Recycling (Specify method of reuse): _____

One-Time Treatment of Off-Site Metallic Sodium Wastes

STATE OF CALIFORNIA
HEALTH AND WELFARE AGENCY
DEPARTMENT OF HEALTH SERVICES
TOXIC SUBSTANCES CONTROL PROGRAM

In the Matter of: Kenneth O. Brown Property P. O. Box 63 Feather Falls, CA 95940	Docket No. HASE 89/90 - 018 IMMINENT AND SUBSTANTIAL ENDANGERMENT DETERMINATION Health and Safety Code Sections 25355.5(b) (3) and 25358.3(a)

INTRODUCTION

1. Site. This Imminent and Substantial Endangerment Determination (Determination) applies to the site located at APN 071-150-018, Lumpkin Road, between Nos. 1315 and 1396. A map showing the site is attached.

2. Jurisdiction. Section 25355.5(b) (3) of the Health and Safety Code authorizes the Department to expend funds from the Hazardous Substance Account and the Hazardous Substances Cleanup Fund without first taking the actions specified in Health and Safety Code section 25355.5(a), if the Department determines that removal or remedial action is necessary at a site because there may be an imminent and substantial endangerment to the public health or welfare or to the environment, because of a release or a threatened release of a hazardous substance.

Section 25358.3(a) of the Health and Safety Code authorizes the Department to take various actions when the Department determines that there may be an imminent or substantial endangerment to the public health or welfare or to the environment, because of a release or a threatened release of a hazardous substance.

Section 66393(a) of the California Code of Regulations allows the Department to issue a temporary emergency permit to allow the treatment, storage, or disposal of hazardous waste in the event that an imminent and substantial endangerment to human health or the environment exists.

FINDINGS OF FACT

The Department hereby finds:

3. Physical Description of Site. The site is a vacant five-acre parcel located approximately one and one-half to two miles north of the Enterprise Bridge which spans the South Fork of the Feather River. This portion of the Feather River is southwest and downgradient from the Ponderosa Reservoir and forms the Eastern arm of Lake Oroville. The site is situated an estimated 300 feet above the lake on the north side of the South Fork. The land comprising the site is undeveloped property zoned for residential use.

4. Site History. An unknown responsible party illegally abandoned metallic sodium waste on a privately-owned five acre parcel in Butte County. It is suspected that the wastes were generated from a clandestine drug laboratory operation. Officials from Butte County discovered the waste on June 5, 1990.

5. Substances Found at the Site. The following substances have been found at the site: Seventy-five (75) thirty (30) - ounce containers of metallic sodium, in their original containers, have been found on-site. Each thirty (30) - ounce container holds six (6) 1"x1"x6" bars of metallic sodium submersed in oil.

6. Health Effects. Metallic sodium is a very reactive substance and presents a high explosion hazard. It reacts violently when exposed to moisture in any form. When metallic sodium is reacted with water, it will produce hydrogen gas which is also highly explosive. Metallic sodium also emits sodium oxide fumes when heated in air.

7. Routes of Exposure. The major risk posed by metallic sodium is the explosion hazard. However, when the substance comes in contact with human tissue, another exposure hazard is presented. Metallic sodium reacts exothermically with the moisture of the body or tissue. This reaction will cause thermal and chemical burns due to the production of sodium hydroxide, a caustic liquid.

8. Population at Risk. The disposal site is located in a rural area of Butte County. The 'Gold Flake Club' a restaurant and drinking establishment, is located 50 yards from where the disposal has occurred. Ten or eleven residents live within a one-half mile radius of the site. One residence with two occupants is located on an adjacent five-acre parcel.

9. Treatment/Disposal. The Rockwell/Rocketdyne Treatment facility in Santa Susana, California, possesses a permitted metallic sodium treatment facility that offers the most desirable means for the Department to treat this particular wastestream at this time. Because of the volume of metallic sodium and the reactive characteristics, the Department is unable to locate an alternative treatment facility that will accept this wastestream in a short period of time under emergency conditions.

CONCLUSIONS OF LAW

10. Each of the substances listed in paragraph 5 is a "hazardous substance," as defined by Health and Safety Code section 25316, and has been found at the Site.

11. A "release" or threatened release of the hazardous substances listed in paragraph 5 has occurred at or from the Site, as defined by Health and Safety Code section 25320.

12. The actual and/or threatened release of hazardous substances at the Site may present an imminent and substantial endangerment to the public health or welfare or to the environment.

DETERMINATION

13. Based on the foregoing findings of fact and conclusions of law, the Department hereby determines that removal or remedial action is necessary at the Site because there may be an imminent and substantial endangerment to the public health or welfare or to the environment.

14. The Department shall remove all metallic sodium wastes from the site. The waste will be transported to the Rockwell/Rocketdyne facility under Uniform Hazardous Waste Manifest. The facility will treat the wastes within 90 days of receipt under emergency permit conditions as stipulated by the Department.

DATED: JUNE 19, 1990

Ted N. Rauh, Chief
Program and Administrative
Support Division

cc: Stan Phillippe, Chief
Site Mitigation Unit
Toxic Substances Control Program
714/744 P Street
P.O. Box 942732
Sacramento, CA 94234-7320

Bill Soo Hoo, Chief
Toxics Legal Office
Toxic Substances Control Program
714/744 P Street
P.O. Box 942732
Sacramento, CA 94234-7320

Dennis Dickerson
Regional Administrator
Toxic Substances Control Program
Region 3
1405 N. San Fernando Boulevard
Burbank, CA 91504

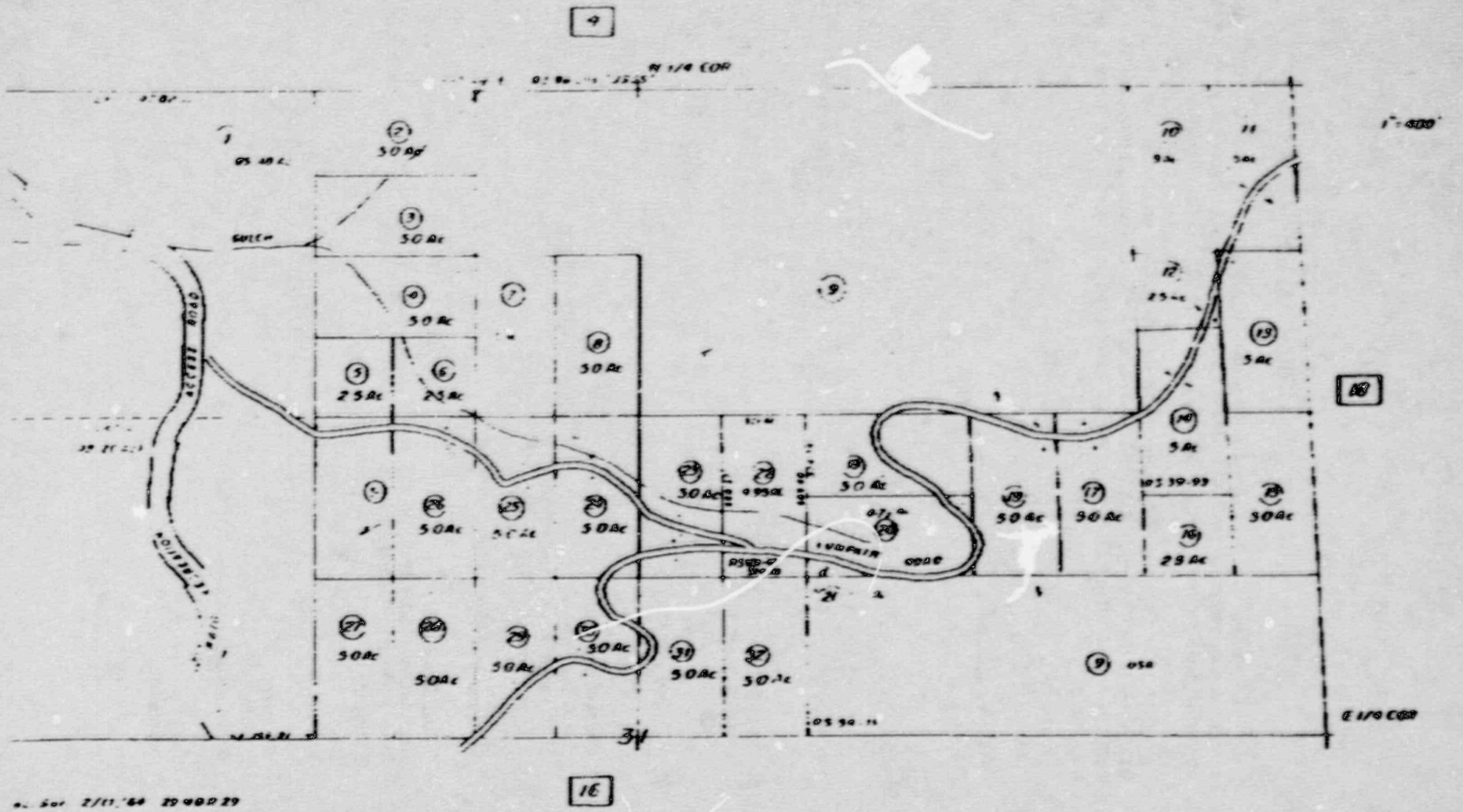
Val Siebal
Regional Administrator
Toxic Substances Control Program
Region 1
10151 Croydon Way
Sacramento, CA 95827

Information

1.800.521.3863

71-15

N 1/2 SEC 31 T20N R6E MDB&M



Assessor's Map No. 71-15
County of Butte, Calif.
APRIL 1961

NOTE - ASSESSOR'S PARCEL BLOCK & LOT NUMBERS SHOWN IN CIRCLES

IMMINENT AND/OR SUBSTANTIAL ENDANGERMENT
SIGN-OFF SHEET
(FOR HEADQUARTERS)

Kenneth G. Brown Property, Butte County
Site Name

Kelvin Yamada/Arnold Sargent — 6.19.90
Project Manager — Date

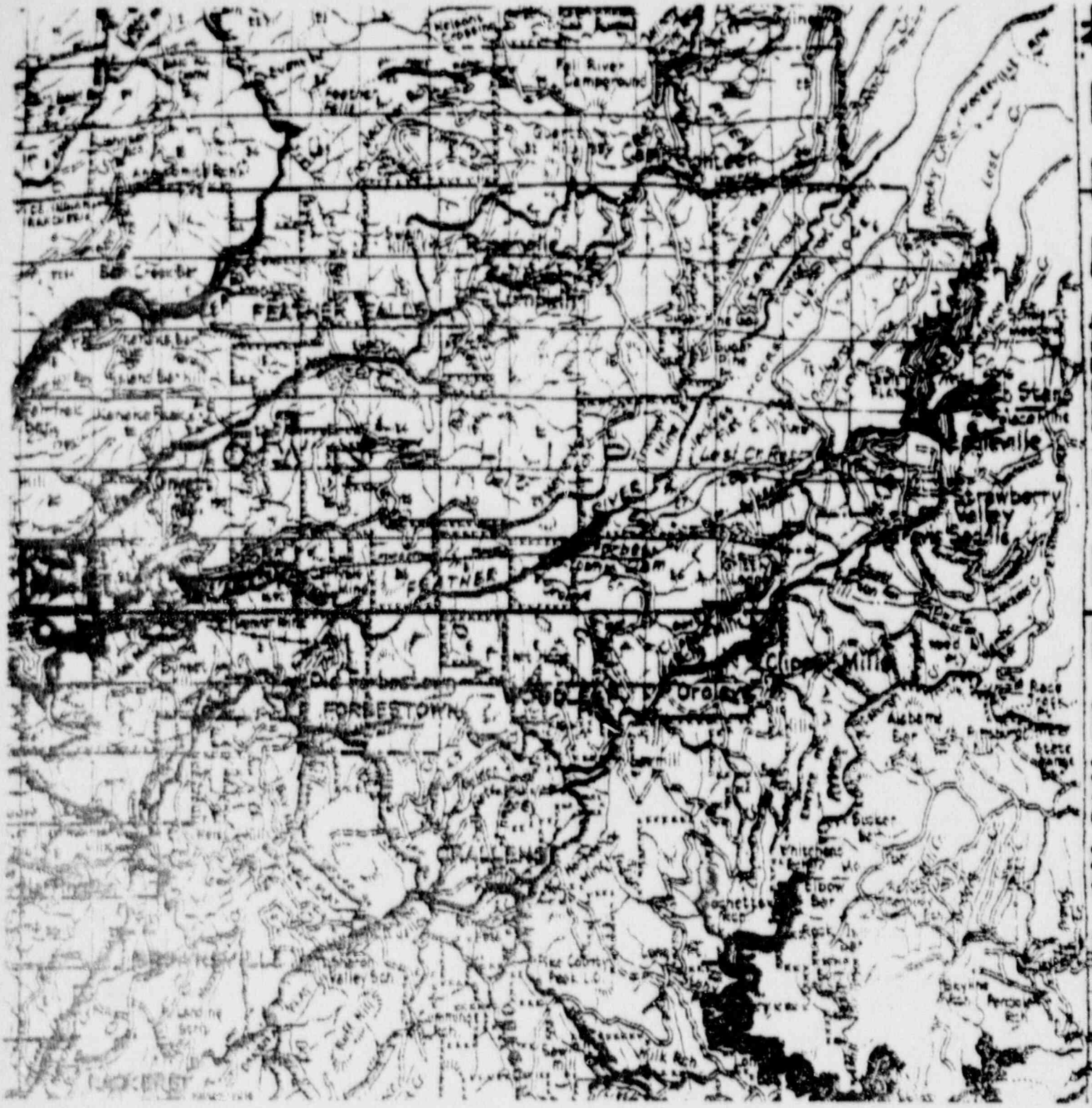
Stan Phillippe Stan Phillippe for Mark Cameron — 6/19/90
Headquarters Senior Specialist/Engineer — Date

Stan Phillippe — 6/19/90
Headquarters Unit Chief — Date

Pete Peterson — 6/19/90
Toxics Legal Office — Date

Ted N. Rauh — 6/19/90
Chief, Program and Administrative Support Division — Date

Remarks: _____


FEATHER FALLS
FORBESTOWN
Oroville
Stanville
Strawberry Valley
Clipper Mills

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY GEORGE DEUKMEJIAN, GOVERNOR

DEPARTMENT OF HEALTH SERVICES
TOXIC SUBSTANCES CONTROL PROGRAM (REGION 3)
1405 N. SAN FERNANDO BOULEVARD, SUITE 300
BURBANK, CA 91504
(818) 567-3000

JUL 0 2 1990

S. R. Lafflam, Manager
Environmental Unit
Facilities and Plant Operations
Rockwell International corporation
6633 Canoga Avenue
Canoga Park, California 91303

EMERGENCY PERMIT - ONE TIME TREATMENT OF OFF-SITE WASTES, EPA ID NO. CAD000629972, ENERGY TECHNOLOGY ENGINEERING CENTER, ROCKWELL ROCKETDYNE DIVISION, ROCKWELL INTERNATIONAL, SANTA SUSANA FIELD LABORATORY, VENTURA COUNTY, CALIFORNIA

Dear Mr. Lafflam:

The Department of Health Services (Department) has determined that an imminent and substantial endangerment to human health or the environment exists due to the illegal disposal of approximately seventy-five 30-ounce containers of sodium metal in Butte County on or about June 5, 1990 (Enclosure A). Each of the 30-ounce containers holds approximately six 1" x 1" X 6" bars of sodium metal packed in oil. The containers have been repacked into twenty 5-gallon plastic pails with packing material as filler. Sodium metal is a reactive material that can cause a severe fire risk in contact with water and can spontaneously ignite in dry air when heated, it is also a caustic irritant to tissue.

The Department is issuing this emergency permit for the Energy Technology Engineering Center B/133, Rockwell Rocketdyne Division (CAD000629972) to accept and treat waste sodium metal wastes described in the above paragraph. In consideration of the acceptance and treatment of this waste by Rockwell and the Department of Energy as an accommodation to the Department and without any obligation to do so, the Department agrees that it will identify itself as generator on the uniform hazardous waste manifest under the Department EPA ID number and that it will hold Rockwell and the Department Of Energy harmless from any damage the waste may cause until it is delivered to and accepted by Rockwell at Rockwell's Santa Susanna Field Laboratory Energy Technology Engineering Center.

The wastes are to be treated in the Alkali Metal Thermal Treatment Facility (B/133) within 90 days of receipt of the wastes. This facility is currently operating under a Hazardous Waste Facility permit issued on December 30, 1983

07063RC

by this Department. Rockwell must comply with all the permit conditions of the December 30, 1983 permit. Rockwell shall maintain the manifest documentation and this emergency permit document as part of the facility's operating record.

Please contact Florence Pearson with any questions or comments you may have on this matter (818) 567-3100.

Sincerely,

Dennis Dickerson, Regional
Administrator
Region 3, Burbank

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY GEORGE DEUKMEJIAN, GOVERNOR

DEPARTMENT OF HEALTH SERVICES
TOXIC SUBSTANCES CONTROL PROGRAM (REGION 3)
1606 N. SAN FERNANDO BOULEVARD, SUITE 300
BURBANK, CA 91504
(818) 567-3000

S. R. Lafflam, Manager
Environmental Unit
Facilities and Plant Operations
Rockwell International corporation
6633 Canoga Avenue
Canoga Park, California 91303

JUN 27 1990

EMERGENCY PERMIT - ONE TIME TREATMENT OF OFF-SITE WASTES, EPA ID NO. CAD000629972, ENERGY TECHNOLOGY ENGINEERING CENTER, ROCKWELL ROCKETDYNE DIVISION, ROCKWELL INTERNATIONAL, SANTA SUSANA FIELD LABORATORY, VENTURA COUNTY, CALIFORNIA

Dear Mr. Lafflam:

The Department of Health Services has determined that an imminent and substantial endangerment to human health or the environment exists due to the illegal disposal of approximately seventy-five 30-ounce containers of sodium metal in Butte County on or about June 5, 1990 (Enclosure A). Each of the 30-ounce containers holds approximately six 1" x 1" X 6" bars of sodium metal packed in oil. The containers have been repacked into twenty 5-gallon plastic pails with packing material as filler. Sodium metal is a reactive material that can cause a severe fire risk in contact with water and can spontaneously ignite in dry air when heated; it is also a caustic irritant to tissue.

The Department is issuing this emergency permit for the Energy Technology Engineering Center B/133, Rockwell Rocketdyne Division (CAD000629972) to accept and treat waste sodium metal wastes described in the above paragraph. The wastes are to be treated in the Alkali Metal Thermal Treatment Facility (B/133) within 90 days of receipt of the wastes. This facility is currently operating under a Hazardous Waste Facility permit issued on December 30, 1983 by this Department. Rockwell must comply with all the permit conditions of the December 30, 1983 permit. Rockwell shall maintain the manifest documentation and this emergency permit document as part of the facility's operating record.

Please contact Florence Pearson with any questions or comments you may have on this matter (818) 567-3100.

VSP BAL AUTHORIZATION
Copy to Rockwell
6/27/90 4pm SS

Sincerely,

Scott Simpson

For Dennis Dickerson, Regional
Administrator
Region 3, Burbank

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY GEORGE DEUKMEJIAN, GOVERNOR

DEPARTMENT OF HEALTH SERVICES
TOXIC SUBSTANCES CONTROL PROGRAM (REGION 3)
1405 N. SAN FERNANDO BOULEVARD, SUITE 300
BURBANK, CA 91504
(818) 567-3000

EMERGENCY PERMIT
FOR A HAZARDOUS WASTE MANAGEMENT FACILITY

Permittee: Rocketdyne Division
Rockwell International Corporation
Energy Technology Engineering Center
B/133
Santa Susana Field Laboratory
Ventura County, California

Facility Identification Number CAD000629972

Pursuant to the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 USC 6901 et seq., commonly known as RCRA) and regulations promulgated thereunder by the U.S. Environmental Protection Agency (EPA) (codified and to be codified in Title 40 of the Code of Federal Regulations, Part 270.61) and Section 66393, Title 22, Division 4, California Code of Regulations, a temporary Emergency Permit is issued to Rocketdyne Division, Rockwell International Corporation subject to the conditions set forth in Attachment A which by this reference is incorporated herein. All Permit conditions established in the permit issued on December 30, 1983 for EPA ID # CAD 00629972 are incorporated herewith. This Emergency Permit allows Rockwell International Corporation to treat seventy-five (75) thirty (30) - ounce containers of metallic sodium in the Sodium Burn Facility (B/133), Santa Susana Field Laboratory. The containers were illegally disposed at a site located at APN 071-150-018, Lumpkin Road, between Nos. 1315 and 1394, Butte County, California on or about June 5, 1990.

This Emergency Permit is effective immediately and shall expire in 90 days from the date given above.

Jeffery Zelikson, Director
Hazardous Waste Management
Division
U.S. Environmental Protection
Agency

6.26.90
Date

Dennis Dickerson, Regional Hazardous
Administrator
Region 3, Burbank
Toxic Substances Control Division
CA Department of Health Services

7/2/90
Date

Attachment A

EMERGENCY
HAZARDOUS WASTE FACILITY PERMIT

ENERGY TECHNOLOGY ENGINEERING CENTER B/133
ROCKWELL ROCKETDYNE DIVISION
ROCKWELL INTERNATIONAL
SANTA SUSANA FIELD LABORATORY
VENTURA COUNTY, CALIFORNIA
(CAD000629972)

INTRODUCTION

The Solid Waste Disposal Act, as amended by the Resources Conservation and Recovery Act of 1976, as amended (42 USC 6901 et seq., commonly known as RCRA) and regulations promulgated thereunder by the U. S. Environmental Protection Agency (EPA) (codified and to be codified in Title 40 of the Code of Federal Regulations, Part 270.61) and Section 66393, Title 22, Division 4, California Code of Regulations, authorize issuance of a temporary emergency permit in the event that an imminent and substantial endangerment of human health or the environment exists. On June 19, 1990, the California State Department of Health Services (Department) found that an imminent and substantial endangerment determination exists as it applies to a site located at APN 071-150-018, Lumpkin Road, between Nos. 1315 and 1394. A map showing the site is attached. The site is a vacant five-acre parcel located approximately one and one-half to two miles north of the Enterprise Bridge which spans that South Fork of the Feather River. The site is situated an estimated 500 feet above the lake on the north side of the South Fork. The land comprising the site is undeveloped property zoned for residential use.

An unknown responsible party illegally abandoned metallic sodium waste on this privately-owned five acre parcel in Butte County. Officials from Butte County discovered the waste on June 5, 1990. Seventy-five (75) thirty (30) - ounce containers of metallic sodium in their original containers have been found on site. Each thirty (30) ounce container holds six (6) 1"x1"x6" bars of metallic sodium submersed in oil.

Metallic sodium is a reactive substance which presents an explosion hazard. It reacts violently when exposed to moisture in any form. When metallic sodium is reacted with water, it will produce hydrogen gas which is explosive. Metallic sodium emits sodium oxide fumes when heated in air.

The Department has determined that the Rockwell/Rocketdyne Treatment facility in Santa Susana, California possesses a permitted metallic sodium treatment facility that offers the most desirable means for treating this particular waste stream. The Department is unable to locate an alternative treatment facility that will accept this waste stream in a short time under emergency conditions.

Based on the foregoing findings of fact and conclusions of law, the Department hereby determines that removal or remedial action is necessary at the Site because there may be an imminent and substantial endangerment to the public health or welfare or to the environment.

This emergency permit authorizes Rockwell International Corporation, Energy Technology Engineering Center P/133 to accept the aforementioned waste for treatment in the Alkali Metal Thermal Treatment Facility, Building 133, Area IV, EPA ID# CAD000629972. Within 90 days of receipt of the wastes they shall be treated. Rockwell International Corporation is required to comply with all permit conditions established with the permit issued under EPA# CAD000629972 on December 30, 1983.

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED-RETURN RECEIPT REQUESTED

11 July 1990

In reply refer to 90RC09143

State of California
Department of Health Services
Toxic Substances Control Program (Region 3)
1405 N. San Fernando Blvd., Suite 300
Burbank, CA 91504

Attention: Dennis Dickerson

Subject: Metallic Sodium Shipment - Manifest No. 89930954

On 11 July 1990, Rockwell International, Rocketdyne Division (Rockwell) received a shipment of metallic sodium from the Department of Health Services (the Department) under Uniform Hazardous Waste Manifest number 89930954. The waste was accepted at the Rockwell/Department of Energy Sodium Burn Facility (CAD000629972) for treatment and disposal under the authority of an emergency permit issued by the Department for the one-time acceptance of this off-site generated waste (Department letter dated 2 July 1990). The Department issued the emergency permit in response to the imminent and substantial endangerment finding dated 9 June 1990 for the highly reactive waste that was reportedly abandoned by an unknown party in Butte County.

The shipment was received and accepted with the following discrepancies noted:

* The metallic sodium metal was characterized on the manifest as characteristic of EPA ignitability and reactivity. As such, the waste would be subject to the land disposal restrictions. No land disposal restriction notification accompanied the shipment as required of the Department (the generator) by the EPA (40 CFR 268.7).

* There was no documentation, records, analyses, etc. that would adequately verify the identity of the waste as required of the generator (40 CFR 262.11/268.7). Rockwell is in the process of analyzing the waste to verify the Department's waste determination.

* The waste was manifested with a total weight of 285 pounds which appears to be a discrepancy from the actual weight. Rockwell is currently weighing each of the sodium bars and will record the actual weight in the facility operating record.

Rockwell will accept and treat the sodium waste described above as an accommodation to the Department at no cost and without any incentive to do so.

Should you have any further requests or questions, please contact Glenn Taylor, of my staff, at (818) 773-5321.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

S R Lafflam

S. R. Lafflam, Director
Environmental & Energy Conservation

cc: Department of Health Services
Toxic Substances Control Program
Site Mitigation Unit
714/744 P. Street
P.O. Box 942732
Sacramento, CA 94234-7320
Attention: Kelvin D. Yamada

U.S. Department of Energy
San Francisco Operations
Nuclear Energy Division
1333 Broadway
Oakland, CA 94612
Attention: Jim Hartman

U.S. Department of Energy
San Francisco Operations
Nuclear Energy Division
1333 Broadway
Oakland, CA 94612
Attention: Roger Liddle

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED-RETURN RECEIPT REQUESTED

26 July 1990

In reply refer to 90RC09748

State of California
Department of Health Services
Toxic Substances Control Program
P.O. Box 3000
Sacramento, CA 95812

Subject: Uniform Hazardous Waste Manifest - TSDF Return

Gentlemen:

Enclosed are two copies of the completed Uniform Hazardous Waste Manifest number 89930954 for a shipment of metallic sodium generated by the Department of Health Services (the Department). Both the yellow generator copy and the Department's white copy are herein submitted as required by the California Code of Regulations.

The waste was accepted at the Rockwell International Corporation/Department of Energy Sodium Burn Facility (CAD000629972) for treatment and disposal under the authority of an emergency permit issued by the Department for the one-time acceptance of this off-site generated waste (Department letter dated 2 July 1990). The Department issued the emergency permit in response to the imminent and substantial endangerment finding dated 9 June 1990 for the highly reactive waste that was reportedly abandoned by an unknown party in Butte County.

The shipment was received and accepted with several discrepancies as noted in Rockwell letter No. 90RC09143 dated 11 July 1990. Mr. Kelvin D. Yamada, of the Department, was able to rectify most of the discrepancies (ie. land disposal notification and documentation of generator's waste determination). However, of the 285 pounds of sodium manifested, Rockwell was able to record an approximate weight of 75 to 85 pounds of sodium and an additional 25 pounds of kerosine. This must be recorded as a weight discrepancy over 10 percent. The kerosine was not noted on the shipping document, however, Rockwell will manage all resulting residues accordingly.

Should you have any further requests or questions, please contact Glenn Taylor, of my staff, at (818) 773-5321.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

SRLaff

S. R. Lafflam, Director
Environmental & Energy Conservation

cc: Department of Health Services
Toxic Substances Control Program
Site Mitigation Unit
714/744 P. Street
P.O. Box 942732
Sacramento, CA 94234-7320
Attention: Kelvin D. Yamada

Department of Health Services
Toxic Substances Control Program
1405 N. San Fernando Blvd., Suite 300
Burbank, CA 91504
Attention: Dennis Dickerson

U.S. Department of Energy
San Francisco Operations
Nuclear Energy Division
1333 Broadway
Oakland, CA 94612
Attention: Roger Liddle

U.S. Department of Energy
San Francisco Operations
Nuclear Energy Division
1333 Broadway
Oakland, CA 94612
Attention: Jim Hartman

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. (Form designed for use on elite (12-pitch typewriter). ~~0142253~~

142201 See Instructions on Back of Page 6 and Front of Page 7

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.
C A S 1 1 1 1 1 1 1 0 3 4	0 0 0 0 0 2		

3. Generator's Name and Mailing Address
CA, Department of Health Services
714-744 P. street. Sacramento, CA 94234

4. Generator's Phone (916) 445-1782

A. State Manifest Document Number: 89930954

B. State Generator's ID: EXEMPT

5. Transporter 1 Company Name: IT Corp. Martinez
6. US EPA ID Number: C A D 9 8 2 5 1 9 0 0 1
C. State Transporter's ID: 10595A
D. Transporter's Phone: (415) 372-9100

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
Rockwell Rocketdyne
Top of Woolfey Canyon Rd.
Simi Valley, CA
10. US EPA ID Number: C A D 0 0 0 6 2 9 9 7 2
G. State Facility's ID
H. Facility's Phone: (818) 773-5492

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste Sodium metal / (Dangerous When Wet) Flammable Solid/ UN 1428	0 1 1 9	D F	0 1 0 2 8 5	P	State 511 / EPA/Other D001/D003
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
11a. Labpacks Dangerous when wet.

K. Handling Codes for Wastes Listed Above
a. T04
b.
c.
d.

15. Special Handling Instructions and Additional Information
Caution: Wear protective clothing
when handling waste

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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GENERATOR

Printed/Typed Name	Signature	Month	Day	Year
Vance Severin	Vance Severin	7	10	90

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
SAMUEL MINOR	Samuel Minor	7	10	90

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space
1) NO LDR NOTIFICATION RECEIVED UPON ARRIVAL
2) NO ANALYTICAL VERIFICATION UPON ARRIVAL

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
GERALD G. GAYLORD	Gerald G. Gaylord	07	11	90

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802. WITHIN CALIFORNIA CALL 1-800-852-7550

89930954 JENNIFER KIRK

DHS 8022 A (1/88)
EPA 8700—22
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To: P.O. Box 3000, Sacramento, CA 95812

125

Transported Hazardous Waste Manifests

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED-RETURN RECEIPT REQUESTED

21 July 1990

In reply refer to 90RC09150

State of California
Department of Health Services
P.O. Box 400
Sacramento. Ca. 95814

Subject: Uniform Hazardous Waste Manifests

Gentlemen:

Enclosed are copies of Uniform Hazardous Waste Manifests for waste hauled from Rockwell International Corporation, Rocketdyne Division facilities. The Manifests are submitted in compliance with the California Code of Regulations, Title 22, Division 6, Sections 66480-66492, 1985.

Should you have any questions please contact Mr. Matt Ratliff, of my staff, at (818) 773-5331.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

Jennifer Crone fa

S.R. Laffiam, Director
Environmental & Energy Conservation

Enclosures: California State Uniform Manifest Nos: 89452208, 89861308-11, 89861338, 89861342, 89861355, 89861406.

Arkansas State Uniform Manifest Nos: AR-433434-35, AR-449409-11, AR-449471, AR-449500, AR-449607-08, AR-449610-12, AR-449614-15, AR-458368-69, AR-458385

Texas State Uniform Manifest Nos: 00085863-64, 0085866

cc: Gary Lavagnino/DOE

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type (Form designed for use on elite (12-pitch typewriter).

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAD981336154315 | Manifest Document No. 91010310

2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
ROCKWELL INTERNATIONAL, ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK, CA 91303 ATTN: G. COLBERT
4. Generator's Phone (818) 773-5233 (DS43-JA16)

A. State Manifest Document Number 89452208
B. State Generator's ID HIYIHQ3161-DDISDD217

5. Transporter 1 Company Name: DISPOSAL CONTROL SERVICE
6. US EPA ID Number: KIATD180031411 84
C. State Transporter's ID 013063
D. Transporter's Phone (714) 983-0342

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
ETICAM
2095 NEVADA DRIVE EAST
FERNLEY, NEVADA
10. US EPA ID Number: INVD918018915 3318
G. State Facility's ID
H. Facility's Phone (702) 575-2760

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ, WASTE ACID, LIQUID, NOS (NITRIC ACID, SULFURIC ACID) CORROSIVE MATERIAL, NA1760 (D002)	001	TIT	01135	G	State 791 EPA/Other D002
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
PROFILE# F89-0235
pH=1.5
RQ=100 (45.4)

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
EMERGENCY RESPONSE: ROCKWELL SECURITY (818)710-5481

USE APPROPRIATE GLOVES, GOGGLES, AND CLOTHING

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Printed/Typed Name	Signature	Month	Day	Year
GARY R COLBERT	Gary R. Colbert	10	16	1990

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
THOM SIEK		10	16	1990

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

89452208

DHS 8022 A (1/88)
EPA 8700—22
(Rev. 9-88) Previous editions are obsolete

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State of California—Health and Wellare Agency
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Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAD093654359 Manifest Document No. 00931

2. Page 1 of 2 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
ROCKWELL INTERNATIONAL, ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK, CA 91303
ATTN: G. COLBERT (054-3/A16)
4. Generator's Phone (818) 773-5322

A. State Manifest Document Number 89861308
B. State Generator's ID HYH0336-005927

5. Transporter 1 Company Name: CHEMICAL WASTE MANAGEMENT
6. US EPA ID Number: CAD009867118
C. State Transporter's ID 10902.4
D. Transporter's Phone 209-386-0571

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
OIL AND SOLVENT PROCESS COMPANY
1704 WEST FIRST STREET
AZUSA, CA 91702
10. US EPA ID Number: CAD009830293
G. State Facility's ID
H. Facility's Phone (818) 334-5117

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
RQ, WASTE 1,1,1-TRICHLOROETHANE ORM-A, UN2831, (F001)	001	DM	00450	P	State 741 / EPA/Other F001
RQ, WASTE HEPTANE FLAMMABLE LIQUID, UN1206, (D001)	001	DM	00300	P	State 331 / EPA/Other D001
RQ, HAZARDOUS WASTE LIQUID, NOS (1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE) ORM-E, NA9189, (F002)	001	DM	00450	P	State 741 / EPA/Other F002
~~RQ, HAZARDOUS WASTE LIQUID, NOS (1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE) ORM-E, NA9189, (F002)~~ (GD)	~~001~~ (GD)	~~DM~~	~~00300~~	~~P~~	State ~~741~~ (GD) / EPA/Other ~~F002~~ (GD)

J. Additional Descriptions for Materials Listed Above
11A. K01726, RQ=10(4.54)
11B. K01745, RQ=100(45.4)
11C. K01733, RQ=10(4.54)
~~11D. K01734, RQ=10(4.54)~~ (GD)

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
EMERGENCY CONTACT: ROCKETDYNE SECURITY (818) 710-5481

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: GARY B COLBERT — Signature: Gary B Colbert — Month Day Year: 06 29 90

GENERATOR

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JON EMERY — Signature: Jon Emery — Month Day Year: 06 29 90

TRANSPORTER

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

FACILITY

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Month Day Year

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

89861308

DHS 8022 A (1/88)
EPA 8700—22
(Rev. 9-88) Previous editions are obsolete.

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UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator's US EPA ID No.: CAD093365435 | Manifest Document No.: 90031

22. Page: 2 | Information in the shaded areas is not required by Federal law.

23. Generator's Name: Rockwell International, Rocketdyne Division
6633 Canoga Avenue
Canoga Park, CA 91303
Attn: G. Colbert (DS43-JA16)

L. State Manifest Document Number: 89861308

M. State Generator's ID: HyHQ36-005027

24. Transporter Company Name: Chemical Waste Management | 25. US EPA ID Number: CAD003986718

N. State Transporter's ID: 109027

O. Transporter's Phone: 209-386-0571

26. Transporter Company Name | 27. US EPA ID Number

P. State Transporter's ID

Q. Transporter's Phone

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	~~Non-Hazardous~~ (G)						
b.	NON-RCRA HAZARDOUS WASTE LIQUID		007	DM	02080	P	221
c.							
d.							
e.							
f.							
g.							
h.							
i.							

GENERATOR

S. Additional Descriptions for Materials Listed Above
28c. K0172S

T. Handling Codes for Wastes Listed Above

32. Special Handling Instructions and Additional Information
Emergency Contact: Rocketdyne Security (818) 710-5181

TRANSPORTER

33. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
Jon Emery	Jon Emery	06 29 90

34. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

FACILITY

35. Discrepancy Indication Space

Style F16 REV-6 LABELMASTER, Div. of AMERICAN LABELMARK CO., CHICAGO, IL 60646

EPA Form 8700-22A (Rev. 9-88) Previous editions are obsolete

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
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Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CA1B0aa900102 Manifest Document No. 910930

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
ROCKWELL INTERNATIONAL, ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK, CA 91303 ATTN: G. COLBERT
4. Generator's Phone (818) 773-5322 (D543-JA16)

A. State Manifest Document Number 89861309
B. State Generator's ID HIYHQ36-095027
C. State Transporter's ID 10924
D. Transporter's Phone 209-386-0571
E. State Transporter's ID
F. Transporter's Phone

5. Transporter 1 Company Name: CHEMICAL WASTE MANAGEMENT
6. US EPA ID Number: CAD009867118
7. Transporter 2 Company Name
8. US EPA ID Number

9. Designated Facility Name and Site Address
OIL & SOLVENT PROCESS COMPANY
1704 WEST FIRST STREET
AZUSA, CA 91702
10. US EPA ID Number: CAD008302903
G. State Facility's ID
H. Facility's Phone (818) 334-5117

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. *RQ, HAZARDOUS WASTE LIQUID, NOS (1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE) ORM-E, NA9189, (F002)	001	DM	00310	P	State 741 / EPA/Other F002
b. WASTE FUEL OIL, DIESEL COMBUSTIBLE LIQUID, NA1993	001	DM	00315	P	State 331 / EPA/Other NONE
c. ~~WASTE FUEL OIL, DIESEL~~ (G1) COMBUSTIBLE LIQUID, NA1993 (G7) (G8)	~~001~~	~~DM~~	~~00205~~	~~P~~	State ~~331~~ (G9) / EPA/Other ~~NONE~~ (G10)
d. RQ, WASTE GASOLINE FLAMMABLE LIQUID, UN1203, (D001)	002	DM	00550	P	State 331 / EPA/Other D001

J. Additional Descriptions for Materials Listed Above
11A. K01734
11B. K01741
~~11C. K01348~~ (G9)
11D. K01747

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
EMERGENCY CONTACT: ROCKETDYNE SECURITY (818) 710-5181

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GENERATOR — Printed/Typed Name: GARY COLBERT — Signature: Gary Colbert — Month Day Year: 10 29 90

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JON EMERY — Signature: Jon Emery — Month Day Year: 10 29 90

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Month Day Year

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

89861309

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Department of Health Services
Toxic Substances Control Division
Sacramento, California

89861310

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CA3890090001 Manifest Document No. 99916

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
ROCKWELL INTERNATIONAL, ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK, CA 91303
ATTN: G. COLBERT (0543-JA16)

4. Generator's Phone 818 773-5322

A. State Manifest Document Number 89861310

B. State Generator's ID HYHQ361-009027

5. Transporter 1 Company Name: CHEMICAL WASTE MANAGEMENT — 6. US EPA ID Number: CAD009836718

C. State Transporter's ID 109024

D. Transporter's Phone 209-386-0571

7. Transporter 2 Company Name — 8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
OIL A'S SOLVENT PROCESS COMPANY
1704 WEST FIRST STREET
AZUSA, CA 91702

10. US EPA ID Number: CAD008302903

G. State Facility's ID

H. Facility's Phone (818) 334-5117

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. NON-RCRA HAZARDOUS WASTE LIQUID	01	DM	0351	P	State 331 / EPA/Other NONE
b. NON-RCRA HAZARDOUS WASTE LIQUID	003	DM	1025	P	State 221 / EPA/Other NONE
c. WASTE FUEL OIL, DIESEL COMBUSTIBLE LIQUID, NA1993	002	DM	190	P	State 331 / EPA/Other NONE
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
11A. H49227
11B. K01725
11C. K01748

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
EMERGENCY CONTACT: ROCKETDYNE SECURITY (818) 710-5481

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GENERATOR — Printed/Typed Name: GARY COLBERT — Signature: Gary Colbert — Month Day Year: 06 29 90

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JON EMERY — Signature: Jon Emery — Month Day Year: 06 29 90

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Month Day Year

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Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CA1800090011 Manifest Document No. 900311

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
ROCKWELL INTERNATIONAL, ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303 ATTN: G. COLBERT (DA53-JA16)

4. Generator's Phone (818) 773-5322

A. State Manifest Document Number 89861311

B. State Generator's ID HYH036-100510217

5. Transporter 1 Company Name: OIL AND SOLVENT PROCESS CO.
6. US EPA ID Number: CAD008302903
C. State Transporter's ID 010463
D. Transporter's Phone (818) 334-5117

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
OIL AND SOLVENT PROCESS COMPANY
1704 WEST FIRST STREET
AZUSA, CA 91702
10. US EPA ID Number: CAD008302903
G. State Facility's ID
H. Facility Phone (818) 334-5117

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. NON-RCRA HAZARDOUS WASTE LIQUID (DOT E7496)	001	TT	03944	G	State 223 / EPA/Other NONE
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
OSCO PROFILE # K01725

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
3044 GAL 55 GAL FIBER DRUM 23½" REAC COMP BL # 06023
EMERGENCY CONTACT — ROCKWELL SECURITY (818) 710-5481

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Printed/Typed Name: GARY B COLBERT
Signature: Gary B Colbert
Month Day Year: 10 30 90

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: RUDY J. LOERA
Signature:
Month Day Year: 10 30 90

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
Printed/Typed Name
Signature
Month Day Year

GENERATOR
TRANSPORTER
FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

89861311

DHS 8022 A (1/88)
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State of California--Health and Welfare Agency
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Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAD093365435 Manifest Document No. 91001312

2. Page 1 of 1

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3. Generator's Name and Mailing Address
ROCKWELL INTERNATIONAL, ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK, CA 91303 ATTN: G B COLBERT (D543-JA16)

4. Generator's Phone (818) 773-5322

A. State Manifest Document Number 89861355

B. State Generator's ID HYHQ936-1905027

5. Transporter 1 Company Name: DISPOSAL CONTROL SERVICE

6. US EPA ID Number: CATT080034184

C. State Transporter's ID 113033

D. Transporter's Phone (714) 983-0342

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
U.S. POLLUTION CONTROL, INC
GRASSY MOUNTAIN FACILITY
3 MILES EAST, 7 MILES NORTH OF KNOLLS EXIT, I-80
CLIVE, UTAH

10. US EPA ID Number: UTD991301718

G. State Facility's ID

H. Facility's Phone (801) 534-0054

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. HAZARDOUS WASTE SOLID, N.O.S. (LEAD) ORM-E, NA9189, (D008)	991	AF	99990	P	State 181 / EPA/Other D008
b. RQ, HAZARDOUS WASTE SOLID, N.O.S. (CHROMIUM, LEAD) ORM-E NA9189, (D007 D008)	991	AF	99110	P	State 181 / EPA/Other D007, D008
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
11A. 90-1453
11B 89-260

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
WEAR PROTECTIVE GLOVES. (1X30541 poly, 1X15521 poly)
EMERGENCY CONTACT: ROCKETDYNE SECURITY (818) 710-5481

16.
GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: GARY B. COLBERT — Signature: Gary B Colbert — Month Day Year: 10/11/90

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: MICHAEL B VAN ALSTINE — Signature: Michael B Van Alstine — Month Day Year: 07/11/90

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name — Signature — Month Day Year

GENERATOR

TRANSPORTER

FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

89861355

DHS 8022 A (1/88)
EPA 8700-22
(Rev. 9-88) Previous editions are obsolete.

