EXXON COMPANY, U.S.A.
P.O. BOX 4032 . CONCORD, CA 94524-2032

ENVIRONMENTAL ENGINEERING
MARLA D. GUENSLER
SENIOR ENVIRONMENTAL ENGINEER
(510) 246-8776
(510) 246-8798 FAX

July 29, 1993

Mr. Safa Toma
East Bay Municipal Utility District
P. O. Box 24055
Oakland, CA 94623-1055

Jul 1993

RE: Exxon RAS #7-0104; 1725 Park Street, Alameda, CA/EBMUD System Discharge Permit #502-66631

Dear Mr. Toma:

Attached for your review and comment is a letter report entitled **Remediation System Quarterly Self-Monitoring Report** for the above referenced site. This report, prepared by RESNA Industries, Inc., of Novato, California, details the data from the operations and performance of the groundwater remediation system located at the site as required by the East Bay Municipal Utility District Wastewater Discharge Permit, number 502-66631 during the Second Quarter 1993.

The attached report includes the certification page required by the permit's Section V, Paragraphs (a) 2 and (c) "Signatory Requirements". A letter dated July 26, 1993 authorizing myself as a representative signature of the statement from Mr. Gord Thomson, Exxon Marketing Vice President, was sent directly to your attention. A copy of the letter is attached.

If you have any questions or comments, or require additional information, please contact me at the above listed phone number.

Sincerely,

Marla D. Guensler

Marla D. Guensler
Senior Environmental Engineer

MDG/mdg

enclosure: RESNA Quarterly Report dated July 26, 1993

cc: w/enclosure:
Mr. Richard Hiett - San Francisco Bay RWQCB
Mr. John Margowski - Wickland Oil Company
Ms. Juliet Shin - Alameda County Health Department

w/o enclosure:
Mr. Gary Pischke - RESNA - Novato

RESNA
Working To Restore Nature

73 Digital Drive
Novato, CA 94949
Phone: (415) 382-7400
FAX: (415) 382-7415

REMEDIATION SYSTEM
QUARTERLY SELF-MONITORING REPORT
FOR EBMUD DISCHARGE PERMIT NO. 502-66631

Second Quarter 1993
Exxon Service Station No. 7-0104
1725 Park Street
Alameda, California

0722mgue
170077.03

RESNA
Working To Restore Nature

73 Digital Drive
Novato, CA 94949
Phone: (415) 382-7400
FAX: (415) 382-7415

July 26, 1993

Ms. Marla Guensler
Exxon Company, U.S.A.
P.O. Box 4032
2300 Clayton Road
Concord, California 94524

Subject: Remediation System Quarterly Self-Monitoring Report for EBMUD Discharge Permit No. 502-66631, Second Quarter 1993, Exxon Service Station No. 7-0104, 1725 Park Street, Alameda, California

Ms. Guensler:

At the request of Exxon Company, U.S.A. (Exxon), RESNA Industries Inc. (RESNA) performed operation and maintenance on the groundwater remediation system (GRS) operating at Exxon Service Station No. 7-0104, 1725 Park Street, Alameda, California. This report presents the results and findings of the self-monitoring activities performed during second quarter 1993. The purpose of the self-monitoring activities is to comply with the East Bay Municipal Utility District (EBMUD) Wastewater Discharge Permit (No. 502-66631) requirements. Information contained in this report pertains to the discharge requirements only. Additional information regarding other aspects of the GRS and site are included in other documents. A site vicinity map is shown on Plate 1.

SYSTEM DESCRIPTION

The GRS was installed in February 1993 to treat dissolved petroleum hydrocarbons in groundwater extracted from the first water bearing zone beneath the site (Plate 2, Generalized Site Plan). The extraction system consists of five pneumatic pumps in on-site extraction wells EW-1 through EW-5, collection piping, and associated instrumentation and controls. The treatment system consists of two main modules: treatment (bioreactor) and post-treatment (filtration and carbon polishing). The treatment module consists of a bioreactor, two 200-pound vapor-phase granular activated carbon (GAC) canisters, and the associated air sparging, nutrient and caustic supply systems. The post-treatment consists of a dual-chamber sand filter, a bag filter, and three 200-pound liquid-phase GAC canisters connected in series. Effluent from the system is discharged to the sanitary sewer regulated by the EBMUD. Sampling ports were installed at various locations of the treatment system and are designated as follows:

"Influent"	Composite sample from recovery wells
"Bioreactor"	Water sample from the first compartment of the bioreactor
"A"	Effluent from bioreactor, influent to first GAC canister
"B"	Effluent from second GAC canister, influent to third GAC canister
"C"	Effluent from third GAC canister into sanitary sewer

FIELD PROCEDURES

Monitoring and maintenance of the GRS was conducted by RESNA in accordance with the Operation and Maintenance Manual for the system. RESNA personnel visited the site weekly during the month of April 1993 to assess smooth operation. Beginning in May 1993, operation and maintenance of the system was performed by RESNA on a bi-weekly basis. Throughout this quarter the GRS was shut down periodically for maintenance purpose.

Sampling of the system was performed monthly in accordance with the requirements and procedures of the self-monitoring program associated with the EBMUD wastewater discharge permit. A copy of the EBMUD wastewater discharge permit is included in Attachment A. Water samples were also collected from the bioreactor and submitted to RESNA's bioremediation laboratory in Los Angeles for biological evaluation (bio count) on a monthly basis.

On April 30, 1993, RESNA personnel collected groundwater samples from sampling ports "Influent", "A", "B", and "C". Samples were submitted to Pace Inc. (Pace), a California-certified laboratory in Novato, California, following proper preservation and Chain-of-Custody procedures. The samples were analyzed for the presence of total petroleum hydrocarbon as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX) using modified Environmental Protection Agency (EPA) Methods 8015/8020.