Do Not Write Below This Line

Blue: GENERATOR SENDS THIS COPY TO DOHS WITHIN 30 DAYS
To: P.O. Box 400, Sacramento, CA 95812-0400

STATE OF ARKANSAS
Department of Pollution Control and Ecology
P. O. Box 9583 Little Rock, Arkansas 72219
Telephone 501-562-7444

6

Please print or type (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-91

AR 2-90

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | C | A | D | 0 | 9 | 7 | 6 | 8 | 1 | 9 | 2 | Manifest Document No. 0 1 7 2 7

2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Rockwell International Corp./Rocketdyne Division
6633 Canoga Ave., Canoga Park, CA 91303 Attn: Gary Colbert

A. State Manifest Document Number AR- 449409

B. State Generator's ID

4. Generator's Phone (818) 773-5322 W/S 543-7416

5. Transporter 1 Company Name | 6. US EPA ID Number
ENSCO | A | R | D | 0 | 6 | 9 | 7 | 4 | 8 | 1 | 9 | 2

C. State Transporter's ID PC 0708H 010

D. Transporter's Phone (501) 863-7173

7. Transporter 2 Company Name | 8. US EPA ID Number

E. State Transporter's ID PC ---- H ---

F. Transporter's Phone

9. Designated Facility Name and Site Address | 10. US EPA ID Number
Ensco
American Oil Road
El Dorado, ARK | A | R | D | 0 | 6 | 9 | 7 | 4 | 8 | 1 | 9 | 2

G. State Facility's ID

H. Facility's Phone 501 863-7173

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. aste Combustible Liquid, N.O.S., (Petroleum Distillates	0 0 1	D	0 0 0 0 5	P	H/R
b. Non RCRA Hazardous Waste Solid (Lab Waste)	0 0 1	B	0 0 0 0 4	P	H/R
c. Hazardous Waste Solid, N.O.S., ORm-E, WA 9189	0 0 1	B	0 0 0 2 0	P	D008
d. Waste Paint, Flammable Liquid, UN 1263	0 0 1	D	0 0 0 3 0	P	D001

J. Additional Descriptions for Materials Listed Above
a) WDS 122162 Drm1(1x55GPD) See Attached List
b) WDS 123517 Drm2(1x30GPD) DOT E-7768
c) WDS 123517 Drm3(1x16GPD) See Attached List
If no alternate TSDF, return to generator

K. Handling Codes for Wastes Listed Above

EMERGENCY RESPONSE INFORMATION:
Rocketdyne Division Rocketdyne Div
Gary Colbert
(818) 710-3337

15. Special Handling Instructions and Additional Information
Keep Away From Sparks And Open Flames
Wear Gloves

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and Arkansas state regulations.
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Printed/Typed Name | Signature | Month Day Year

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name | Signature | Month Day Year

EPA Form 8700-22 (Rev. 9-88) Previous edition is obsolete.

1 of 7

UNIFORM HAZARDOUS WASTE MANIFEST
(Continuation Sheet)

21. Generator's US EPA ID No.	Manifest Document No.	22. Page	Information in the shaded areas is not required by Federal law.
C A D 0 9 3 3 6 5 4 3 5	9[illegible]259	2	

23. Generator's Name: Rockwell International Corp./Rocketdyne Divisiou

L. State Manifest Document Number: CAR-449409

M. State Generator's ID:

24. Transporter ____ Company Name	25. US EPA ID Number	N. State Transporter's ID
E N S C O	A R D 0 6 9 7 4 8 1 9 2	PC0708ED10
		O. Transporter's Phone: (301) 863-7173
26. Transporter ____ Company Name	27. US EPA ID Number	P. State Transporter's ID
		Q. Transporter's Phone

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	29. Containers No	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	Waste Oil-A, N.O.S., NA 1693		0 0 1	D F	0 0 0 3 5	P	D001
b.	Non RCRA Hazardous Wast Solid (Filters And Empty Containers)		0 0 1	D F	0 0 0 8 5	P	N/R
c.	Waste Ethylene Dichloride Solution Flammable Liquid, UN 1184		0 0 1	D F	0 0 0 1 3	P	D077 D001, D002
d.	Waste Charcoal, Ground, Flammable Solid, NA 1361		0 0 1	D F	0 0 0 4 8	P	N/R D001
e.							
f.							
g.							
h.							
i.							

S. Additional Descriptions for Materials Listed Above

a) WOS 123517 Drm5(1x1CFD) DOT E-7768
b) WOS 123517 Drm6(1x55CFD) See Attached List
c) WOS 123517 Drm7(1x1CFD) DOT E-9245
d) WOS 123517 Dm71(1x30CFD)

T. Handling Codes for Wastes Listed Above

32. Special Handling Instructions and Additional Information

33. Transporter ____ Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year
C F I				

34. Transporter ____ Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year

35. Discrepancy Indication Space

138

GENERATOR'S COPY

STATE OF ARKANSAS
Department of Pollution Control and Ecology
P. O. Box 9583 Little Rock, Arkansas 72219
Telephone 501-562-7444

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Form Approved. OMB No. 2050-0039 Expires 9-30-91

AR2-90

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | Manifest Document No.

2. Page 1 of 2 | Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: AR- 449410

3. Generator's Name and Mailing Address
Rockwell International Corp./Rocketdyne Division
6633 Canoga Ave., Canoga Park, CA 91303 Attn: Gary Colbert
M/S 583-7A16

B. State Generator's ID

4. Generator's Phone (818) 710-5322

5. Transporter 1 Company Name | 6. US EPA ID Number
YESCO

C. State Transporter's ID PC 0708 H 010

D. Transporter's Phone (501) 863-7173

7. Transporter 2 Company Name | 8. US EPA ID Number

E. State Transporter's ID PC ____ H ____

F. Transporter's Phone

9. Designated Facility Name and Site Address | 10. US EPA ID Number
Ensco
American Oil Road
El Dorado, ARK

G. State Facility's ID

H. Facility's Phone 501 863-7173

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste Paint, Flammable Liquid, UN 1263	003	DF	00055	P	D001
b. Waste Methyl Ethyl Ketone, Flammable Liquid, UN 1193	001	DF	00023	P	F003
c. Non RCRA Hazardous Waste Solid (Lab Waste)	001	DF	00015	P	N/R
d. Waste Compressed Gas, N.O.S., Flammable Gas, UN 1954	001	DF	00007	P	D001, D003

J. Additional Descriptions for Materials Listed Above
a) WMDS 123517 Dr#1,2(2x55GPD)Dr#3(1x30GPD)
b) WMDS 123517 Dr#4(1x30GPD)
c) WMDS 123517 Dr#5(1x15GPD) See Attached List
If no alternate TSDF, return to generator

K. Handling Codes for Wastes Listed Above

EMERGENCY RESPONSE INFORMATION:
Rocketdyne Division
Gary Colbert
(818) 710-5322

15. Special Handling Instructions and Additional Information
d) WMDS 123517 Dr#6(1x5GPD) Wear Gloves
DOT E-7768 DOT E-9245 Keep Away From Sparks And Open Flames

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and Arkansas state regulations.
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GENERATOR

Printed/Typed Name: Gary Colbert | Signature | Month 12 Day 13 Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
Printed/Typed Name | Signature | Month Day Year

EPA Form 8700-22 (Rev. 9-88) Previous edition is obsolete.

13

GENERATOR WITH COPY

UNIFORM HAZARDOUS WASTE MANIFEST
(Continuation Sheet)

21. Generator's US EPA ID No.	Manifest Document No.	22. Page	Information in the shaded areas is not required by Federal law.
C A 1 8 0 0 0 9 0 0 1 0		2	

23. Generator's Name: Rockwell International Corp./Rocketdyne Division

L. State Manifest Document Number: CAR-669610

M. State Generator's ID:

24. Transporter ____ Company Name	25. US EPA ID Number	N. State Transporter's ID
ENSCO	A R D 0 6 7 4 8 1 9 2	TC0708010
26. Transporter ____ Company Name	**27. US EPA ID Number**	**O. Transporter's Phone** (501) 863-7173
		P. State Transporter's ID
		Q. Transporter's Phone

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	29. Containers No	Type	30. Total Quantity	31. Unit Wt/Vol	& Waste No.
a.	Waste Xylene, Flammable Liquid, UN 1307		0 0 1	D F	0 0 0 1 4	P	D003
b.							
c.							
d.							
e.							
f.							
g.							
h.							
i.							

GENERATOR

32. Additional Descriptions for Materials Listed Above	33. Handling Codes for Wastes Listed Above
a) EPA/State Id. No. CAD 009 125 517 b) [illegible] DOT E-9245 OWNERS AND OPERATORS OF TREATMENT, STORAGE OR DISPOSAL FACILITIES	

34. Special Handling Instructions and Additional Information

TRANSPORTER

35. Transporter ____ Acknowledgement of Receipt of Materials		Date
Printed/Typed Name	Signature	Month / Day / Year
36. Transporter ____ Acknowledgement of Receipt of Materials		**Date**
Printed/Typed Name	Signature	Month / Day / Year

FACILITY

37. Discrepancy Indication Space

110

GENERATOR'S COPY

STATE OF ARKANSAS
Department of Pollution Control and Ecology
P. O. Box 9583 Little Rock, Arkansas 72219
Telephone 501-562-7444

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Form Approved. OMB No. 2050-0039. Expires 9-30-91

AR 2-30

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | Manifest Document No. d d 3 d d d d d d d d d d 0 1 7 7 4 5

2. Page 1 of | Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address
Rockwell International Corp.-Rocketdyne Division
6633 Canoga Ave, Canoga Park, CA 91303 Attn: Cary Colbert
4. Generator's Phone (818) 773-5322 W/S 543-3416

A. State Manifest Document Number: AR- 449411
B. State Generator's ID:

5. Transporter 1 Company Name: ENSCO | 6. US EPA ID Number: A R D 0 8 9 7 4 8 1 9 2
C. State Transporter's ID: PC 0708 H 010
D. Transporter's Phone: (501) 863-7173

7. Transporter 2 Company Name | 8. US EPA ID Number
E. State Transporter's ID: PC ____ H ____
F. Transporter's Phone

9. Designated Facility Name and Site Address
Ensco
American Oil Road
El Dorado, ARK | 10. US EPA ID Number: A R D 0 8 9 7 4 8 1 9 2
G. State Facility's ID:
H. Facility's Phone: 501 863-7173

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non RCRA Hazardous Waste Solid (Oil And Absorbant)	0 0 1	D M	0 0 0 1	P	N/R
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a) WMDS 123517 Drf1(1x14CPD) DOT E-7768

K. Handling Codes for Wastes Listed Above

If no alternate TSDF, return to generator

EMERGENCY RESPONSE INFORMATION
Rocketdyne Division
Gary Colbert (818) 710 5481

15. Special Handling Instructions and Additional Information
Wear Gloves

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and Arkansas state regulations.
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Printed/Typed Name | Signature | Month Day Year: 10 21 11

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name | Signature | Month Day Year

EPA Form 8700-22 (Rev. 9-88) Previous edition is obsolete.

STATE OF ARKANSAS
Department of Pollution Control and Ecology
P. O. Box 9583 Little Rock, Arkansas 72219
Telephone 501-562-7444

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AR 2-90

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | Manifest Document No. | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address
ROCKWELL INTERNATIONAL, ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK, CA 91303
ATTN: G.C. CLEARY (DA2-JA16)

4. Generator's Phone (818) 773-5322

A. State Manifest Document Number: AR-04950

B. State Generator's ID

5. Transporter 1 Company Name: EDCO TRANSPORTATION | 6. US EPA ID Number: AR0000974892

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name | 8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
EDCO
AUSTRALIA OIL ROAD
EL DORADO, ARKANSAS
10. US EPA ID Number: AR0000974892

G. State Facility's ID

H. Facility's Phone: 501-862-3132

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	Unit Wt/Vol	I. Waste No.
a. NON-RCRA HAZARDOUS LIQUID, N.O.S.	001	DM	00055	P	NR
b. HAZ. WASTE LIQUID FLAMMABLE, N.O.S. (CONTAINS FLAMMABLE LIQUID)	002	DM	00110	P	D001
c. NON-RCRA HAZARDOUS WASTE SOLID, N.O.S.	001	DF	00400	P	NR
d. HAZARDOUS WASTE SOLID, N.O.S. (1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, TOLUENE) CRUDE NAPHTHA (F001 F005)	001	DF	00130	P	F001 F005

J. Additional Descriptions for Materials Listed Above
1A 1129102 F-DF-2.5YR
1B 1129103
1C 1129943

K. Handling Codes for Wastes Listed Above
EMERGENCY RESPONSE INFORMATION
(818) 710-5322

If no alternate TSDF, return to generator

15. Special Handling Instructions and Additional Information
WASTE QUANTITIES ARE ESTIMATED.
USE APPROPRIATE GLOVES, GOGGLES AND CLOTHING

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and Arkansas state regulations.
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Printed/Typed Name: GARY R CLEARY | Signature | Month 09 Day 17 Year 91

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name | Signature | Month Day Year

EPA Form 8700-22 (Rev. 9-88) Previous edition is obsolete

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STATE OF ARKANSAS
Department of Pollution Control and Ecology
P. O. Box 9583 Little Rock, Arkansas 72219
Telephone 501-562-7444

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AR2-90

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | Manifest Document No. | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: EXCELL INTERNATIONAL, Pyrotronic Division, 632 CANOGA AVENUE 91303, CANOGA PARK CA, Attn: C. Lowery (805-341-1616)

4. Generator's Phone (818) 772-5222

A. State Manifest Document Number: AR-4496085

B. If State Generator's ID

5. Transporter 1 Company Name: ENVIRO TRANSPORTATION | US EPA ID Number: ARD049748412

C. State Transporter's ID

D. Transporter's Phone

6. Transporter 2 Company Name | US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address: ENVIRO, AMERICAN OIL ROAD, EL DORADO, ARKANSAS | 10. US EPA ID Number: ARD049748492

G. State Facility's ID

H. Facility's Phone

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. NA 1224, Hazardous Waste Solid, N.O.S.	001	DF	00140	P	N/A
b. Hazardous Waste Solid, N.O.S. (Acetone) Cyanide, Nitrile, (Freon)	001	DF	00140	P	F003
c.					
d.					

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above: EMERGENCY RESPONSE

If no alternate TSDF, return to generator

15. Special Handling Instructions and Additional Information: 594.30A

WASTE QUANTITY ARE ESTIMATED
USE APPROPRIATE GLOVES GOGGLES AND CLOTHING

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and Arkansas state regulations.
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Printed/Typed Name: CARY E GILBERT | Signature | Month Day Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name | Signature | Month Day Year

EPA Form 8700-22 (Rev. 9-88) Previous edition is obsolete.

STATE OF ARKANSAS
Department of Pollution Control and Ecology
P. O. Box 9583 Little Rock, Arkansas 72219
Telephone 501-562-7444

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Form Approved. OMB No. 2050-0039. Expires 9-30-91

AR 2-90

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. TXD093365439 Manifest Document No. TX0[illegible]

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
ROCKWELL INTERNATIONAL, ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK, CA 91303
ATTN: G. COLFELT (SAME)

4. Generator's Phone (818) 772-5622

A. State Manifest Document Number AR- 449610

B. State Generator's ID

5. Transporter 1 Company Name: EAGLE TRANSPORTATION

6. US EPA ID Number: ARD049749192

C. State Transporter's ID PC 029101

D. Transporter's Phone (501) 863-7173

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID PC

F. Transporter's Phone

9. Designated Facility Name and Site Address
EAGLE AMERICA OIL ROAD
EL DORADO, ARK 71730

10. US EPA ID Number: ARD049749192

G. State Facility's ID

H. Facility's Phone (501) 863-7173

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. RQ, HAZARDOUS WASTE SOLID, NOS (METHYLENE CHLORIDE) ORM-E, NA9189 (F002)	001	DF	00055	P	F002
b. RQ, HAZARDOUS WASTE SOLID, NOS (1,1,1-TRICHLOROETHANE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE) ORM-E, NA9189 (F001)	001	DF	00110	P	F001
c. RQ, WASTE CORROSIVE LIQUID, NOS (WITH 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE) CORROSIVE MATERIAL, UN1760 (D002)	001	DF	00110	P	D002 F002
d.				P	

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above

EMERGENCY RESPONSE INFORMATION
Rockwell
(818) 710-5[illegible]

If no alternate TSDF, return to generator

15. Special Handling Instructions and Additional Information
WMDS-129941
WMDS-129948
WMDS-129962

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and Arkansas state regulations.
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GENERATOR

Printed/Typed Name	Signature	Month	Day	Year
G. COLFELT	[signature]	1	4	3 1 9 2

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

EPA Form 8700-22 (Rev. 9-88) Previous edition is obsolete.

STATE OF ARKANSAS
Department of Pollution Control and Ecology
P. O. Box 9583 Little Rock, Arkansas 72219
Telephone 501-562-7444

6

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039 Expires 9-30-91

AR 2-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | Manifest Document No. | 2. Page 1 of 2 | Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address: Rockwell International, Electronics Division, Attn: G. Corbett (Alternate), 6622 Cantrell Rd., Little Rock, AR 72228
4. Generator's Phone ( ): (501) 664-7100

A. State Manifest Document Number: AR- 449611
B. State Generator's ID:

5. Transporter 1 Company Name: Fuller Transportation
6. US EPA ID Number: ARD 074 974 512
C. State Transporter's ID: PC 0004010
D. Transporter's Phone: (501) 562-7173

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID: PC ____ H ____
F. Transporter's Phone:

9. Designated Facility Name and Site Address: Envirocare of Utah, American Oil Road, Clive, UT 84029
10. US EPA ID Number: UTD 981 482 245
G. State Facility's ID:
H. Facility's Phone: (801) 532-1330

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non-RCRA Hazardous Waste Liquid	005	DF	00475	P	N/A
b. RQ, Waste Flammable Liquid, NOS, 9, NA 3082, PG III, (Benzene)	004	DT	01000	P	D001
c. RQ, Waste Corrosive Liquid, NOS, (With 1,2-Dichloroethane, 1,2,4-Trichlorobenzene) Corrosive Hazardous Waste, NOS, 8, NA 3264, PG II	99	DT	00111	P	D002, F002
d. RQ, Waste Corrosive Liquid, NOS, (With 1,2-Dichloroethane, 1,2,4-Trichlorobenzene) Corrosive Hazardous Waste, NOS, 8, NA 3264, PG II	99	DT	00741	P	D002, F002

J. Additional Descriptions for Materials Listed Above

If no alternate TSDF, return to generator

K. Handling Codes for Wastes Listed Above

EMERGENCY RESPONSE INFORMATION: Rockwell Security (501) 570-5481

15. Special Handling Instructions and Additional Information
WMS-129947
WMA-129977
WMA-125662
WMC-125662

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Printed/Typed Name	Signature	Month	Day	Year
JAY CORBETT		12	11	90

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name	Signature	Month	Day	Year

EPA Form 8700-22 (Rev. 9-88) Previous edition is obsolete.

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator's US EPA ID No.	Manifest Document No.	22. Page	Information in the shaded areas is not required by Federal law.
CAB000990010	90028	2	

23. Generator's Name: ROCKWELL INTERNATIONAL, ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK, CA 91303

L. State Manifest Document Number: AR-449611
M. State Generator's ID:

24. Transporter Company Name: ENSCO TRANSPORTATION
25. US EPA ID Number: ARD069748192
N. State Transporter's ID: 070B, 010
O. Transporter's Phone: 501-863-7173

26. Transporter Company Name:
27. US EPA ID Number:
P. State Transporter's ID:
Q. Transporter's Phone:

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HW	29. Containers No.	29. Containers Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	RQ, HAZARDOUS WASTE SOLID, NOS (1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, TOLUENE) ORM-E, NA9189 (F001, F005)	X	005	DF	00550	P	F001, F005
b.	RESIDUE: LAST CONTAINED ACETONE FLAMMABLE LIQUID, UN1090		001	DF	00180	P	N/A
c.	RESIDUE: LAST CONTAINING ISOPROPANOL FLAMMABLE LIQUID, UN1219		001	DF	00120	P	N/A
d.	RESIDUE: LAST CONTAINING ORM-A, NOS (1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE) ORM-A, NA1693		001	DF	00120	P	N/A
e.	RESIDUE: LAST CONTAINING NON-RCRA HAZARDOUS WASTE LIQUID		003	DF	00360	P	N/A
f.							
g.							
h.							
i.							

S. Additional Descriptions for Materials Listed Above:
EMERGENCY CONTACT: ROCKWELL SECURITY (818) 710-5481

T. Handling Codes for Wastes Listed Above:

32. Special Handling Instructions and Additional Information:
WMAS-129948
WMAS-129949

58728

TRANSPORTER

33. Transporter ___ Acknowledgement of Receipt of Materials
Printed/Typed Name: G F CUMMINGS
Signature:
Date: Month 06 Day 21 Year 90

34. Transporter ___ Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Date: Month Day Year

FACILITY

35. Discrepancy Indication Space:

Style F16 REV-6 LABELMASTER Div. of AMERICAN LABELMARK CO., CHICAGO, IL 60646

EPA Form 8700-22A (Rev. 9-88) Previous editions are obsolete.

STATE OF ARKANSAS
Department of Pollution Control and Ecology
P. O. Box 9583 Little Rock, Arkansas 72219
Telephone 501-562-7444

6

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-91

AR 2-90

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | Manifest Document No. | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address

4. Generator's Phone ( )

A. State Manifest Document Number: AR- 449612

B. State Generator's ID

5. Transporter 1 Company Name | 6. US EPA ID Number | C. State Transporter's ID | D. Transporter's Phone

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | F. Transporter's Phone

9. Designated Facility Name and Site Address | 10. US EPA ID Number | G. State Facility's ID | H. Facility's Phone

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	15. Waste No.
a.					N/A
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above

EMERGENCY RESPONSE INFORMATION

If no alternate TSDF, return to generator

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and Arkansas state regulations.
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GENERATOR

Printed/Typed Name | Signature | Month Day Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name | Signature | Month Day Year

EPA Form 8700-22 (Rev. 9-88) Previous edition is obsolete.

1

STATE OF ARKANSAS
Department of Pollution Control and Ecology
P. O. Box 9583 Little Rock, Arkansas 72219
Telephone 501-562-7444

6

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-91

AR 2-89

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. GAD 993615435 — Manifest Document No. 99199 3

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: ROCKWELL INTERNATIONAL, ROCKWELL DIVISION, 6633 CANOGA AVENUE, CANOGA PARK CA 91303, ATTN: G. COLBERT (0543-JA16)

4. Generator's Phone (818) 773-5322

A. State Manifest Document Number: AR- 449614

B. State Generator's ID

5. Transporter 1 Company Name: ENSCO TRANSPORTATION — 6. US EPA ID Number: ARD 044774 817

C. State Transporter's ID: PC 82-81-1281

D. Transporter's Phone: 501-836-7173

7. Transporter 2 Company Name — 8. US EPA ID Number

E. State Transporter's ID: PC

F. Transporter's Phone

9. Designated Facility Name and Site Address: ENSCO, AMERICAN OIL ROAD, EL DORADO ARKANSAS — 10. US EPA ID Number: AR D 044 974 812

G. State Facility's ID

H. Facility's Phone: 501-863-7173

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	J. Waste No.
a. NON-RCRA HAZARDOUS WASTE SOLID	99	DF	99239	P	N/R
b. RCRA HAZARDOUS WASTE SOLID	01	DF	00196-10	P	D018
c. RQ, WASTE FLAMMABLE LIQUID, N.O.S. (CONTAINING ETHYL ACETATE) FLAMMABLE LIQUID, UN1224	99	DF	00004-10	P	D001
d. RQ, WASTE 1,1,1-TRICHLOROETHANE ORM-A, UN2831, PGIII	99	DF	00055-50	P	F002

K. Handling Codes for Wastes Listed Above

EMERGENCY RESPONSE INFORMATION: CONTACT (818) 710-5322

No alternate if GDF return to generator

15. Special Handling Instructions and Additional Information

WASTE QUANTITY ARE ESTIMATED
USE APPROPRIATE GLOVES GOGGLES AND CLOTHING

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Printed/Typed Name	Signature	Month	Day	Year
G. COLBERT		11	19	90

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
G F C				

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

EPA Form 8700-22 (Rev. 9-88) Previous edition is obsolete.

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Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED-RETURN RECEIPT REQUESTED

20 June 1990

In reply refer to 90RC07868

State of California
Department of Health Services
P.O. Box 400
Sacramento, Ca. 95814

Subject: Uniform Hazardous Waste Manifests

Gentlemen:

Enclosed are copies of Uniform Hazardous Waste Manifests for waste hauled from Rockwell International Corporation, Rocketdyne Division facilities. The Manifests are submitted in compliance with the California Code of Regulations, Title 22, Division 6, Sections 66480-66492, 1985.

Should you have any questions please contact Mr. Matt Ratliff, of my staff, at (818) 773-5331.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

S R Lafflam

S.R. Lafflam, Director
Environmental & Energy Conservation

Enclosures: California State Uniform Manifest Nos: 88304868, 89452186, 89452188, 89861302, 89861304-89861307, 89861360-89861362, 89861366, 89861402, 89861403.

cc: Gary Lavagnino/DOE

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. (Form designed for use on elite (12-pitch typewriter).

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAD 0 9 1 3 6 5 4 3 1 5 — Manifest Document No. 9 0 0 2 1 6
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
ROCKWELL INTERNATIONAL, ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK, CA 91303
ATTN: GARY COLBERT
4. Generator's Phone (818) 773 3322

A. State Manifest Document Number 89452186
B. State Generator's ID H Y H Q 3 6 - 0 0 5 0 2 7
C. State Transporter's ID 013062
D. Transporter's Phone 714-983-0342

5. Transporter 1 Company Name: DISPOSAL CONTROL SERVICE
6. US EPA ID Number: C A T 0 8 0 0 3 4 1 8 4
7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
ETICAM
2095 NEWLANDS DRIVE EAST
FERNLEY, NEVADA 89408
10. US EPA ID Number: N V D 0 9 8 0 8 9 5 3 3 8
G. State Facility's ID
H. Facility's Phone 702-575-2760

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ, WASTE ACID, LIQUID, NOS (SULFURIC ACID, NITRIC ACID) CORROSIVE MATERIAL, NA1760, D002	0 0 1	T T	0 1 4 0 0	G P	State 791 EPA/Other D002
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
F89-0235
RQ=100(45.4)

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
EMERGENCY CONTACT:
ROCKETDYNE SECURITY (818)710-5481.
USE APPROPRIATE GLOVES, GOGGLES, AND CLOTHING

16.
GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month	Day	Year
GARY B COLBERT	Gary B Colbert	0 5	1 2	1 9 9 0

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
JACK E RAYS	Jack E Rays	0 5	1 5	1 9 9 0

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

GENERATOR
TRANSPORTER
FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1/88)
EPA 8700—22
(Rev. 9-88) Previous editions are obsolete.

Do Not Write Below This Line

Blue: GENERATOR SENDS THIS COPY TO DOHS WITHIN 30 DAYS
To: P.O. Box 400, Sacramento, CA 95812-0400

State of California—Health and Welfare Agency
Form Approved OMB No. 2060—0039 (Expires 9-30-91)
Please print or type. (Form designed for use on elite (12-pitch typewriter))

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CA1980009101011 0 | Manifest Document No. 91007

2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
ROCKWELL INTERNATIONAL, ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK, CA 91303
ATTN: G. COLBERT (0543-JA16)
4. Generator's Phone (818) 773-5322

A. State Manifest Document Number 89452188
B. State Generator's ID HVH0316-10056217

5. Transporter 1 Company Name: OIL AND SOLVENT PROCESS CO.
6. US EPA ID Number: CAD009836219013
C. State Transporter's ID 10301
D. Transporter's Phone (818) 334-5117

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
OIL AND SOLVENT PROCESS COMPANY
1704 WEST FIRST STREET
AZUSA, CA 91702
10. US EPA ID Number: CAD009830219 03
G. State Facility's ID
H. Facility's Phone (818) 334-5117

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. NON-RCRA HAZARDOUS WASTE LIQUID, (NOT REGULATED)	001	TT	01629	G	State 221 / EPA/Other NONE
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
OSCO PROFILE # [redacted] K01725

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
ROCKWELL SECURITY FOR EMERGENCY CONTACT: (818) 710-5481
USE APPROPRIATE GLOVES AND CLOTHING
4629 GALS. 12½" BL# 507712

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month	Day	Year
GARY B COLBERT	Gary B Colbert	10	15	1990

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
RUDY T. LOERA	R J Loera	10	30	1990

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

GENERATOR

DHS 8022 A (1/88)
EPA 8700—22
(Rev. 9-88) Previous editions are obsolete.

Do Not Write Below This Line

Blue: GENERATOR SENDS THIS COPY TO DOHS WITHIN 30 DAYS
To: P.O. Box 400, Sacramento, CA 95812-0400

151

State of California—Health and Welfare Agency
Form Approved OMB No. 2050-0039 (Expires 9-30-91)
Please print or type. (Form designed for use on elite (12-pitch typewriter).

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CA1800090010 | Manifest Document No.: 090026
2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
ROCKWELL INTERNATIONAL, ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK, CA 91303
ATTN: G. COLBERT (A543-JA16)

State Manifest Document Number: 8986130?

4. Generator's Phone (818) 773-5322

State Generator's ID: HWE 336-605027

5. Transporter 1 Company Name | 6. US EPA ID Number | C. State Transporter's ID | D. Transporter's Phone
~~CHEMICAL WASTE SERVICE~~ CAT080034184

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID: 010489 | F. Transporter's Phone: 818-334-5117
OIL AND SOLVENT PROCESS COMPANY CAD008302903

9. Designated Facility Name and Site Address | 10. US EPA ID Number | G. State Facility's ID
OIL AND SOLVENT PROCESS COMPANY
1704 WEST FIRST STREET
AZUSA, CA 91702
CAD008302903

H. Facility's Phone: 818-334-5117

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.	I. Waste No.
a. WASTE KEROSENE COMBUSTIBLE LIQUID, UN1223	001	TT	01056	G	State 331,221 EPA/Other NONE
RQ. WASTE TRICHLOROETHYLENE ORM-A, UN1710, (F001)	001	TT	00665	G	State 211,741 EPA/Other F001
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
11A. K01729 - KEROSENE 75-80%, OIL 20-25%, H_2O 0-5%
11B. K01738 - TRICHLOROETHYLENE 95-98%, OIL 0-3%, H_2O 0-3% RQ=115(4.54)

K. Handling Codes for Wastes Listed Above: a. | b. | c. | d.

15. Special Handling Instructions and Additional Information
EMERGENCY CONTACT: ROCKWELL SECURITY (818) 710-5481
USE APPROPRIATE GLOVES, GOGGLES, AND CLOTHING
AIFA/BRAVO

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transportation by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year
GARY B COLBERT	Gary B Colbert	05	25	90

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
JOHN AVILA	John J Avila	05	25	90

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1/88)
EPA 8700—22
(Rev. 9-88) Previous editions are obsolete.

Do Not Write Below This Line

Blue: GENERATOR SENDS THIS COPY TO DOHS WITHIN 30 DAYS
To: P.O. Box 400, Sacramento, CA 95812-0400

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. (Form designed for use on elite (12-pitch typewriter))

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAD093365435 | Manifest Document No.: 10012 5

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
ROCKWELL INTERNATIONAL, ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK, CA 91303
ATTN: G. COLBERT (DS43-JA16)

4. Generator's Phone: 818 773-5322

A. State Manifest Document Number: 89861304

B. State Generator's ID: HYH936-005227

5. Transporter 1 Company Name: DISPOSAL CONTROL SERVICE

6. US EPA ID Number: CAT080034184

C. State Transporter's ID: 002344

D. Transporter's Phone: 714-983-0342

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
ETICAM
2095 NAVAJAS DRIVE EAST
FERNLEY, NEVADA 89408

10. US EPA ID Number: NVD980895338

G. State Facility's ID

H. Facility's Phone: (702) 575-2760

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ, WASTE CHROMIC ACID, SOLUTION CORROSIVE MATERIAL, UN1755 (D002)(D007)	001	CF	00098	G	State 792 EPA/Other D002, D007
b. WASTE MIXED ACID, LIQUID, NOS (PHOSPHORIC, SULFURIC) CORROSIVE MATERIAL, NA1760, (D002)	001	DF	00041	G	State 791 EPA/Other D002
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
ETICAM # F90-0108, PH: 1.0, RQ: 1(1454)
ETICAM # F90-0109, PH: 1.5

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
EMERGENCY RESPONSE NUMBER:
ROCKETDYNE SECURITY (818) 710-5181
USE APPROPRIATE GLOVES, GOGGLES, AND CLOTHING

15.
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Printed/Typed Name: GARY COLBERT | Signature: Gary Colbert | Month Day Year: 10 04 90

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: MICHAEL B VAN ASTINE | Signature: Michael B Van Astine | Month Day Year: 10 04 90

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
Printed/Typed Name | Signature | Month Day Year

GENERATOR

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1/88)
EPA 8700—22
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Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CA3890090001 | Manifest Document No.: 900113
2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: ROCKWELL INTERNATIONAL, ROCKETDYNE DIVISION, 6633 CANOGA AVENUE, CANOGA PARK, CA 91303, ATTN: G. COLBERT
4. Generator's Phone (8/8) 773-5322

A. State Manifest Document Number: 89861305
B. State Generator's ID: HYH0236-005027
C. State Transporter's ID: 007344
D. Transporter's Phone: 714-983-0342
E. State Transporter's ID:
F. Transporter's Phone:
G. State Facility's ID:
H. Facility's Phone: [redacted] 702-575-2760

5. Transporter 1 Company Name: DISPOSAL CONTROL SERVICE
6. US EPA ID Number: CAT080031184
7. Transporter 2 Company Name:
8. US EPA ID Number:
9. Designated Facility Name and Site Address: ETICAM, 2095 NEWLANDS DRIVE EAST, FERNLEY, NEVADA 89408
10. US EPA ID Number: NVA980895338

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. WASTE PHOSPHORIC ACID, SOLUTION CORROSIVE MATERIAL, UN1805, (D002)	001	DF	00025	G	State 791 EPA/Other D002
b. WASTE MIXED ACID, LIQUID, NOS (PHOSPHORIC, SULFURIC) CORROSIVE MATERIAL, NA1760, (D002, D009)	002	DF	00170	G	State 792 EPA/Other D002, D009
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
ETICAM # F90-0107, PH≥1.0.
ETICAM # F90-0109, PH≥1.0.

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
EMERGENCY RESPONSE NUMBER:
ROCKETDYNE SECURITY (818) 710-5481
USE APPROPRIATE GLOVES GOGGLES, AND CLOTHING.

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Printed/Typed Name	Signature	Month Day Year
GARY COLBERT	Gary Colbert	06 04 90

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
MICHAEL B. VAN ALSTINE	Michael B. Van Alstine	06 04 90

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1/88)
EPA 8700—22
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Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CA1890090001 | Manifest Document No.: 900113
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
ROCKWELL INTERNATIONAL, ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303
ATTN: G COLBERT (DS42-JA16)
4. Generator's Phone (818) 772-5322

A. State Manifest Document Number: 89861306
B. State Generator's ID: HYH0936-095027

5. Transporter 1 Company Name: DESOTO CARGO SERVICE
6. US EPA ID Number: CAT080034181
C. State Transporter's ID: 00739
D. Transporter's Phone: 714-983-0342

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: US POLLUTION CONTROL, INC (US) MOUNTAIN FACILITY
EAST, 7 MILES NORTH OF KNOLLS EXIT, I-80
(US) UTAH
10. US EPA ID Number: UTA9911301748
G. State Facility's ID
H. Facility's Phone: (801) 534-0054

11. Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.	I. Waste No.
a. HAZARDOUS WASTE LIQUID, N.O.S. (MERCURY) ORM-E, NA9189 (D009)	001	DF	00995	P	State 725 EPA/Other D009
b. NON-RCRA HAZARDOUS WASTE SOLID	001	DF	00255	P	State 181 EPA/Other NOJE
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
11A. GM90-1282, RQ:1 (454)
11B. GM90-0851

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
EMERGENCY CONTACT:
ROCKETDYNE SECURITY (818) 710-5181
TEMP CASE 10

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: GARY COLBERT
Signature: Gary Colbert
Month Day Year: 10 16 90

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: MICHAEL B. VAN ALSTINE
Signature: Michael B Van Alstine
Month Day Year: 10 16 90

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
Printed/Typed Name
Signature
Month Day Year

GENERATOR
TRANSPORTER
FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1/88)
EPA 8700—22
(Rev. 9-88) Previous editions are obsolete.

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155

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. (Form designed for use on elite (12-pitch typewriter).

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAD093365435 | Manifest Document No.: 90047
2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
ROCKWELL INTERNATIONAL, ROCKETDYNE DIVISION
6633 CANOGA AVENUE
CANOGA PARK CA 91303 ATTN: G. COLBERT
4. Generator's Phone (818) 773-5322 (DSV3-JA16)

A. State Manifest Document Number: 89861307
B. State Generator's ID: HYHQ36-10051027

5. Transporter 1 Company Name: DISPOSAL CONTROL SERVICE
6. US EPA ID Number: CAT080033184
C. State Transporter's ID: 007319
D. Transporter's Phone: 714-983-0342

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: U.S. POLLUTION CONTROL INC
GRASSY MOUNTAIN FACILITY
5 MILES EAST, 7 MILES NORTH OF KNOLLS EXIT, I-80
GRIVE UTAH
10. US EPA ID Number: UTA9911301718
G. State Facility's ID
H. Facility's Phone: (801) 534-0054

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	L. Waste No.
a. RQ HAZARDOUS WASTE SOLID, N.O.S. (CONTAINS CADMIUM, LEAD) ORM-E, NA9189, (D007 D008)	001	DF	00035	P	State 181 EPA/Other D007 D008
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above: GM-89-260

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
EMERGENCY CONTACT:
ROCKETDYNE SECURITY (818) 710-5481

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Printed/Typed Name	Signature	Month	Day	Year
GARY COLBERT	Gary Colbert	10	06	90

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
MICHAEL B. VAN ALSTINE	Michael B Van Alstine	10	06	90

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

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Printed/Typed Name	Signature	Month	Day	Year

GENERATOR

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DHS 8022 A (1/88)
EPA 8700—22
(Rev. 9-88) Previous editions are obsolete.