RESNA received the laboratory results for the April 30 samples on May 12, 1993. Analytical results indicated that breakthrough of petroleum hydrocarbons had occurred in the second and third GAC canisters. However, TPHg and BTEX concentrations in the effluent sample were below the limitations of the wastewater discharge permit. On May 20, 1993 RESNA proceeded to shut down all five recovery well pumps which stopped discharge from entering the sanitary system. The bioreactor itself was kept in operation by maintaining air sparging and the input of caustic and nutrients.

The treatment system was back in full operation after the spent carbon was replaced with new carbon on June 14, 1993. RESNA collected water samples from all sampling ports two hours after effluent beginning discharged into the sewer. Samples collected were delivered to Pace and analyzed for the presence of TPHg and BTEX. Analytical results indicated that TPHg and BTEX concentrations in the effluent discharged were below the wastewater discharge permit limitations.

DISCUSSIONS OF RESULTS

Operation and performance data for the GRS including analytical results of water samples collected for the period of April through June, 1993 are summarized in Table 1. Copies of laboratory reports and chain-of-custody records are included in Attachment B. Attachment C contains copies

of the facility inspection logs. Results of the self-monitoring and sampling activities indicate the following:

- A cumulative total of 415,739 gallons of groundwater has been treated and discharged into the sanitary sewer during this monitoring period, ending June 29, 1993.
- TPHg and BTEX concentrations in effluent water discharged into the sewer were in compliance with the wastewater discharge permit.

RESNA recommends that signed copies of this report be forwarded to:

Mr. Safa Toma
East Bay Municipal Utility District
P.O.Box 24055
Oakland, California 94623-1055

Mr. Richard Hiett
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street
Oakland, California 94612

Ms. Juliett Shin
Alameda County Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, California 94621

Please call with any questions or comments regarding this report.

Sincerely,
RESNA Industries Inc.

Kin W. Leung
Staff Engineer

Gary Pischke, C.E.G. 1501
Project Manager

Enclosures: Plate 1, Site Vicinity Map
Plate 2, Generalized Site Plan
Table 1, Operation & Performance Data for Groundwater Treatment System
Attachment A: Wastewater Discharge Permit
Attachment B: Laboratory Reports and Chain-of-Custody Records
Attachment C: Facility Inspection Logs

0722mgue
170077.03

RESNA
Working To Restore Nature

STATEMENT OF CERTIFICATION

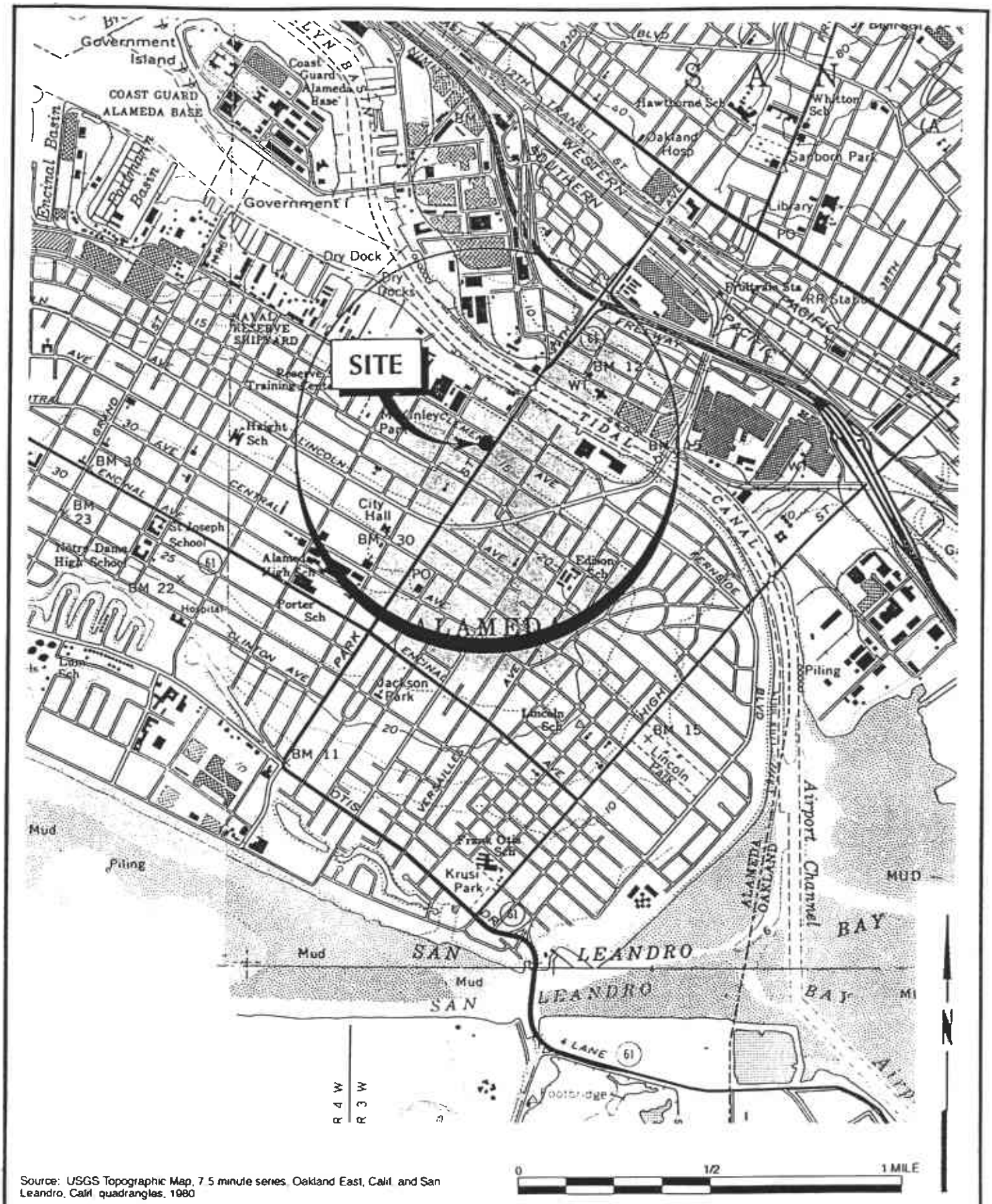
I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge or 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.

EXXON COMPANY, U.S.A.

Marla O. Guensler

Date: 7-29-93

Marla Guensler
Senior Environmental Engineer



Source: USGS Topographic Map, 7 5 minute series, Oakland East, Calif. and San Leandro, Calif. quadrangles, 1980

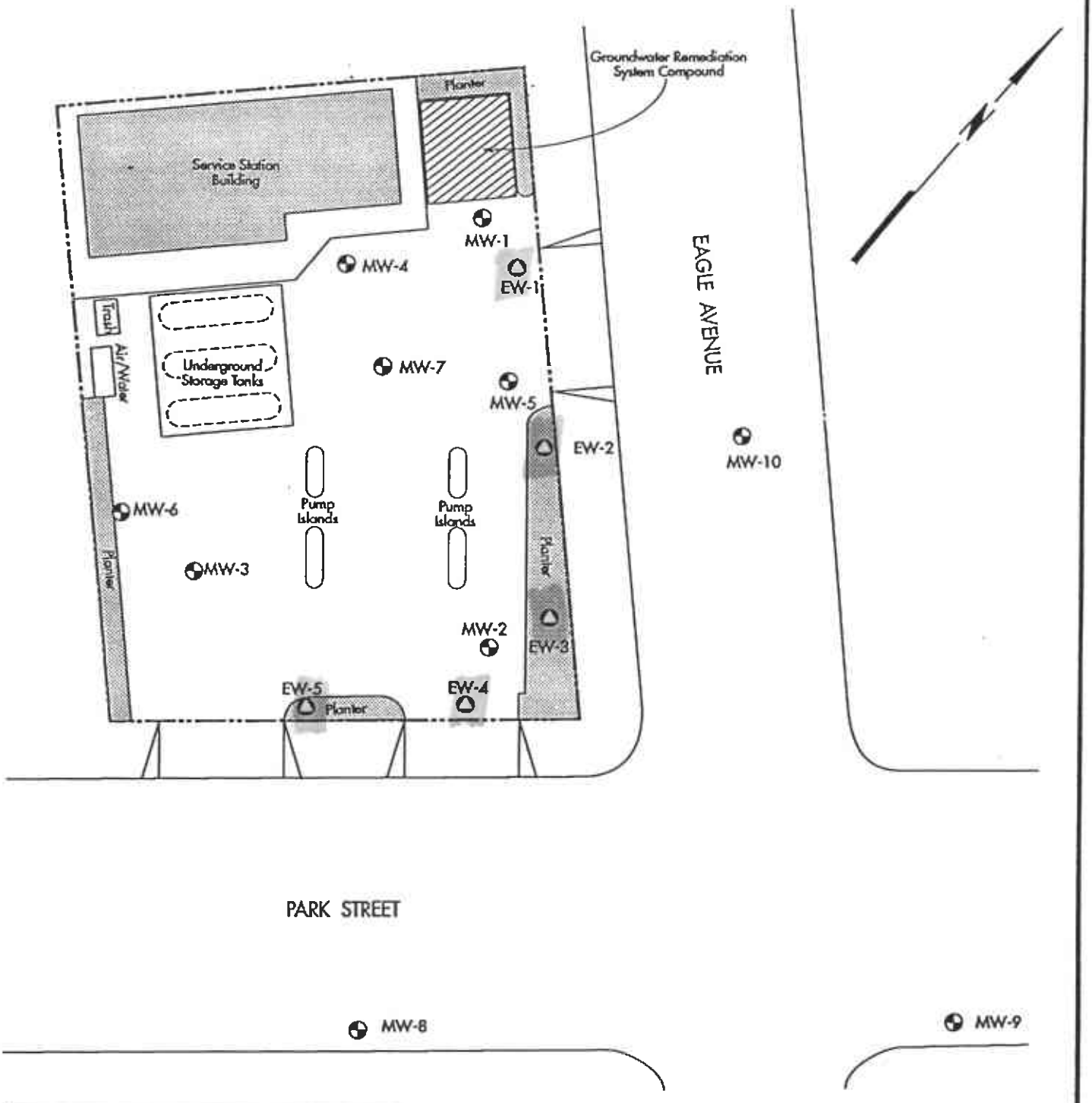
RESNA

PROJECT NO. 170077.05 | 1/93

SITE VICINITY MAP

Exxon Service Station No. 7-0104
1725 Park Street
Alameda, California

PLATE
1



EXPLANATION

- MW-1 Monitoring well location
- EW-1 Extraction well location

Map Source: Site Map by Harding Lawson Associates, 1992; survey by Ron Archer, Civil Engineer, Inc., 1993

0 30' 60' 90'

RESNA

PROJECT NO. 170077.03 | 7/93

GENERALIZED SITE PLAN

Exxon Service Station No. 7-0104
1725 Park Street
Alameda, California

PLATE 2

RESNA
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TABLE 1
OPERATION AND PERFORMANCE DATA
FOR GROUNDWATER REMEDIATION SYSTEM
Exxon Station No. 7-0104
1725 Park Street
Alameda, California
(Page 1 of 3)