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To: P.O. Box 400, Sacramento, CA 95812-0400

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED-RETURN RECEIPT REQUESTED

25 June 1990

In reply refer to 90RC07873

Texas Water Commission
Waste Management Reports Unit
Hazardous and Solid Waste Division
P.O. Box 13087, Capital Station
Austin, Texas 78711

Subject: Waste Shipment Summary Reports (TWC-0040A)

Gentlemen:

Enclosed are Waste Shipment Summary Reports (WSS) and the generator's copy of the Texas manifests for waste transported from Rockwell International Corporation, Rocketdyne Division facilities to permitted TSD facilities located within the State of Texas. These reports are being submitted for hazardous waste activity during the month of May, 1990.

Should you have any questions please contact Mr. Matt Ratliff, of my staff, at (818) 773-5331.

Very truly yours,

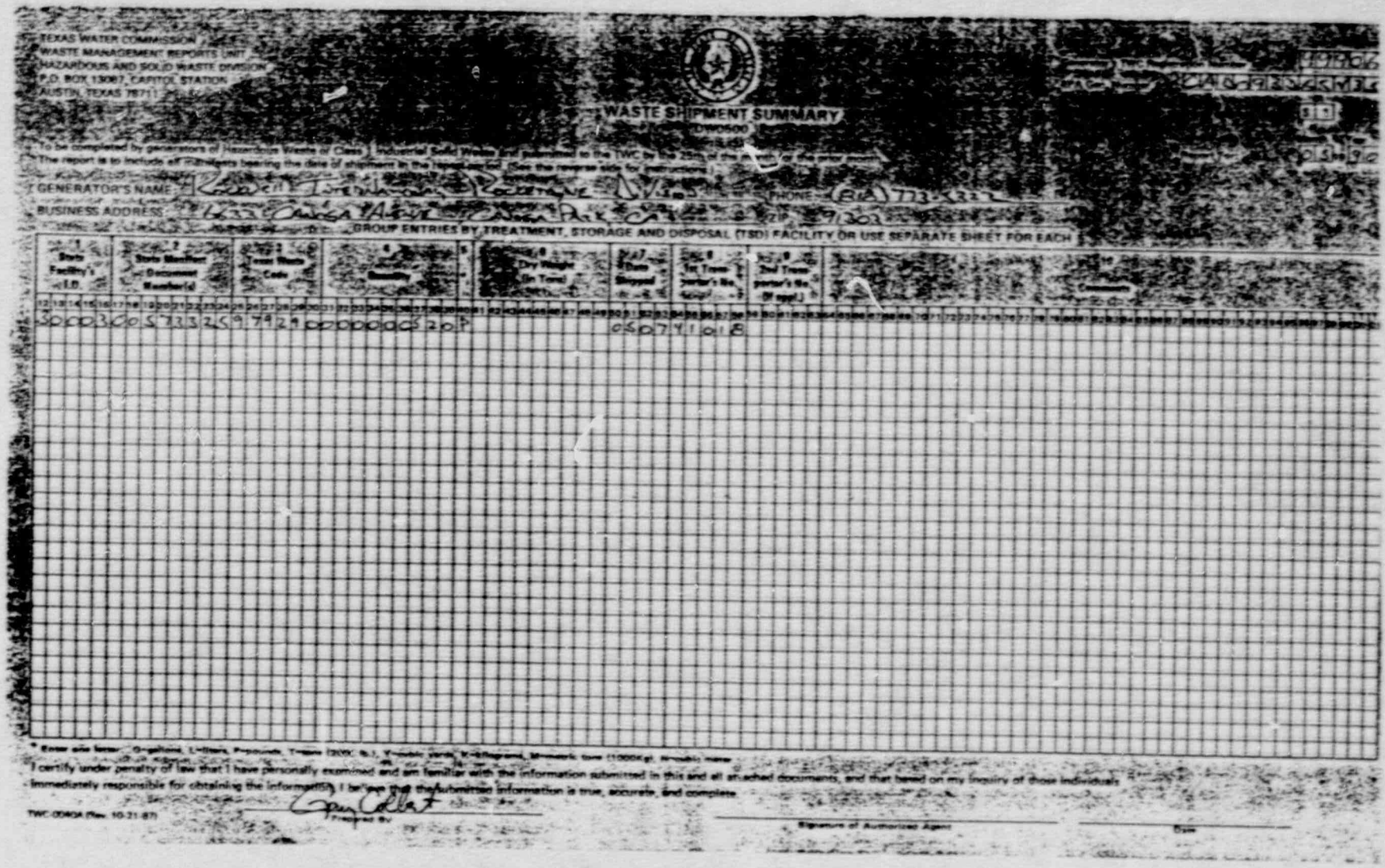
ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

SRLafflam

S.R. Lafflam, Director
Environmental & Energy Conservation

Enclosures: May, 1990 Waste Summary Reports for EPA I.D. Nos: CAD074103771, CAD093365435

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TEXAS WATER COMMISSION
WASTE MANAGEMENT REPORTS UNIT
HAZARDOUS AND SOLID WASTE DIVISION
P.O. BOX 13087, CAPITOL STATION
AUSTIN, TEXAS 78711

WASTE SHIPMENT SUMMARY

To be completed by generators of Hazardous Wastes or Class 1 Industrial Solid Wastes and submitted to the TWC by the 25th of the month of the prior month.
The report is to include all manifests bearing the date of shipment in the reporting period. (See the reverse side for instructions.)

GENERATOR'S NAME
BUSINESS ADDRESS
PHONE

GROUP ENTRIES BY TREATMENT, STORAGE AND DISPOSAL (TSD) FACILITY OR USE SEPARATE SHEET FOR EACH

1 State Facility's I.D.	2 State Manifest Document Number(s)	3 Waste Code	4 Quantity	5	6 Dry Weight (In Tons)	7 Date Shipped	8 1st Transporter's No. (If appl.)	9 2nd Transporter's No. (If appl.)	Comments
12 13 14 15 16 17 18	19 20 21 22 23 24 25 26 27 28 29 30 31	32 33 34	35 36 37 38 39 40 41		42 43 44 45 46 47 48	49 50 51 52 53 54	55 56 57 58 59 60 61	62 63 64 65 66 67 68	69 70 71 72 73 74 75 76 77 78 79 80
5P1003160	5733259	79	29		0000005.20	P		060719	1018

* Enter one letter: G=gallons, L=liters, P=pounds, T=tons (2000 lb.), Y=cubic yards, K=kilograms, M=metric tons (1000 kg), R=cubic meters

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Prepared By

Signature of Authorized Agent

Date

TWC-0040A (Rev. 10-21-87)

TEXAS WATER COMMISSION
P.O. Box 13087, Capitol Station
Austin, Texas 78711-3087

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form approved. OMB No. 2050-0039, expires 12-31-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAD 982454325 | Manifest Document No. 10022

2. Page 1 of 1 | information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Rockwell International, Rocketdyne Division
Attn: G. Calbert (Dept. 1414)
#633 Canoga Ave
Canoga Park, CA 91303

4. Generator's Phone (213) 772-5322

A. State Manifest Document Number NR 00573325

5. State Generator's ID 99906

6. Transporter 1 Company Name [illegible]

8. US EPA ID Number

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name Dixie Contr. Co.

8. US EPA ID Number TXD980741184

E. State Transporter's ID 41018

F. Transporter's Phone (512) 993-0342

9. Designated Facility Name and Site Address
Envicle
5500 Up River Road
Corpus Christi, TX 78407

10. US EPA ID Number TXD008171186

G. State Facility's ID 2003

H. Facility's Phone (512) 289-0200

11A. HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.	I. Waste No.
X	a. ~~RQ~~, WASTE CHROMIC ACID, SOLID OXIDIZER, NA1463 (U032)	004	CF	00520	P	879290
	b.					
	c.					
	d.					

J. Additional Descriptions for Materials Listed Above
Envicle #CC466-90
Chromium 20%, Inert Solids 80%

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Emergency Response: (918) 710-5181

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GENERATOR

Printed/Typed Name	Signature	Month	Day	Year
Gary D Calbert	[signature]	12	7	88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date: Month	Day	Year
Jimmy Lizcano	[signature]	12	7	88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date: Month	Day	Year

TRANSPORTER

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date: Month	Day	Year

FACILITY

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TWC-0311 (Rev 11-06-86) White - original Pink-TSD Facility Yellow-Transporter Green-Generator's first copy

EXECUTIVE SUMMARY FOR REMEDIATION

- RESPONSE TO 8 MAY 1990 EPA LETTER

The Environmental Protection Agency (EPA) submitted a letter with questions concerning operations at Rockwell International Corp., Rocketdyne Division's (Rocketdyne) Santa Susana Field Laboratory (SSFL) to the U.S. Department of Energy (DOE).

Rocketdyne responded to a subsequent DOE request concerning the EPA questions which covered areas such as: on- and off-site groundwater sampling, determination of background radiological levels, possible need for an epidemiological study, update information on NPDES permits and cleanup activities, and status of Rocketdyne's peer review.

- SSFL HYDROGEOLOGIC ASSESSMENT REPORT

Rocketdyne submitted a Hydrogeologic Assessment Report (HAR) for the Lower Pond, Bldg. 886 and the Sodium Burn Facility to the Regional Water Quality Control Board. This report was produced in response to the Toxic Pits Cleanup Act of 1984 (TPCA).

- UNDERGROUND TANK CONTAMINATION ASSESSMENT

A current review of Ventura County Environmental Health Department's records by their Underground Tanks Program staff indicated analysis results for the original 1984 tank excavations exceeding specified limits for one tank site.

Rocketdyne is submitting a workplan to re-sample the designated area.

Response to EPA Letter

Dated 8 May 1990

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED - RETURN RECEIPT REQUESTED

7 June 1990

In reply refer to 90RC07400

United States
Department of Energy
Environmental Restoration and Waste Management Branch
1333 Broadway
Oakland, CA 94612

Attention: Mr. Roger Liddle

Subject: Response to EPA letter dated 8 May 1990 from Karen Schwinn to Dennis Dickerson

Gentlemen:

The responses are listed below for section "F. DOE, San Francisco" from the subject letter:

1. DHS/EMB has taken many samples in the general area for determination of background radioactivity. These have included water, soil, and vegetation. A major survey of natural radioactivity in soil, water, and rock has been completed by Groundwater Resources Consultants, Inc. which will be mailed to all the responsible parties on 15 June 1990.

2. This response will be provided by DOE/SAN.

3. This response will be provided by DOE/SAN.

4. Response to the ORAU 2-day review was delayed until the Peer Review could be completed. Part of the Peer Review effort was to consider the recommendations in the ORAU report. This review was just completed and all recommendations will be addressed.

5. Rockwell has reduced the ashing temperature used for soil and vegetation from 500°C to 450°C. Several specimens of wildlife have been collected and analyzed. Much more radionuclide-specific analyses are being performed. A thorough investigation of tritium-in-water is being performed. A Peer Review has been conducted.

6. This response will be provided by DOE/SAN.

7. There are currently three studies on file at Rocketdyne (Attachment 1) that have been conducted and compiled into reports by consultants since 1971. The titles, dates and authors of the reports are as follows:

   a. "Evaluation of the Seismicity for the Site of the LMEC Test Facilities", November 1972 prepared by Holmes and Narver, Inc.;

   b. "Ground Motion Study, Atomics International Site Simi Hills, Ventura County, California", April 1976 prepared by evicom Corporation and;

8. There have been no transportation incidents involving spills of nuclear waste or nuclear materials from SSFL.

9. This response will be provided the DOE/SAN.

10. The Peer Review has been completed. It was started on April 16 and the final report was completed May 31.

    This involved two weeks of on-site work by the reviewer approved by EPA Region IX (Dan Montgomery of Analytics Inc.) with further document review at his home office. The report will be available in the near future.

11. There is only non-nuclear related Trump-S work currently being conducted at the SSFL site. Research involves developing new techniques to measure electrochemical properties of actinides using rare earth as stand-ins. Rare earths exist that are non-radioactive and electro chemical properties of the rare earths are identical for radioactive and non-radioactive isotopes.

Should any questions arise, please contact Mr. Randy Ueshiro at (818) 773-5315.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

SR Laffiam

S. R. Laffiam
Director
Environmental & Energy Conservation

SRL/sj-1463H

Enclosure

cc: DOE/SAN - Gary Lavagnino, Tony Adduci

Pair # — 75173

GROUND MOTION STUDY
ATOMICS INTERNATIONAL SITE
SIMI HILLS
Ventura County, California

Prepared for
Rockwell International Corporation
Atomics International Divison

Prepared by
Envicom Corporation
April, 1976

HN-8139.1

EVALUATION OF THE SEISMICITY FOR THE SITE OF LMEC TEST FACILITIES

Burro Flats
Santa Susana, California

Prepared for
LIQUID METAL ENGINEERING CENTER
Canoga Park, California
Under
Contract No. AT(04-3)-874

November 1972

HOLMES & NARVER, INC.

A Resource Sciences company

Advanced Technology / Engineering / Construction / Management / Maintenance & Operations

400 EAST ORANGETHORPE AVENUE • ANAHEIM, CALIFORNIA 92801

Hydrogeologic Assessment Report (HAR)

Lower Pond, Bldg. 886

Sodium Treatment Facility

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED - RE "URN RECEIPT REQUESTED

11 July 1990

In reply refer tc 90RC09141

County of Ventura
Environmental Health Division
801 South Victoria Avenue
Ventura, CA 93003

Attention: Mr. Kevin Tinsley

Subject: Santa Susana Field Laboratory Underground Tanks

Gentlemen:

Pursuant to your request in your letter dated 25 May 1990, Rockwell International Corporat on, Rocketdyne Division (Rocketdyne) submits the following underground tank information for the Santa Susana Field Laboratory (SSFL).

1) Tank #1 and Tank #47, located building 005 and 324 respectively, will have work plans developed and submitted to the Ventura County Environmental Health Department (VCEHD) detailing the proposed site assessment for soils investigations. These plans will be developed by a outside consulting firm and follow the guidelines set forth in the L.U.F.T. manual.

2) The Uniform Hazardous Waste Manifest, No.87016201, used in the transportation of contaminated soils from the Tank #3, building 009 remediation is enclosed for the VCEHD files.

3) The VCEHD abandonment report for Tank #36, located at building 459, indicates that a hole was observed in the tank during the excavation, resulting in possible soil contamination. Attached is the certified analysis for the soils beneath the tank, indicating no amounts of contaminates above State action levels. It is Rocketdyne's understanding that this site should be considered a clean closure.

4) The proposed site assessment work plan for Tanks #39, 40, & 41 was developed in accordance with the L.U.F.T. manual and is enclosed for VCEHD approval.

5) The site inspection on 21 June 1990 by Mr. Kevin Tinsley, of the VCEHD, resulted in the verification of the locations for abandonments of Tanks #48, 51, & 53. It was during this inspection that Mr. Tinsley noted to Mr. Gary Colbert, of my staff, that the complete listing of underground tanks corresponding with the map obtained at a prior meeting was not on file with the VCEHD. The VCEHD files did not contain the list for Tanks #51, 52, & 53. Therefore the list containing the tanks is enclosed.

Should you have any questions please contact Mr. Gary B. Colbert, of my staff, at (818)773-5322

Very truly yours,

ROCKWELL INTERNATIONAL DIVISION
Rocketdyne Division

SR Laffiam

S.R. Laffiam, Director
Environmental & Energy Conservation

enclosures:

1) Uniform Hazardous Waste Manifest No.87016201

2) Soil Analysis; Building 009

3) Proposed Site Assessment Work Plan; Tanks #39, 40, & 41

4) SSFL underground Tank List (51, 52, & 53)

cc. Josh Workman, RWQCB
Karin Schwinn, EPA

State of California — Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-88)
Please print or type (Form designed for use on elite (12-pitch typewriter))

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAD 000629772 — Manifest Document No. 88PP
2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
ROCKETDYNE Unit Rocketdyne Division
6633 Canoga Ave
Canoga Park, CA 91303
ATTN: C. Steinwert
818 700-6137 818 543-7435

A. State Manifest Document Number: 87016201
B. State Generator's ID: HYH 034-005027

4. Generator's Phone ( )

5. Transporter 1 Company Name: MP VACUUM TRUCK SERVICE — 6. US EPA ID Number: CAT000621434
C. State Transporter's ID: 403700
D. Transporter's Phone: 805-393-1151

7. Transporter 2 Company Name — 8. US EPA ID Number
E. State Transporter's ID: 403700
F. Transporter's Phone

9. Designated Facility Name and Site Address
USPCI
Grassy Mountain Facility
3 miles East, 3 miles North of Knolls Exit, I-80
Clive Utah
10. US EPA ID Number: UTD991301748
G. State Facility's ID
H. Facility's Phone: (801) 534-0054

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. California Regulated Waste Only	001	DT	00024	T	State 352 / EPA/Other N/A
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
1(a) 99% Soil 43140 DA
1(b) 1% diesel fuel
Manifest #11187-3265-5

K. Handling Codes for Wastes Listed Above
a. DSP 03 — b. — c. — d.

15. Special Handling Instructions and Additional Information
Use appropriate goggles, gloves and overalls

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: CARL STAMWERT — Signature — Month Day Year: 10 5 87

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JOHNNY TISDO — Signature — Month Day Year: 10 6 87

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19
Printed/Typed Name: DAVID L PRIZER — Signature — Month Day Year: 10 7 87

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

87012201

DHS 8022 A (1/87)
EPA 8700—22
(10/85) Previous editions are obsolete

Yellow: TSDF SENDS THIS COPY TO GENERATOR WITHIN 30 DAYS

INSTRUCTIONS ON THE BACK

BROWN AND CALDWELL LABORATORIES
373 SOUTH FAIR OAKS AVENUE PASADENA, CA 91105 • (818) 795-7553 • FAX (818) 795-8579

ANALYTICAL REPORT

LOG NO: P88-02-086

Received: 04 FEB 88
Reported: 10 FEB 88

Beverly Hurt
Rocketdyne Division
6633 Canoga Avenue, Department 060
Canoga Park, CA 91304

Purchase Order: R440BF-030210

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
02-086-1	8802.043/12988RB459-1	29 JAN 88
02-086-2	8802.044/12988RB459-2	29 JAN 88

PARAMETER	02-086-1	02-086-2
EPA Method 8015 (Modified)		
Date Analyzed	02/08/88	02/08/88
Dilution Factor, Times 1	1	1
Fuel Hydrocarbons, mg/kg	<5	<5
Benzene, mg/kg	<1	<1
Toluene, mg/kg	<1	<1
Total Xylene Isomers, mg/kg	<1	<1
Other EPA Method 8015 (Modified)	---	---

Larry L. Thaleger for
Edward Wilson, Laboratory Director

SANTA SUSANA FIELD LABORATORY

UNDERGROUND TANK LIST

TANK	BLDG.	AREA	DESC.	CONTS.	SIZE(gal)	YR. INST	YR. REMV
T-51	206	II	Metal	Diesel	10,000		8/87
T-52	AIGS	II	Joor P.	Gasoline	12,000	8/88 - Active	
T-53	207	II	Metal	Diesel	1,500		7/88

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

RECEIVED
JUN 20 1990
DRF 1343

CERTIFIED - RETURN RECEIPT REQUESTED

14 June 1990

In reply refer to 90RC07858

State of California
Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, CA 91754-2156

Attention: Mr. James Ross

Subject: HAR Submittal, File No. 200.003 Lower Pond - Sodium Disposal Facility

Reference: Reply to letter dated 1 May 1990, 90RC05861, S. R. Lafflam to Ms. Irma Salinas

Gentlemen:

Enclosed is the Hydrogeologic Assessment Report (HAR) for the Lower Pond, Building 886, Sodium Disposal Facility, Santa Susana Field Laboratory, Rockwell International Corporation, Rocketdyne Division (Rocketdyne), Ventura County, California for your review and comments. Rocketdyne is hereby submitting the HAR for the Lower Pond as designated by the Toxic Pits Cleanup Act of 1984 (TPCA).

Should any questions arise, please contact Mr. Randy Ueshiro at (818) 773-5315 or Ms. Jennifer Crone at (818) 773-5319.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

S R Lafflam

S. R. Lafflam
Director
Environmental & Energy Conservation

SRL/sj-1472H

Enclosure as noted

cc: RWQCB/Irma Salinas
EPA/Karen Schwinn
DHS/Dennis Dickerson
VCEHD/Terrence Gilday
VAPCD/Al Danzig
DOE-SAN/G. Lavagnino, R. Liddle, T. Adduci

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED - RETURN RECEIPT REQUESTED

1 May 1990

In reply refer to 90RC05861

State of California
Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, CA 91754-2156

Attention: Ms. Irma Salinas

Subject: Extension for the HAR Sumittal, File No. 200.003 Lower Pond - Sodium Burn Pit

Gentlemen:

Rockwell International Corporation, Rocketdyne Division (Rocketdyne) is hereby requesting an extension to 14 June 1990 for the Hydrogeological Assessment Report (HAR) for the lower pond area. Rocketdyne did not recieve your 6 April 1990 letter until 17 April 1990 via facsimile transmission (see enclosure) therefore, Rocketdyne would like the additional time to submit the HAR. Your approval of this time extension was indicated by telephone to Jennifer Crone, of my staff.

Should you have any questions, please contact Randy Ueshiro at (818) 773-5315 or Jennifer Crone at (818) 773-5319.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

S R Lafflam

S. R. Lafflam
Director
Environmental and Energy Conservation

SRL/sj-1422H

Enclosure as noted

STATE OF CALIFORNIA — GEORGE DEUKMEJIAN, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOAR -
LOS ANGELES REGION
101 CENTRE PLAZA DRIVE
MONTEREY PARK, CALIFORNIA 91754-2156
(213) 266-7500

April 6, 1990

Mr. S. R. Lafflam
Manager, Environmental Unit
Facilities & Plant Operations
Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, CA 91303

TPCA DETERMINATION-LOWER POND OF THE SODIUM BURN PIT-SANTA SUSANA FIELD LABORATORY (FILE NO 200.003)

On January 19 and 25, 1990, staff inspected the Rockwell facility and took soil and ground water samples in area IV in the vicinity of the Sodium Burn Pit. A copy of our laboratory analysis is enclosed. Upon reviewing the results from the analysis, it was determined that the lower pond area is subject to TPCA.

You are directed to submit a Hydrogeological Assessment Report (HAR) by June 1, 1990 for the lower pond area; in addition, you are to fill out the enclosed attachment and include an annual fee of $300.00 and $150.00 for this additional surface impoundment.

Enclosed is an application which you will resubmit along with the HAR report to this regional board and enclose a check for $450.00 made out to the State Water Resource Control Board. Also enclosed is a copy of the lab results.

If you have any questions, please call Ms. Irma Salinas at (213) 266-7610.

J.E. ROSS
Hazardous Waste
Unit Chief

enclosure

cc: Mr. Jim Parsons, State Water Resources Control Board,
Division of Water Quality
Ms. Carmen Santos, EPA
Mr. Larry Petersen, Department of Health Services, Toxic Substances Control
Division Region 3, Burbank
Assemblyman Richard Katz, District 39

1[illegible]9

Work Plan Extension Request for SSFL Underground Tank Nos. 39, 40, 41

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED - RETURN RECEIPT REQUESTED

11 June 1990

In reply refer to 90RC07406

County of Ventura
Environmental Health Department
Underground Tanks Program
801 South Victoria Avenue, Suite 304
Ventura, CA 93003

Attention: Mr. Douglass A. Beach, Manager

Subject: SSFL Underground Tanks #39, 40, and 41

Gentlemen:

Rockwell International Corporation, Rocketdyne Division (Rockwell) would appreciate an extension from submitting a work plan for the subject tanks until 13 July 1990. The appropriate paperwork is enclosed.

Should you have any questions, please contact Jennifer Crone at (818) 773-5319.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

SRLafflam

S. R. Lafflam
Director
Environmental & Energy Conservation

SRL/sj-1465H
05725RC

Enclosures as noted

cc: CRWQCB/Joshua Workman

VENTURA COUNTY ENVIRONMENTAL HEALTH DEPARTMENT

REQUEST FOR EXTENSION OF TIME TO SUBMIT CORRECTIVE ACTION PLAN

SITE INFORMATION:

Name ROCKWELL INTERNATIONAL CORPORATION/ROCKETDYNE DIVISION Site Number C90067

Address SANTA SUSANA FIELD LABORATORY

City VENTURA COUNTY

Contact Person GARY COLBERT Telephone (818) 773-5322

RESPONSIBLE PARTY INFORMATION:

Name ROCKWELL INTERNATIONAL CORPORATION/ROCKETDYNE DIVISION

Address 6633 CANOGA AVENUE (M.S. JA16)

City CANOGA PARK, CA 91303

Contact Person GARY COLBERT Telephone (818) 773-5322

CONSULTANT:

Name GROUNDWATER RESOURCES CONSULTANTS, INC.

Address 1735 E. FORT LOWELL ROAD, SUITE 4

City TUCSON, AZ

Contact Person DINAH JASENSKI Telephone (602) 326-1898

CHECK APPROPRIATE BOXES:

- ☐ Site Investigation in Progress *(Defining Extent of Problem)*
- ☐ No Funds Available to Proceed
- ☐ No Action Planned*
- ☐ Other _____
- ■ Need More Time*
- ☐ Selecting Consultant*
- ☐ Renewal*

***EXPLANATION:**

Requested Extension Until 13 JULY 1990 *(Date)*

Applicant's Signature S R Laffler Date 6-11-90

FOR DEPARTMENT USE ONLY:

Submittal Date _____ Site I.D. No. _____ Extension Expires on _____

Approved by _____ Date _____

DISTRIBUTION: **White** – File Copy **Canary** – Applicant Copy

EH-270 (12/89)

(SEE REVERSE FOR CONDITIONS)

EXECUTIVE SUMMARY FOR RADIOLOGICAL ENVIRONMENTAL HEALTH

RADIOLOGICAL

Approximately 400 sq. ft of radioactively contaminated non-friable asbestos containing floor tiles was removed from room 128 of the Rockwell International Hot Laboratory (RIHL). Room 128 was used to repair radioactive remote handling equipment and in the process, the floor tiles became radioactively contaminated. The tiles and mastic are being stored on-site until a waste shipment is prepared.

ECOLOGICAL SURVEY

Additional reference material concerning activities at SSFL were added to the two designated repository locations at the Simi and University of California, Northridge Libraries.

Following a series of public tours at Rocketdyne's SSFL, questionnaires were distributed to participants. Individual comments or questions were responded to by members of the Environmental & Energy Conservation Department staff. Among the questions were ones concerning: radiological studies on flora and fauna, ground water sampling, and general comments regarding SSFL facility appearance.

In June, two dead squirrels were collected and tested for radioactivity by gamma-spectrometry. Trace indications of the daughter activities for natural thorium and natural uranium were found, but were not adequate to permit quantifying such small amounts. The K-40 in the two squirreis showed good agreement with previous measurements. (See table in Ecological/Bioassay Reporting section.) No artificial radionuclides have been found at concentrations that would suggest any contamination. (The deer analysis showed "less than blank" for plutonium, 0.375 pCi/g for Sr-90, and 0.002 pCi/g for Cs-137.) The rabbits showed minor amounts of natural uranium and thorium.

Recently, a report on radioactivity (predominantly K-40 and Cs-137) measured in woodash from the northeastern part of the U.S. was published in the April 1990 issue of the HPS Newsletter with a request for information from other areas of the country. Rocketdyne cooperated in this effort with the assistance of several employees who brought in woodash from their fireplaces; a variety of different wood types were represented. The author of the original report compiled a summary of the analyses results. A more concise summary table of those results is included herein in the Ecological/Bioassay Reporting section of this document. Values have been converted to pCi/g for easier comparison to previous environmental data reported by Rocketdyne. The results indicated that the major gamma-emitting radionuclide is K-40. The concentration of Cs-137 is notably low in wood from southern California compared to the east coast, but similar to that found in Idaho. The author discusses in some detail the prediction of some environmental specialists that any Cs-137 present in the firewood would have been volatilized and completely lost since ashing

Removal of Radioactive Contaminated Asbestos Floor Tile SSFL, Bldg. 020

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91304

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED - RETURN RECEIPT REQUESTED

8 June 1990

In reply refer to 90RC07402

Ventura County Air Pollution
Control District
800 South Victoria Avenue
Ventura, CA 93009

Attention: Mr. Doug McWilliams

Subject: Rockwell International Hot Laboratory, Building 020, Area IV, SSFL - Radioactive Contaminated Asbestos Containing Floor Tile Removal

Gentlemen:

In accordance with EPA regulations contained in Title 40, Code of Federal Regulations, Section 61, Subpart M and Rule 73 of Ventura County Air Pollution Control District (VAPCD) Rules and Regulations, both of which pertain to the NESHAP for asbestos, please accept this letter as written notice for Rockwell International Corporation, Rocketdyne division's intent to remove radioactive contaminated non-friable asbestos floor tiles at our Santa Susana Field Laboratories (SSFL).

Rockwell International Hot Laboratory (RIHL) is an NRC licensed facility that was designed and constructed to provide for the remote handling of irradiated nuclear fuels and reactor components. For the last 13 years, the facility has been utilized for the decladding of irradiated reactor fuels and disassembly of reactor components in support of the Office of Material Production, DOE defense programs. RIHL contains 16,000 square feet of floor space. Room 128 in the RIHL was used to repair radioactive remote handling equipment and in the process, the floor tiles became radioactively contaminated. Approximately 400 sq-ft of radioactively contaminated non-friable asbestos containing floor tiles will be removed to release the room for unrestricted use.

The floor tiles will be removed under carefully controlled conditions to maintain non-friable status.

The removal operations will be done by radiation and asbestos trained personnel with proper protective clothing and respirators for both radiation and asbestos removal type work. The floor tiles and mastic will be placed in double bags and suitably identified.

The radioactive non-friable asbestos floor tiles and mastic will then be stored on site as radioactive waste until a waste shipment is prepared. It will then be shipped to a radioactive waste repository in Mercury, Nevada using a permitted hauler.

The removal operations will commence on or after 5 July 1990, i.e., to provide the requisite 20 days notification, and is expected to be completed by 26 July 1990.

Should you have any questions, please contact Mr. Randy Ueshiro at (818) 773-5315.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

S R Laffl

S. R. Laffham, Director
Environmental Unit
Environmental and Energy Conservation

cc: EPA/NESHAPS Region 1X
1235 Mission St. A-3-3
San Francisco, CA 94103
Attn: Janet Crawford

Cal/OSHA
5720 Ralston #203
Ventura, CA 93003

PROJECT JOB#_____( )Cancellation ( )RevisionProject Dates ( )RevisionOther
for cancellation or revision, fill out sections 1403 (d)(1)(A)(i)(ii)(ix)

Completed by: Fred Schmidt Date 8 June 1990
Company: Rockwell Int'l Rocketdyne Divn. Telephone: 818/700-5057

MAIL TO:
1) EPA/NESHAPS Region IX
1235 Mission St. A-3-3
San Francisco, CA 94103
Attn Janet Crawford

2) Cal/Osha
5720 Ralston #203
Ventura, CA 93003

3) Ventura County Air Pollution Control District
800 South Victoria Ave.
Ventura, CA 93009

EPA-USE-ONLY
Notif#
DateRec
Pstmrk
School
Del/ND
ADQTE?
Code#
Doc#
StatusCode
Quarter
Entered By

SCAQMD-USE-ONLY

Operator/Contractor

NAME:	Rockwell International Rocketdyne Division
Address:	6633 Canoga Ave.
City, State, Zip:	Canoga Park, CA 91303
Site Supervisor:	Fred G. Schmidt
Telephone:	818/700-5057

Property Owner

Name:	Rockwell International Rocketdyne Division
Address:	6633 Canoga Ave.
City, State, Zip:	Canoga Park, CA 91303
Contact Person:	Randy Ueshiro D/543, 055-JA16
Telephone:	818/718-5315

Facility Location

Site Name:	Santa Susana Facility
Street Address:	Top of Woolsey Canyon Rd.
City, State, Zip:	
County:	Ventura
Demolition/Renovation:	Renovation

Facility Description

Size (Square Feet):	16000
Age (Years):	31
Number of Floors:	1
Building Type:	I
Prior Use:	I
Number of Dwelling Units:	(For Residence Only)
Work Location (Describe):	Building T020 Area IV

H-Hospital S-School O-Office I-Industrial
P-Public Building R-Residence

Project Dates

Set-Up Date: 5 July 1990
Start Date: 5 July 1990
Completion Date: 26 July 1990

Number of Men 4
Working Hours 0730-1600

Indicate Work Practices and Engineering Controls.
Reference 140: (d)(1)(D)(i) through (v).

Procedure 1. ( ) (Full Containment)
Procedure 2. ( ) (Glove Bag)
Procedure 3. (xx) (Modified Containment)
Procedure to comply with 40 CFR 61.147 & 152: Wet Thoroughly & Double Bag.

Amount of friable Class I & Class IInonfriable Asbestos Containing Material

Friable Linear Feet:
Square Feet: none

Class I Linear Feet:
Square Feet: Describe Class I none

Surface Area Equivalent: none

Total of Linear feet equivalent and Square Feet (Friable and Class I) none

Class II Linear Feet:
Square Feet: 400 ft^2

Describe Class II Radioactive Contaminated Floor Tile & Mastic

Surface Area Equivalent: 400 ft^2

Total of Linear Feet equivalent and Square Feet (Class II) 400 ft^2

Waste Disposal Site
Landfill Name: Reynolds Electrical and Engineering Co.
Address: U.S. DOE/Nevada Test Site/Zone 2
City, State, Zip: Mercury, Nevada 89023
Permit #:

Procedure to be followed if unexpected asbestos is found or nonfriable ACM becomes friable.

1. Notify Owner 2. Notify all Agencies

Proof of California State Contractor Certification & Cal/Osha Registration
Contractors License #: none
Cal/Osha Registration #: none

Location of storage area for asbestos containing waste material.
Metal Radioactive Waste Box Type B-25 on Sit

Name of Transporter(s) used to transport waste to disposal site.
Tri-State Motor Transit, Joplin, MO MOD 095038998

Emergency Renovation N/A
Authorized Person:
Telephone:

Emergency (Ordered) Demolition. (Who ordered the demolition?)
Agency:
Name: N/A
Title:
Telephone:
Authority:

1983

ORIGINAL

	Invoice Number	Invoice Date	Supplier Code	Gross Amount	Discount Amount	Net Amount
0600201		06 05 90				230.00
REF. LETTER 90RC07402 TOZO FLOOR TILE RENOVAL						

Detach Before Depositing

No. 05146977 60-162/433

Rockwell International

Aerospace Operations, Rocketdyne Division
Canoga Park, California

Pittsburgh National Bank
Jeannette, Pennsylvania

DATE 06/08/90

[redacted] | [redacted]
******230.00

PAY to the order of VENTURA COUNTY AIR POLLUTION CTL DIST

Authorized Representative(s)

FORM R136-4-1 REV. 2-89

035011 "05146977" :043301627: 1 425297"

Repository Sites

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex 698478
ROCKETDYN CNPK

Rockwell International

20 June 1990

In reply refer to 90RC07867

Library
California State University, Northridge
Northridge, CA 91330

Attention: Ms. Barbara Magnuson

Subject: Repository Documents from Rockwell International Corp., Rocketdyne Division

Gentlemen:

Enclosed are additional documents from Rockwell International Corporation, Rocketdyne Division (Rocketdyne) to add to your respository.

In the future, you will be receiving material from other members of my staff as their reports go to various government agencies. The Environmental Department will make every effort to keep your document repository current.

Thank you, again, for allowing this information to be placed in your library for public review. If you have any questions, please contact Ms. Wilma Seltzer at (818) 773-5330.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

S. R. Lafflam, Director
Environmental & Energy Conservation

SRL/ws

Enclosures:

1. Santa Susana Field Lab, Ground Water Bimonthly Report, 15 June 1990.
2. Investigation of Naturally Occurring Radionuclides in Rock, Soils and Groundwater, Santa Susana Field Laboratory, June 1, 1990, 8640M-77.

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

20 June 1990

In reply refer to 90RC07866

Simi Valley Library
2969 Tapo Canyon Rd.
Simi Valley, CA 93063

Attention: Ms. Gayle Demirtas

Subject: Repository Documents from Rockwell International Corp., Rocketdyne Division

Gentlemen:

Enclosed are additional documents from Rockwell International Corporation, Rocketdyne Division (Rocketdyne) to add to your respository.

In the future, you will be receiving material from other members of my staff as their reports go to various government agencies. The Environmental Department will make every effort to keep your document repository current.

Thank you, again, for allowing this information to be placed in your library for public review. If you have any questions, please contact Ms. Wilma Seltzer at (818) 773-5330.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

SR Laffiam

S. R. Laffiam, Director
Environmental & Energy Conservation

SRL/ws

Enclosures:

1. Santa Susana Field Lab, Ground Water Bimonthly Report, 15 June 1990.
2. Investigation of Naturally Occurring Radionuclides in Rock, Soils and Groundwater, Santa Susana Field Laboratory, June 1, 1990, 8640M-77.

SSFL Tours

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

In reply refer to 90RC06930

2 July 1990

Mr. James D. Riley
6195 Sylvan Drive
Simi Valley, CA 93063

Subject: SSFL Tours

Dear Mr. Riley:

Rockwell International Corporation, Rocketdyne Division (Rocketdyne) appreciates your having taken the time to respond to the Santa Susana Field Laboratory (SSFL) Tours questionnaire. In 1977 an Environmental Impact Appraisal of SSFL was conducted by the U.S. Nuclear Regulatory Commission Office of Nuclear Material Safety and Safeguards Division of Fuel Cycle and Material Safety. We have enclosed excerpts of their findings in regard to the Ecology at the SSFL per your inquiry of any studies having been conducted on the flora and fauna.

Rocketdyne maintained an Environmental Monitoring program of the vegetation for radioactivity which was initiated in 1954. The monitoring was conducted to ensure that nuclear operations did not contribute significantly to environmental radioactivity. Compilations of vegetation monitoring data indicate that the average of on-site radioactivity analytical values for vegetation are similar to the average of off-site values. Values are in picocuries per gram.

	Gross Alpha	Gross Beta
on-site:	3.8 pCi/g	135 pCi/g
off-site:	4.7 pCi/g	133 pCi/g

Vegetation monitoring for radioactivity, which was conducted monthly with soil monitoring, was discontinued after 1985 when SSFL also decided to reduce soil monitoring from monthly to quarterly intervals. The vegetation monitoring program is going to be reestablished this year.

The Environmental and Energy Conservation Department (EECD) has several Environmental Engineers on staff with degrees in Biology and Environmental Biology. Rocketdyne is currently looking at the possibility of dedicating a portion of its property at SSFL as a wildlife corridor and also establishing employee participation in a wildlife sighting program whereby employees will report any sightings of deer, bobcats, coyotes, gray foxes, mountain lions and many other frequently sighted vertebrates in the SSFL area to the EECD to gain a better understanding of the vertebrate ecology at SSFL.

Rocketdyne will be holding an Open House in October, 1990, where the public will have access to see the activities at the SSFL and Canoga sites. Perhaps you will care to visit our facilities again at that time and learn more about the products Rocketdyne makes and Rocketdyne's commitment to protecting the environment.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

Jennifer Crow for

S. R. Lafflam
Director
Environmental and Energy Conservation

SRL:ma

Enclosure

2.8 ECOLOGY

2.8.1 Terrestrial biota

2.8.1.1 Headquarters site-common biota

The potential natural vegetation of the San Fernando Valley is believed to be California Oakwoods.[10] Such vegetation forms a dense to open woodland dominated by several oak species (*Quercus agrifolia, Q. chrysolepis, Q. douglasii, Q. englemanii, Q. lobata, Q. wislizenii*) along with digger pine (*Pinus sabiniana*). The potential vegetation is a matter of conjecture, however, for it has been almost entirely erased — first by irrigated agriculture, then by residential development. Today the west end of the San Fernando Valley — the location of the Headquarters site — contains an urban ornamental vegetation composed primarily of grass and *Dichondra* lawns, exotic shrubs, and shade and ornamental trees including *Eucalyptus* spp., *Olea europa, Cedrus deodora, Phoenix* spp., *Washingtonia* spp., *Citrus* spp., and *Pinus halepensis*.

The fauna in the San Fernando Valley is probably similarly depauperate of nondisturbance species. Characteristic animals of coastal cismontane urban areas[11] include the opossum (*Didelphus marsupialis virginiana*), southern pocket gopher (*Thomomys bottae*), Norway rat (*Rattus norvegicus*), black rat (*Rattus rattus*), house mouse (*Mus musculus*), barn owl (*Tyto alba*), mourning dove (*Zenaidura macroura*), spotted dove (*Streptopelia chinensis*), domestic dove (*Columba livia*), mockingbird (*Mimus polyglottos*), Brewer's blackbird (*Euphagus cyanocephalus*), house sparrow (*Passer domesticus*), house finch (*Carpodacus mexicanus*), and brown towhee (*Pipilo fuscus*). In more rural, farmed areas, the opossum, striped skunk (*Mephitis mephitis*), coyote (*Canis latrans*), black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Citellus beecheyi*), southern pocket gopher, deer mouse (*Peromyscus maniculatus*), house mouse, sparrow hawk (*Falco sparverius*), western kingbird (*Tyrannus verticalis*), mourning dove, mockingbird, horned lark (*Eremophila alpestris*), loggerhead shrike (*Lanius ludovicianus*), western meadowlark (*Sturnella neglecta*), brown towhee, and the gopher snake (*Pituophis melanoleucus*) are also characteristic. The applicant made inquiries to several state and national agencies for further information,[12] but little site-specific information is available to supplement these general species lists.