Sample Date	Total Flow (gal)	Average Flow Rate (gpd)	Sample ID	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TPHg (ppb)
02/16/93	NA	NA	"Bioreactor"	120	40	25	56	660
02/17/93	NA	NA	"Bioreactor"	23	5.3	2.8	9.3	140
02/18/93	NA	NA	"Bioreactor"	<0.5	<0.5	<0.5	<0.5	<50
02/22/93	0	NA	"Influent"	NS	NS	NS	NS	NS
			"A"	16	11	3.7	15	150
			"B"	NS	NS	NS	NS	NS
			"C"	<0.5	<0.5	<0.5	<0.5	<50
02/23/93	230	288	"Influent"	NS	NS	NS	NS	NS
			"A"	12	7.4	2.7	14	110
			"B"	NS	NS	NS	NS	NS
			"C"	<0.5	<0.5	<0.5	<0.5	<50
02/24/93	4,165	5,328	"Influent"	1,000	700	83	50	4,800
			"A"	200	110	5.1	80	800
			"B"	NS	NS	NS	NS	NS
			"C"	<0.5	<0.5	<0.5	<0.5	<50
02/25/93	10,130	4,752	"Influent"	930	820	130	740	3,800
			"A"	11	2.9	<0.5	33	300
			"B"	NS	NS	NS	NS	NS
			"C"	NS	NS	NS	NS	NS
02/26/93	15,440	5,328	"Influent"	NS	NS	NS	NS	NS
			"A"	NS	NS	NS	NS	NS
			"B"	NS	NS	NS	NS	NS
			"C"	NS	NS	NS	NS	NS
03/04/93	36,240	3,456	"Influent"	760	430	45	600	3,600
			"A"	5.1	2.1	<0.5	20	170
			"B"	<0.5	<0.5	<0.5	<0.5	<50
			"C"	<0.5	<0.5	<0.5	<0.5	<50
03/11/93	80,000	6,192	"Influent"	480	390	84	600	3,800
			"A"	0.5	<0.5	<0.5	0.8	63
			"B"	<0.5	<0.5	<0.5	<0.5	<50
			"C"	<0.5	<0.5	<0.5	<0.5	<50

RESNA
Working To Restore Nature

TABLE 1
OPERATION AND PERFORMANCE DATA
FOR GROUNDWATER REMEDIATION SYSTEM
Exxon Station No. 7-0104
1725 Park Street
Alameda, California

Sample Date	Total Flow (gal)	Average Flow Rate (gpd)	Sample ID	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TPHg (ppb)
04/30/93	270,400	1,389	"Influent"	240	140	35	500	2,700
			"A"	31	22	14	81	380
			"B"	1.3	<0.5	<0.5	2.3	55
			"C"	1.5	0.9	<0.5	2.4	<50
05/11/93	308,640	3,476	"Influent"	NS	NS	NS	NS	NS
			"A"	NS	NS	NS	NS	NS
			"B"	NS	NS	NS	NS	NS
			"C"	NS	NS	NS	NS	NS
05/20/93	346,407	4,196	"Influent"	NS	NS	NS	NS	NS
			"A"	NS	NS	NS	NS	NS
			"B"	NS	NS	NS	NS	NS
			"C"	NS	NS	NS	NS	NS
06/14/93	346,407	0	"Influent"	540	340	88	730	3,300
			"A"	<0.5	<0.5	<0.5	1.1	<50
			"B"	<0.5	<0.5	<0.5	<0.5	<50
			"C"	<0.5	<0.5	<0.5	<0.5	<50
06/24/93	393,810	4,740	"Influent"	NS	NS	NS	NS	NS
			"A"	NS	NS	NS	NS	NS
			"B"	NS	NS	NS	NS	NS
			"C"	NS	NS	NS	NS	NS
06/29/93	415,739	4,386	"Influent"	NS	NS	NS	NS	NS
			"A"	NS	NS	NS	NS	NS
			"B"	NS	NS	NS	NS	NS
			"C"	NS	NS	NS	NS	NS

Abbreviations:

B = benzene
E = ethylbenzene
TPHg = total petroleum hydrocarbons as gasoline
gal = gallons
NA = not applicable
T = toluene
X = total xylenes
gpd = gallons per day
ppb = parts per billion
NS = not sampled/not measured

ATTACHMENT A

WASTEWATER DISCHARGE PERMIT

EBMUD

STANDARD PROVISIONS AND REPORTING REQUIREMENTS

I. Exxon Service Station #7-0104, located at 1725 Park Street, in Oakland, shall comply with all items of the attached STANDARD PROVISIONS AND REPORTING REQUIREMENTS, 11/92 Revision.

REPORTING REQUIREMENTS

I. Exxon Service Station #7-0104 shall notify EBMUD Source Control in writing, one week prior to start up. The District will conduct a site inspection before discharge may be initiated.

II. Exxon Service Station #7-0104 shall monitor discharges per the schedule found in the Self-Monitoring and Reporting Requirements, Section IV, on page 3 of this permit and submit the reports as required below.

III. Exxon Service Station #7-0104 shall submit quarterly reports as follows:

Date Due	Reporting Period
April 30, 1993	January 25 through March 31, 1993
July 30, 1993	April 1 through June 30, 1993
October 29, 1993	July 1 through September 30, 1993
January 28, 1994	October 1 through December 31, 1993

The quarterly report shall contain:

1. A summary of the treatment unit self-monitoring results, any other monitoring, and well sample results that occurred during the reporting period.

2. The estimated date that primary carbon canister breakthrough will occur, using current loading data.

3. Copies of the Facility Inspection Log. This log must include flow totalizer readings from each sample date, maintenance activities performed, description of operational changes, visual observations of the unit for leaks or fouling and off-haul of hazardous wastes.

EBMUD

WASTEWATER DISCHARGE LIMITATIONS

Exxon Service Station #7-0104 shall not discharge wastewater from Side Sewer number 1 into the sanitary sewer if the strength of the wastewater exceeds the following:

REGULATED PARAMETER	DAILY MAXIMUM, mg/L	
Arsenic	2	mg/L
Cadmium	1	mg/L
Chlorinated Hydrocarbons (Total Identifiable)	0.5	mg/L
Chromium	2	mg/L
Copper	5	mg/L
Cyanide	5	mg/L
Iron	100	mg/L
Lead	2	mg/L
Mercury	0.05	mg/L
Nickel	5	mg/L
Oil and Grease	100	mg/L
Phenolic compounds	100	mg/L
Silver	1	mg/L
Zinc	5	mg/L
pH (not less than)	5.5	S.U.
Temperature	150	°F
Benzene	0.005	mg/L
Toluene	0.012	mg/L
Ethylbenzene	0.005	mg/L
Xylenes	0.011	mg/L

SELF-MONITORING AND REPORTING REQUIREMENTS

I. Exxon Service Station #7-0104 shall obtain representative samples of the wastewater discharge. The sampling shall be performed according to the frequency and methods outlined below and according to the methods and requirements found in STANDARD PROVISIONS AND REPORTING REQUIREMENTS, 11/92 Revision.

II. Self-monitoring Reports shall contain:

1. Laboratory results.
2. Chain of custody documentation.
3. Signatory requirements.

III. Sample location "C", also known as Side Sewer number 1, shall be the sample port located on the effluent side of the final carbon vessel. Sample location "B" shall be the sample port located between the end two carbon vessels. Sample location "A" shall be the sample port located on the influent side of the first carbon vessel, after the retention tank. The sample locations are shown on Harding Lawson Associates Plate 2 in this Permit.

IV. Sample locations "A", "B", and "C" per the following schedule:

Two hours after system start-up[1,2]
Daily for first three days[1,2]
Weekly for the first three weeks
Monthly for the first year

[1] Sample locations "A" and "C" only.
[2] Laboratory results to be available within 24 hours of sample collection and faxed to 510/287-1351.

V. Parameters to be monitored and sample types:

EPA 8020 (as gasoline) - grab sample
BTEX - grab sample

VI. All samples must be obtained using containers, collection methods, preservation techniques, holding times and analytical methods set forth in 40 CFR Part 136, except for the 8000 series methods, which are found in U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Test Methods for Evaluating Solid Waste, SW-846.

EBMUD

MONITORING and TESTING CHARGES

Total EBMUD Inspections Per Year: 3 @ $510.00 each = $1,530.00 /year

Total Analyses Per Year:

Parameter	Tests per year	Charge per test	Total Charge per year
EPA 624	3	$156.00	$468.00
EPA 625	1	$199.00	$199.00
Metals	1	$111.00	$111.00
		Monitoring and Testing Charge =	$2,308.00 /year
			$192.33 /month

WASTEWATER DISPOSAL CHARGE

All wastewater discharged will be charged for treatment and disposal service at the unit rate measured for other carbon treated groundwater discharges.
Current unit rate: $0.32 /Ccf

Volume discharged in Ccf/month = 292.8 $93.70 /month

WASTEWATER CAPACITY FEE

The capacity fee is calculated by multiplying the monthly wastewater discharge volume by the applicable fee in effect at start-up. Each month, 1/36 of the capacity fee will be charged, until the entire fee has been paid in 3 years.

Discharge volume = 218880 gallons per month
Capacity fee rate = $46.72 /Ccf-month
Capacity fee = $13,671.22 or $379.76 /month

SD - 30.6 6/90 N

WASTEWATER DISCHARGE PERMIT

Terms and Conditions

FEES AND WASTEWATER CHARGES

The following fees and charges are due when billed by the District:

Permit Fee (Paid $2,260). Balance:	$0.00
Monthly Monitoring Charges	$192.33
Monthly Wastewater Disposal Charge	$93.70
Monthly Wastewater Capacity Fee	$379.76
Total Monthly Charges =	$665.79

This Permit may be amended to include changes to rates and charges which may be established by the District during the term of this Permit.

AVERAGE WASTEWATER DISCHARGE *

LAST 12 MONTHS	PRECEDING 12 - 24 MONTHS
N/A	N/A

* Gallons per calendar day.

AUTHORIZATION

The above named Applicant is hereby authorized to discharge wastewater to the community sewer, subject to said Applicant's compliance with EBMUD Wastewater Control Ordinance, compliance conditions, reporting requirements and billing conditions.

Effective Date: January 25, 1993

Expiration Date: January 24, 1994

Michael J. Walker — MANAGER, WASTEWATER DEPARTMENT

1/22/93 — DATE

SD-30 (2-93)

ATTACHMENT B

LABORATORY REPORTS
AND
CHAIN-OF-CUSTODY RECORDS

pace
INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

May 10, 1993

MAY 12 1993

Mr. Kin Leung
Resna
73 Digital Dr.
Novato, CA 94949

RE: PACE Project No. 430430.519
Client Reference: Exxon 7-0104 (EE)

Dear Mr. Leung:

Enclosed is the report of laboratory analyses for samples received April 30, 1993.

Please note a peak eluting earlier than Benzene and suspected to be methyl tert butyl ether was present in your samples INFLUENT, A, and B (PACE #'s 70 0061733, 70 0061741, and 70 0061750).