2.8.1.2 NDFL site-common biota

The potential natural vegetation of the Simi Hills is mapped as chaparral.[11] This plant community forms a very dense vegetation of broad-leaved evergreen sclerophyll shrubs. It is dominated by either chamise (*Adenostoma fasciculatum*) or manzanita (*Arctostaphylos* spp.) and California lilac (*Ceanothus* spp.); numerous other shrub species are subdominant.[11]

The vegetation map drawn in 1931[2] concurs with this description and adds further details. Figure 2.4 is an adaptation of this map, showing the area immediately surrounding the AI Headquarters and NDFL sites. It indicates that much of the Simi Hills crest was semibarren (<50% vegetation cover), whereas the crest and the remaining upland areas were covered by chaparral which was dominated by (a) *Adenostoma fasciculatum* (chamise chaparral) or by (b) *Salvia apiana, S. Leucophylla,* and *S. mellifera* (coastal sagebrush of ref. 11). Open grasslands occurred primarily on the lower southeast slopes, and oak woodland (*Quercus agrifolia*) appeared only in the canyons near ephemeral streams (Bell Canyon, Las Virgenes Canyon).

When the staff visited the site in late 1976, most of the Simi Hills area inspected (east slope, crest, southeast lower slopes) was dominated by an oak woodland (*Quercus agrifolia*) with undergrowth of grass or sage (*Salvia*) species. Canyon vegetation was dominated by shrub willow (*Salix* spp.), California bay (*Umbellularia californica*), and broom (*Baccharis* spp.); no oaks were evident. Apparently much of the chamise chaparral has been replaced by oak woodland since 1931. The most likely explanation for this succession is that fire suppression activities allowed the fire-tolerant chaparral vegetation to be replaced by the less fire-tolerant oaks and sages.

Faunal descriptions of the Simi Hills area were rather limited. Animals of rural cismontane coastal areas listed above would likely be present at the Simi Hills site. In addition, animals characteristic of the coastal sage, chaparral, and oak woodland should be common at the NDFL site. These include the mule deer (*Odocoileus hemionus*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), western gray squirrel (*Sciurus griseus*), brush rabbit (*Sylvilagus bachmani*), dusky-footed woodrat (*Neotoma fuscipes*), nimble kangaroo rat (*Dipodomys agilis*), desert wood rat (*Neotoma lepida*), California mouse (*Peromyscus californicus*), brush mouse (*P. boylii*), California pocket mouse (*Perognathus californicus*), California quail (*Lophortyx californicus*), mountain quail (*Oreortyx pictus*), acorn woodpecker (*Melanerpes formicivorus*), scrub jay (*Aphelocoma coerulescens*), Costa's hummingbird (*Calypte costae*), cactus wren (*Campylorhynchus brunneicapillum*), Lazuli bunting (*Passerina amoena*), wrentit (*Chamaea fasciata*), plain titmouse (*Parus inornatus*), common bushtit (*Psaltriparus minimus*), poor-will (*Phalaenoptilus nuttallii*), Bewick's wren (*Thryomanes bewickii*), black-headed grosbeak (*Pheucticus melanocephalus*), California thrasher (*Toxostoma redivivum*), rufous-sided towhee (*Pipilo erythrophthalmus*), orange-crowned warbler (*Vermivora celata*), sage sparrow (*Amphispiza belli*), rufous-crowned sparrow (*Aimophila ruficeps*), western fence lizard (*Sceloporus occidentalis*), southern alligator lizard (*Gerrhonotus multicarinatus*), coast horned lizard (*Phrynosoma coronatum*), skinks (*Eumeces skiltonianus, E. gilberti*), striped racer (*Masticophis lateralis*), western rattlesnake (*Crotalus viridis*), and red rattlesnake (*C. ruber*).[12]

2.8.1.3 Headquarters and NDFL sites -- endangered species

There are 236 plant species in California classified as endangered.[13] Examination of their geographic distributions[14] indicates that nine of the species occur in Ventura County or adjacent Los Angeles County. These species are listed in Table 2.8, along with information regarding their geographic distributions and habitat preferences. Four of the species are unlikely to occur in the western San Fernando Valley or in the Simi Hills (*Hemizonia minthornii, Pentachaeta lyonii, Dudleya multicaulis, Astragalus tener* var. *Titi*) because either their habitat preferences or their geographic distributions do not coincide with the sites. Of the remaining species, three are likely to be found in the Simi Hills (*Dudleya cymosa, Dicentra ochroleuca, Eriogonum crocatum*), one would be limited to the valley (*Chorizanthe leptoceras*), and one could occur at both localities (*Berberis nevinii*). The latter two species are unlikely to occur in the western San Fernando Valley today because of the lack of nonurban habitat.

The 25 species of terrestrial California vertebrates classified as endangered are listed with the geographic ranges and/or habitat preferences of each[15] in Table 2.9. Of those listed, only three species (southern bald eagle, prairie falcon, American peregrine falcon) are potential residents of the AI area. This conclusion is based on nonspecific range descriptions, rather than on information indicative of the presence of the birds at or near the AI sites.

2.8.2 Aquatic biota

Because there is no natural surface water at either the Headquarters or NDFL sites, there are no resident populations of aquatic biota. Bell Canyon, although containing flowing water during periods of heavy rainfall (December through March), is merely a dry natural channel during most of the year. It therefore does not sustain a permanent population of aquatic biota. There is no information available on aquatic biota that may be present in Bell Canyon during periods of flow.

Table 2.8. Endangered plant species[a] of Ventura and Los Angeles counties, California

Family, genus, species, subspecies[b]	Habitat and geography[b]
1. Asteraceae – *Hemizonia minthornii*	Chaparral zone; Santa Susanna Mountains
2. Asteraceae – *Pentachaeta lyonii* (*Chaetopappa lyonii*)[c]	Valley grassland; coastal Los Angeles County
3. Berberidaceae – *Berberis nevinii*	Coastal sage scrub and chaparral; San Fernando Valley
4. Crassulaceae – *Dudleya cymosa* ssp. *marcescens*	Chaparral; Santa Monica Mountains, southern Ventura County
5. Crassulaceae – *Dudleya multicaulis*	Chaparral; Los Angeles County
6. Fabaceae – *Astragalus tener* var. *Titi*	Coastal strand; coastal Los Angeles County
7. Fumariaceae – *Dicentra ochroleuca* (Papaveraceae)[c]	Dry disturbed places below 3000 ft in chaparral; Los Angeles and Ventura counties
8. Polygonaceae – *Chorizanthe parryi*	Coastal sage scrub and San Fernando Valley
9. Polygonaceae – *Eriogonum crocatum*	Rocky slopes at about 500 ft, coastal sage scrub; northern base of Santa Monica Mountains, Ventura County

[a] From Smithsonian Institution, *Report on Endangered and Threatened Plant Species of the United States*, Serial No. 94 A, U.S. Government Printing Office, Washington, D.C., 1975.

[b] Unless otherwise noted, nomenclature and range of habitat from P. A. Munz, *A Flora of Southern California*, University of California Press, Berkeley, Calif., 1974.

[c] Family or genus classification from footnote a.

Table 2.9. Endangered wildlife of California

Common name	Habitat and geography
Blunt-nosed lizard	Cuyama River Valley, San Joaquin Valley
San Francisco garter snake	San Francisco area
Santa Cruz long-toed salamander	Santa Cruz County, two localities
Desert slender salamander	Santa Rosa Mountains, Riverside County only
Tehachapi slender salamander	Kern County only
Limestone salamander	Mariposa County
Shasta salamander	Lake Shasta
Inyo County toad	Inyo County, only
California brown pelican	Anacapa Island, Ventura County, and south (40 miles SW of site)
Aleutian Canada goose	Occasional winter visitor to northern California
Tule white-fronted goose	Winters in central California
California condor	Tehachapi Mountains and north (40 miles N of site)
Southern bald eagle	Nests in California
Prairie falcon	Nests in Baja California and possibly in southern California
American peregrine falcon	Nests in California
California clapper rail	Central California coast
Light-footed clapper rail	Santa Barbara County and south in salt marshes
Yuma clapper rail	Lower Colorado River
California least tern	Coastal California, San Francisco south to Baja California
Spotted owl	Northern California, southern California mountains; forests only
Santa Barbara song sparrow	Not available; assumed to be Santa Barbara County
Morro Bay kangaroo rat	San Luis Obispo County, sandy soils on southern side of Morro Bay
Salt Marsh harvest mouse	San Francisco Bay region
San Joaquin kit fox	Western side of San Joaquin Valley, Kern County and north

Source: U.S. Department of the Interior, Fish and Wildlife Service, *Threatened Wildlife of the United States*, Resource Publication 114, U.S. Government Printing Office, Washington, D.C., 1973.

10. Rockwell International, Atomics International Division, *Answers to "Questions Relative to Environmental Reports of Atomics International's Nuclear Fuel Facilities at Los Angeles, California,"* Canoga Park, Calif., December 1976.

11. A. W. Küchler, *Potential Natural Vegetation of the Conterminous United States*, American Geographical Society Special Publication 36, New York, N.Y., 1964.

12. E. C. Jaeger and A. C. Smith, *Introduction to the Natural History of Southern California*, University of California Press, Berkeley, Calif., 1966.

13. Smithsonian Institution, *Report on Endangered and Threatened Plant Species of the United States*, Serial No. 94-A, U.S. Government Printing Office, Washington, D.C., 1975.

14. P. A. Munz, *A Flora of Southern California*, University of California Press, Berkeley, Calif., 1974.

15. U.S. Department of the Interior, Fish and Wildlife Service, *Threatened Wildlife of the United States*, Resource Publication 114, U.S. Government Printing Office, Washington, D.C., 1973.

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

2 July 1990

In reply refer to 90RC06469

Mr. Ken Boyd
3167 Pebblestone
Simi Valley, CA 93063

Subject: SSFL Tours

Dear Mr. Boyd:

Rockwell International Corporation, Rocketdyne Division (Rocketdyne) appreciates your having taken the time to respond to the SSFL Tours questionnaire. With reference to your comment "water test wells, what dates EPA or other agency test's water, not Rockwell employees", Rocketdyne is pleased to provide the following information: The EPA and/or other regulatory agencies (including those described below who are designated as the SSFL Work Group) have tested water from various Rocketdyne SSFL sources according to their own timetables for many years. There is no set schedule as to when or where they sample. The agencies have maintained that firms do their own scheduled monitoring according to the requirements stipulated in their operating permits and submit the results to regulatory personnel. When sampling is done on site, the agencies and Rocketdyne split samples and review the results prior to proceeding with further activities.

We agree that the external appearance of many of our facilities at the SSFL leaves something to be desired. Some of those facilities are no longer in use. Others, while still in use and maintained in good functional condition, have aged, and were not very attractive to begin with. Also, our facilities there are rarely on public display. For the purposes of this tour, however, we decided that completeness had a priority, even if it meant that we would be displaying things that were not very aesthetic.

Rocketdyne will be holding an Open House in October, 1990, where the public will have access to see the activities at the SSFL and Canoga sites. Perhaps you will care to visit our facilities again at that time and learn more about the products Rocketdyne makes and Rocketdyne's commitment to protecting the environment.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

Jennifer Crone for

S. R. Laffam
Director
Environmental & Energy Conservation

SRL/sj-1447H

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

2 July 1990

In reply refer to 90RC06470

KMEX Channel 34
6255 Sunset Blvd., 16th Floor
Hollywood, CA 90028

Attention: Ms. Maureen Schultz
Director of Audience Research

Subject: SSFL Tours

Dear Ms. Schultz:

Rockwell International Corporation, Rocketdyne Division (Rocketdyne) appreciates your having taken the time to respond to the SSFL Tours questionnaire. With reference to your comments ("I am curious about the degree of ground contamination/ground water with TCE. What are the amounts present, how much has been cleaned up, what steps are being taken to clean up what remains..."), Rocketdyne is pleased to provide the following information.

Soil contamination with trichloroethylene (TCE) was evaluated during the process of physically closing eleven surface impoundments at the site. Soils remaining in these areas are essentially clean except for contact with migrating ground water; i.e., mud would probably show a few parts per billion TCE. (This amount is approximately equivalent to the TCE present in coffee years ago when TCE was used as the chief solvent for the decaffeinating process.) In 1984, when Rocketdyne discovered the presence of TCE in the ground water and reported it to the Regional Water Quality Control Board (RWQCB), the highest concentration found was about ten parts per million TCE. Since 1987, when the remediation systems were installed, Rocketdyne has decontaminated 129,000,000 gallons of ground water. The steps that have been taken to clean up what remains include the Rocketdyne investment in seven treatment systems (six air-stripping tower units and one ultra violet light/hydrogen peroxide unit) plus 147 on-site monitoring/or extraction wells with a fully-staffed Environmental unit to address the SSFL ground water program. Additionally more wells are to be drilled on and off-site in the Fall for continued monitoring.

Rocketdyne appreciates your desire to understand the ground water remediation program. During the past SSFL Work Group meeting which took

place in your home town (the Simi Valley Town Hall) on 17 March 1990, all of the regulatory agencies involved in directing Rocketdyne's cleanup programs went on record to state their positions. This public meeting was chaired by the U.S. EPA and included updates from the representatives of the U.S. Department of Energy (DOE), the California Department of Health Services (DHS) for both toxic and radiological, the California Regional Water Quality Control Board (RWQCB), the Ventura County Air Pollution Control District as well as public participants and Rocketdyne personnel. Members of the media were present. The conclusions they reached were: (1) the chemical contamination was contained on-site; (2) there was no evidence that any radioactive releases went off-site; and (3) Rocketdyne was in compliance with all current regulations and would continue to be monitored by these agencies.

Rocketdyne will be holding an Open House in October, 1990, where the public will have access to see the activities at the SSFL and Canoga sites. Perhaps you will care to visit our facilities again at that time. Various experts will be available then who will be qualified to respond to questions that you have which were not responded to during the tour.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

Jennifer Crone

S. R. Lafflam
Director
Environmental & Energy Conservation

SRL/sj-1448H

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

2 July 1990

In reply refer to 90RC06468

Mr. Gary Walts
P. O. Box 4012
Chatsworth, CA 91303-4012

Subject: SSFL Tours

Dear Mr. Walts:

Rockwell International Corporation, Rocketdyne Division (Rocketdyne) appreciates your having taken the time to respond to the SSFL Tours questionnaire. We are pleased to enclose the map that Rocketdyne's Environmental Specialist, Jennifer Crone, of my staff, said would be sent to you. This map of water level contours of the Chatsworth Formation (the sandstone "bedrock") of the SSFL ground water system (Figure 3, GRC Report 8640M-710 is interesting because it indicates that Rocketdyne has been able to prevent migration of any contaminants off the property by pumping its many wells. Thus, even though the ground water flows in various directions, the net effect of the pumping is to provide a "cone of depression" in the center of the facility which draws the contaminants inward.

Rocketdyne will be holding an Open House in October, 1990, where the public will have access to see the activities at the SSFL and Canoga sites. Perhaps you will care to visit our facilities again at that time and learn more about how radioactive materials can be safely handled. There will be many Rocketdyne employees present on that occasion who will be qualified to respond to your questions.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

Jennifer Crone

S. R. Lafflam for
Director
Environmental and Energy Conservation

SRL/sj-1446H

Animal Bioassay Results

SAMPLING DATE: June 22 & 28, 1990 (and prior results)

SAMPLING LOCATION: Various Locations in Area IV

SAMPLING MEDIUM: Roadkill Animals

SAMPLING AGENCY: Rockwell, Radiation & Nuclear Safety

SAMPLES ANALYZED BY: Same

Collection Date	Sample	K-40 pCi/g
6/28/90	Roadkill Squirrel	1.37
6/22/90	Roadkill Squirrel	1.34
2/7/90	Roadkill Rabbit#	1.35
1/9/90	Roadkill Rabbit#	1.36
11/27/89	Deer (Liver only)*	1.51

NOTE: No artificial radionuclides were found at concentrations suggesting contamination.

* The deer analysis showed "less than blank" for Plutonium, 0.375 pCi/g for Strontium-90, and 0.002 pCi/g for Cesium-137. This analysis was done by U.S. Testing Co.

Woodash Test Results

for

Radioactivity Content

SAMPLING DATE: June-July 1990 Page 1

SAMPLING LOCATION: Home Fireplaces, Various U.S. Locations

SAMPLING MEDIUM: Woodash

SAMPLING AGENCY: Various Organizations, Rocketdyne-Assisted Project

SAMPLES ANALYZED BY: Various Radiological Laboratories

Vicinity	Cs-137 pCi/g	K-40 pCi/g
Augusta, ME	16.1	102.0
Eastern Massachusetts	14.05	63.9
Billerica, MA	6.342	99.299
Newmarket, NH	21.1	89.9
Hollis, NH	15.909	70.011
New Hampshire	10.300	---
Hopewell Junction, NY	1.08	88.0
Putnam County, NY	1.6	140.0
(Rocketdyne) Simi Valley, CA	0.2128	50.889
(Rocketdyne) Chatsworth, CA	0.1407	111.343

Vicinity	Cs-137 pCi/g	K-40 pCi/g
(Rocketdyne) Somis, CA	0.4687	154.280
(Rocketdyne) Simi, CA	0.2612	77.894
(Rocketdyne)Southern California	0.0787	28.004
Columbia, SC	1.36	65.4
Columbia, SC	1.82	47.8
Douglas County, GA	3.5	77.0
Purchased in GA	1.4	8.6
Idaho	0.79	---
Warren, VT	15.34	83.62
Vernon, VT	1.587	79.7
North Adams, MA	4.36	41.2
South County, RI	13.6	93.7

NOTE: Be-7 was also identified in 4 samples in concentrations ranging from 0.4 to 1.4 pCi/g.



Environmental Monitoring Report

Santa Susana Field Laboratory
Ventura County, California

Volume 3

August
1990

Ground Water
Treatment and Monitoring

Rockwell International
Rocketdyne Division

This document is printed on recycled paper

EXECUTIVE SUMMARY FOR GROUND WATER

Rocketdyne has six active remedial water treatment systems operating at the SSFL in Areas I, II, and III. These include the Alfa, Area I Road, Bravo, Canyon, and Delta air stripping towers plus the Batch Facility ultraviolet light (UV)/peroxidation unit that is located along the Area II Road. The chemical analyses of the treated water discharged from all remediation systems have shown compliance continually and the results have been consistently below the state action levels. To date, the net effect of the pumping has been to prevent the migration of contaminants off-site from these areas and to quickly lower the contamination levels.

The SSFL Work Group, chaired by the EPA, had its quarterly public meeting in the Community Room of the Simi Valley City Hall in Simi Valley, California on 25 June 1990. During the meeting, EPA Project Manager Carmen Santos requested that Rocketdyne provide the stripping tower influent and effluent concentrations vs. residence time. The report is submitted in Attachment 3.

On 10 July 1990, Rocketdyne received the permit to operate the Bravo and Area I Road (Bowl) air stripping towers from the Ventura County Air Pollution Control District (Attachment 4). The Alfa, Canyon, and Delta systems had already been permitted.

Water supply well WS-5 is used at the SSFL for industrial purposes. Rocketdyne contracted for design and installation of an ultraviolet light/hydrogen peroxide ground water treatment system for WS-5 and the unit is scheduled to be shipped to Rocketdyne before November 1990.

In Area IV, the hydrogeological assessment report for the Lower Pond of the Former Sodium Disposal Facility was submitted to the Regional Water Quality Control Board before the 14 June 1990 deadline. The off-site (downgradient of RMDF and B/886 in Area IV) ground water monitoring well construction workplan has been finalized and will be forwarded to DOE/SAN for approval and distribution to the agencies.

Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Canoga Park, California 91303

Telex: 698478
ROCKETDYN CNPK

Rockwell International

CERTIFIED-RETURN RECEIPT REQUESTED

3 August 1990

In reply refer to 90RCO9757

State of California
Department of Health Services
Toxic Substances Control Division
Region 3
1405 N. San Fernando Road, Suite 300
Burbank, CA 91504

Attention: Mr. Scott Simpson, Chief, Facilities Permitting Unit

Subject: SSFL Ground Water Program Bimonthly Report

Gentlemen:

Enclosed are documents from Rockwell International Corporation, Rocketdyne Division (Rocketdyne) detailing activities on the ground water program at the Santa Susana Field Laboratory (SSFL). The submittals include.

1. "Summary of Groundwater Investigation and Remediation Activities' - a bimonthly letter prepared for Rocketdyne by Groundwater Resources Consultants, Inc. (Attachment 1).
2. Well Locations and Chemical Analysis Reports from Monitoring Wells And Surface Waters (Attachment 2).
3. Chemical Analysis Reports, Treatment Systems. This section also includes two studies from the Groundwa. . urces Consultants, Inc.: (1) "Iron Concentrations from the Delta Treatment System"

and (2) "Summary of the Results of Chemical Analyses Collected from the Extraction/Treatment Systems (EST) Grab Samples vs. Residence Time Samples" (Attachment 3).

4. Air Stripping Towers Permit to Operate from Ventura County Air Pollution Control District (Attachment 4).

Rocketdyne has six active remedial water treatment systems operating at the SSFL in Areas I, II, and III. These include the Alfa, Area I Road, Bravo, Canyon, and Delta air-stripping towers plus the Batch Facility ultraviolet light (UV)/peroxidation unit that is located along the Area II Road. Attachment I details the activities associated with these systems and includes hydrographs charting the remediation progress. The chemical analyses of the treated water discharged from all remediation systems have shown compliance continually and the results have been consistently below the state action levels. To date, the net effect of the pumping has been to prevent the migration of contaminants offsite from these areas and to quickly lower the contamination levels. The chemical analysis reports for the treatment systems are presented in Attachment 3.

The SSFL Work Group, chaired by the EPA, had its quarterly public meeting in the Community Room of the Simi Valley City Hall in Simi Valley, California on 25 June 1990. During the meeting, EPA Project Manager Carmen Santos requested that Rocketdyne provide the stripping tower influent and effluent concentrations vs. residence time. The report is submitted in Attachment 3. The purpose of the study was to verify the efficiency of the treatment systems in the removal of the volatile organic compounds (VOCs) of concern. The data shows that untimed grab samples (because the systems are operating continually) and measured time samples both indicate complete agreement on the effectiveness of the decontamination of the influent groundwater.

On 10 July 1990, Rocketdyne received the permit to operate the Bravo and Area I Road (Bowl) air stripping towers from the Ventura County Air Pollution Control District (Attachment 4). The Alfa, Canyon, and Delta systems had already been permitted.

The STL-IV air stripping tower has not been activated because of the lack of sufficient ground water in the supply wells due to drought conditions. Plans are in design to hookup a collection tank to the tower and treat periodically when

the tank is full. Currently, the accumulated water is treated after it is transported to the UV/peroxidation unit.

Water supply well WS-5 is used at the SSFL for industrial purposes. As indicated in the Part B Permit to the DHS (EPA I.D. D093365435, page VIII-8, section F), this well has been under consideration for remediation. Recently Rocketdyne contracted for design and installation of an ultraviolet light/hydrogen peroxide ground water treatment system. The unit is tentatively scheduled to be shipped to Rocketdyne before November 1990.

DHS personnel are still reviewing the Post-Closure Plans they received from Rocketdyne on 2 April 1990 for nine SSFL surface impoundments.

Approximately 5,000 gallons of perchloroethylene-contaminated ground water were transferred from B/059 to the RCRA-permitted Delta air stripping tower in Area II for treatment.

In Area IV, the hydrogeological assessment report for the Lower Pond of the Former Sodium Disposal Facility was submitted to the Regional Water Quality Control Board before the 14 June 1990 deadline. The offsite (downgradient of RMDF and B/886 in Area IV) ground water monitoring well construction workplan has been finalized and will be forwarded to DOE/SAN for approval and distribution to the agencies.

Should you have any questions concerning this transmittal, please call Norma Fujikawa, of my staff, at (818) 773-5316.

Very truly yours,

ROCKWELL INTERNATIONAL CORPORATION
Rocketdyne Division

S R Lafflam

S. R. Lafflam, Director
Environmental Control and Energy Conservation
Production Operations

SRL:mac

Attachments: (1) "Summary of Groundwater Investigation and Remediation Activities"- by Groundwater Resources Consultants, Inc. (Attachment 1).
(2) Well Locations and Chemical Analysis Reports from Monitoring Wells and Surface Waters (Attachment 2).
(3) Chemical Analysis Reports, Treatment Systems (Attachment 3).
(4) Air Stripping Towers Permit to Operate (Attachment 4).

Distribution list is attached.

SANTA SUSANA FIELD LAB GROUND WATER BIMONTHLY REPORT

Rockwell International Corporation

Rocketdyne Division

15 August 1990

GOVERNMENT/STATE 8/03/90

L = Letter
E = Enclosure

Certified

SSFL GROUND WATER BIMONTHLY - MAILING LIST

State of California
Department of Health Services
Environmental Management Branch
1449 W. Temple Street, Room 222
Los Angeles, CA 90026
Attn: Charles Myers

L/E Yes

State of California
Department of Health Services
Environmental Management Branch
1449 W. Temple Street, Room 222
Los Angeles, CA 90026
Attn: Bill Watson

L/E Yes

State of California
Department of Health Services
Radiologic Health Branch
714 P Street
Sacramento, CA 95814
Attn: Mr. E. D. Bailey, Chief

L/E Yes

State of California
Department of Health Services
Radiologic Health Branch, Licensing
714 P Street
Sacramento, CA 95814
Attn: Mr. G. Wong

L/E Yes

State of California
Department of Health Services
Radiologic Health Branch, Licensing
714 P Street
Sacramento, CA 95814
Attn: Mr. J. H. Hickman

L/E Yes

State of California
Department of Health Services
Region #3/Burbank
1405 N. San Fernando Rd., Suite 300
Burbank, CA 91504
Attn: Mr. Scott Simpson, Chief
Facilities & Permitting

L/E Yes

GOVERNMENT/STATE 8/03/90

	L = Letter E = Enclosure	Certified
State of California Department of Health Services Region #3/Burbank 1405 N. San Fernando Blvd, Suite 300 Burbank, CA 91504 Attn: Ms. Maxine Richey Facilities & Permitting	L/E	Yes
State of California Department of Health Services Region #3/Burbank 1405 N. San Fernando Blvd, Suite 300 Burbank, CA 91504 Attn: Mr. Dennis Dickerson, Director	L/E	Yes
California Regional Water Quality Control Board 101 Centre Plaza Drive Monterey Park, CA 91754-2156 Attn: Mr. Jim Ross, Chief, Hazardous Waste Unit	L/E	Yes
U.S. Environmental Protection Agency Toxics and Waste Mgmt. Division, Mail Stop H-4 1235 Mission Street San Francisco, CA 94103 Attn: Ms. Karen Schwinn, Chief, Waste Compliance Branch	L/E	Yes
U.S. Environmental Protection Agency - Region IX Office of Air Toxics & Radiation 1235 Mission Street A-1-1 San Francisco, CA 94103 Attn: Mr. Michael Bandrowski	L/E	Yes
State of California Regional Water Quality Control Board 101 Centre Plaza Drive Monterey Park, CA 91754-2156 Attn: Mr. Hank Yacoub	L/E	Yes
Department of Water & Power P.O. Box 111, Rm 1455 Los Angeles, CA 90051 Attn: Mr. Mel Blevins, Watermaster	L/E	Yes

	L = Letter E = Enclosure	Certified
County of Ventura Resource Management. Agency Environmental Health Department 800 S. Victoria Ave. Ventura, CA 93009 Attn: Mr. Douglas Beach	L/E	Yes
County of Ventura Resource Management. Agency Environmental Health Department 800 S. Victoria Ave. Ventura, CA 93009 Attn: Mr. Terrence Gilday	L/E	Yes
County of Ventura Air Pollution Control District 800 S. Victoria Ave. Ventura, CA 93009 Attn: Mr. Al Danzig	L/E	Yes
U.S. Nuclear Regulatory Commission Region V 1450 Maria Lane, Suite 210 Walnut Creek, CA 94596-5368 Attn: Mr. Charles Hooker	L/E	No
U.S. Nuclear Regulatory Commission Nuclear Materials Safety & Safeguards Branch Region V 1450 Maria Lane, Suite 210 Walnut Creek, CA 94596-5368 Attn: Mr. R. J. Pate, Chief	L/E	No
U.S. Department of Energy San Francisco Operations Office 1333 Broadway Oakland, CA 94612 Attn: A. J. Adduci, ETEC Project Management	L/E	Yes
U.S. Department of Energy San Francisco Operations Office 1333 Broadway Oakland, CA 94612 Attn: Mr. James T. Davis Office of Environment, Safety, & Quality Assurance	L/E	Yes

	L = Letter E = Enclosure	Certified
U.S. Department of Energy San Francisco Operations Office 1333 Broadway Oakland, CA 94612 Attn: Mr. Gary Lavagnino, EOS Div.	L/E	Yes
U.S. Department of Energy San Francisco Operations Office 1333 Broadway Oakland, CA 94612 Attn: Mr. Jim Hartman, Director Engineering & Facilities Mgmt. Div.	L/E	Yes
U.S. Department of Energy San Francisco Operations Office 1333 Broadway Oakland, CA 94612 Attn: Mr. Roger Liddle Engineering & Facilities Mgmt. Div.	L/E	Yes
U.S. Department of Energy Office of Remedial Action & Waste Technology NE-23 Washington, D.C. 20545 Attn: Bill Murphie, Director Engineering & Facilities Mgmt. Div.	L/E	Yes
U.S. Army Corps of Engineers Omaha District Office 1024 Douglas Street, Room 312 Omaha, NE 68102-4978 Attn: J. Deb Kobler CEMRO-ED-EC	L/E	Yes
NASA/HQ/NXG 400 Maryland Ave., SW Washington, D.C. 20546 Attn: Mike Green	L/E	No
NASA/HQ/NXG 400 Maryland Ave., SW Washington, D.C. 20546 Attn: Arthur R. Lee	L	No

GOVERNMENT/STATE 8/03/90

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NASA Marshall Space Flight Center Huntsville, AL 35812 Attn: Marshall Corlew (AB44)	L/E	No
NASA Marshall Space Flight Center Huntsville, AL 35812 Attn: Wayne Wilson (AB22)	L/E	No
NASA Marshall Space Flight Center Huntsville, AL 35812 Attn: Dewayne Collins (SA24)	L/E	No

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Simi Valley Library 2969 Tapo Canyon Road Simi Valley, CA 93063 Attn: Ms. Gayle Demirtas	L/E	Yes

Attachment 1.

Summary of Groundwater Investigation and Remediation Activities from Groundwater Resources Consultants, Inc.

GROUNDWATER RESOURCES CONSULTANTS, INC.

CONSULTING HYDROGEOLOGISTS • ENVIRONMENTAL SPECIALISTS

1735 EAST FORT LOWELL ROAD,
SUITE 4
TUCSON, ARIZONA 85719
PHONE (602) 326-1898

CHUCK M. DICKENS, P.G.
DAVID B. HAWKINS, P.G.
SHELDON D. CLARK
KURT J. BLUST, P.G.
DINAH H. JASENSKY

July 24, 1990

Mrs. Norma Fujikawa
Facilities and Plant Operations
Rocketdyne Division
Rockwell International Corporation
6633 Canoga Avenue
Dept. 543, Mail Stop JA-16
Canoga Park, California 91303

Dear Mrs. Fujikawa:

This bimonthly letter was prepared at your request to summarize the activities of the Rocketdyne Santa Susana Field Laboratory (the Facility) Groundwater Investigation and Remediation during the period May 28, 1990 through July 23, 1990. Included in this bimonthly letter is a summary of field activities, current investigations/work plans in progress, and reports/work plans finalized and submitted during the reporting period.

FIELD ACTIVITIES

- Routine monthly monitoring of the extraction/treatment system (ETS), including the Alfa, Bravo, Bowl, Canyon and Delta systems, was conducted on May 30 and 31 and June 29 and 30, 1990. The monthly ETS monitoring report summarizing data collected during the May 30 and 31 monitoring events was submitted in the Monthly Groundwater Monitoring Report for May 3, 1990 through May 31, 1990. The monthly ETS monitoring report for the June sampling event is forthcoming.

- Modification and installation of pumps, pump controls, flow controls and piping from wells HAR-4 and HAR-16 to the Bowl treatment system, from wells HAR-17 and HAR-18 to the STL-IV treatment system and from well HAR-7 to the Delta treatment system was completed.

- Sampling of wells in the vicinity of the Delta ETS was conducted during the week of May 21, 1990, to determine the probable source of iron influent to the treatment system. Details of this study are contained in a letter to Rocketdyne dated June 21, 1990.

- Residence time sampling of treatment systems, including Alfa, Bravo, Bowl, and Canyon, was conducted on June 29 and 30. Results of this study were presented in a letter to Rocketdyne dated July 20, 1990.

- A site inspection of solid waste management units (SWMUS) was conducted during the reporting period.

- Routine quarterly groundwater monitoring was conducted during the period of June 25 through July 1, 1990. The quarterly monitoring report which will summarize the data collected during this monitoring event will be submitted August 30, 1990.

REPORTS/WORK PLAN FINALIZED AND SUBMITTED

Reports and work plans finalized and submitted during the reporting period included:

- Proposed Work Plan, Assessment of Hydrogeologic Conditions in the Off-Site Area Northwest of Area IV.

- Final Report, Hydrogeologic Assessment Report, Lower Pond Building 886 Sodium Burn Pit.

- Proposed Work Plan, Investigation of Soils in the Vicinity of Excavated Underground Storage Tanks Near Building 8-351.

- Draft Report, Assessment of Pond Sediments in the R2, SRE and Perimeter Ponds.

In addition to the activities summarized, attached to the bimonthly letter pursuant to Rocketdyne's request are hydrographs excerpted from the monthly ETS Monitoring reports. These hydrographs illustrate water levels, cumulative pumpage volumes, and concentrations of TCE and 1,2-DCE for each extraction well.

If you have any questions concerning the Bimonthly letter, please contact us.

Respectfully submitted,

GROUNDWATER RESOURCES CONSULTANTS, INC.

Dinah H. Jasensky

Dinah H. Jasensky
Associate Hydrologist

Sheldon D. Clark

Sheldon D. Clark
Associate Hydrogeologist

DHJ:SDC:krb

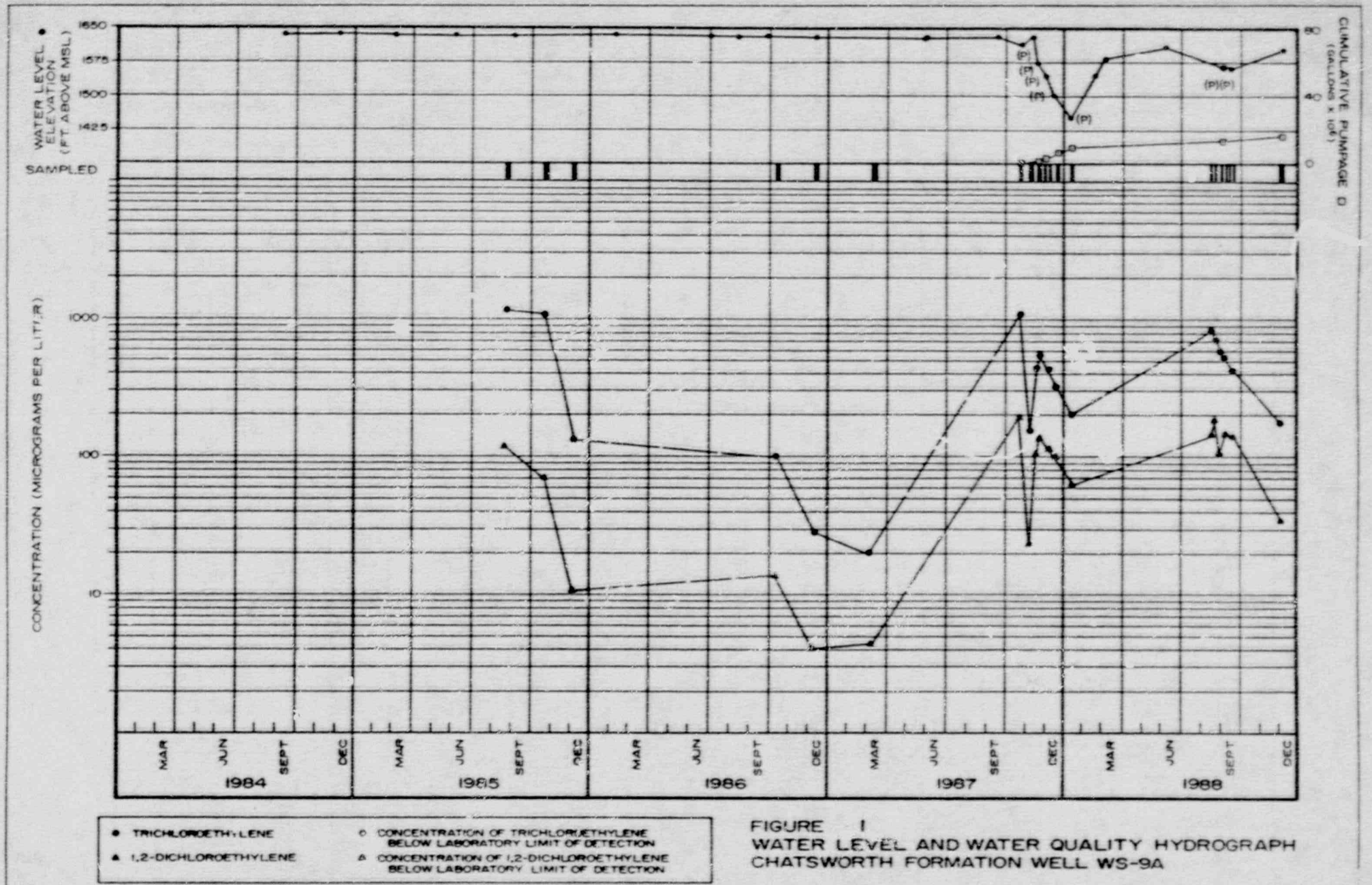


FIGURE 1
WATER LEVEL AND WATER QUALITY HYDROGRAPH
CHATSWORTH FORMATION WELL WS-9A

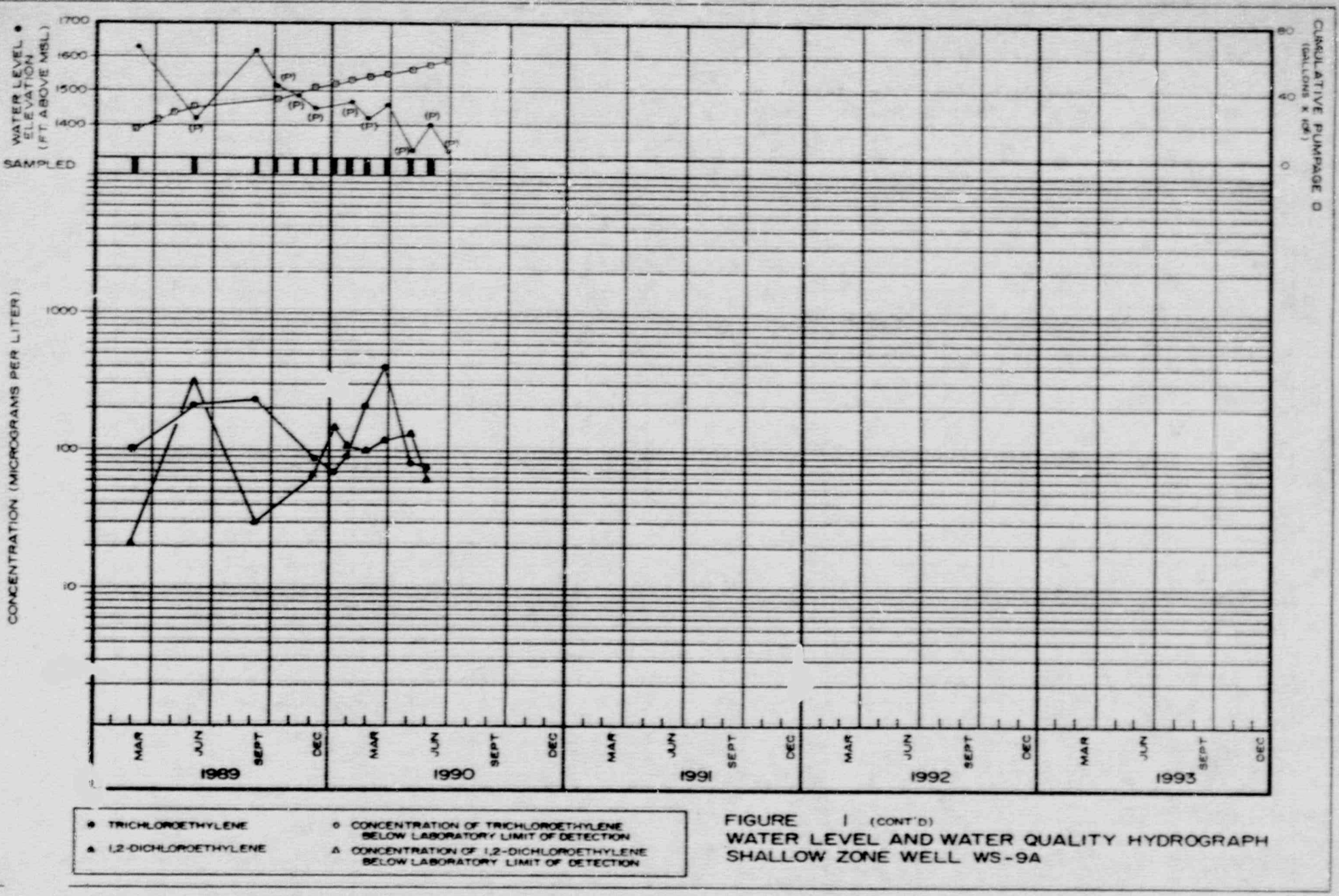


FIGURE 1 (CONT'D)
WATER LEVEL AND WATER QUALITY HYDROGRAPH
SHALLOW ZONE WELL WS-9A

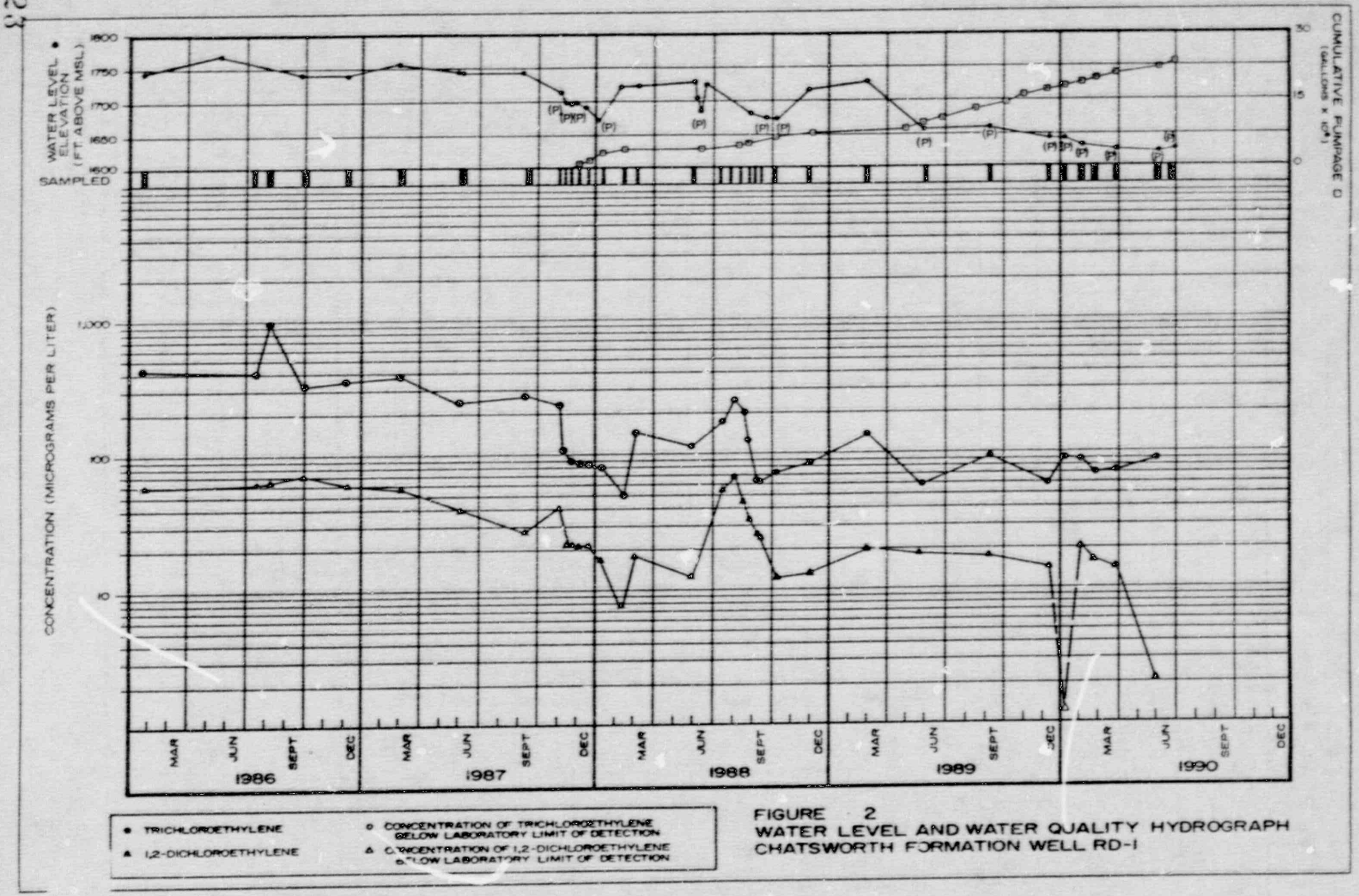


FIGURE 2
WATER LEVEL AND WATER QUALITY HYDROGRAPH
CHATSWORTH FORMATION WELL RD-1

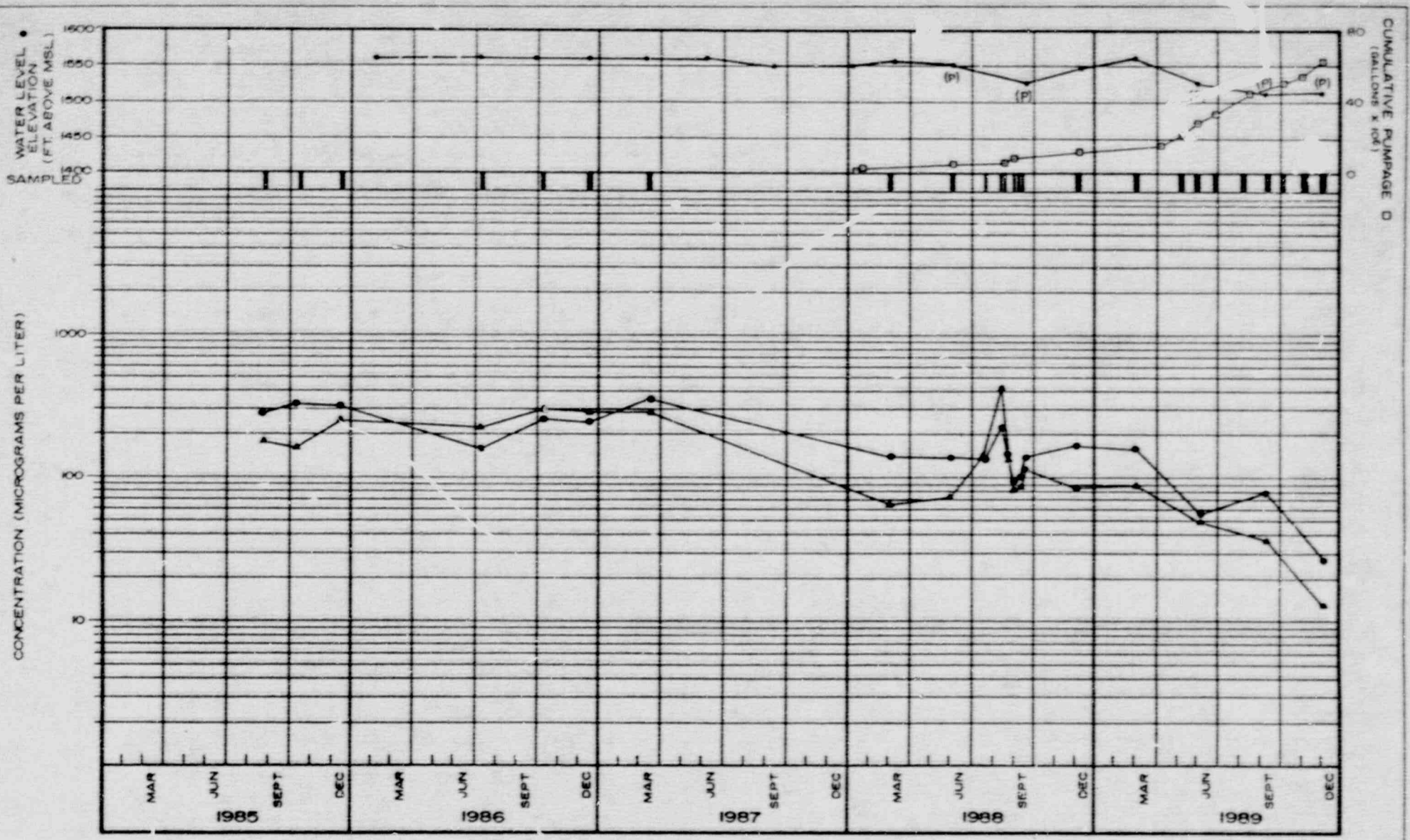


FIGURE 3
WATER LEVEL AND WATER QUALITY HYDROGRAPH
CHATSWORTH FORMATION WELL WS-6

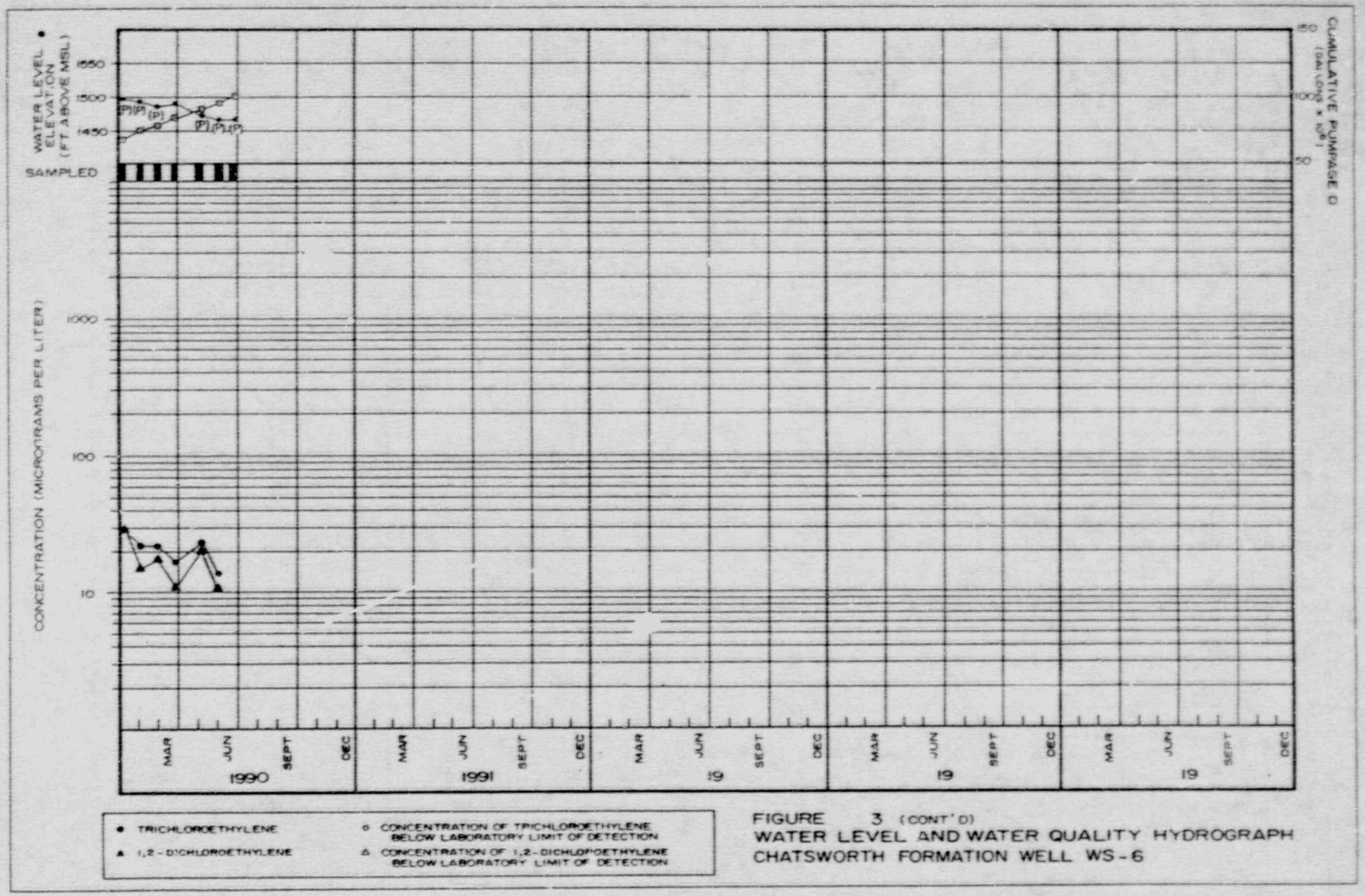


FIGURE 3 (CONT'D)
WATER LEVEL AND WATER QUALITY HYDROGRAPH
CHATSWORTH FORMATION WELL WS-6

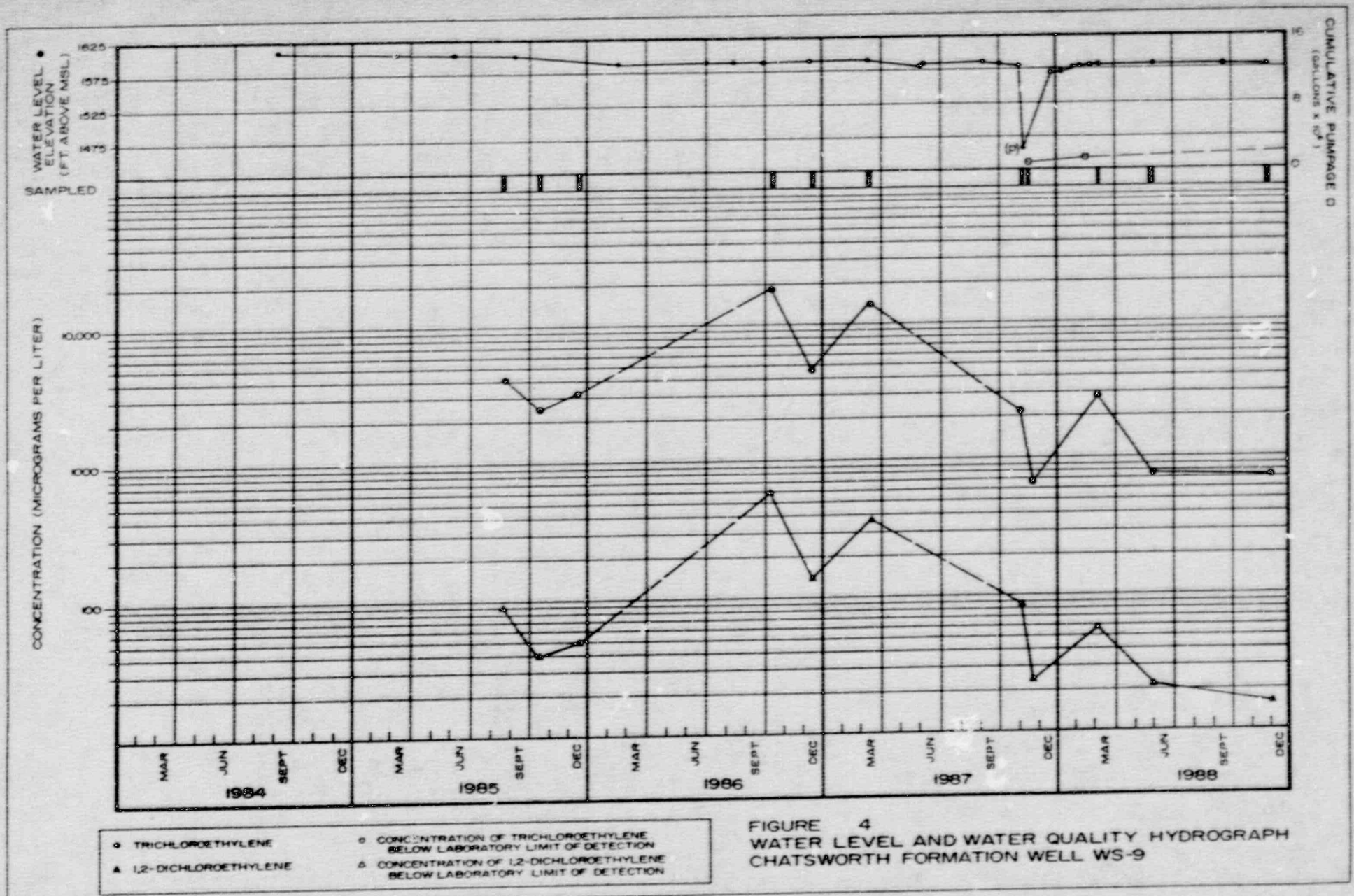


FIGURE 4
WATER LEVEL AND WATER QUALITY HYDROGRAPH
CHATSWORTH FORMATION WELL WS-9

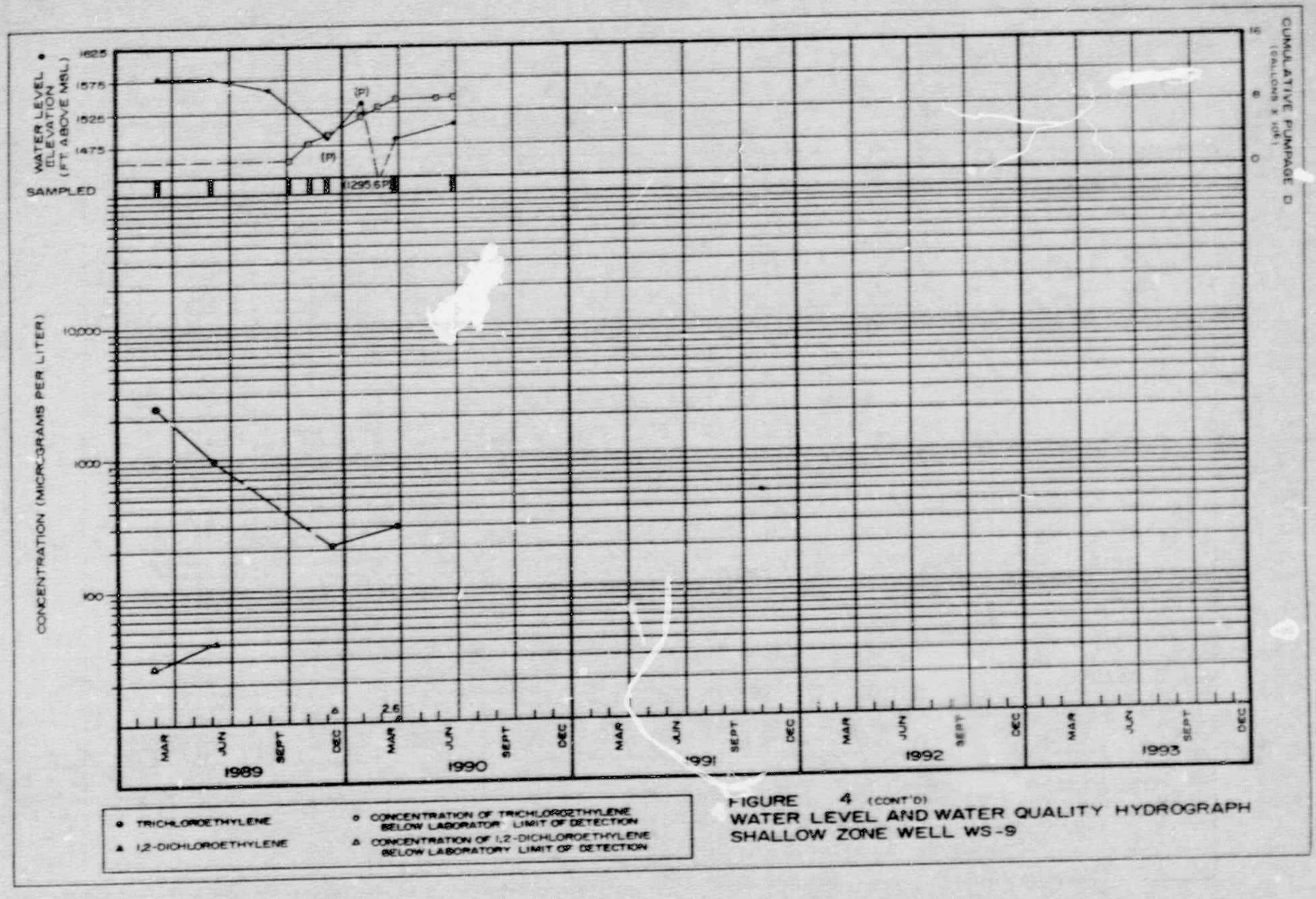


FIGURE 4 (CONT'D)
WATER LEVEL AND WATER QUALITY HYDROGRAPH
SHALLOW ZONE WELL WS-9

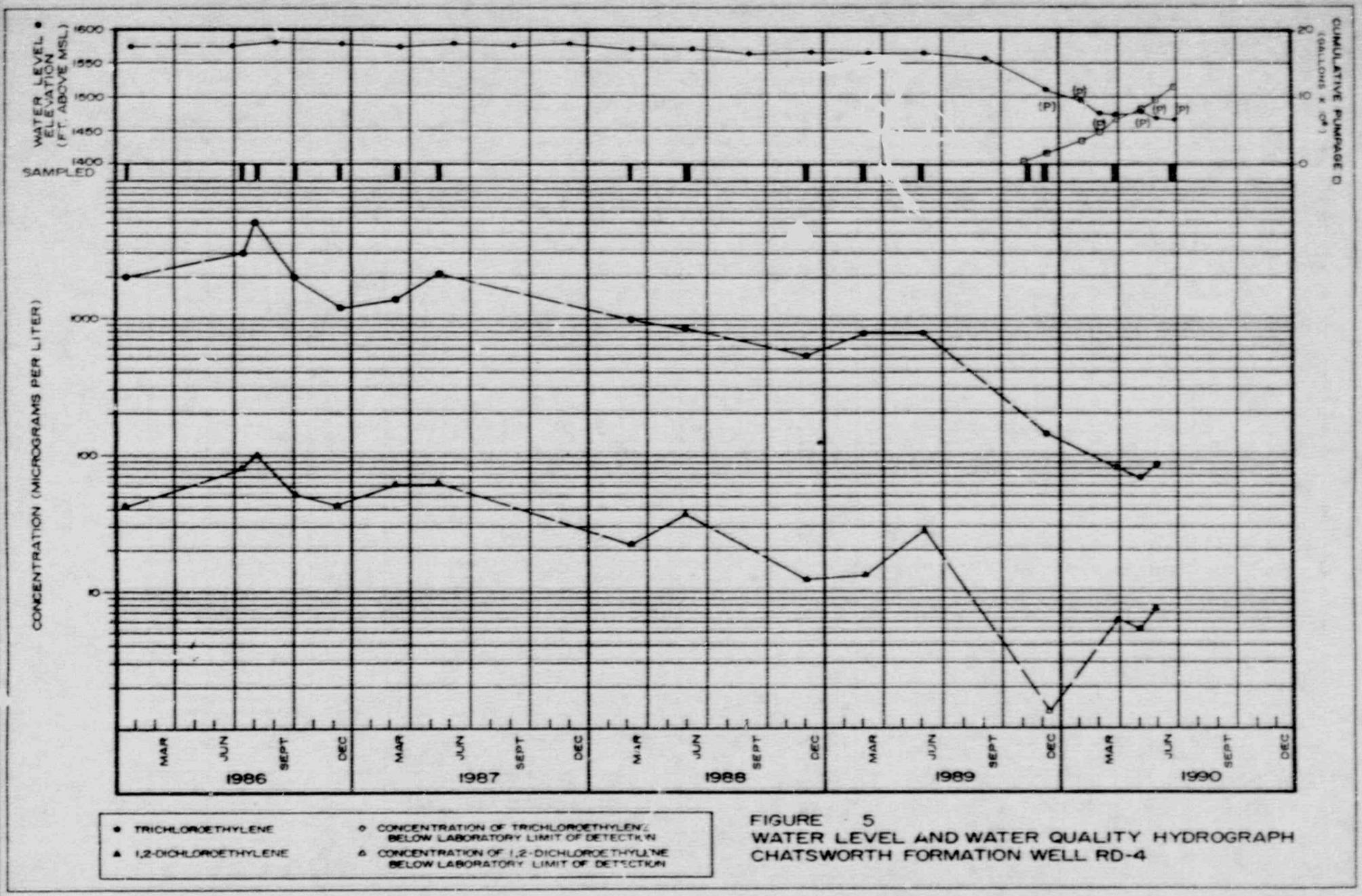


FIGURE 5
WATER LEVEL AND WATER QUALITY HYDROGRAPH
CHATSWORTH FORMATION WELL RD-4

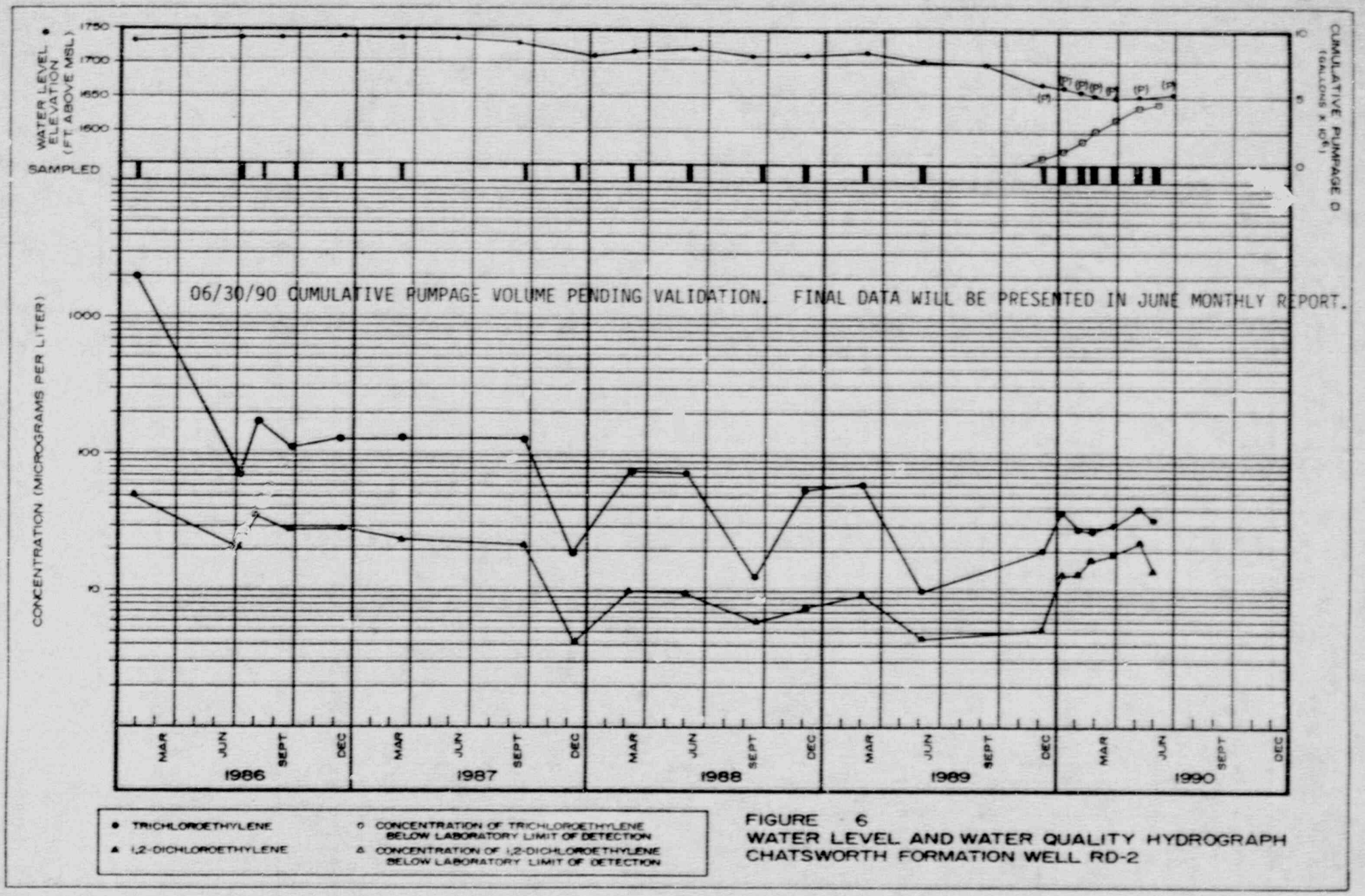


FIGURE 6
WATER LEVEL AND WATER QUALITY HYDROGRAPH
CHATSWORTH FORMATION WELL RD-2

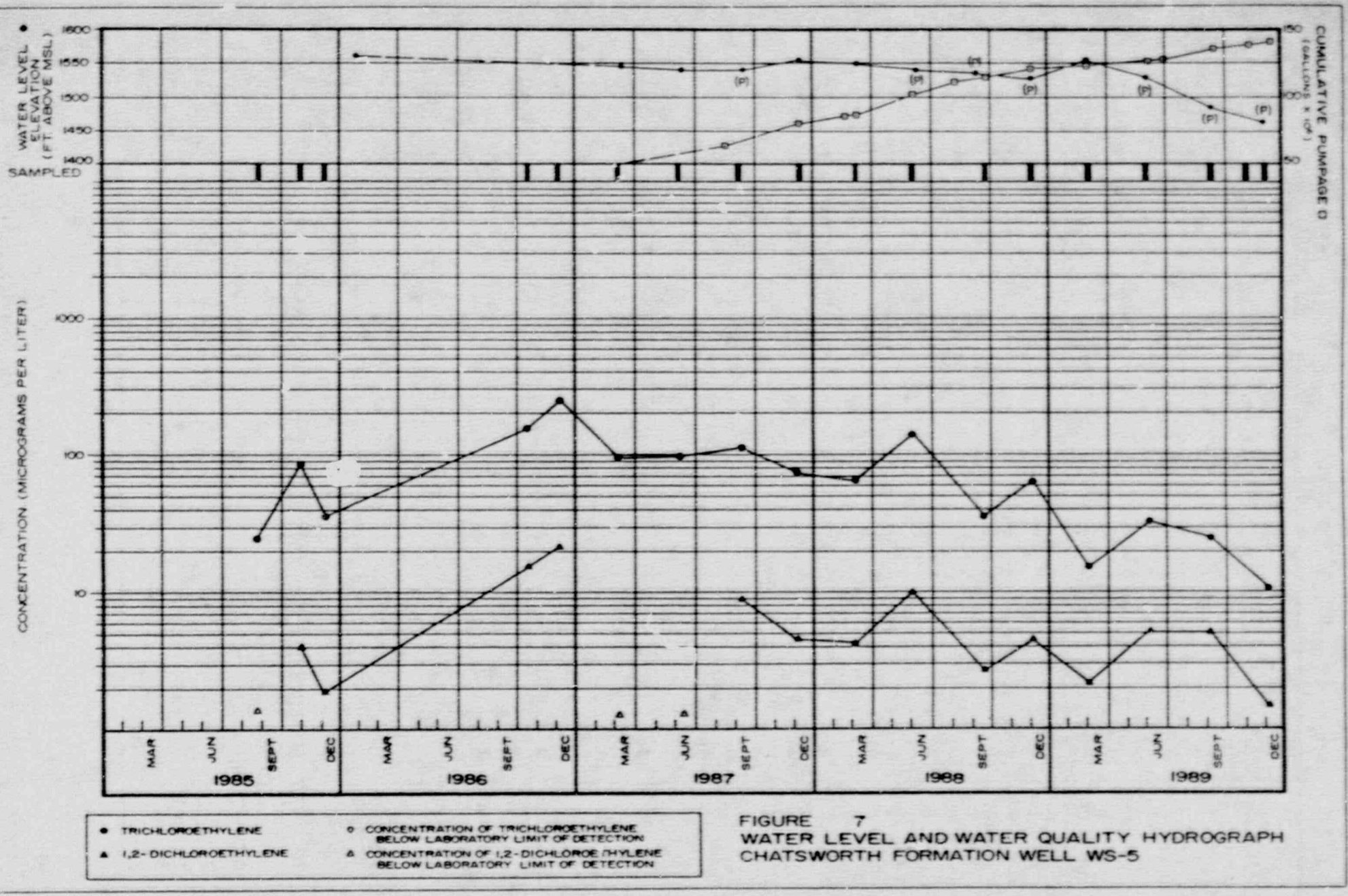


FIGURE 7
WATER LEVEL AND WATER QUALITY HYDROGRAPH
CHATSWORTH FORMATION WELL WS-5

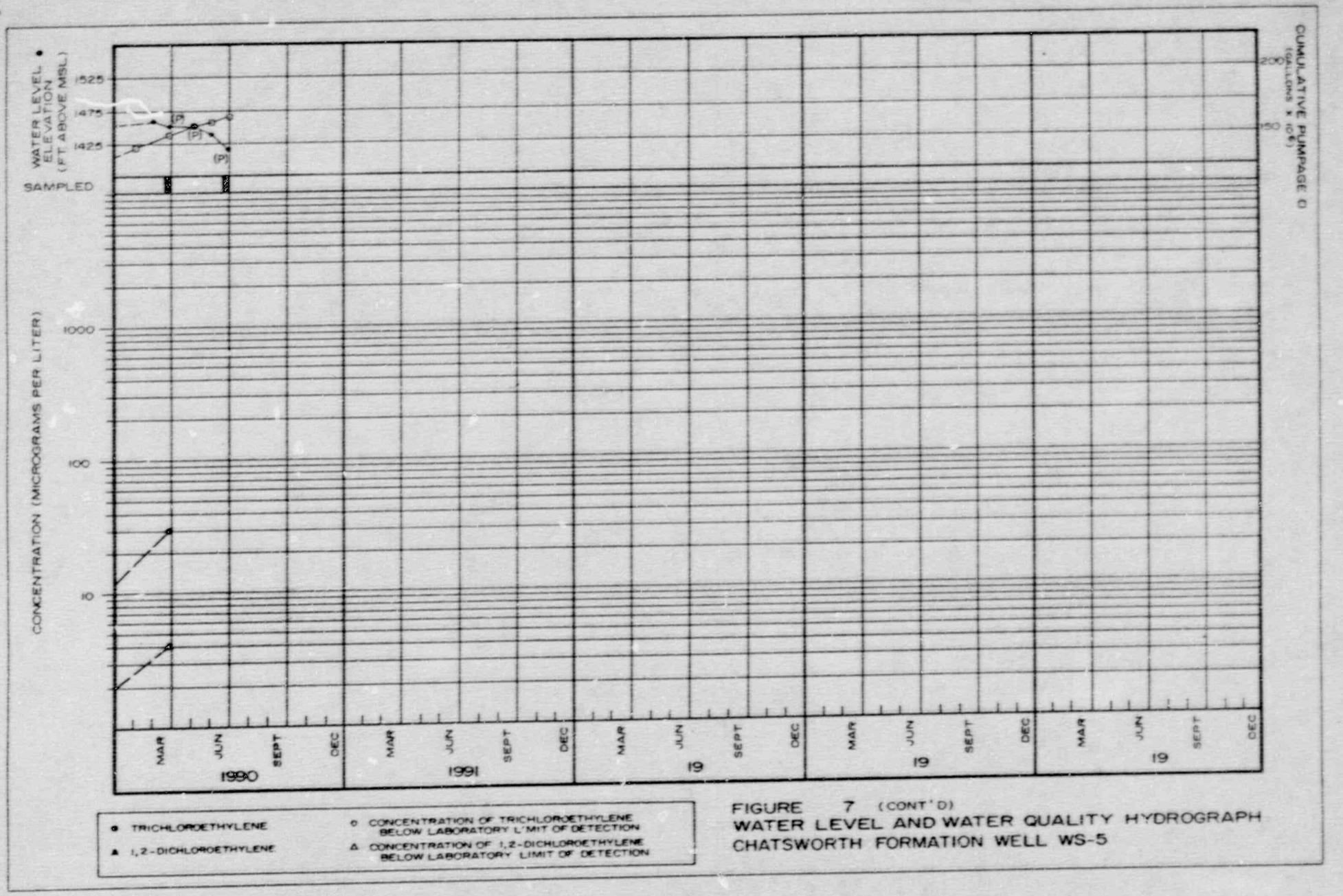


FIGURE 7 (CONT'D)
WATER LEVEL AND WATER QUALITY HYDROGRAPH
CHATSWORTH FORMATION WELL WS-5

Attachment 2.