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Stephanie Matzo

Stephanie Matzo
Project Manager

Enclosures

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

pace INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

Resna
73 Digital Dr.
Novato, CA 94949

May 10, 1993
PACE Project Number: 430430519

Attn: Mr. Kin Leung

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0061733	
Date Collected:			04/30/93	
Date Received:			04/30/93	
Client Sample ID:			INFLUENT	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/04/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	2700	05/04/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/04/93
Benzene	ug/L	0.5	240	05/04/93
Toluene	ug/L	0.5	140	05/04/93
Ethylbenzene	ug/L	0.5	35	05/04/93
Xylenes, Total	ug/L	0.5	500	05/04/93

REPORT OF LABORATORY ANALYSIS

May 10, 1993
PACE Project Number: 430430519

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0061741	
Date Collected:			04/30/93	
Date Received:			04/30/93	
Client Sample ID:			'A'	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/04/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	380	05/04/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/04/93
Benzene	ug/L	0.5	31	05/04/93
Toluene	ug/L	0.5	22	05/04/93
Ethylbenzene	ug/L	0.5	14	05/04/93
Xylenes, Total	ug/L	0.5	81	05/04/93

pace INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

May 10, 1993
PACE Project Number: 430430519

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0061750	
Date Collected:			04/30/93	
Date Received:			04/30/93	
Client Sample ID:			'B'	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/04/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	55	05/04/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/04/93
Benzene	ug/L	0.5	1.3	05/04/93
Toluene	ug/L	0.5	ND	05/04/93
Ethylbenzene	ug/L	0.5	ND	05/04/93
Xylenes, Total	ug/L	0.5	2.3	05/04/93

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

Offices Serving: Minneapolis, Minnesota; Tampa, Florida; Iowa City, Iowa; San Francisco, California; Kansas City, Missouri; Charlotte, North Carolina; Asheville, North Carolina; New York, New York; Pittsburgh, Pennsylvania; Denver, Colorado

pace INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

Mr. Kin Leung
Page 4

May 10, 1993
PACE Project Number: 430430519

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0061768	
Date Collected:			04/30/93	
Date Received:			04/30/93	
Client Sample ID:			'C'	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/04/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	05/04/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/04/93
Benzene	ug/L	0.5	1.5	05/04/93
Toluene	ug/L	0.5	0.9	05/04/93
Ethylbenzene	ug/L	0.5	ND	05/04/93
Xylenes, Total	ug/L	0.5	2.4	05/04/93

These data have been reviewed and are approved for release.

Mark A. Valentini

Darrell C. Cain
Regional Director

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

Client Reference: Exxon 7-0104 (EE)

MDL Method Detection Limit
ND Not detected at or above the MDL.

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

Mr. Kin Leung
Page 6

QUALITY CONTROL DATA

May 10, 1993
PACE Project Number: 430430519

Client Reference: Exxon 7-0104 (EE)

PURGEABLE FUELS AND AROMATICS
Batch: 70 20912
Samples: 70 0061733, 70 0061741, 70 0061750, 70 0061768

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M)			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	1000	90%	89%	1%
Benzene	ug/L	0.5	40.0	104%	100%	3%
Toluene	ug/L	0.5	40.0	104%	99%	4%
Ethylbenzene	ug/L	0.5	40.0	106%	103%	2%
Xylenes, Total	ug/L	0.5	120	105%	99%	5%

Mr. Kin Leung
Page 7

FOOTNOTES
for page 6

May 10, 1993
PACE Project Number: 430430519

Client Reference: Exxon 7-0104 (EE)

MDL	Method Detection Limit
ND	Not detected at or above the MDL.
RPD	Relative Percent Difference

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EXXON COMPANY, U.S.A.

430430.519

P.O. Box 4415, Houston, TX 77210-4415

CHAIN OF CUSTODY

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☐ Huntington Beach, CA, 5702 Bolsa Avenue, 92649 (714) 892-2565

Consultant's Name: RESNA — Page 1 of 1

Address: 73 DIGITAL DR., NOVATO CA — Site Location: ALAMEDA

Project #: — Consultant Project #: 170077.01 — Consultant Work Release #:

Project Contact: KIN LEUNG — Phone #: (415)382-7400 Fax #: 382-7415 — Laboratory Work Release #: 09300238

EXXON Contact: MARLA ☒ EE ☐ C&M — Phone #: — Fax #: — EXXON RAS #: 7-0104

Sampled by (print): KIN LEUNG — Sampler's Signature: Kin Wai Leung

Shipment Method: ICE CHEST — Air Bill #: — Shipment Date:

TAT: ☐ 24 hr ☐ 48 hr ☐ 72 hr ☒ Standard (5 day)

ANALYSIS REQUIRED

Sample Condition as Received
Temperature ° C: CLIENT
Cooler #: COURIER
Inbound Seal Yes No
Outbound Seal Yes No

Sample Description	Collection Date/Time	Matrix Soil/Water	Prsv	# of Cont	PACE Sample #	TPH/GAS/BTEX EPA 8015/8020	TPH/Diesel EPA 8015	TRPH EPA 418.1									COMMENTS
INFLUENT	4/30/93 1625	H_2O	HCl	2	61173.3	✓											
'A'	4/30/93 1620				61174.1	✓											
'B'	4/30/93 1617				61175.0	✓											
'C'	4/30/93 1610				61176.8	✓											

Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time	Additional Comments:
Kin Wai Leung	4/30/93	1635				
[signature]	4/30/93	6:40	C. L. Cramer / PACE	4/30	6:40	

Distribution: White Original — Yellow Exxon — Pink Lab — Goldenrod Consultant Field Staff

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THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

June 28, 1993

JUN 29 1993

Mr. Kin Leung
Resna
73 Digital Dr.
Novato, CA 94949

RE: PACE Project No. 430615.501
Client Reference: Exxon 7-0104 (EE)

Dear Mr. Leung:

Enclosed is the report of laboratory analyses for samples received June 15, 1993.