Well Locations and

Chemical Analysis Reports

from Monitoring

Wells and Surface Waters

TABLE 1

DESCRIPTION OF WELL LOCATIONS

WELL IDENTIFICATION	PORTION OF SITE	AREA NO.	DESCRIPTION	DATE DRILLED
SH-1 THRU SH-11	N.W.	III	ECL AREA	12/84-1/85
RS-1	N.E.	I	NEAR MAIN GATE	06/08/85
RS-2	N.E.	I	ALONG AREA I ROAD, N.E. OF APTF	06/08/85
RS-3	N.E.	I	ALONG AREA I ROAD, S.W. OF APTF	06/08/85
RS-4	N.E.	I	ALONG AREA I ROAD, W. OF CANYON AREA	06/08/85
RS-5	N.E.	I	ALONG AREA I ROAD, BETWEEN PERIMETER POND AND R1 POND	06/07/85
RS-6	S.E.	I	N. OF PERIMETER POND	06/07/85
RS-7	S.E.	I	S.W. OF PERIMETER POND	06/07/85
RS-8	N.W.	II	ABSP AREA	06/09/85
RS-9	N.W.	III	N.E. OF STL-IV	09/11/85
RS-10	N.W.	II	ALONG TEST AREA ROAD N.E. OF DELTA AREA	06/10/85
RS-11	N.W.	IV	ALONG G. STREET, N.W. OF ECL	06/10/85
RS-12	N.W.	III	BETWEEN STL-IV AND ECL	06/09/85
RS-13	S.W.	II	S. OF R2 POND	06/11/85
RS-14	N.W.	III	STL-IV AREA	06/09/85
RS-15	N.W.	III	ALONG STL-IV ROAD, N. OF STL-IV AREA	06/10/85
RS-16	N.W.	IV	NEAR N.W. BOUNDARY OF SITE, S.W. OF BLDG. 59	06/11/85
RS-17	N.W.	III	ALONG STL-IV ROAD, N. OF STL-IV AREA	06/10/85
RS-18	N.W.	IV	NEAR N.W. BOUNDARY OF SITE, N. OF BLDG. 886	06/12/85
RS-19	N.E.	I	ALONG AREA I ROAD, N. OF R1 POND	09/12/85
RS-20	N.E.	I	ALONG AREA I ROAD, W. OF CANYON AREA	09/12/85
RS-21	N.W.	II	SWIMMING POOL AREA	10/23/85
RS-22	N.W.	II	SWIMMING POOL AREA	10/23/85

TABLE 1 (continued)

DESCRIPTION OF WELL LOCATIONS

WELL IDENTIFICATION	PORTION OF SITE	AREA NO.	DESCRIPTION	DATE DRILLED
RS-23	N.W.	IV	SOUTH OF BUILDING 886	08/24/88
RS-24	N.W.	IV	NORTHWEST OF ECL	08/24/88
RS-25	N.W.	IV	NEAR BUILDING 133	08/25/88
RS-27	N.W.	IV	BURRO FLATS, S.E. OF BUILDING 59	08/02/89
RS-28	N.W.	IV	S.W. OF BUILDING 133, NEAR N.W. BOUNDARY OF SITE	08/17/89
ES-1	N.E.	I	ALONG AREA I ROAD, BETWEEN R1 POND AND PERIMETER POND	10/20/86
ES-2	N.E.	I	ALONG AREA I ROAD, N. OF R1 POND	10/20/86
ES-3	N.E.	I	ALONG AREA I ROAD, BETWEEN R1 POND AND PERIMETER POND	10/21/86
ES-4	N.E.	I	ALONG AREA I ROAD, W. OF CANYON AREA	10/21/86
ES-5	N.E.	I	ALONG AREA I ROAD, W. OF CANYON AREA	10/21/86
ES-6	N.E.	I	ALONG AREA I ROAD, W. OF CANYON AREA	11/04/86
ES-7	N.E.	I	ALONG AREA I ROAD, W. OF CANYON AREA	11/05/86
ES-8	N.E.	I	ALONG AREA I ROAD, W. OF CANYON AREA	11/05/86
ES-9	N.E.	I	ALONG AREA I ROAD, W. OF CANYON AREA	11/05/86
ES-10	N.E.	I	ALONG AREA I ROAD, W. OF CANYON AREA	11/05/86
ES-11	N.E.	I	ALONG AREA 1 ROAD, S.W. OF APTF	11/06/86
ES-12	N.E.	I	ALONG AREA 1 ROAD, S.W. OF APTF	11/06/86
ES-13	N.E.	I	ALONG AREA I ROAD, BETWEEN R1 POND AND PERIMETER POND	11/06/86
ES-14	N.W.	III	BETWEEN STL-IV AND ECL	11/10/86
ES-15	N.W.	III	BETWEEN STL-IV AND ECL	11/10/86
ES-16	N.W.	III	N.E. OF STL-IV	11/10/86

TABLE 1 (continued)

DESCRIPTION OF WELL LOCATIONS

WELL IDENTIFICATION	PORTION OF SITE	AREA NO.	DESCRIPTION	DATE DRILLED
ES-17	N.W.	III	STL-IV AREA	11/11/86
ES-18	N.W.	II	SWIMMING POOL AREA	11/11/86
ES-19	N.W.	II	SWIMMING POOL AREA	11/11/86
ES-20	N.W.	II	SWIMMING POOL AREA	11/13/86
ES-21	N.W.	II	SWIMMING POOL AREA	01/26/87
ES-22	N.W.	II	SWIMMING POOL AREA	01/27/87
ES-23	N.W.	III	ALONG STL-IV ROAD, N.E. OF STL-IV AREA	01/27/87
ES-24	N.W.	III	BETWEEN STL-IV AND ECL	01/28/87
ES-25	N.W.	III	BETWEEN STL-IV AND ECL	01/28/87
ES-26	N.W.	III	STL-IV AREA	01/28/87
ES-27	N.W.	III	STL-IV AREA	01/28/87
ES-28	N.W.	III	ALONG STL-IV ROAD, N.E. OF STL-IV AREA	01/29/87
ES-29	N.W.	III	ALONG STL-IV ROAD, N.E. OF STL-IV AREA	01/29/87
ES-30	N.W.	III	ALONG STL-IV ROAD, NE OF STL-IV AREA	01/29/87
ES-31	N.W.	IV	ALONG G. STREET	01/29/87
ES-32	N.W.	III	STL-IV AREA	01/29/87
RD-1	N.E.	I	N. OF CANYON AREA	01/09/86
RD-2	N.E.	I	BOWL AREA	01/16/86
RD-3	S.E.	I	S.W. OF PERIMETER POND	01/10/86
RD-4	N.W.	II	BRAVO AREA	01/22/86
RD-5	S.W.	BUFFER ZONE, W. SIDE		01/13/86
RD-6	S.W.	BUFFER ZONE, W. SIDE		01/31/86

TABLE 1 (continued)

DESCRIPTION OF WELL LOCATIONS

WELL IDENTIFICATION	PORTION OF SITE	AREA NO.	DESCRIPTION	DATE DRILLED
RD-7	N.W.	IV	NEAR N.W. BOUNDARY OF SITE, S.W. OF BLDG. 59	01/08/86
RD-8	N.W.	III	ECL AREA	01/29/86
RD-9	N.W.	II	SWIMMING POOL AREA	01/28/86
RD-10	N.E.	I	N.E. OF CANYON AREA	05/07/86
RD-11	N.W.	III	ECL AREA	10/23/86
RD-12	N.W.	III	ECL AREA	10/23/86
RD-13	N.W.	IV	BURRO FLATS, WEST OF STL-IV	07/25/89
RD-14	N.W.	IV	N.W. OF CONTROL CENTER	07/27/89
RD-15	N.W.	IV	N.W. OF SPA AREA, S.W. OF CONTROL CENTER	07/27/89
RD-16	N.W.	IV	N. OF ECL AREA	08/15/89
RD-17	N.W.	IV	S.E. OF BUILDING 133, N.W. OF G. STREET	08/10/89
RD-18	N.W.	IV	N.E. OF BUILDING 133, N.W. OF CONTROL CENTER	07/28/89
RD-19	N.W.	IV	W. OF BUILDING 133	07/31/89
RD-20	N.W.	IV	BURRO FLATS, S. OF BUILDING 59	07/27/89
RD-21	N.W.	IV	S. OF BUILDING 886	08/11/89
RD-22	N.W.	IV	W. OF BUILDING 886, NEAR N.W. BOUNDARY OF SITE	08/15/89
RD-23	N.W.	IV	N. OF BUILDING 886	08/16/89
RD-24	N.W.	IV	E. OF BUILDING 59	08/09/89
RD-25	N.W.	IV	NEAR BUILDING 59	08/07/89
RD-26	N.W.	II	W. OF CONTROL CENTER	08/03/89
RD-27	N.W.	IV	S.W. OF BUILDING 133	08/10/89
RD-28	N.W.	IV	NEAR BUILDING 59	08/10/89
RD-29	N.W.	IV	BURRO FLATS, S.E. OF BUILDING 59	08/09/89

TABLE 1 (continued)

DESCRIPTION OF WELL LOCATIONS

WELL IDENTIFICATION	PORTION OF SITE	AREA NO.	DESCRIPTION	DATE DRILLED
RD-30	N.W.	IV	S.W. OF BUILDING 133, NEAR N.W. BOUNDARY OF SITE	08/11/89
RD-31	N.E.	I	S. OF MAIN GATE, E. OF APTF	08/16/89
WS-4A	N.E.	I	N. OF SERVICE AREA ROAD	1953
WS-5	N.E.	I	ALONG AREA I ROAD, W. OF CANYON AREA	1954
WS-6	N.E.	I	ALFA AREA	1954
WS-7	N.W.	IV	NEAR N. BOUNDARY OF SITE, W. OF CONTROL CENTER	1954
WS-8	N.W.	III	E. OF ECL	1954
WS-9	N.W.	II	BRAVO AREA	1955
WS-9A	S.W.	II	S. OF R2 POND	1956
WS-9B	N.E.	II	ALONG SERVICE AREA ROAD, N. OF ALFA AREA	1956
WS-11	N.W.	III	BETWEEN STL-IV AND ECL	1955
WS-12	N.E.	I	N. OF SERVICE AREA ROAD, N.E. OF ALFA AREA	1956
WS-13	N.E.	II	NEAR N. BOUNDARY OF SITE, N.E. OF SWIMMING POOL AREA	1957
WS-14	N.E.	I	N. OF SERVICE AREA ROAD, N.E. OF APTF AREA	1958
WS-SP	N.W.	II	SWIMMING POOL AREA	
			OFF-SITE WELLS	
OS-1			N. OF SITE	
OS-2			N.W. OF SITE	
OS-3			N.W. OF SITE	
OS-4			N.W. OF SITE	
OS-5			N.W. OF SITE	
OS-8			N. OF SITE	

TABLE 1 (continued)

DESCRIPTION OF WELL LOCATIONS

WELL IDENTIFICATION	PORTION OF SITE	AREA NO.	DESCRIPTION	DATE DRILLED
OS-10			N. OF SITE	
OS-12			S.E. OF SITE	
OS-13			E. OF SITE	
OS-15			N.E. OF SITE, E. OF WOOLSEY CANYON ROAD	
OS-16			N.E. OF SITE, S. OF WOOLSEY CANYON ROAD	
OS-17			E. OF SITE	
OS-21			S.W. OF SITE	
HAR-1	N.E.	I	APTF AREA	05/16/87
HAR-2	N.E.	I	APTF AREA	05/12/87
HAR-3	N.E.	I	APTF AREA	05/13/87
HAR-4	N.E.	I	APTF AREA	05/13/87
HAR-5	N.W.	II	SPA AREA	05/16/87
HAR-6	N.W.	II	SPA AREA	05/16/87
HAR-7	N.W.	II	DELTA AREA	05/20/87
HAR-8	N.W.	II	DELTA AREA	05/20/87
HAR-9	N.W.	II	ABSP AREA	05/16/87
HAR-11	N.W.	II	ABSP AREA	05/16/87
HAR-12	N.W.	II	SPA AREA	05/17/87
HAR-13	N.W.	II	SPA AREA	05/17/87
HAR-14	N.W.	II	SPA AREA	05/19/87
HAR-15	N.W.	II	SPA AREA	05/19/87
HAR-16	N.E.	I	APTF AREA	05/20/87

TABLE 1 (continued)

DESCRIPTION OF WELL LOCATIONS

WELL IDENTIFICATION	PORTION OF SITE	AREA NO.	DESCRIPTION	DATE DRILLED
HAR-17	N.W.	III	E. OF STL-IV	05/20/87
HAR-18	N.W.	III	STL-IV AREA	05/20/87
HAR-19	N.W.	II	ABSP AREA	06/17/87
HAR-20	N.W.	II	ABSP AREA	06/16/87
HAR-21	N.W.	II	ABSP AREA	06/18/87
HAR-22	N.W.	II	N. OF SPA AREA	06/18/87
HAR-23	N.W.	II	W. OF SPA AREA	06/18/87
HAR-24	N.E.	I	APTF AREA	06/18/87
HAR-25	N.E.	I	APTF AREA	06/18/87
HAR-26	N.W.	III	ECL AREA	06/18/87
HAR-27	N.W.	II	DELTA AREA	06/14/87
HAR-28	N.W.	II	DELTA AREA	06/14/87
HAR-29	N.W.	II	DELTA AREA	06/14/87
HAR-30	N.W.	II	SPA AREA	06/ [illegible]7
HAR-31	N.W.	II	SPA AREA	06/15/87
HAR-32	N.W.	III	STL-IV AREA	06/17/87
HAR-33	N.W.	III	STL-IV AREA	06/17/87
HAR-34	N.W.	III	STL-IV AREA	06/17/87

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - RESULTS

ATI I.D. : 00648508

TEST : EPA 8010 (HALOGENATED VOLATILE ORGANICS)

CLIENT	: GROUNDWATER RESOURCES	DATE SAMPLED	: 06/27/90
PROJECT #	: 8640	DATE RECEIVED	: 06/28/90
PROJECT NAME	: ROCKWELL/ROCKETDYNE-SSFL	DATE EXTRACTED	: N/A
CLIENT I.D.	: RD-26	DATE ANALYZED	: 07/08/90
SAMPLE MATRIX	: WATER	UNITS	: UG/L
		DILUTION FACTOR	: 2

COMPOUNDS	RESULTS
BROMODICHLOROMETHANE	<0.40
BROMOFORM	<0.80
BROMOMETHANE	<0.40
CARBON TETRACHLORIDE	1.1
CHLOROBENZENE	<1.0
CHLOROETHANE	<0.40
CHLOROFORM	1.5
CHLOROMETHANE	<0.40
DIBROMOCHLOROMETHANE	<0.40
1,2-DICHLOROBENZENE	<1.0
1,3-DICHLOROBENZENE	<1.0
1,4-DICHLOROBENZENE	<1.0
DICHLORODIFLUOROMETHANE	<0.40
1,1-DICHLOROETHANE	<0.40
1,2-DICHLOROETHANE	<0.40
1,1-DICHLOROETHENE	<0.40
CIS-1,2-DICHLOROETHENE	<0.40
TRANS-1,2-DICHLOROETHENE	<0.40
1,2-DICHLOROPROPANE	<0.40
CIS-1,3-DICHLOROPROPENE	<0.40
TRANS-1,3-DICHLOROPROPENE	<0.40
METHYLENE CHLORIDE	<4.0
1,1,2,2-TETRACHLOROETHANE	<0.40
TETRACHLOROETHENE	<0.40
1,1,1-TRICHLOROETHANE	<0.40
1,1,2-TRICHLOROETHANE	<0.40
TRICHLOROETHENE	23
TRICHLOROFLUOROMETHANE	<4.0
VINYL CHLORIDE	<0.40

SURROGATE PERCENT RECOVERIES

BROMOFLUOROBENZENE (ELCD) (%)	80
BROMOFLUOROBENZENE (PID) (%)	101

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - RESULTS

ATI I.D. : 00648508

TEST : EPA 8020 (AROMATIC VOLATILE ORGANICS)

CLIENT	: GROUNDWATER RESOURCES	DATE SAMPLED	: 06/27/90
PROJECT #	: 8640	DATE RECEIVED	: 06/28/90
PROJECT NAME	: ROCKWELL/ROCKETDYNE-SSFL	DATE EXTRACTED	: N/A
CLIENT I.D.	: RD-26	DATE ANALYZED	: 07/04/90
SAMPLE MATRIX	: WATER	UNITS	: UG/L
		DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
BENZENE	<0.50
TOLUENE	<0.50
CHLOROBENZENE	<0.50
ETHYLBENZENE	<0.50
1,3-DICHLOROBENZENE	<0.50
1,2 AND 1,4-DICHLOROBENZENE	<0.50
XYLENES (TOTAL)	<1.0

SURROGATE PERCENT RECOVERIES

BROMOFLUOROBENZENE (PID) (%)	82

GROUNDWATER RESOURCES CONSULTANTS, INC.

CONSULTING HYDROGEOLOGISTS • ENVIRONMENTAL SPECIALISTS

1735 EAST FORT LOWELL ROAD,
SUITE 4
TUCSON, ARIZONA 85719
PHONE (602) 326-1898

CHUCK M. DICKENS, P.G.
DAVID B. HAWKINS, P.G.
SHELDON D. CLARK
KURT J. BLUST P.G.
DINAH H. JASENSKY

June 19, 1990

Mrs. Norma Fujikawa
Environmental Unit
Facilities and Plant Operations
Rocketdyne Division
ROCKWELL INTERNATIONAL CORPORATION
Dept. 543, Mail Stop JA-16
6633 Canoga Avenue
Canoga Park, CA 91303

Dear Mrs. Fujikawa:

Per your request, the enclosed table is submitted summarizing water quality data obtained from the Metropolitan Water District (MWD) for 1989 and water quality data collected from Chatsworth Formation wells at the Santa Susana Field Laboratory during the same year. MWD data represents the annual average of quarterly samples collected from the Joseph Jensen Filtration Plant located in Granada Hills.

Water received by the Jensen Filtration Plant is imported by MWD from the California aqueduct originating in the Sacramento - San Joaquin Delta. This water is then distributed to the Santa Susana Field Laboratory by the Calleguas Water District.

If you have any comments or wish further discussion of the water quality results, please call.

Respectfully submitted,

GROUNDWATER RESOURCES CONSULTANTS, INC.

Dinah H. Jasensky

Dinah H. Jasensky
Associate Hydrologist

DHJ:lw
Enclosure

TABLE

COMPARISON OF IMPORTED AND ON-SITE WATER QUALITY DATA

ORGANIC PARAMETERS

CHEMICAL NAME	CONCENTRATION IN MWD WATER (µg/l)[1/]	CONCENTRATION RANGE IN SSFL GROUNDWATER (µg/l)[2/]
Benzene	<0.5	<1
Carbon Tetrachloride	<0.5	<0.2 - 34
1,1-Dichloroethane	<0.5	<0.2 - 16
1,2-Dichloroethane	<0.5	<0.2 - 57
1,1-Dichloroethylene	<0.2	<0.2 - 230
1,2-Dichloroethylene (total)	<0.5	<0.2 - 3,600
1,2-Dichloropropane	<0.5	<0.2
1,3-Dichloropropene	<0.5	<0.2
Ethylbenzene	<0.5	<1
1,1,2,2-Tetrachloroethane	<0.5	<0.2 - 13
Tetrachloroethylene	<0.5	<0.2 - 290
1,1,1-Trichloroethane	<0.5	<0.2 - 2
1,1,2-Trichloroethane	<0.5	<0.2 - 4.8
Trichloroethylene	<0.5	<0.2 - 36,000
Trichlorofluoromethane (Freon 11)	<0.5	<0.5 - 100
Vinyl Chloride	<0.5	<0.2 - 310

MWD = Metropolitan Water District

(<) = Less than; numerical value represents limit of detection for that analysis.

1/ Average concentration determined in samples collected quarterly during 1989 from the Joseph Jensen Filtration Plant.

2/ Range of concentration in samples collected from on-site Chatsworth Formation wells during 1989.

TABLE

COMPARISON OF IMPORTED AND ON-SITE WATER QUALITY DATA

INORGANIC PARAMETERS

CHEMICAL NAME	CONCENTRATION IN MWD WATER (mg/l)[1/]	CONCENTRATION RANGE IN SSFL GROUNDWATER (mg/l)[2/]
Arsenic	0.002	<0.01
Barium	0.037	<0.10
Cadmium	<0.001	<0.005
Calcium	28	62 - 205
Chloride	112	20.5 - 148
Chromium	<0.002	<0.01
Copper	<0.01	<0.01
Fluoride	0.15	0.09 - 0.75
Iron	<0.02	<0.05
Lead	<0.005	<0.01
Magnesium	17	6.4 - 45
Mercury	<0.0005	<0.0002 - 0.0002
Nitrate	0.46	<0.04 - 42.1
Potassium	3.9	1.8 - 5.5
Selenium	<0.001	<0.005
Silver	<0.01	<0.01
Sodium	77	36 - 123
Sulfate	58	44 - 258
Zinc	<0.02	<0.01 - 4.601
TDS	372	355 - 1055
pH (units)	8.35	7.5 - 8.9
E.C. (umhos/cm)	671	602 - 1584

MWD = Metropolitan Water District

(<) = Less than; numerical value represents limit of detection for that analysis.

1/ Average concentration determined in samples collected quarterly during 1989 from the Joseph Jensen Filtration Plant.

2/ Range of concentration in samples collected from on-site Chatsworth Formation wells during 1989.

TABLE

COMPARISON OF IMPORTED AND ON-SITE WATER QUALITY DATA

RADIONUCLIDES

CHEMICAL NAME	CONCENTRATION IN MWD WATER (pCi/l)[1/]	CONCENTRATION RANGE IN SSFI GROUNDWATER (pCi/l)[2/]
Gross Alpha	-0.2	-1.0 - 30.0
Gross Beta	2.6	-0.5 - 37.3
Radium-226	<0.1	0.484 - 0.852
Radium - 228	<1	0.859 - 2.32
Tritium	<1000	-500 - 699
Uranium	1	30.8

MWD = Metropolitan Water District

(-) = Negative number indicates a reported value which is less than the background count.

(<) = Less than; numerical value represents limit of detection for that analysis.

1/ Average concentration determined in samples collected quarterly during 1989 from the Joseph Jensen Filtration Plant.

2/ Range of concentration in samples collected from on-site Chatsworth Formation wells during 1989.

NORTHWEST SLOPE

MONITORING

CHEMICAL ANALYSIS REPORT

Log Number 9005613

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5313
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90, PG 124 REPORT DATE: 06/13/90
DATE OF ANALYSIS: 06/07/90 Page Number: 1
LOG NUMBER 9005613

SAMPLE INFORMATION

Sample Description: Water, run-off, B/100
Requester: Michelle Levesque
Requested Analysis: VOA
Received: 05/29/90 at 15:35:00
Sampler: R. Banaga Sampler ID#: 28 Sample Time: 14:00:00
Sampled: 05/29/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/07/90

LOG NUMBER 9005613

SAMPLE INFORMATION

Sample Descrption: Water, run-off, B/100
Requester: Michelle Levesque
Requested Analysis: VOA
Received: 05/29/90 at 15:35:00
Sampler: R. Banaga Sampler ID#: 28 Sample Time: 14:00:00
Sampled: 05/29/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: R.C. Ahn for M.D. Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C Hollis
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005619

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5313
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90, PG 124 REPORT DATE: 06/14/90
DATE OF ANALYSIS: 06/07/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9005619

Sample Descrption: Water, run-off, RMDF
Requester: Michelle Levesque
Requested Analysis: VOA
Received: 05/29/90 at 16:20:00
Sampler: R. Banaga Sampler ID#: 36 Sample Time: 14:16:00
Sampled: 05/29/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

SAMPLE INFORMATION — LOG NUMBER 9005619

Sample Descrption: Water, run-off, RMDF
Requester: Michelle Levesque
Requested Analysis: VOA
Received: 05/29/90 at 16:20:00
Sampler: R. Banaga Sampler ID#: 36 Sample Time: 14:16:00
Sampled: 05/29/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: for M.D. Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Miller
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005623

TO: Environmental Unit
DEPT/GROUP: 543 PHONE: 392-5313
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REPORT DATE: 06/14/90
REFERENCE: LB 90, PG 124
Page Number: 1
DATE OF ANALYSIS: 06/07/90
LOG NUMBER 9005623

SAMPLE INFORMATION

Sample Description: Water, run-off, SRE
Requester: Michelle Levesque
Requested Analysis: VOA
Received: 05/29/90 at 16:20:00
Sampler: S. Banaga Sampler ID#: 48 Sample Time: 14:30:00
Sampled: 05/29/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/07/90

SAMPLE INFORMATION — LOG NUMBER 9005623

Sample Descrption: Water, run-off, SRE
Requester: Michelle Levesque
Requested Analysis: VOA
Received: 05/29/90 at 16:20:00
Sampler: R. Banaga Sampler ID#: 48 Sample Time: 14:30:00
Sampled: 05/29/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

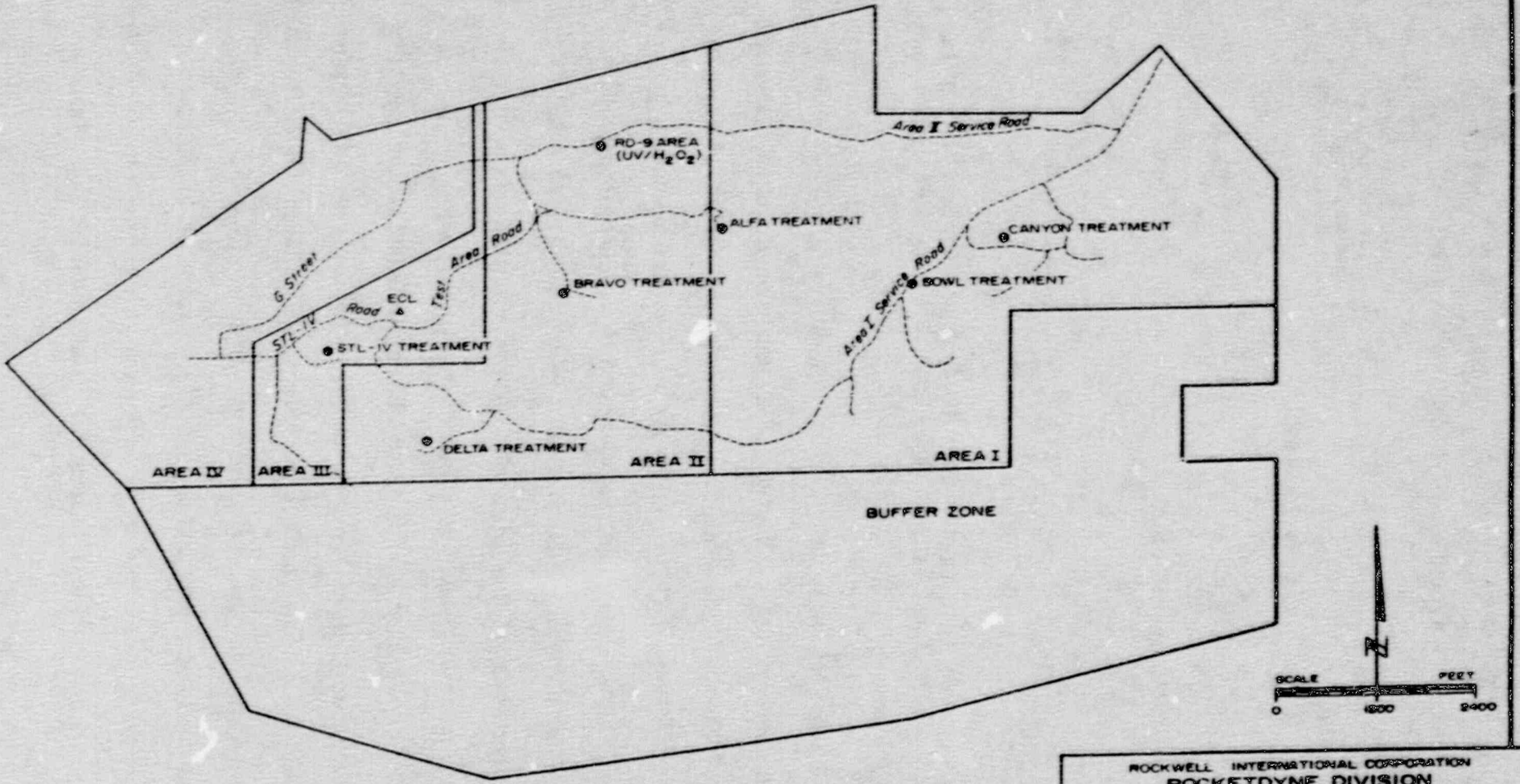
APPROVED: A. C. Hamilton for M. D. Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Miller
Chemist
Rocketdyne SSFL Analytical Chemistry

Attachment 3.

Chemical Analysis Reports

Treatment Systems



NOTE GROUNDWATER EXTRACTED FROM ECL WILL BE CONVEYED TO THE RD-9 AREA UV/H_2O_2 TREATMENT SYSTEM

ROCKWELL INTERNATIONAL CORPORATION
ROCKETDYNE DIVISION
SANTA SUSANA FIELD LABORATORY

TREATMENT SYSTEM LOCATION MAP

GROUNDWATER RESOURCES CONSULTANTS, INC.
CONSULTANTS IN HYDROGEOLOGY
TUCSON, ARIZONA

FIGURE

GROUNDWATER RESOURCES CONSULTANTS, INC.

CONSULTING HYDROGEOLOGISTS • ENVIRONMENTAL SPECIALISTS

1735 EAST FORT LOWELL ROAD,
SUITE 4
TUCSON, ARIZONA 85719
PHONE (602) 326-1898

CHUCK M. DICKENS, P.G.
DAVID B. HAWKINS, P.G.
SHELDON D. CLARK
KURT J. BLUST, P.G.
DINAH H. JASENSKY

July 20, 1990

Mrs. Norma Fujikawa and
Mr. Alan Nelson
Rockwell International Corporation
Rocketdyne Division
Facilities and Plant Operations
6633 Canoga Avenue
Dept. 543, Mail Stop JA-16
Canoga Park, CA 91303

RE: Summary of the Results of Chemical Analyses Collected From the Extraction/Treatment Systems (ETS) Grab Samples vs. Residence Time Samples

Dear Mrs. Fujikawa and Mr. Nelson:

Pursuant to your request of May 26, 1990, we have prepared a summary of the results of chemical analyses for water samples collected from the Extraction/Treatment Systems (ETS) (Table 1). Per your request, the sample collection procedures were modified to address EPA concerns regarding the residence time of each ETS. The purpose of the residence time sample was to verify the efficiency of the treatment systems in the removal of the volatile organic compounds (VOCs) of concern.

Water samples were collected from each ETS following standard sampling protocols, where influent lines are sampled first followed by sampling of the effluent lines. A second sample was collected from each ETS effluent line timed to correspond to the residence time of each ETS.

The residence time of a particular particle of water in a Packed Tower Aeration treatment unit is obtained by dividing the volume of water resident in the tower and still well by the throughput rate of the influent stream.

The residence times for each ETS were obtained from the Rocketdyne Environmental staff (Table 1).

Comparison of the results of chemical analyses of water samples collected after the prescribed residence times with results of the untimed grab samples indicate no differences in concentrations of the compounds trichloroethylene (TCE), cis-1,2-dichloroethylene (cis-1,2-DCE) and trans-1,2-dichloroethylene (trans-1,2-DCE). Minor concentrations of several trihalomethanes and methylene chloride were detected in effluent samples. The absence of these compounds in the influent water samples suggest that these compounds are probably by-products of chlorination systems used as part of the treatment systems.

Review of historical water quality data indicates that the present VOC concentrations influent to the treatment systems are decreasing with time, and are well below the maximum concentrations for which the treatment systems were designed. In view of these trends, we do not recommend any changes in sampling protocol of the treatment systems.

Please review the enclosed data and contact me if you have any questions or wish further discussion of the data.

Respectfully submitted,

GROUNDWATER RESOURCES
CONSULTANTS, INC.

Sheldon D. Clark
Associate Hydrogeologist

SDC:jc

Enclosure

TABLE 1

RESULTS OF CHEMICAL ANALYSES FOR WATER SAMPLES COLLECTED FROM
SSFL TREATMENT SYSTEMS, GRAB VS. RESIDENCE TIME SAMPLES

SOURCE	SAMPLE TIME	DATE	RESIDENCE TIME FOR SYSTEM (MINUTES)	CONSTITUENT CONCENTRATION (µg/l) TCE	CIS-1,2-DCE	TRANS-1,2-DCE
ALFA INFLUENT	9:35	06/29/90	16	16	12	2.0
ALFA EFFLUENT	9:45	06/29/90		-0.20	-0.20	-0.20
ALFA EFFLUENT	9:51	06/29/90		-0.20	-0.20	-0.20
BRAVO INFLUENT	10:50	06/29/90	98	75	11	-1.0
BRAVO EFFLUENT	11:15	06/29/90		-0.20	-0.20	-0.20
BRAVO EFFLUENT	12:28	06/29/90		-0.20	-0.20	-0.20
BOWL INFLUENT	13:00	06/29/90	107	37	25	5.3
BOWL EFFLUENT	13:20	06/29/90		-0.20	-0.20	-0.20
BOWL EFFLUENT	14:47	06/29/90		-0.20	-0.20	-0.20
CANYON INFLUENT	13:40	06/29/90	87	100	31	-1.60
CANYON EFFLUENT	14:00	06/29/90		-0.20	-0.20	-0.20
CANYON EFFLUENT	15:07	06/29/90		-0.20	-0.20	-0.20
DELTA INFLUENT	8:05	06/30/90	50	100	86	8.1
DELTA EFFLUENT	8:25	06/30/90		-0.20	-0.20	-0.20
DELTA EFFLUENT	8:55	06/30/90		-0.20	-0.20	-0.20

(-) = Less Than
Laboratory: Analytical Technologies, Inc.
Analytical Method: EPA 8010

GROUNDWATER RESOURCES CONSULTANTS, INC.
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DINAH H. JASENSKY

June 21, 1990

Mrs. Norma Fujikawa/Mr. Alan Nelson
Environmental Control Group
Facilities and Plant Operations
Rocketdyne Division
ROCKWELL INTERNATIONAL CORPORATION
Dept. 543, Mail Stop JA-16
6633 Canoga Avenue
Canoga Park, CA 91303

RE: Delta Treatment System Iron Concentrations

Dear Mrs. Fujikawa/Mr. Nelson:

Enclosed are the results of chemical analyses from selected wells in the vicinity of the Delta treatment system and from the Delta treatment system influent and effluent lines. Water samples collected from each sample point were analyzed for both total iron and dissolved iron concentrations (Table 1).

Comparison of the total iron concentrations from the various sample points indicate that the iron concentration in groundwater pumped from well WS-9A is not anomalously high, but is in fact the lowest iron concentration detected in water samples collected from wells in the general vicinity of the Delta Treatment system.

We do not believe that elimination or reduction of iron concentrations will be achieved by replacement of well WS-9A. Available water quality data indicate the dissolved iron concentrations are prevalent in Chatsworth wells throughout the SSFL facility and in particular in the south western portion of the facility. The likelihood of drilling a replacement well which does not contain similar concentrations of iron is considered remote.

Operational data from the Delta treatment system indicate that the system is effective in the removal of VOCs. It is recommended that you contact Mr. Ralph Schmitt of Emcon Associates, Inc. with respect to any

additional control measures which might be required to control scaling and fouling of the tower medium, and assure continued effective operation of the Delta treatment system.

Please advise if you have any questions or wish additional discussion of these data.

Sincerely,

GROUNDWATER RESOURCES CONSULTANTS, INC.

Sheldon D. Clark
Associate Hydrogeologist

SDC:lkr

Attachment

DELTA AREA IRON CONCENTRATIONS

SAMPLE POINT	TOTAL (mg/l)	DISSOLVED (mg/l)	LABORATORY	DATE
DELTA - INFLUENT	0.67	0.09	ATI	05/24/90
DELTA - EFFLUENT	0.35	0.01	ATI	05/24/90
WS-9A	1.4	0.02	ATI	05/24/90
RD-5	86.1	0.02	ATI	05/24/90
RD-6	4.6	0.19	ATI	05/24/90
HAR-7	6.9	0.06	ATI	05/24/90
HAR-17	8.3	0.06	ATI	05/24/90
HAR-18	3.0	0.08	ATI	05/24/90
HAR-7	6.17	ND	BC	05/24/90

Regulatory Guidelines for Drinking Water

California Maximum Contaminant Levels for Drinking Water

Department of Health Services
Recently Adopted Maximum
Contaminant Levels For Contaminants
In Drinking Water

April 1989

California Code of Regulations
Title 22

Constituent	Maximum Contaminant Level
Inorganic (Section 64435)	mg/l
Aluminum	1.
Radioactivity (Section 64441)	pCi/l
Uranium	20
Organic (Section 64444.5)	mg/l
Atrazine	0.003
Bentazon	0.018
Benzene	0.001
Carbon Tetrachloride	0.0005
1,4-Dichlorobenzene	0.005
1,2-Dichloroethane	0.0005
1,1-Dichloroethylene	0.006
1,3-Dichloropropene	0.0005
Ethylbenzene	0.680
Ethylene Dibromide	0.00002
Molinate	0.02
Monochlorobenzene	0.030
Simazine	0.01
1,1,2,2-Tetrachloroethane	0.001

036017/83/8/89/S

Thiobencarb	0.07
1,1,1-Trichloroethane	0.200
1,1,2-Trichloroethane	0.032
Trichloroethylene	0.005
Vinyl Chloride	0.0005
Xylenes	1.750*

*MCL is for either single isomer or the sum of the isomers.

Table 4

MCL Radioactivity

Constituent	*Maximum Contaminant Level, pCi/l*
Combined Radium-226 and Radium-228	5
Gross Alpha particle activity (including Radium-226 but excluding Radon and Uranium)	15
Tritium	20,000
Strontium-90	8
Gross Beta particle activity	50
Uranium	20

NOTE: Authority cited: Sections 208 and [illegible]alth and Safety Code. Reference: Sections 4017 and 4024, Health and Safety Code.

HISTORY:

1. New NOTE filed 12-7-84 (Register 84, No. 49).
2. Amendment of subsection (c) filed 10-7-88; operative 1-1-89 (Register 88, No. 42).
3. Amendment of subsections (b) and (c), and renumbering of Table 5 to Table 4 filed 11-22-88; operative 12-22-88 (Register 88, No. 51).

Department of Health Services

Recommended

Drinking Water Action Levels

State of California
Department of Health Services

Drinking Water Action Levels Recommended
by the Department of Health Services

April 1989

Chemical	Action Level parts per billion (ppb)
Pesticides	
Chlorinated Hydrocarbon	
Aldrin	Limit of Quantification (0.05)
a-Benzene Hexachloride (a-BHC)	0.7
b-Benzene Hexachloride (b-BHC)	0.3
Chlordane	0.1
Dieldrin	Limit of Quantification (0.05)
Heptachlor	0.01
Heptachlor Epoxide	0.01
Pentachlorophenol	30.0
Organophosphate	
Dimethoate	140.0
Diazinon	14.0
Ethion	35.0
Malathion	160.0
Methyl Parathion	30.0
Parathion	30.0
Trithion	7.0
Carbamate	
Aldicarb	10.0
Baygon	90.0
Carbaryl	60.0
Phthalamide	
Captan	350.0
Amides	
Diphenamide	40.0
Fumigants	
Dibromochloropropane	1.0
1,2-Dichloropropane	5.0
Chloropicrin	50.0 (37.0)*
Miscellaneous	
Terrachlor (Pentachloronitrobenzene)	0.9

*Taste & Odor Threshold

Herbicides		
	CIPC (isopropyl N (3-chlorophenyl) carbamate)	350.0
	Glyphosate	700.0
	Alachlor	Limit of Quantification (0.2)
Purgeable Halocarbons		
	Methylene Chloride	40.0
	Tetrachloroethylene	5.0
	1,1-Dichloroethane	5.0
	Trichlorofluoromethane (Freon 11)	150.0
	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1,200.0
	Cis-1,2-Dichloroethylene	6.0
	Trans-1,2-Dichloroethylene	10.0
Purgeable Aromatics		
	1,2-Dichlorobenzene	130.0 (10)*
	1,3-Dichlorobenzene	130.0 (20)*

(Action Level for 1,2-Dichlorobenzene and 1,3-Dichlorobenzene is either for a single isomer or for the sum of the 2 isomers)

Toluene	100.0

(Action Level for Xylene is either for a single isomer or the sum of the 3 isomers)

Phenols	
2,4-dimethylphenol	(400.0)*
Phenol	(1.0)* (For Chlorinated Systems)
Aldehydes	
Formaldehyde	30.0

*Taste & Odor Threshold

AIR STRIPPING TOWERS

ALFA: 200 gpm System (1 & 2)

AREA I ROAD: 40 gpm System (1 & 2)

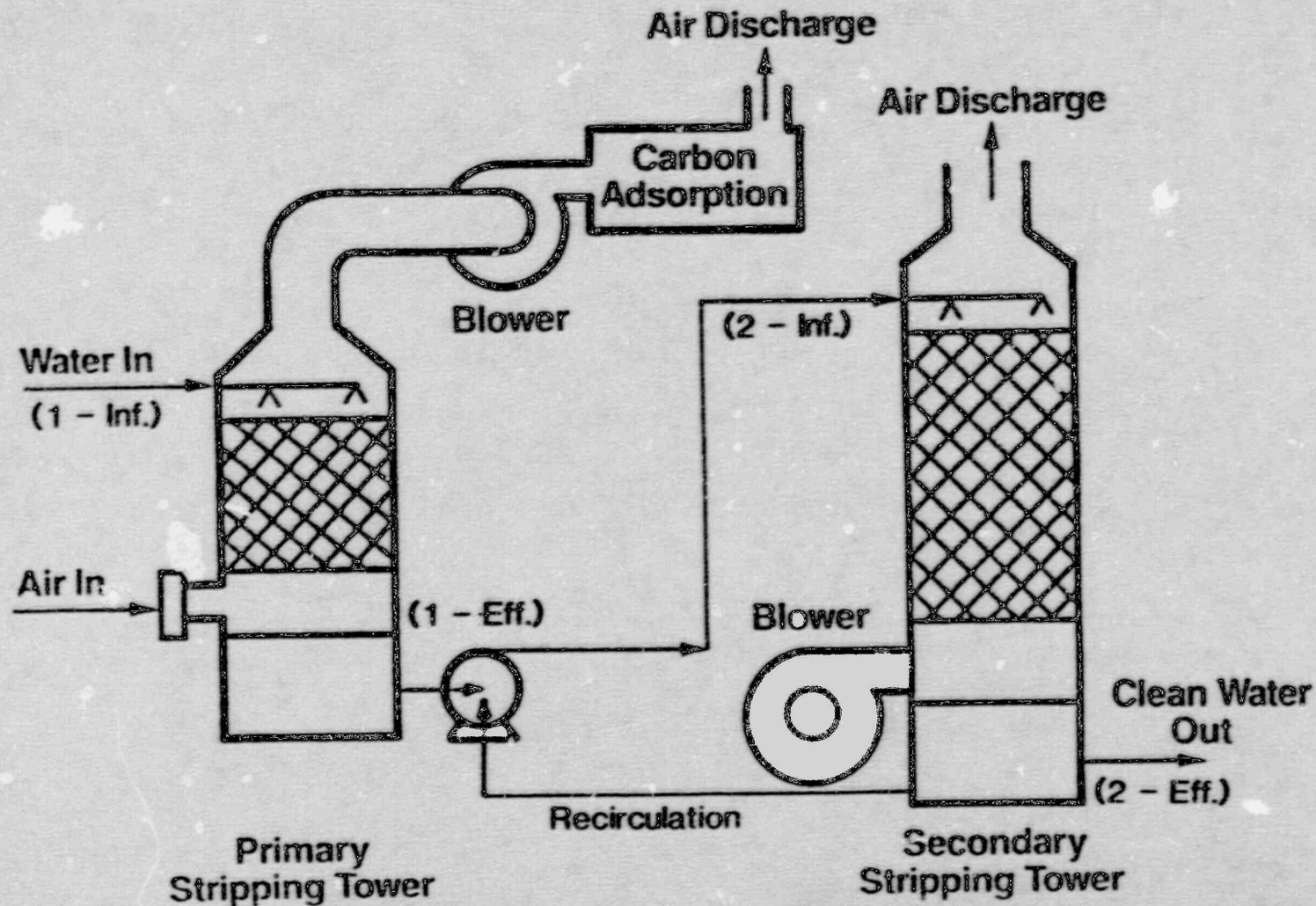
BRAVO: 2 ea. 40 gpm Systems (1 & 2, 3 & 4)
NOTE: System effluents are from towers 2 & 4

CANYON: 40 gpm System (1 & 2)

DELTA: 200 gpm System (1 & 2)

( ): Water Sampling Location

FULL SCALE STRIPPING TOWER DESIGN



Removes 90–95% of the Volatile Organics

Removes 99.9% of the Remaining Volatile Organics

ALFA Treatment System

CHEMICAL ANALYSIS REPORT

Log Number 9007112

TO: Environmental Unit
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827 DEPT/GROUP: 543 PHONE: 392-5331
REFERENCE: -0-
DATE OF ANALYSIS: 07/09/90
REPORT DATE: 07/27/90
Page Number: 1

SAMPLE INFORMATION

Sample Descrption: VOA, Alfa Tower 2 effluent
Requester: Alan Nelson
Requested Analys.s: VOA3
Receive.: 07/09/90 at 11:16:00
Sampler: L. Collins Sampler ID#: 48367
Sampled: 07/09/9) Sample Time: 10:10:00
LOG NUMBER 9007112

ANALYTE per SW-846, #8240	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	See Note (1)	0.4
Bromoform	4.12	See Note (1)	0.6
Bromoethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	See Note (1)	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 07/09/90

LOG NUMBER 9007[illegible]2

SAMPLE INFORMATION

Sample Descrption: VOA, Alfa Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOAs
Received: 07/09/90 at 11:16:00
Sampler: L. Collins Sampler ID#: 48367 Sample Time: 10:10:00
Sampled: 07/09/90

ANALYTE per SW-846, #8240	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	2.25	See Note (1)	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 ()
SPECIAL NOTES: (1) Total Trihalomethane Maximum Contamination Level = 100 ug/L

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace
2) ND = None detected
3) < = Less than
4) > = Greater than
5) DNA = Does not apply
6) N.S. = Not Stated

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: _____
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9007016

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0- REPORT DATE: 07/12/90
DATE OF ANALYSIS: 07/03/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9007016

Sample Description: VOA, Alfa tower 2 effluent, duplicate
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 11:00:00
Sampler: L. Collins Sampler ID#: 48313 Sample Time: 7:40:00
Sampled: 07/02/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	3.22	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	0.66	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 07/03/90

LOG NUMBER 9007016

SAMPLE INFORMATION

Sample Descrption: VOA, Alfa tower 2 effluent, duplicate
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 11:00:00
Sampler: L. Collins Sampler ID#: 48313 Sample Time: 7:40:00
Sampled: 07/02/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	1.28	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: W D Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: D C Nino
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9007014

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0- REPORT DATE: 07/26/90
DATE OF ANALYSIS: 07/03/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9007014

Sample Description: VOA Alfa tower 1 Influent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 11:00:00
Sampler: L. Collins Sampler ID#: 48311 Sample Time: 7:35:00
Sampled: 07/02/90

ANALYTE per #8240, SW-846	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	2.07	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	22.06	6.0	0.5
1,2-Dichloroethylene (trans)	2.06	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	2.48	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

SAMPLE INFORMATION — LOG NUMBER 9007014

Sample Descrption: VOA, Alfa tower 1 Influent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 11:00:00
Sampler: L. Collins Sampler ID#: 48311 Sample Time: 7:35:00
Sampled: 07/02/90

ANALYTE per #8240, SW-846	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	28.11	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: _____
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006441

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0- REPORT DATE: 07/17/90
DATE OF ANALYSIS: 07/02/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006441

Sample Description: VOA's, ALFA tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA's
Received: 06/27/90 at 11:15:00
Sampler: L. Collins Sampler ID#: 48303 Sample Time: 10:30:00
Sampled: 06/27/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.6
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	1.51	N.S.	0.4
Bromoform	10.24	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 07/02/90

SAMPLE INFORMATION — LOG NUMBER 9006441

Sample Descrption: VOA's, ALFA tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA's
Received: 06/27/90 at 11:15:00
Sampler: L. Collins Sampler ID#: 48303 Sample Time: 10:30:00
Sampled: 06/27/90

ANALYTE	RESULT ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	4.88	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: _____
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006430

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0- REPORT DATE: 07/26/90
DATE OF ANALYSIS: 06/29/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006430

Sample Description: Waste Yard Trip Blank
Requester: Alan Nelson
Requested Analysis: VOA's
Received: 06/27/90 at 11:15:00
Sampler: L. Collins Sampler ID#: 48287 Sample Time: 7:00:00
Sampled: 06/27/90

ANALYTE per #8240, SW-846	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/29/90

SAMPLE INFORMATION

LOG NUMBER 9006430

Sample Description: Waste Yard Trip Blank
Requester: Alan Nelson
Requested Analysis: VOA's
Received: 06/27/90 at 11:15:00
Sampler: L. Collins Sampler ID#: 48287 Sample Time: 7:00:00
Sampled: 06/27/90

ANALYTE per #8240, SW-846	RESULT, -0-	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: _____
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006240

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0- REPORT DATE: 06/22/90
DATE OF ANALYSIS: 06/20/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006240

Sample Descrption: VOA, ALFA Tower 2-effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/18/90 at 9:40:00
Sampler: Les Collins Sampler ID#: 48242 Sample Time: 7:45:00
Sampled: 06/18/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/20/90

SAMPLE INFORMATION — LOG NUMBER 9006240

Sample Descrption: VOA, ALFA Tower 2-effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/18/90 at 9:40:00
Sampler: Les Collins Sampler ID#: 48242 Sample Time: 7:45:00
Sampled: 06/18/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: Beverly K Hurt for MD Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Paul Grguelin
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006151

TO: Environmental Unit DEPT/GROUP: 583 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
DATE OF ANALYSIS: 06/15/90
REPORT DATE: 06/20/90
Page Number: 1
LOG NUMBER 9006151

SAMPLE INFORMATION

Sample Description: VOA, ALFA Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/11/90 at 11:30:00
Sampler: L.L. Collins Sampler ID#: 48225 Sample Time: 10:35:00
Sampled: 06/11/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	5.37	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/15/90

SAMPLE INFORMATION

LOG NUMBER 9006151

Sample Descrption: VOA, ALFA Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/11/90 at 11:30:00
Sampler: L.L. Collins Sampler ID#: 48225 Sample Time: 10:35:00
Sampled: 06/11/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	2.89	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Miller
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006019

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 P 128 REPORT DATE: 06/13/90
DATE OF ANALYSIS: 06/06/90 Page Number: 1
LOG NUMBER 9006019

SAMPLE INFORMATION

Sample Description: ALFA Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48177 Sample Time: 9:00:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	4.25	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/06/90

SAMPLE INFORMATION — LOG NUMBER 9006019

Sample Descrption: ALFA Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48177 Sample Time: 9:00:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -C-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

DNA

APPROVED: A.C. Hom for M.D. Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Dana C. Hallen
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006018

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 P 128 REPORT DATE: 06/13/90
DATE OF ANALYSIS: 06/06/90 Page Number: 1
LOG NUMBER 9006018

SAMPLE INFORMATION

Sample Descrption: ALFA Tower 1 Influent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48175 Sample Time: 8:58:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	24.97	6.0	0.6
1,2-Dichloroethylene (trans)	2.52	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	2.14	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	0.85	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/06/90

LOG NUMBER 9006018

SAMPLE INFORMATION

Sample Descrption: ALFA Tower 1 Influent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48175 Sample Time: 8:58:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	1.11	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	28.32	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	3.16	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: A.C. Nan for M.D. Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C Hilling
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005547

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 p 120 REPORT DATE: 06/14/90
DATE OF ANALYSIS: 06/08/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9005547

Sample Description: ALFA Tower 2 Effluent, Duplicate
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 05/29/90 at 10:10:00
Sampler: L. Collins Sampler ID#: 48113 Sample Time: 7:35:00
Sampled: 05/29/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	1.67	N.S.	0.4
Bromoform	11.58	N.S.	0.8
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	1.09	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/08/90

SAMPLE INFORMATION

LOG NUMBER 9005547

Sample Description: ALFA Tower 2 Effluent, Duplicate
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 05/29/90 at 10:10:00
Sampler: L. Collins Sampler ID#: 48113 Sample Time: 7:35:00
Sampled: 05/29/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	5.25	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: Beverly K Hurt for Manager MD Reduction
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C Hillis
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005402

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 P116 REPORT DATE: 06/13/90
DATE OF ANALYSIS: 05/24/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9005402

Sample Description: ALFA Tower 2 Effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 05/21/9[illegible] at 11:05:00
Sampler: L. Collins Sampler ID#: 48071 Sample Time: 7:45:00
Sampled: 05/21/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	1.07	N.S.	0.4
Bromoform	9.45	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	1.35	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 05/24/90

SAMPLE INFORMATION — LOG NUMBER 9005402

Sample Descrption: ALFA Tower 2 Effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 05/21/90 at 11:05:00
Sampler: L. Collins Sampler ID#: 48071 Sample Time: 7:45:00
Sampled: 05/21/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: Beverly J. Kurt for
Manager MD, Laboratory
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Miller
Chemist
Rocketdyne SSFL Analytical Chemistry

Area I Road (Bowl)

Treatment System

CHEMICAL ANALYSIS REPORT

Log Number 9007104

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0- REPORT DATE: 07/27/90
DATE OF ANALYSIS: 07/10/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9007104

Sample Description: VOA, Area I Road Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOAs
Received: 07/09/90 at 11:16:00
Sampler: L. Collins Sampler ID#: 48355 Sample Time: 8:35:00
Sampled: 07/09/90

ANALYTE per SW-846, #8240	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	2.97	See Note (1)	0.4
Bromoform	5.05	See Note (1)	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	1.35	See Note (1)	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 07/10/90

LOG NUMBER 9007104

SAMPLE INFORMATION

Sample Descrption: VOA, Area I Road Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOAs
Received: 07/09/90 at 11:16:00
Sampler: L. Collins Sampler ID#: 48355 Sample Time: 8:35:00
Sampled: 07/09/90

ANALYTE per SW-846, #8240	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	6.52	See Note (1)	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 ()
SPECIAL NOTES: (1) Total Trihalomethane Maximum Contamination Level = 100 ug/L

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: D. C. Dino
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9007114

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0- REPORT DATE: 07/27/90
DATE OF ANALYSIS: 07/09/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9007114

Sample Description: VOA, Waste yard trip blank
Requester: Alan Nelson
Requested Analysis: VOAs
Received: 07/09/90 at 11:16:00
Sampler: L. Collins Sampler ID#: 48351 Sample Time: 7:00:00
Sampled: 07/09/90

ANALYTE per SW-846, #8240	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	See Note (1)	0.4
Bromoform	<0.6	See Note (1)	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	See Note (1)	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 07/09/90

LOG NUMBER 9007114

SAMPLE INFORMATION

Sample Descrption: VOA, Waste yard trip blank
Requester: Alan Nelson
Requested Analysis: VOAs
Received: 07/09/90 at 11:16:00
Sampler: L. Collins Sampler ID#: 48351 Sample Time: 7:00:00
Sampled: 07/09/90

ANALYTE per SW-846, #8240	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	See Note (1)	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 ()
SPECIAL NOTES: (1) Total Trihalomethane Maximum Contamination Level = 100 ug/L

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: D. C. NUNO
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9007030

TO: Environmental Unit DEPT/GROUP: 543 PHONE: -0-
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
DATE OF ANALYSIS: 07/03/90
REPORT DATE: 07/12/90
Page Number: 1
LOG NUMBER 9007030

SAMPLE INFORMATION

Sample Description: VOA, Area I Road tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 11:00:00
Sampler: L. Collins Sampler ID#: 48331 Sample Time: 9:40:00
Sampled: 07/02/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 07/03/90

Page Number: 2

SAMPLE INFORMATION

LOG NUMBER 9007030

Sample Descrption. VOA, Area 1 Road tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 11:00:00
Sampler: L. Collins Sampler ID#: 48331 Sample Time: 9:40:00
Sampled: 07/02/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: M D Rhodes
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: D C Nunu
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9007028

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
DATE OF ANALYSIS: 07/05/90

REPORT DATE: 07/12/90
Page Number: 1
LOG NUMBER 9007028

SAMPLE INFORMATION

Sample Descrption: VOA, Area I Road tower 1 influent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 11:00:00
Sampler: L. Collins Sampler ID#: 48329 Sample Time: 9:35:00
Sampled: 07/02/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	23.76	6.0	0.6
1,2-Dichloroethylene (trans)	4.93	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 07/05/90

Page Number: 2

SAMPLE INFORMATION

LOG NUMBER 9007028

Sample Description: VOA, Area I Road tower 1 influent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 11:00:00
Sampler: L. Collins Sampler ID#. 48329 Sample Time: 9:35:00
Sampled: 07/02/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	43.89	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: _____ Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: D C. Dino Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006439

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0- REPORT DATE: 07/17/90
DATE OF ANALYSIS: 06/29/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006439

Sample Description: VOA's, Area I Road tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA's
Received: 06/27/90 at 11:15:00
Sampler: L. Collins Sampler ID#: 48300 Sample Time: 10:05:00
Sampled: 06/27/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/29/90

SAMPLE INFORMATION

LOG NUMBER 9006439

Sample Descrption: VOA's, Area I Road tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA's
Received: 06/27/90 at 11:15:00
Sampler: L. Collins Sampler ID#: 48300 Sample Time: 10:05:00
Sampled: 06/27/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: D. C. Nuno
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006250

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0- REPORT DATE: 06/22/90
DATE OF ANALYSIS: 06/20/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006250

Sample Description: VOA, Area I Road Tower 2-effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/18/90 at 9:40:00
Sampler: Les Collins Sampler ID#: 48257 Sample Time: 8:25:00
Sampled: 06/18/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/20/90

Page Number: 2

SAMPLE INFORMATION

LOG NUMBER 9006250

Sample Descrption: VOA, Area I Road Tower 2-effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/18/90 at 9:40:00
Sampler: Les Collins Sampler ID#: 4825
Sampled: 06/18/90 Sample Time: 8:25:00

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: Beverly K Hart for MD Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Paul Dryden
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006032

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 p 128 REPORT DATE: 06/13/90
DATE OF ANALYSIS: 06/06/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006032

Sample Description: Area 1 Road Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48190 Sample Time: 11:52:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/06/90

LOG NUMBER 9006032

SAMPLE INFORMATION

Sample Description: Area 1 Road Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48190 Sample Time: 11:52:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: A.C. Hamilton for M.D. Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C Wilcox
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006030

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 p 128 REPORT DATE: 06/13/90
DATE OF ANALYSIS: 06/07/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006030

Sample Descrption: Area 1 Road Tower 1 Influent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48188 Sample Time: 11:50:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	5.38	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	24.87	6.0	0.6
1,2-Dichloroethylene (trans)	5.38	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/07/90

SAMPLE INFORMATION — LOG NUMBER 9006030

Sample Descrption: Area 1 Road Tower 1 Influent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:20:00
Sampler: J. Sherman Sampler ID#: 48188 Sample Time: 11:50:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	43.22	5.0	1.0
Trichlorofluorometha[illegible]	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 M[illegible]th 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: A. C. Ahn for M.D. Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C Hall
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005555

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 p 120
DATE OF ANALYSIS: 06/09/90

REPOPT DATE: 06/14/90
Page Number: 1
LOG NUMBER 9005555

SAMPLE INFORMATION

Sample Descrption: Area 1 Road Tower 2 Effluent
Requester: Alan Nelson
Requested Analysic: VOA 8240, Duplicate
Received: 05/29/90 at 10:10:00
Sampler: L. Collins Sampler ID#: 48125 Sample Time: 9:15:00
Sampled: 05/29/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	0.20	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/09/90

SAMPLE INFORMATION

LOG NUMBER 9005555

Sample Descrption: Area 1 Road Tower 2 Effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240, Duplicate
Received: 05/29/90 at 10:10:00
Sampler: L. Collins Sampler ID#: 48125 Sample Time: 9:15:00
Sampled: 05/29/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: Beverly Eldert for
Manager MD Reburtson
Rocketdyne SSFL Analytical Chemistry

SIGNED: Delia C. Alicea
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005451

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90, PG 118 REPORT DATE: 05/25/90
Page Number: 1

SAMPLE INFORMATION FOR 9005451

Sample Descrption: Area I Rd Tower 2-effluent
Requester: Alan Nelson
Requested Analysis: VOA, 8240
Received: 05/22/90 at 10:30:00
Sampler: L. Collins Sampler ID#: 48096 Sample Time: 10:15:00
Sampled: 05/22/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,2-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

SAMPLE INFORMATION FOR 9005451

Sample Description: Area I Rd Tower 2-effluent
Requester: Alan Nelson
Requested Analysis: VOA, 8240
Received: 05/22/90 at 10:30:00
Sampler: L. Collins Sampler ID#: 48096 Sample Time: 10:15:00
Sampled: 05/22/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: Beverly Ptkert for
Manager MD Robertson
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Miller
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005453

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90, PG 118 REPORT DATE: 05/25/90
Page Number: 1

SAMPLE INFORMATION FOR 9005453

Sample Descrption: Trip Blk, form B/300
Requester: Alan Nelson
Requested Analysis: VOA, 8240
Received: 05/22/90 at 10:30:00
Sampler: L. Collins Sampler ID#: 48095 Sample Time: 9:50:00
Sampled: 05/22/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

SAMPLE INFORMATION FOR 9005453

Sample Description: Trip Blk, form B/300
Requester: Alan Nelson
Requested Aralysis: VOA, 8240
Received: 05/22/90 at 10:30:00
Sampler: L. Collins Sampler ID#: 48095 Sample Time: 9:50:00
Sampled: 05/22/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	200	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: Beverly K. Hurt for
Manager M.D. Patterson
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Hillen
Chemist
Rocketdyne SSFL Analytical Chemistry

BRAVO Treatment System

CHEMICAL ANALYSIS REPORT

Log Number 9007110

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0- REPORT DATE: 07/27/90
DATE OF ANALYSIS: 07/09/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9007110

Sample Descrption: VOA, Bravo Tower 4 effluent
Requester: Alan Nelson
Requested Analysis: VOAs
Received: 07/09/90 at 11:16:00
Sampler: L. Collins Sampler ID#: 48364 Sample Time: 9:45:00
Sampled: 07/09/90

ANALYTE per SW-846, #8240	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	See Note (1)	0.4
Bromoform	1.34	See Note (1)	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	See Note (1)	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 07/09/90

SAMPLE INFORMATION — LOG NUMBER 9007110

Sample Description: VOA, Bravo Tower 4 effluent
Requester: Alan Nelson
Requested Analysis: VOAs
Received: 07/09/90 at 11:16:00
Sampler: L. Collins Sampler ID#: 48364 Sample Time: 9:45:00
Sampled: 07/09/90

ANALYTE per SW-846, #8240	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	See Note (1)	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 ()
SPECIAL NOTES: (1) Total Trihalomethane Maximum Contamination Level = 100 ug/L

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: _____
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9007108

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
REPORT DATE: 07/27/90
DATE OF ANALYSIS: 07/09/90
Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9007108

Sample Descrption: VOA, Bravo Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOAs
Received: 07/09/90 at 11:16:00
Sampler: L. Collins Sampler ID#: 48361 Sample Time: 9:35:00
Sampled: 07/09/90

ANALYTE per SW-846, #8240	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	See Note (1)	0.4
Bromoform	1.94	See Note (1)	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	0.57	See Note (1)	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 07/09/90

SAMPLE INFORMATION — LOG NUMBER 9007108

Sample Descrption: VOA, Bravo Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOAs
Received: 07/09/90 at 11:16:00
Sampler: L. Collins Sampler ID#: 48361 Sample Time: 9:35:00
Sampled: 07/09/90

ANALYTE per SW-846, #8240	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	1.11	See Note (1)	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 ()
SPECIAL NOTES: (1) Total Trihalomethane Maximum Contamination Level = 100 ug/L

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: _____ SIGNED: _____
Manager
Rocketdyne SSFL Analytical Chemistry
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9007022

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
DATE OF ANALYSIS: 07/03/90
REPORT DATE: 07/12/90
Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9007022

Sample Description: VOA, Bravo tower 4 effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 11:00:00
Sampler: L. Collins Sampler ID#: 48321 Sample Time: 8:10:00
Sampled: 07/02/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	1.04	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	0.69	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 07/03/90

LOG NUMBER: 9007022

SAMPLE INFORMATION

Sample Description: VOA, Bravo tower 4 effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 11:00:00
Sampler: L. Collins Sampler ID#: 48321 Sample Time: 8:10:00
Sampled: 07/02/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	0.76	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	50	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: D C Nino
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9007020

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
DATE OF ANALYSIS: 07/03/90

REPORT DATE: 07/12/90
Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9007020

Sample Description: VOA, Bravo tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 11:00:00
Sampler: L. Collins Sampler ID#: 48318 Sample Time: 8:05:00
Sampled: 07/02/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	1.21	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	0.58	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 07/03/90

Page Number: 2

SAMPLE INFORMATION

LOG NUMBER 9007020

Sample Descrption: VOA, Bravo tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 11:00:00
Sampler: L. Collins Sampler ID#: 48318 Sample Time: 8:05:00
Sampled: 07/02/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: M D Roberts
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: D C Nino
Chemist
Rocketdyne SSFL Analytical Chemistry

190

CHEMICAL ANALYSIS REPORT

Log Number 9007018

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0- REPORT DATE: 07/12/90
DATE OF ANALYSIS: 07/03/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9007018

Sample Description: VOA, Bravo tower 1 & 3 influent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 11:00:00
Sampler: L. Collins Sampler ID#: 48316 Sample Time: 8:00:00
Sampled: 07/02/90

ANALYTE	RESULT, ug/L.	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	15.60	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 07/03/90

SAMPLE INFORMATION

LOG NUMBER 9007018

Sample Descrption: VOA, Bravo tower 1 & 3 influent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 11:00:00
Sampler: L. Collins Sampler ID#: 48316 Sample Time: 8:00:00
Sampled: 07/02/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	112.98	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: _____
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006433

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
DATE OF ANALYSIS: 06/29/90
REPORT DATE: 07/17/90
Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006433

Sample Descrption: VOA's, Bravo tower 4 effluent
Requester: Alan Nelson
Requested Analysis: VOA's
Received: 06/27/90 at 11:15:00
Sampler: L. Collins Sampler ID#: 4829. Sample Time: 7:50 00
Sampled: 06/27/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	1.75	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	0.58	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

SAMPLE INFORMATION — LOG NUMBER 9006433

Sample Descrption: VOA's, Bravo tower 4 effluent
Requester: Alan Nelson
Requested Analysis: VOA's
Received: 06/27/90 at 11:15:00
Sampler: L. Collins Sampler ID#: 48291 Sample Time: 7:50:00
Sampled: 06/27/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: _____ SIGNED: _____

Manager
Rocketdyne SSFL Analytical Chemistry

Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006431

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
REPORT DATE: 07/17/90
DATE OF ANALYSIS: 06/29/90
Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006431

Sample Description: VOA's, Bravo tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA's
Received: 06/27/90 at 11:15:00
Sampler: L. Collins Sampler ID#: 48288 Sample Time: 7:40:00
Sampled: 06/27/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	1.18	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/29/90

SAMPLE INFORMATION

LOG NUMBER 9006431

Sample Descrption: VOA's, Bravo tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA's
Received: 06/27/90 at 11:15:00
Sampler: L. Collins Sampler ID#: 48288 Sample Time: 7:40:00
Sampled: 06/27/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: _____
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006244

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0- REPORT DATE: 06/22/90
DATE OF ANALYSIS: 06/20/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006244

Sample Descrption: VOA, Bravo Tower 4-S-effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/18/90 at 9:40:00
Sampler: Les Collins Sampler ID#: 48248 Sample Time: 8:20:00
Sampled: 06/18/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINANT	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	2.83	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/20/90

SAMPLE INFORMATION — LOG NUMBER 9006244

Sample Descrption: VOA, Bravo Tower 4-S-effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/18/90 at 9:40:00
Sampler: Les Collins Sampler ID#: 48248 Sample Time: 8:20:00
Sampled: 06/18/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	2.39	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: Beverly K Hurt for
Manager MD Laboratories
Rocketdyne SSFL Analytical Chemistry

SIGNED: Paul Douglas
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006242

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0- REPORT DATE: 06/22/90
DATE OF ANALYSIS: 06/20/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006242

Sample Descrption: VOA, Bravo Tower 2-effluent
Requester: Allan Nelson
Requested Analysis: 624
Received: 06/[illegible]/90 at 9:40:00
Sampler: Les Collins Sampler ID#: 48245 Sample Time: 8:10:00
Sampled: 06/18/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	1.66	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/20/90

SAMPLE INFORMATION — LOG NUMBER 9006242

Sample Descrption: VOA, Bravo Tower 2-effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/18/90 at 9:40:00
Sampler: Les Collins Sampler ID#: 48245 Sample Time: 8:10:00
Sampled: 06/18/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: Beverly F. Hurt for Manager MD Laboratories
Rocketdyne SSFL Analytical Chemistry

SIGNED: Paul Snyder
Chemist
Rocke SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006239

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
REPORT DATE: 07/05/90
DATE OF ANALYSIS: 06/20/90
Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006239

Sample Descrption: VOA, Waste Yard Trip Blank
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/18/90 at 9:40:00
Sampler: Les Collins Sampler ID#: 48241 Sample Time: 7:30:00
Sampled: 06/18/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

ATE OF ANALYSIS: 06/20/90

Page Number: 2

SAMPLE INFORMATION

LOG NUMBER 9006239

Sample Description: VOA, Waste Yard Trip Blank
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/18/90 at 9:40:00
Sampler: Les Collins Sampler ID#: 48241 Sample Time: 7:30:00
Sampled: 06/18/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: Beverly F. Hurt for MD Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: D.C. Miller for P. Grazulis
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006145

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0- REPORT DATE: 06/20/90
DATE OF ANALYSIS: 06/15/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006145

Sample Descrption: VOA, Bravo Tower 4 system effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/11/90 at 11:30:00
Sampler: L.L. Collins Sampler ID#: 48216 Sample Time: 8:00:00
Sampled: 06/11/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	2.27	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	0.73	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/15/90

SAMPLE INFORMATION — LOG NUMBER 9006145

Sample Descrption: VOA, Bravo Tower 4 system effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/11/90 at 11:30:00
Sampler: L.L. Collins Sampler ID#: 48216 Sample Time: 8:00:00
Sampled: 06/11/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: _____
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006143

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
REPORT DATE: 06/20/90
DATE OF ANALYSIS: 06/15/90
Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006143

Sample Descrption: VOA, Bravo Tower 2 system effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/11/90 at 11:30:00
Sampler: L.L. Collins Sampler ID#: 48213 Sample Time: 7:50:00
Sampled: 06/11/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	2.14	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/15/90

SAMPLE INFORMATION

LOG NUMBER 9006143

Sample Descrption: VOA, Bravo Tower 2 system effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/11/90 at 11:30:00
Sampler: L.L. Collins Sampler ID#: 48213 Sample Time: 7:50:00
Sampled: 06/11/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Dina C. Miller
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006153

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
DATE OF ANALYSIS: 06/15/90

REPORT DATE: 06/21/90
Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006153

Sample Descrption: VOA, Waste yard trip Blank
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/11/90 at 11:30:00
Sampler: L.L. Collins Sampler ID#: 48212 Sample Time: 7:00:00
Sampled: 06/11/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

SAMPLE INFORMATION — LOG NUMBER 9006153

Sample Descrption: VOA, Waste yard trip Blank
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/11/90 at 11:30:00
Sampler: L.L. Collins Sampler ID#: 48212 Sample Time: 7:00:00
Sampled: 06/11/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Fuller
Chemist
Rocketdyne SSFL Analytical

CHEMICAL ANALYSIS REPORT

Log Number 9006025

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 P 128 REPORT DATE: 06/13/90
DATE OF ANALYSIS: 06/06/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006025

Sample Descrption: BRAVO Tower 4 effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48183 Sample Time: 10:26:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloroproper (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	1.18	N.S.	0.4
Bromoform	3.88	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	1.22	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/06/90

SAMPLE INFORMATION

LOG NUMBER 9006025

Sample Description: BRAVO Tower 4 effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48183 Sample Time: 10:26:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	2.28	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: S 846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: A.C. Hanzlik for M.D. Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Iffley
Chemist
Rocketdyne SSFL Analytical Chemistry

DATE OF ANALYSIS: 06/06/90

SAMPLE INFORMATION

LOG NUMBER 9006023

Sample Descrption: BRAVO Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48181 Sample Time: 10:25:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: A.C. Nan for M.D. Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Hiller
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006023

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 P 128 REPORT DATE: 06/13/90
DATE OF ANALYSIS: 06/06/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006023

Sample Descrpti n: BRAVO Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48181 Sample Time: 10:25:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	1.68	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

CHEMICAL ANALYSIS REPORT

Log Number 9006021

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 P 128 REPORT DATE: 06/13/90
DATE OF ANALYSIS: 06/07/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006021

Sample Descrption: BRAVO Tower 1 Influent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48179 Sample Time: 10:24:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	13.63	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	1.52	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	0.84	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/07/90

SAMPLE INFORMATION

LOG NUMBER 9006021

Sample Descrption: BRAVO Tower 1 Influent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48179 Sample Time: 10:24:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	1.66	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	108.95	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: R.C. Ham for M.D. Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Erma C. Hillis
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006017

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 P 128 REPORT DATE: 06/13/90
DATE OF ANALYSIS: 06/06/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006017

Sample Descrption: HWSA Trip Blank
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48174 Sample Time: 7:31:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/06/90

SAMPLE INFORMATION

LOG NUMBER 9006017

Sample Descrption: HWSA Trip Blank
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48174 Sample Time: 7:31:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: A.C. Han for M.D. Roberton
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C Miller
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005549

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 p 120
DATE OF ANALYSIS: 06/08/90
REPORT DATE: 06/14/90
Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9005549

Sample Descrption: BRAVO Tower 2-S Effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240, Duplicate
Received: 05/29/90 at 10:10:00
Sampler: L. Collins Sampler ID#: 48116 Sample Time: 8:10:00
Sampled: 05/29/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	3.39	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	0.81	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/08/90

SAMPLE INFORMATION

LOG NUMBER 9005549

Sample Descrption: BRAVO Tower 2-S Effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240, Duplicate
Received: 05/29/90 at 10:10:00
Sampler: L. Collins Sampler ID#: 48116 Sample Time: 8:10:00
Sampled: 05/29/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	1.71	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: Beverly K. Hurt for
Manager M.D. Robertson
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Collins
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005551

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 p 120
DATE OF ANALYSIS: 06/08/90

REPORT DATE: 06/14/90
Page Number: 1
LOG NUMBER 9005551

SAMPLE INFORMATION

Sample Description: BRAVO Tower 4-S Effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240, Duplicate
Received: 05/29/90 at 10:10:00
Sampler: L. Collins Sampler ID#: 48119 Sample Time: 8:25:00
Sampled: 05/29/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.1	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	2.35	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	0.77	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

SAMPLE INFORMATION — LOG NUMBER 9005551

Sample Descrption: BRAVO Tower 4-S Effluent
Requester: Alan Nelson
equest d Analysis: VOA 8240, Duplicate
Received: 05/29/90 at 10:10:00
Sampler: L. Collins Sampler ID#: 48119 Sample Time: 8:25:00
Sampled: 05/29/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	1.01	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: Beverly F. Kurt for M.D. Kotterson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Hillis
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005406

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 P116 REPORT DATE: 05/25/90

SAMPLE INFORMATION FOR 9005406

Sample Descrption: Bravo Tower 4 System Effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 05/21/90 at 11:05:00
Sampler: L. Collins Sampler ID#: 48077 Sample Time: 8:23:00
Sampled: 05/21/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	3.66	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

SAMPLE INFORMATION FOR 9005406

Sample Descrption: Bravo Tower 4 System Effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 05/21/90 at 11:05:00
Sampler: L. Collins Sampler ID#: 48077 Sample Time: 8:23:00
Sampled: 05/21/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	2.57	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: Beverly F. Hurt for M D Patterson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Miller
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005401

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 P116 REPORT DATE: 05/25/90

SAMPLE INFORMATION FOR 9005401

Sample Descrption: Waste Yard Trip Blank for VOA's
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 05/21/90 at 11:05:00
Sampler: L. Collins Sampler ID#: 48070 Sample Time: 7:30:00
Sampled: 05/21/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

SAMPLE INFORMATION FOR 9005401

Sample Description: Waste Yard Trip Blank for VOA's
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 05/21/90 at 11:05:00
Sampler: L. Collins Sampler ID#: 48070 Sample Time: 7:30:00
Sampled: 05/21/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: Beverly F. Hurt for M.D. Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Miller
Chemist
Rocketdyne SSFL Analytica

CHEMICAL ANALYSIS REPORT

Log Number 9005404

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 P116 REPORT DATE: 05/25/90
Page Number: 1

SAMPLE INFORMATION FOR 9005404

Sample Descrption: Bravo Tower 2 System Effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 05/21/90 at 11:05:00
Sampler: L. Collins Sampler ID#: 48074 Sample Time: 8:15:00
Sampled: 05/21/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	2.24	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

SAMPLE INFORMATION FOR 9005404

Sample Descrption: Bravo Tower ? System Effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 05/21/90 @ 11:05:00
Sampler: L. Collins Sampler ID#: 48074 Sample Time: 8:15:00
Sampled: 05/21/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

8240

APPROVED: Beverly K. Hurt for M.D. Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Hillis
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005295

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-163, ext. 5827
REFERENCE: LB 90, page 110
DATE OF ANALYSIS: 05/24/90
REPORT DATE: 06/14/90
Page Number: 1
LOG NUMBER 9005295

SAMPLE INFORMATION

Sample Description: Bravo Tower 2 System Effluent
Requester: Alan Nelson
Requested Analysis: 8240
Received: 05/14/90 at 10:42:00
Sampler: L. Collins Sampler ID#: 48034
Sampled: 05/14/90 Sample Time: 7:55:00

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	4.12	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	6.76	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 05/24/90

SAMPLE INFORMATION

LOG NUMBER 9005295

Sample Descrption: Bravo Tower 2 System Effluent
Requester: Alan Nelson
Requested Analysis: 8240
Received: 05/14/90 at 10:42:00
Sampler: L. Collins Sampler ID#: 48034 Sample Time: 7:55:00
Sampled: 05/14/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: Beverly Reburt for M D Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Dena C Hill
Chemist
Rocketdyne SSFL Analytical Chemistry

CANYON Treatment System

CHEMICAL ANALYSIS REPORT

Log Number 9007102

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0- REPORT DATE: 07/27/90
DATE OF ANALYSIS: 07/10/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9007102

Sample Description: VOA, Canyon Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOAs
Received: 07/09/90 at 11:16:00
Sampler: L. Collins Sampler ID#: 48352 Sample Time: 8:00:00
Sampled: 07/09/90

ANALYTE per SW-846, #8240	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	See Note (1)	0.4
Bromoform	<0.6	See Note (1)	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	See Note (1)	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 07/10/90

SAMPLE INFORMATION

LOG NUMBER 9007102

Sample Descrption: VOA, Canyon Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOAs
Received: 07/09/90 at 11:16:00
Sampler: L. Collins Sampler ID#: 48352 Sample Time: 8:00:00
Sampled: 07/09/90

ANALYTE per SW-846, #8240	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	See Note (1)	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 ()
SPECIAL NOTES: (1) Total Trihalomethane Maximum Contamination Level = 100 ug/L

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: _____
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9007026

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, Ext. 5827
REFERENCE: -0-
DATE OF ANALYSIS: 07/03/90
REPORT DATE: 07/12/90
Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9007026

Sample Descrption: VOA, Canyon tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 11:00:00
Sampler: L. Collins Sampler ID#: 48326 Sample Time: 9:20:00
Sampled: 07/02/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 07/03/90

SAMPLE INFORMATION

LOG NUMBER 9007026

Sample Descrption: VOA, Canyon tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 11:00:00
Sampler: L. Collins Sampler ID#: 48326 Sample Time: 9:20:00
Sampled: 07/02/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: D. C. Nino
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

* Ammended Report *

Log Number 9007024

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International , D/539-169, ext. 5827
REFERENCE: -0-
DATE OF ANALYSIS: 07/05/90
REPORT DATE: 07/31/90
Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9007024

Sample Description: VOA, Canyon Tower 1 Influent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 11:00:00
Sampler: L. Collins Sampler ID#: 48324 Sample Time: 9:15:00
Sampled: 07/02/90

ANALYTE per #8240, SW-846	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	3.70	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	31.1	6.0	0.6
1,2-Dichloroethylene (trans)	3.70	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	See Note 1	0.4
Bromoform	<0.6	See Note 1	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	See Note 1	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 07/05/90

SAMPLE INFORMATION — LOG NUMBER 9007024

Sample Descrption: VOA, Canyon Tower 1 Influent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 11:00:00
Sampler: L. Collins Sampler ID#: 48324 Sample Time: 9:15:00
Sampled: 07/02/90

ANALYTE per #8240, SW-846	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	See Note 1	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	0.32	100	0.6
Trichloroethylene (TCE)	120.55	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 ()
SPECIAL NOTES: (1) Total Trihalomethane Maximum Contamination Level = 100 ug/L

COMMENTS: -0- supercedes previously issued report labled "Effluent"

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C Nino
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9007013

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0- REPORT DATE: 07/12/90
DATE OF ANALYSIS: 07/03/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9007013

Sample Description: VOA waste yard trip blank
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 11:00:00
Sampler: L. Collins Sampler ID#: 48310 Sample Time: 7:00:00
Sampled: 07/02/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 07/03/90

Page Number: 2

SAMPLE INFORMATION

LOG NUMBER 9007013

Sample Description: VOA waste yard trip blank
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 11:00:00
Sampler: L. Collins Sampler ID#: 48310 Sample Time: 7:00:00
Sampled: 07/02/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: _____
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006437

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
DATE OF ANALYSIS: 06/29/90 REPORT DATE: 07/17/90
Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006437

Sample Description: VOA's, Canyon tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA's
Received: 06/27/90 at 11:15:00
Sampler: L. Collins Sampler ID#: 48297
Sampled: 06/27/90 Sample Time: 9:50:00

ANALYTE	RESULT ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/29/90

SAMPLE INFORMATION — LOG NUMBER 9006437

Sample Descrption: VOA's, Canyon tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA's
Received: 06/27/90 at 11:15:00
Sampler: L. Collins Sampler ID#: 48297 Sample Time: 9:50:00
Sampled: 06/27/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #[illegible] for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: D. C. Dino
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006248

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
DATE OF ANALYSIS: 06/20/90
REPORT DATE: 06/22/90
Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006248

Sample Description: VOA, Canyon Tower 2-effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/18/90 at 9:40:00
Sampler: Les Collins Sampler ID#: 48254 Sample Time: 9:05:00
Sampled: 06/18/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/20/90

SAMPLE INFORMATION

LOG NUMBER 9006248

Sample Descrption: VOA, Canyon Tower 2-effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/18/90 at 9:40:00
Sampler: Les Collins Sampler ID#: 48254 Sample Time: 9:05:00
Sampled: 06/18/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: Beverly K. Hurt for MD Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Paul Gryder
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006149

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
DATE OF ANALYSIS: 06/15/90
REPORT DATE: 06/20/90
Page Number: 1
LOG NUMBER 9006149

SAMPLE INFORMATION

Sample Descrption: VOA, Canyon Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/11/90 at 11:30:00
Sampler: L.L. Collins Sampler ID#: 48222
Sampled: 06/11/90 Sample Time: 10:05:00

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	0.68	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/15/90

Page Number: 2
LOG NUMBER 9006149

SAMPLE INFORMATION

Sample Descrption: VOA, Canyon Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/11/90 at 11:30:00
Sampler: L.L. Collins Sampler ID#: 48222
Sampled: 06/11/90 Sample Time: 10:05:00

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

✓ APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Miller
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006036

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 p 128 REPORT DATE: 06/13/90
DATE OF ANALYSIS: 06/06/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006036

Sample Descrption: Canyon Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48194 Sample Time: 12:17:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/06/90

LOG NUMBER 9006036

SAMPLE INFORMATION

Sample Descrption: Canyon Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48194 Sample Time: 12:17:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: A.C. Bam for M.D. Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Miller
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006034

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Di . Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 p 128 REPORT DATE: 06/13/90
DATE OF ANALYSIS: 06/07/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006034

Sample Descrption: Canyon Tower 1 Influent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48192 Sample Time: 12:15:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	29.74	6.0	0.6
1,2-Dichloroethylene (trans)	3.03	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	0.51	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/07/90

SAMPLE INFORMATION — LOG NUMBER 9006034

Sample Descrption: Canyon Tower 1 Influent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48192 Sample Time: 12:15:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	119.68	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: A.C. Nau for M.D. Roberts
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C Hallen
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005557

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 p 120 REPORT DATE: 06/14/90
DATE OF ANALYSIS: 06/09/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9005557

Sample Description: Canyon Tower 2 Effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240, Duplicate
Received: 05/29/90 at 10:10:00
Sampler: L. Collins Sampler ID#: 48128 Sample Time: 9:50:00
Sampled: 05/29/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichlorcethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	0.44	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/09/90

SAMPLE INFORMATION

LOG NUMBER 9005557

Sample Descrption: Canyon Tower 2 Effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240, Duplicate
Received: 05/29/90 at 10:10:00
Sampler: L. Collins Sampler ID#: 48128 Sample Time: 9:50:00
Sampled: 05/29/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE) *	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

✓ APPROVED: Beverly Eldurt for SIGNED: Debra C. Miller

Manager MD Laboratories
Rocketdyne SSFL Analytical Chemistry

Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005410

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 P116
REPORT DATE: 05/25/90

SAMPLE INFORMATION FOR 9005410

Sample Descrption: Canyon Tower 2 Effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 05/21/90 at 11:05:00
Sampler: L. Collins Sampler ID#: 48083 Sample Time: 10:20:00
Sampled: 05/21/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

SAMPLE INFORMATION FOR 9005410

Sample Descrption: Canyon Tower 2 Effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 05/21/90 at 11:05:00
Sampler: L. Collins Sampler ID#: 48083 Sample Time: 10:20:00
Sampled: 05/21/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: Beverly K Hurt for MD Patterson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Miller
Chemist
Rocketdyne SSFL Analytical Chemistry

DELTA Treatment System

CHEMICAL ANALYSIS REPORT

Log Number 9007106

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
DATE OF ANALYSIS: 07/10/90
REPORT DATE: 07/27/90
Page Number: 1
LOG NUMBER 9007106

SAMPLE INFORMATION

Sample Description: VOA, Delta Tower 2 effluent.
Requester: Alan Nelson
Requested Analysis: VOAs
Received: 07/09/90 at 11:16:00
Sampler: L. Collins Sampler ID#: 48358 Sample Time: 9:10:00
Sampled: 07/09/90

ANALYTE per SW-846, #8240	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	See Note 1	0.4
Bromoform	<0.6	See Note 1	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	See Note 1	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 07/10/90

SAMPLE INFORMATION

LOG NUMBER 9007106

Sample Description: VOA, Delta Tower 2 effluent.
Requester: Alan Nelson
Requested Analysis: VOAs
Received: 07/09/90 at 11:16:00
Sampler: L. Collins Sampler ID#: 48358 Sample Time: 9:10:00
Sampled: 07/09/90

ANALYTE per SW-846, #8240	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	See Note 1	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 ()
SPECIAL NOTES: (1) Total Trihalomethane Maximum Contamination Level = 100 ug/L

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: D. C. Nimo
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9007034

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
DATE OF ANALYSIS: 07/03/90
REPORT DATE: 07/12/90
Page Number: 1
LOG NUMBER 9007034

SAMPLE INFORMATION

Sample Descrption: VOA, Delta tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 12:00:00
Sampler: L. Collins Sampler ID#: 48336 Sample Time: 10:25:00
Sampled: 07/02/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	4.41	N.S.	0.4
Bromoform	7.42	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	2.52	N.S	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 07/03/90

SAMPLE INFORMATION

LOG NUMBER 9007034

Sample Description: VOA, Delta tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 12:00:00
Sampler: L. Collins Sampler ID#: 48336 Sample Time: 10:25:00
Sampled: 07/02/90

ANALYTE	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	9.64	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: M A Roberts
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: R C Wind
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9007032

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
DATE OF ANALYSIS: 07/05/90
REPORT DATE: 07/27/90
Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9007032

Sample Description: VOA, Delta tower 1 influent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 12:00:00
Sampler: L. Collins Sampler ID#: 48335 Sample Time: 10:15:00
Sampled: 07/02/90

ANALYTE per #8240, SW-846	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	163.4	6.0	0.6
1,2-Dichloroethylene (trans)	3.03	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	4.83	N.S.	0.4
Bromoform	3.59	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	1.93	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 07/05/90

SAMPLE INFORMATION

LOG NUMBER 9007032

Sample Descrption: VOA, Delta tower 1 influent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 07/02/90 at 12:00:00
Sampler: L. Collins Sampler ID#: 48335 Sample Time: 10:15:00
Sampled: 07/02/90

ANALYTE per 8240, SW-846	RESULT, ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	8.35	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	140.51	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: D.C. WINE
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006435

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
DATE OF ANALYSIS: 06/29/90 REPORT DATE: 07/17/90

SAMPLE INFORMATION

Page Number: 1
LOG NUMBER 9006435

Sample Descrption: VOA's, Delta tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA's
Received: 06/27/90 at 11:15:00
Sampler: L. Collins Sampler ID#: 48294
Sampled: 06/27/90 Sample Time: 9:15:00

ANALYTE	RESULT ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	1.67	N.S.	0.4
Bromoform	10.20	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/29/90

SAMPLE INFORMATION

LOG NUMBER 9006435

Sample Description: VOA's, Delta tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA's
Received: 06/27/90 at 11:15:00
Sampler: L. Collins Sampler ID#: 48294 Sample Time: 9:15:00
Sampled: 06/27/90

ANALYTE	RESULT ug/L	MAX. LEVEL CONTAMINANTS	DETECTION LIMIT (MDL)
Dibromochloromethane	6.40	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: Not to [illegible]
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: D C Nunn
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006246

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
DATE OF ANALYSIS: 06/20/90
REPORT DATE: 06/22/90
Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006246

Sample Descrption: VOA, Delta Tower 2-effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/18/90 at 9:40:00
Sampler: Les Collins Sampler ID#: 48251 Sample Time: 8:35:00
Sampled: 06/18/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	1)0	0.2
1,2-Dichloroethane	<0.3	. .5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	8.92	N.S.	0.4
Bromoform	8.11	N.S.	0.6
Bromometh ne	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	4.59	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/20/90

SAMPLE INFORMATION

LOG NUMBER 9006246

Sample Descrption: VOA, Delta Tower 2-effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/18/90 at 9:40:00
Sampler: Les Collins Sampler ID#: 48251 Sample Time: 8:35:00
Sampled: 06/18/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	15.25	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xyleres (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: Beverly F. Ikert for
Manager MD Robertson
Rocketdyne SSFL Analytical Chemistry

SIGNED: Paul Douglas
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006147

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0- REPORT DATE: 06/20/90
DATE OF ANALYSIS: 06/15/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006147

Sample Descrption: VOA, Delta Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/11/90 at 11:30:00
Sampler: L.L. Collins Sampler ID#: 48219 Sample Time: 9:05:00
Sampled: 06/11/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	5.61	N.S.	0.4
Bromoform	11.44	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	2.68	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/15/90

Page Number: 2

SAMPLE INFORMATION

LOG NUMBER 9006147

Sample Description: VOA, Delta Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/11/90 at 11:30:00
Sampler: L.L. Collins Sampler ID#: 48219 Sample Time: 9:05:00
Sampled: 06/11/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (SDL)
Dibromochloromethane	13.25	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW-846 #8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: _____
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006028

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 p 128 REPORT DATE: 06/13/90
DATE OF ANALYSIS: 06/06/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006028

Sample Descrption: DELTA Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48186 Sample Time: 11:31:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	4.78	N.S.	0.4
Bromoform	7.06	N.S.	0.6
Bromomethane	<0.6	N.S.	0.3
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	2.54	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/06/90

SAMPLE INFORMATION — LOG NUMBER 9006028

Sample Description: DELTA Tower 2 effluent
Requester: Alan Nelson
Requested Analysis: EPA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48186 Sample Time: 11:31:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	10.45	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: A.C. Ham for M.D. Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: [signature]
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006026

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 P 128 REPORT DATE: 06/13/90
DATE OF ANALYSIS: 06/07/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006026

Sample Descrption: DELTA Tower 1 Influent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48184 Sample Time: 11:29:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	4.64	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	161.67	6.0	0.6
1,2-Dichloroethylene (trans)	6.64	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	3.49	N.S.	0.4
Bromoform	1.80	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	2.90	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/07/90

SAMPLE INFORMATION

LOG NUMBER 9006026

Sample Description: DELTA Tower 1 Influent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 06/04/90 at 12:29:00
Sampler: J. Sherman Sampler ID#: 48184 Sample Time: 11:29:00
Sampled: 06/04/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	4.88	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	131.16	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: A.C. Nam for M.D. Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Dina C. Hillis
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005639

TO: Environmental Unit DEPT/GROUP: -0- PHONE: -0-
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 page 125 REPORT DATE: 06/14/90
DATE OF ANALYSIS: 06/08/90 Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9005639

Sample Description: Trip Blank for Delta Tower Effluent
Requester: -0-
Requested Analysis: 8240 VOAs
Received: 05/30/90 at 15:25:00
Sampler: Richard Banaga Sampler ID#: 58 Sample Time: 14:35:00
Sampled: 05/30/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/08/90

SAMPLE INFORMATION — LOG NUMBER 9005639

Sample Descrption: Trip Blank for Delta Tower Effluent
Requester: -0-
Requested Analysis: 8240 VOAs
Received: 05/30/90 at 15:25:00
Sampler: Richard Banaga Sampler ID#: 58 Sample Time: 14:35:00
Sampled: 05/30/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

✓ APPROVED: Beverly Eldert for M.D. Patterson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Heller
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005673

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB. 90 pg. 126
DATE OF ANALYSIS: 06/08/90
REPORT DATE: 06/14/90
Page Number: 1
LOG NUMBER 9005673

SAMPLE INFORMATION

Sample Descrption: Delta Tower, water from B/059 Tank
Requester: Alan Nelson
Requested Analysis: 8240
Received: 06/01/90 at 13:14:00
Sampler: J. Sherman Sampler ID#: 344 Sample Time: 12:00:00
Sampled: 06/01/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	0.50	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/08/90

SAMPLE INFORMATION

LOG NUMBER 9005673

Sample Descrption: Delta Tower, water from B/059 Tank
Requester: Alan Nelson
Requested Analysis: 8240
Received: 06/01/90 at 13:14:00
Sampler: J. Sherman Sampler ID#: 344 Sample Time: 12:00:00
Sampled: 06/01/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: Beverly F. Hurt for MD Patterson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Alan C. Nelson
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005672

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/579-169, ext. 5827
REFERENCE: LB. 90 pg. 126
DATE OF ANALYSIS: 06/08/90
REPORT DATE: 06/14/90
Page Number: 1
LOG NUMBER 9005672

SAMPLE INFORMATION

Sample Descrption: Trip Blank from HWSA D.I. Water, #343, for 8240
Requester: Alan Nelson
Requested Analysis: 8240
Received: 06/01/90 at 13:14:00
Sampler: J. Sherman Sampler ID#: 343
Sampled: 06/01/90 Sample Time: 11:55:00

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/08/90

SAMPLE INFORMATION

LOG NUMBER 9005672

Sample Descrption: Trip Blank from HWSA D.I. Water, #343, for 8240
Requester: Alan Nelson
Requested Analysis: 8240
Received: 06/01/90 at 13:14:00
Sampler: J. Sherman Sampler ID#: 343
Sampled: 06/01/90 Sample Time: 11:55:00

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace
2) ND = None detected
3) < = Less than
4) > = Greater than
5) DNA = Does not apply
6) N.S. = Not Stated

APPROVED: Beverly F. Hurt for MD Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Willis
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005553

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
RFFERENCE: LB 90 p 120
DATE OF ANALYSIS: 06/08/90
REPORT DATE: 06/14/90
Page Number: 1
LOG NUMBER 9005553

SAMPLE INFORMATION

Sample Descrption: DELTA Tower 2 Effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240, Duplicate
Received: 05/29/90 at 10:10:00
Sampler: L. Collins Sampler ID#: 48122 Sample Time: 8:45:00
Sampled: 05/29/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis,	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	3.36	N.S.	0.4
Bromoform	6.79	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	1.81	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/08/90

Page Number: 2

SAMPLE INFORMATION

LOG NUMBER 9005553

Sample Descrption: DELTA Tower 2 Effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240, Duplicate
Received: 05/29/90 at 10:10:00
Sampler: L. Collins Sampler ID#: 48122 Sample Time: 8:45:00
Sampled: 05/29/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	8.06	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: Beverly R Ehert for
Manager MDK Editor
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C Miller
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005637

TO: Environmental Unit DEPT/GROUP: 543 PHONE: -0-
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 page 125
DATE OF ANALYSIS: 05/09/90
REPORT DATE: 06/14/90
Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9005637

Sample Descrption: Delta Tower Effluent
Requester: Alan Nelson
Requested Analysis: 8240 VOAs
Received: 05/30/90 at 15:25:00
Sampler: Richard Banaga Sampler ID#: 57 Sample Time: 15:03:00
Sampled: 05/30/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2 ?-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/09/90

SAMPLE INFORMATION

LOG NUMBER 9005637

Sample Descrption: Delta Tower Effluent
Requester: Alan Nelson
Requested Analysis: 8240 VOAs
Received: 05/30/90 at 15:25:00
Sampler: Richard Banaga Sampler ID#: 57
Sampled: 05/30/90 Sample Time: 15:03:00

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace
2) ND = None detected
3) < = Less than
4) > = Greater than
5) DNA = Does not apply
6) N.S. = Not Stated

APPROVED: Beverly Eldert for Manager MD Operation
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C Hillin
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005408

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90 P116 REPORT DATE: 05/25/90

SAMPLE INFORMATION FOR 9005408

Sample Descrption: Delta Tower 2 Effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 05/21/90 at 11:05:00
Sampler: L. Collins Sampler ID#: 48080 Sample Time: 9:00:00
Sampled: 05/21/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	7.89	N.S.	0.4
Bromoform	16.46	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	3.36	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

SAMPLE INFORMATION FOR 9005408

Sample Descrption: Delta Tower 2 Effluent
Requester: Alan Nelson
Requested Analysis: VOA 8240
Received: 05/21/90 at 11:05:00
Sampler: L. Collins Sampler ID#: 48080 Sample Time: 9:00:00
Sampled: 05/21/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	20.29	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: Beverly F. Hurt for M D Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C Miller
Chemist
Rocketdyne SSFL Analytical Chemistry

PEROXIDATION UNIT

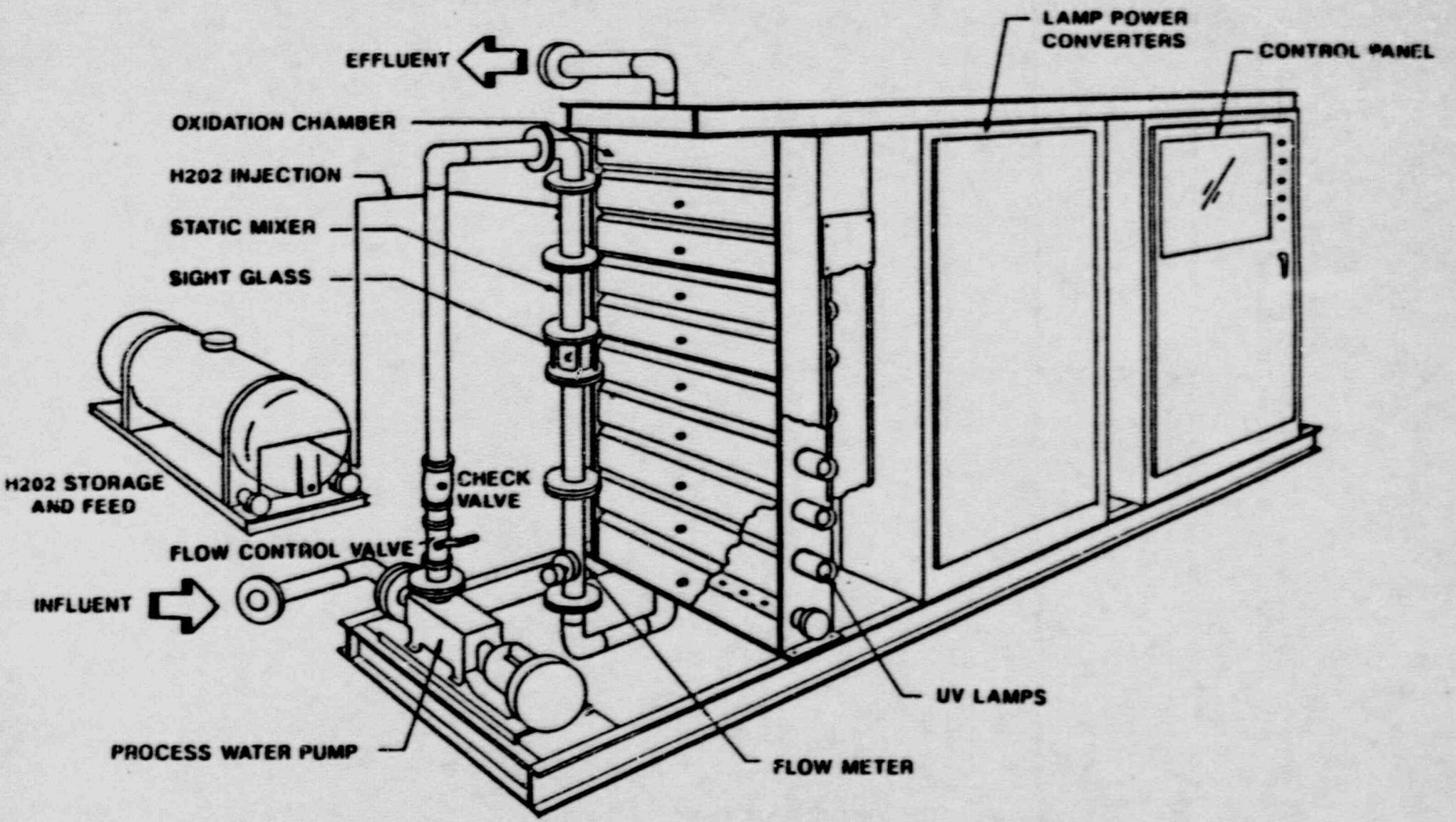
Ultraviolet Light/Hydrogen Peroxide

Treatment System

(UV/H2O2 Treatment System)

235

Equipment Arrangement And Process Water Flow For The UV/H202 System



CHEMICAL ANALYSIS REPORT

Log Number 9006053

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
REPORT DATE: 06/07/90
DATE OF ANALYSIS: 06/07/90
Page Number: 1
LOG NUMBER 9006053

SAMPLE INFORMATION

Sample Descrption: **UV Tank #1 90.0601E (ECL)**
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/05/90 at 10:00:00
Sampler: P. Pollock Sampler ID#: 6590PP1119 Sample Time: 9:10:00
Sampled: 06/05/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	5.58	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	189.76	0.5	0.3
1,2-Dichloroethylene (cis)	7.86	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	16.67	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	117.88	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/07/90

SAMPLE INFORMATION

LOG NUMBER 9006053

Sample Descrption: UV Tank #1 90.0601E (ECL)
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/05/90 at 10:00:00
Sampler: P. Pollock Sampler ID#: 6590PP1119 Sample Time: 9:10:00
Sampled: 06/05/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	2.32	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	15.30	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: Beverly L. Hurt for M.D. Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Hiller
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006048

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-53[illegible]
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
DATE OF ANALYSIS: 06/07/90

REPORT DATE: 06/07/90
Page Number: 1
LOG NUMBER 9006048

SAMPLE INFORMATION

Sample Descrption: UV Tank #2 90.0601S (STL-IV)
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/05/90 at 10:00:00
Sampler: P. Pollock Sampler ID#: 6590PP1114 Sample Time: 9:00:00
Sampled: 06/05/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	3.82	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	1.39	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	18.26	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	1.03	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/07/90

SAMPLE INFORMATION

LOG NUMBER 9006048

Sample Descrption: UV Tank #2 90.0601S (STL-IV)
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/05/90 at 10:00:00
Sampler: P. Pollock Sampler ID#: 6590PP1114 Sample Time: 9:00:00
Sampled: 06/05/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	258.72	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: Beverly Tolbert for MD Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Miller
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006041

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
REPORT DATE: 06/14/90
DATE OF ANALYSIS: 06/08/90
Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006041

Sample Descrption: Trip Blank
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/05/90 at 10:00:00
Sampler: P. Pollock Sampler ID#: 6590PP1107 Sample Time: 8:00:00
Sampled: 06/05/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

DATE OF ANALYSIS: 06/08/90

SAMPLE INFORMATION

LOG NUMBER 9006041

Sample Descrption: Trip Blank
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/05/90 at 10:00:00
Sampler: P. Pollock Sampler ID#: 6590PP1107 Sample Time: 8:00:00
Sampled: 06/05/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated

APPROVED: Beverly K Hurt for MD Rahdert
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Miller
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9006045

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: -0-
DATE OF ANALYSIS: 06/07/90
REPORT DATE: 06/07/90
Page Number: 1

SAMPLE INFORMATION — LOG NUMBER 9006015

Sample Description: ECL Raven Tank
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/05/90 at 10:00:00
Sampler: P. Pollock Sampler ID#: 0590PP1111 Sample Time: 8:35:00
Sampled: 06/05/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.6
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	63.77	0.5	0.3
1,2-Dichloroethylene (cis)	3.77	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.3	5.0	0.3
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4.0	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	10.42	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	38.45	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

SAMPLE INFORMATION — LOG NUMBER 9006045

Sample Descrption: ECL Raven Tank
Requester: Alan Nelson
Requested Analysis: VOA
Received: 06/05/90 at 10:00:00
Sampler: P. Pollock Sampler ID#: 6590PP1111 Sample Time: 8:35:00
Sampled: 06/05/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	9.13	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: -0-

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

VOA

APPROVED: Beverly F. Hurt for MD Patterson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Nille
Chemist
Rocketdyne SSFL Analytical Ch

CHEMICAL ANALYSIS REPORT

Log Number 9005124

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90, page 105 REPORT DATE: 05/17/90
Page Number: 1

SAMPLE INFORMATION FOR 9005124

Sample Description: Water, STL-4 Receiving Tank
Requester: Alan Nelson
Requested Analysis: 8240 & freon
Received: 05/03/90 at 14:00:00
Sampler: L.Collins/J.Sherman Sampler ID#: 47989 Sample Time: 13:40:00
Sampled: 05/03/90

ANALYTE	RESULT	M.S. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	11.11	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	3.41	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	43.47	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	1.01	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

SAMPLE INFORMATION FOR 9005123

Sample Descrption: Trip blank, from wasteyard
Requester: Alan Nelson
Requested Analysis: 8240 & freon
Received: 05/03/90 at 14:00:00
Sampler: L.Collins/J.Sherman Sampler ID#: 47988 Sample Time: 13:20:00
Sampled: 05/03/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	<1.0	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	<0.9.	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: *** Non-certified analysis for indication purposes only.

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

pref
APPROVED: MD Robertson
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Hillis
Chemist
Rocketdyne SSFL Analytical Chemistry

Analytical Report

LOG NO: G90-01-322

Received: 19 JAN 90
Reported: 31 JAN 90

Ms. Nancy McMillan
Rocketdyne Division
6633 Canoga Avenue, M/S SS-12
Canoga Park, CA 91304

Requisition: R94QEZ89-032382

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, WASTEWATER SAMPLES	DATE SAMPLED
01-322-6	9001.437 UV 1ST	17 JAN 90
01-322-7	9001.441 UV 2ND	17 JAN 90
01-322-8	9001.538 UV S3B3	17 JAN 90
01-322-9	9001.540 UV S3B4	17 JAN 90
01-322-10	9001.542 UV S4B4	17 JAN 90

PARAMETER	01-322-6	01-322-7	01-322-8	01-322-9	01-322-10
B/N,A Ext.Pri.Poll. (EPA-625)					
Date Analyzed	01/26/90	01/26/90	01/26/90	01/26/90	01/26/90
Date Extracted	01/22/90	01/22/90	01/22/90	01/22/90	01/22/90
Dilution Factor, Times 1	1	1	1	<1	1
1,2,4-Trichlorobenzene, ug/L	<10	<10	<10	<10	<10
1,2-Dichlorobenzene, ug/L	<10	<10	<10	<10	<10
1,2-Diphenylhydrazine, ug/L	<10	<10	<10	<10	<10
1,3-Dichlorobenzene, ug/L	<10	<10	<10	<10	<10
1,4-Dichlorobenzene, ug/L	<10	<10	<10	<10	<10
2,4,5-Trichlorophenol, ug/L	<10	<10	<10	<10	<10
2,4,6-Trichlorophenol, ug/L	<10	<10	<10	<10	<10
2,4-Dichlorophenol, ug/L	<10	<10	<10	<10	<10
2,4-Dimethylphenol, ug/L	<10	<10	<10	<10	<10
2,4-Dinitrophenol, ug/L	<25	<25	<25	<25	<25
2,4-Dinitrotoluene, ug/L	<10	<10	<10	<10	<10
2,6-Dinitrotoluene, ug/L	<10	<10	<10	<10	<10
2-Chloronaphthalene, ug/L	<10	<10	<10	<10	<10
2-Chlorophenol, ug/L	<10	<10	<10	<10	<10
2-Methyl-4,6-dinitrophenol, ug/L	<50	<50	<50	<50	<50
2-Methylnaphthalene, ug/L	<10	<10	<10	<10	<10
2-Methylphenol, ug/L	<10	<10	<10	<10	<10
2-Nitroaniline, ug/L	<50	<50	<50	<50	<50
2-Nitrophenol, ug/L	<10	<10	<10	<10	<10

SAMPLE INFORMATION FOR 9005124

Sample Description: Water, STL-4 Receiving Tank
Requester: Alan Nelson
Requested Analysis: 8240 & freon
Received: 05/03/90 at 14:00:00
Sampler: L.Collins/J.Sherman Sampler ID#: 47989 Sample Time: 13:40:00
Sampled: 05/03/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
Dibromochloromethane	<0.3	N.S.	0.3
Ethylbenzene	<0.3	680	0.3
Methylene Chloride	<0.2	40	0.2
Monochlorobenzene	<0.2	30	0.2
Tetrachloroethylene	<0.7	5.0	0.7
Toluene	<0.6	100	0.6
Trichloroethylene (TCE)	699.46	5.0	1.0
Trichlorofluoromethane	<0.4	150	0.4
Vinyl Chloride	4.59	0.5	0.9
Xylenes (Total)	<0.7	1750	0.7

SPECIFICATION: SW846 Meth 8240 (Reserved for GC/MS Samples)
SPECIAL NOTES: -0-

COMMENTS: *** Non-certified analysis for indication only.

* ABBREVIATIONS *

1) TR = Trace 2) ND = None detected 3) < = Less than
4) > = Greater than 5) DNA = Does not apply 6) N.S. = Not Stated
7) *** = Non-certified analysis for indication purposes only

APPROVED: _____
Manager
Rocketdyne SSFL Analytical Chemistry

SIGNED: Debra C. Keller
Chemist
Rocketdyne SSFL Analytical Chemistry

CHEMICAL ANALYSIS REPORT

Log Number 9005123

TO: Environmental Unit DEPT/GROUP: 543 PHONE: 392-5331
FROM: SSFL Analytical Chemistry, Rocketdyne Div. Rockwell International, D/539-169, ext. 5827
REFERENCE: LB 90, page 105
REPORT DATE: 05/17/90

SAMPLE INFORMATION FOR 9005123

Sample Descrption: Trip blank, from wasteyard
Requester: Alan Nelson
Requested Analysis: 8240 & freon
Received: 05/03/90 at 14:00:00
Sampler: L.Collins/J.Sherman Sampler ID#: 47988 Sample Time: 13:20:00
Sampled: 05/03/90

ANALYTE	RESULT	MAX. LEVEL CONTAMINATES	DETECTION LIMIT (MDL)
1,1,1-Trichloroethane (TCA)	<0.4	200	0.4
1,1,2,2-Tetrachloroethane	<0.2	1.0	0.2
1,1,2-Trichloroethane	<0.5	32	0.5
1,1-Dichloroethane	<0.2	5.0	0.2
1,1-Dichloroethylene	<0.6	6.0	0.2
1,2-Dichlorobenzene	<0.2	130	0.2
1,2-Dichloroethane	<0.3	0.5	0.3
1,2-Dichloroethylene (cis)	<0.6	6.0	0.6
1,2-Dichloroethylene (trans)	<0.3	10	0.3
1,2-Dichloropropane	<0.5	5.0	0.5
1,3-Dichlorobenzene	<0.6	130	0.6
1,3-Dichloropropene (cis)	<2.0	0.5	2.0
1,3-Dichloropropene (trans)	<2.0	0.5	2.0
1,4-Dichlorobenzene	<0.2	5.0	0.2
Acetone	<4	N.S.	4
Benzene	<0.2	1.0	0.2
Bromodichloromethane	<0.4	N.S.	0.4
Bromoform	<0.6	N.S.	0.6
Bromomethane	<0.6	N.S.	0.6
Carbon Tetrachloride	<1.0	0.5	1.0
Chloroethane	<0.5	N.S.	0.5
Chloroform	<0.2	N.S.	0.2
Chloromethane	<0.7	N.S.	0.7

Analytical Report

LOG NO: G90-01-322

Received: 19 JAN 90
Reported: 31 JAN 90

Ms. Nancy McMillan
Rocketdyne Division
6633 Canoga Avenue, M/S SS-12
Canoga Park, CA 91304

Requisition: R94QEZ89-032382

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, WASTEWATER SAMPLES	DATE SAMPLED
01-322-6	9001.437 UV 1ST	17 JAN 90
01-322-7	9001.441 UV 2ND	17 JAN 90
01-322-8	9001.538 UV S3B3	17 JAN 90
01-322-9	9001.540 UV S3B4	17 JAN 90
01-322-10	9001.542 UV S4B4	17 JAN 90

PARAMETER	01-322-6	01-322-7	01-322-8	01-322-9	01-322-10
3,3'-Dichlorobenzidine, ug/L	<10	<10	<10	<10	<10
3-Nitroaniline, ug/L	<50	<50	<50	<50	<50
4-Bromophenylphenylether, ug/L	<10	<10	<10	<10	<10
4-Chloro-3-methylphenol, ug/L	<10	<10	<10	<10	<10
4-Chloroaniline, ug/L	<20	<20	<20	<20	<20
4-Chlorophenylphenylether, ug/L	<10	<10	<10	<10	<10
4-Methylphenol, ug/L	<10	<10	<10	<10	<10
4-Nitroaniline, ug/L	<50	<50	<50	<50	<50
4-Nitrophenol, ug/L	<25	<25	<25	<25	<25
Acenaphthene, ug/L	<10	<10	<10	<10	<10
Acenaphthylene, ug/L	<10	<10	<10	<10	<10
Aniline, ug/L	<20	<20	<20	<20	<20
Anthracene, ug/L	<10	<10	<10	<10	<10
Benzidine, ug/L	<40	<40	<40	<40	<40
Benzo(a)anthracene, ug/L	<10	<10	<10	<10	<10
Benzo(a)pyrene, ug/L	<10	<10	<10	<10	<10
Benzo(b)fluoranthene, ug/L	<10	<10	<10	<10	<10
Benzo(g,h,i)perylene, ug/L	<10	<10	<10	<10	<10
Benzo(k)fluoranthene, ug/L	<10	<10	<10	<10	<10
Benzyl Alcohol, ug/L	<20	<20	<20	<20	<20
Benzoic acid, ug/L	<50	<50	<50	<50	<50
Butylbenzylphthalate, ug/L	<10	<10	<10	<10	<10
Chrysene, ug/L	<10	<10	<10	<10	<10

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01-322-10	9001.542 UV S4B4	17 JAN 90

PARAMETER	01-322-6	01-322-7	01-322-8	01-322-9	01-322-10
Di-n-octylphthalate, ug/L	<10	<10	<10	<10	<10
Dibenzo(a,h)anthracene, ug/L	<10	<10	<10	<10	<10
Dibenzofuran, ug/L	<10	<10	<10	<10	<10
Dibutylphthalate, ug/L	<50	<50	<50	<50	<50
Diethylphthalate, ug/L	<10	<10	<10	<10	<10
Dimethylphthalate, ug/L	<25	<25	<25	<25	<25
Fluoranthene, ug/L	<10	<10	<10	<10	<10
Fluorene, ug/L	<10	<10	<10	<10	<10
Hexachlorobenzene, ug/L	<10	<10	<10	<10	<10
Hexachlorobutadiene, ug/L	<10	<10	<10	<10	<10
Hexachlorocyclopentadiene, ug/L	<10	<10	<10	<10	<10
Hexachloroethane, ug/L	<10	<10	<10	<10	<10
Indeno(1,2,3-c,d)pyrene, ug/L	<10	<10	<10	<10	<10
Isophorone, ug/L	<10	<10	<10	<10	<10
N-Nitrosodimethylamine, ug/L	<80	<80	<80	<80	<80
N-Nitrosodiphenylamine, ug/L	<10	<10	<10	<10	<10
N-Nitrosodi-n-propylamine, ug/L	<40	<40	<40	<40	<40
Nitrobenzene, ug/L	<10	<10	<10	<10	<10
Naphthalene, ug/L	<10	<10	<10	<10	<10
Phenanthrene, ug/L	<10	<10	<10	<10	<10
Phenol, ug/L	<10	<10	<10	<10	<10
Pentachlorophenol, ug/L	<10	<10	<10	<10	<10
Pyrene, ug/L	<10	<10	<10	<10	<10

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01-322-9	9001.540 UV S3B4	17 JAN 90
01-322-10	9001.542 UV S4B4	17 JAN 90

PARAMETER	01-322-6	01-322-7	01-322-8	01-322-9	01-322-10
Bis(2-chloroethoxy)methane, ug/L	<10	<10	<10	<10	<10
Bis(2-chloroethyl)ether, ug/L	<10	<10	<10	<10	<10
Bis(2-chloroisopropyl)ether, ug/L	<10	<10	<10	<10	<10
Bis(2-ethylhexyl)phthalate, ug/L	150	490	240	250	280
Semi-Quantified Results **					
A 2nd Unidentified Compound, ug/L	---	---	---	10	---
An Unidentified Compound, ug/L	---	30	---	10	20

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

PLEASE SEE LABORATORY MANAGER'S COMMENTS CONCERNING LABORATORY CONTAMINATION IN THE BLANK FOR THIS COMPOUND (PAGE 9).

Analytical Report

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Canoga Park, CA 91304

Requisition: R94QEZ89-032382

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, WASTEWATER SAMPLES	DATE SAMPLED
01-322-11	9001.543 SRE	17 JAN 90
01-322-12	9001.544 SRE DUP.SITE	17 JAN 90
01-322-13	9001.545 SBP #1	17 JAN 90
01-322-14	9001.546 B/100	17 JAN 90
01-322-15	9001.547 RMDF	17 JAN 90

PARAMETER	01-322-11	01-322-12	01-322-13	01-322-14	01-322-15
Cadmium, mg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Nitric Acid Digestion, Date	01/22/90	01/22/90	01/22/90	01/22/90	01/22/90

The method blank for the 625 analysis was found to be contaminated with 77 ug/L of bis(2-ethylhexyl) phthalate. The level found in the samples can therefore be attributed to laboratory contamination. G. Havalias 01/31/90

Jeffrey A. Erion, Laboratory Manager

Attachment 4.

Air Stripping Towers Permit

from

Ventura County Air Pollution Control District

RESOURCE MANAGEMENT AGENCY
County of Ventura

Air Pollution
Control District

Richard H. Baldwin
Air Pollution Control Officer



July 10, 1990

Mr. Robert Melvold
Rockwell International
Rocketdyne Division
6633 Canoga Avenue (Code JA16)
Canoga Park, CA 91304

RE: Permit to Operate #1344

Dear Mr. Melvold:

Your APCD Permit to Operate is enclosed. APCD Rule 19 requires that the permit be readily accessible to inspection personnel from the Air Pollution Control District, and be posted reasonably close to the subject equipment.

This permit differs from the previous permit in that two air stripping towers have been added. In your letter dated April 24, 1990, you indicated that the remaining two air stripping towers on Authority to Construct 1344-2 will not be constructed; therefore, the Authority to Construct has been cancelled.

A receipt for your permit processing fee is also enclosed.

Please note that this permit has been issued with specific permitted emissions, which are based on the process limits listed in the accompanying permit conditions. Prior to exceeding any of these limits, you must submit an application to the District to modify your permit. You must also submit an application to the District prior to adding or modifying any equipment on the permit.

If you have any questions on this matter, please contact me at (805)654-2844.

Sincerely,

Terri Thomas
Engineering Section

tt1344 07394RC

Government Center, Administration Building, L #1710
800 South Victoria Avenue, Ventura, CA 93009 (805) 654-2806 Fax Number: (805) 654-2842

County of Ventura
Air Pollution Control District
800 South Victoria Avenue • Ventura, CA 93009
(805) 654-2801

PERMIT TO OPERATE

Number 1344

Valid April 1, 1990 to March 31, 1991

This Permit Has Been Issued To The Following:

Company Name / Address:

Rockwell International
6633 Canoga Ave. - Code JA16
Canoga Park, CA 91304

Facility Name / Address:

Rocketdyne Division
Santa Susana Field Laboratory
Simi Valley, CA 93065

Permission Is Hereby Granted To Operate The Following:

At Water Supply Well 9A (Delta Area), Area II:

1 - Tankinetics Air Stripping System, 200 gallon per minute capacity, consisting of:
  1 - Primary tower, 36 feet high x 36 inches diameter, with a maximum air flow rate of 260 cfm
  1 - Secondary tower, 28 feet high x 36 inches diameter, with a maximum air flow rate of 2000 cfm
  8 - Carbon canisters, 55 gallon capacity each, operated in parallel, controlling exhaust from the primary tower

At Deep Well RD-1, Happy Valley, Area I:

1 - Tankinetics Air Stripping System, 40 gallon per minute capacity, consisting of:
  1 - Primary tower, 27 feet high x 18 inches diameter, with a maximum air flow rate of 60 cfm
  1 - Secondary tower, 23 feet high x 18 inches diameter, with a maximum air flow rate of 400 cfm
  2 - Carbon canisters, 55 gallon capacity each, operated in parallel, controlling exhaust from the primary tower

At Water Supply Well 6 behind Alfa, Area I:

1 - Tankinetics Air Stripping System, 200 gallon per minute capacity, consisting of:
  1 - Primary tower, 36 feet high x 36 inches diameter, with a maximum air flow rate of 260 cfm
  1 - Secondary tower, 28 feet high x 36 inches diameter, with a maximum air flow rate of 2000 cfm
  8 - Carbon canisters, 55 gallon capacity each, operated in parallel, controlling exhaust from the primary tower

07-1[illegible]90

VCAPCD Permit to Operate Number 1344
Issued To Rocketdyne Division
Valid April 1, 1990 to March 31, 1991

At Water Supply Well 9, Bravo Area:

2 - Tankinetics Air Stripping Systems, 40 gallon per minute capacity each, each consisting of:
  1 - Primary tower, 27 feet high x 18 inches diameter, with a maximum air flow rate of 60 cfm
  1 - Secondary tower, 23 feet high x 18 inches diameter, with a maximum air flow rate of 400 cfm
  2 - Carbon canisters, 55 gallon capacity each, operated in parallel, controlling exhaust from the primary tower

At Area I Road, Area I:

1 - Tankinetics Air Stripping System, 40 gallon per minute capacity, consisting of:
  1 - Primary tower, 27 feet high x 18 inches diameter, with a maximum air flow rate of 60 cfm
  1 - Secondary tower, 23 feet high x 18 inches diameter, with a maximum air flow rate of 400 cfm
  2 - Carbon canisters, 55 gallon capacity each, operated in parallel, controlling exhaust from the primary tower

This Permit Has Been Issued Subject To The Following Conditions:

1. Permitted Emissions:

	Tons/Year	Pounds/Hour
Reactive Organic Compounds	0.30	0.08

2. Permitted emissions are based on a maximum reactive organic compound concentration of 6 ppmv, as methane, in the exhaust from each primary tower carbon adsorption system, and 1 ppmv, as methane, in the exhaust from each secondary tower. Additional controls or operational modifications will be required if these concentrations are exceeded.

3. The maximum exhaust flow rate from each tower shall not exceed the values specified in the above equipment description. The exhaust flow rate from each tower shall be established by a mechanical setting based on the water flow rate to the tower. If a change in water flow rate to any tower greater than 25% occurs, the mechanical setting shall be redetermined and adjusted to insure that the exhaust flow rate does not exceed the specified level. A description of the method used to determine the mechanical setting shall be submitted to the District for approval.

4. All spent carbon must be disposed at a Class I Hazardous Waste Facility or reclaimed by a certified regeneration facility.

5. Samples shall be taken on a monthly basis of the influent groundwater, the primary tower effluent water, and the secondary tower effluent water from each air stripping system. These samples shall be analyzed by a certified independent laboratory for ROC.

6. Tests shall be conducted once per week of operation for ROC at the exhaust of each carbon adsorption system and at the exhaust of each secondary tower. The frequency of sampling may be adjusted based on review of the required sampling records and determination of the carbon adsorption system breakthrough period. Written approval from the APCD shall be obtained prior to modifying the sampling frequency. Tests shall be conducted using a portable analyzer approved by the APCD.

7. Permittee shall maintain records of sample analyses required by Condition 5, results of testing required by Condition 6, and air and water flow rates to each air stripping system. Records of mechanical settings used to limit air flow rates may be substituted for the required air flow rate records. These records shall be maintained for a period of two years and be made available to APCD personnel on request.

Within ten days after receipt of this permit, the applicant may petition the Hearing Board to review any condition that has been modified or added to the permit (Rule 22).

This permit, or a copy, shall be posted reasonably close to subject equipment and shall be readily accessible to inspection personnel from the Air Pollution Control District (Rule 19).

This permit is not transferable from one location to another unless the equipment is specifically listed as being portable (Rule 20).

In reliance upon the statement of the applicant that the operation of the equipment described herein shall meet the requirements as specified in the Rules and Regulations of the Air Pollution Control District, permission is hereby granted to operate; provided, however, the permission granted hereby shall not be construed to permit said equipment to operate in violation of any applicable State or Federal emission standard or Rules and Regulations of the District.

Richard H. Baldwin
Air Pollution Control Officer

by:

Karl E. Krause, Manager
Engineering Section