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Stacy P. Hoch

for Michael Cohen
Project Manager

Enclosures

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

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THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

Resna
73 Digital Dr.
Novato, CA 94949

June 28, 1993
PACE Project Number: 430615501

Attn: Mr. Kin Leung

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0092566	
Date Collected:			06/14/93	
Date Received:			06/15/93	
Client Sample ID:			Influent	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	06/19/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	3300	06/19/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	06/19/93
Benzene	ug/L	0.5	540	06/19/93
Toluene	ug/L	0.5	340	06/19/93
Ethylbenzene	ug/L	0.5	88	06/19/93
Xylenes, Total	ug/L	0.5	730	06/19/93

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pace INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

Mr. Kin Leung
Page 2

June 28, 1993
PACE Project Number: 43061550

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0092574	
Date Collected:			06/14/93	
Date Received:			06/15/93	
Client Sample ID:			'A'	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	06/21/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	06/21/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	06/21/93
Benzene	ug/L	0.5	ND	06/21/93
Toluene	ug/L	0.5	ND	06/21/93
Ethylbenzene	ug/L	0.5	ND	06/21/93
Xylenes, Total	ug/L	0.5	1.1	06/21/93

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FAX: 415-883-2673

REPORT OF LABORATORY ANALYSIS

June 28, 1993
PACE Project Number: 430615501

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0092582	
Date Collected:			06/14/93	
Date Received:			06/15/93	
Client Sample ID:			'B'	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	06/19/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	06/19/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	06/19/93
Benzene	ug/L	0.5	ND	06/19/93
Toluene	ug/L	0.5	ND	06/19/93
Ethylbenzene	ug/L	0.5	ND	06/19/93
Xylenes, Total	ug/L	0.5	ND	06/19/93

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THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

Mr. Kin Leung
Page 4

June 28, 1993
PACE Project Number: 430615501

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0092590	
Date Collected:			06/14/93	
Date Received:			06/15/93	
Client Sample ID:			'C'	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	06/19/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	06/19/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	06/19/93
Benzene	ug/L	0.5	ND	06/19/93
Toluene	ug/L	0.5	ND	06/19/93
Ethylbenzene	ug/L	0.5	ND	06/19/93
Xylenes, Total	ug/L	0.5	ND	06/19/93

These data have been reviewed and are approved for release.

Darrell C. Cain
Regional Director

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

Mr. Kin Leung
Page 6

QUALITY CONTROL DATA

June 28, 1993
PACE Project Number: 430615501

Client Reference: Exxon 7-0104 (EE)

PURGEABLE FUELS AND AROMATICS
Batch: 70 22135
Samples: 70 0092566, 70 0092574, 70 0092582, 70 0092590

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M)			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	1000	89%	92%	3%
Benzene	ug/L	0.5	40	104%	111%	6%
Toluene	ug/L	0.5	40	99%	105%	5%
Ethylbenzene	ug/L	0.5	40	95%	101%	6%
Xylenes, Total	ug/L	0.5	120	97%	103%	6%

Mr. Kin Leung
Page 7

FOOTNOTES
for page 6

June 28, 1993
PACE Project Number: 430615501

Client Reference: Exxon 7-0104 (EE)

MDL	Method Detection Limit
ND	Not detected at or above the MDL.
RPD	Relative Percent Difference

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430615.501

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☐ Huntington Beach, CA, 5702 Bolsa Avenue, 92649 (714) 892-2565

Consultant's Name: RESNA

Address: 73 DIGITAL DR., NOVATO, CA

Site Location: ALAMEDA

Project #:

Consultant Project #: 170077.01

Consultant Work Release #:

Project Contact: KIN LEUNG

Phone #: (415)382-7400 Fax #: 382-7415

Laboratory Work Release #: 09300238

EXXON Contact: MARLA ☒ EE ☐ C&M

Phone #: Fax #:

EXXON RAS #: 7-0104

Sampled by (print): KIN LEUNG

Sampler's Signature: Kin Wai Leung

Shipment Method: ICE CHEST

Air Bill #:

Shipment Date:

TAT: ☐ 24 hr ☐ 48 hr ☒ 72 hr ☒ Standard (5 day)

ANALYSIS REQUIRED

Sample Condition as Received
Temperature °C: CLIENT
Cooler #: COURIER
Inbound Seal Yes No
Outbound Seal Yes No

Sample Description	Collection Date/Time	Matrix Soil/Water	Prsv	# of Cont	PACE Sample #	TPH/GAS/BTEX EPA 8015/8020	TPH/Diesel EPA 8015	TRPH EPA 418.1										COMMENTS
INFLUENT	6/14/93 10:05	H_2O	HCl	2	92560	X												
'A'	"	"	"	"	9257.4	X												
'B'	"	"	"	"	9258.2	X												
'C'	"	"	"	"	9259.0	X												

Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time	Additional Comments:
Kin Wai Leung / LEUNG	6/15/93	9:35	Sheila Hoover	6/15	935	

Distribution 10/2 White Original Yellow Exxon Pink Lab Goldenrod Consultant Field Staff

ATTACHMENT C

FACILITY INSPECTION LOGS

DAILY FIELD REPORT

Project No.	Project Name	By	To	Date
170077.01	EXXON 7-0104	K. LEUNG		3-31-93

Main Activity: O & M, REFILL CAUSTIC TANK

cle Type	Odometer IN	Odometer OUT	Total Mileage
☐ Rent ☐ WGR ☒ Personal			

Time — Description

Depart ☐ Home ☒ Office ☐ Hotel

12:05 Arrive at Job Site. System was off upon arrival

Inspected Instrumentation:

Control Panel: ON Nutrient Pump: ON pH: 6.30

Caustic Pump: on AUTO Transfer Pump: AUTO

Sand Filter Pressure: 0 psi Bag Filter Pressure: 0 psi

1st Carbon Pressure: 0 psi

Flowmeter Reading: 184321 Flow rate: 0 gpm

Compressor: ON (back up unit) Hour meter: 597.95

Air Sparging Flow Rate: 1-9 scfm Pressure. 25 psi

Air Supply Pressure: 65 psi

Caustic level: ~5 gal Nutrient level: 100 gal

- Backwash Sand filter
- Backwash carbon drums
- Refill caustic tank
- Replace bag filter

15:35 Instrumentation readings:

Control Panel: ON Nutrient pump: ON pH: 6.4

Caustic Pump: AUTO Transfer Pump: AUTO

Sand Filter Pressure. 17.0 psi Bag Filter Pressure: 16.2 psi

1st Carbon Pressure: 12 psi

Flowmeter Reading: 184780 Flowrate: 7.5 gpm

Compressor: ON (Backup) Hour meter: 597.95

Air Sparging Flow Rate: 1.9 scfm Pressure 25 psi

Air Supply Pressure: 65 psi

Caustic level: 20 gal Nutrient level: 100 gal

- Measure vapor emission from carbon drum.

Depart Job Site

Arrive ☐ Home ☐ Office ☐ Hotel

DAILY FIELD REPORT

Project No. 170077.01 Project Name EXXON 7-0104 By K. LEUNG To Date 4-2-93

Main Activity O & M

cle Type	☐ Rent	☐ WGR	☒ Personal	Odometer IN	Odometer OUT	Total Mileage

Time Description

Depart ☒ Home ☐ Office ☐ Hotel

9:30 Arrive at Job Site – System was ON upon arrival.

Inspect Instrumentation :

Control Panel : ON Nutrient Pump : ON pH : 7.46

Caustic Pump : AUTO Transfer Pump : AUTO

Sand Filter Pressure : 0 psi Bag Filter Pressure : 0 psi

1st Carbon Pressure : 0 psi

Flow meter Reading : 192674 Flow rate : 0 gpm

Compressor : ON (backup unit) Hour meter 597.95

Air Sparging Flow rate : 1.9 scfm Pressure 25 psi

Caustic Level : 15 gals Nutrient Level : 90 gals

Air Supply Pressure : 65 psi

- Backwash sand filters
- Backwash carbon beds
- Replaced Bag Filter

12:30 Instrumentation Readings :

Control Panel : ON Nutrient Pump : ON pH : 7.16

Caustic Pump : AUTO Transfer Pump : AUTO

Sand Filter Pressure : 17.1 psi Bag Filter Pressure : 16.0 psi

1st Carbon Pressure : 12.0 psi

Flow meter Reading : 193207 Flow rate : 8.2 gpm

Compressor : ON (backup) Hour meter : 597.95

Air Sparging Flow rate : 1.9 scfm , Pressure : 25 psi

Air Supply Pressure : 65 psi

Depart Job Site

Arrive ☐ Home ☐ Office ☐ Hotel

DAILY FIELD REPORT

Project No. 170077.01 Project Name EXXON 7-0104 By K. LEUNG To Date 4-5-93

Main Activity O & M

Vehicle Type	Odometer IN	Odometer OUT	Total Mileage
☐ Rent ☐ WGR ☒ Personal			

Time	Description
	Depart ☐ Home ☐ Office ☐ Hotel
1745	Arrive at Job Site
	Inspect Instrumentation:
	Control Panel (CP): ON Nutrient Pump (P-1): on pH: 6.57
	Caustic Pump (P-2): AUTO Transfer Pump (P-3): Auto
	Sand Filter Pressure: 0 psi Bag Filter Pressure: 0 psi
	1st Carbon Pressure (PI-9): 0 psi
	Flowmeter Reading: 208161 Flowrate: 0 gpm
	Air Compressor: ON (backup) Hour meter: 597.95
	Air Sparging Flow rate: 1.9 scfm Pressure: 25 psi
	Air Supply Pressure: 65 psi
	Caustic Level: 8 gal Nutrient Level: ~~100~~ 85 gal
	- Backwash Sand Filter
	- Backwash carbon Drums
	- Replace bag filter
1852	Control Panel: ON Nutrient Pump (PI-1): ON pH: 6.61
	Caustic Pump (P-2): Auto. Transfer Pump (P-3): Auto
	Sand Filter Pressure: 18 psi Bag Filter Pressure: 18 psi
	1st Carbon Pressure: 13 psi
	Flow meter Reading: 208238 Flow Rate: 6.5 gpm
	Air Compressor: ON (back up) Hour meter: 597.93
	Air Sparging Flow Rate: 1.9 scfm Pressure: 25 psi
	Air Supply Pressure: 65 psi
	Caustic Level: 8 gal Nutrient Level: 85 gal
	Depart Job Site
	Arrive ☐ Home ☐ Office ☐ Hotel

DAILY FIELD REPORT

Project No. 170077.01 | Project Name EXXON 7-0104 | By K. LEUNG | To | Date 4-7-93

Main Activity O & M / REFILL CAUSTIC TANK

cle Type ☐ Rent ☐ WGR ☒ Personal | Odometer IN | Odometer OUT | Total Mileage

Time	Description
	Depart ☐ Home ☒ Office ☐ Hotel
1215	Arrive at Job Site
	Control Panel : on Nutrient Pump (P-1) : ON pH : 6.65
	Caustic Pump : Auto Transfer Pump : Auto
	Sand Filter Pressure : 19 psi Bag Filter Pressure : 19 psi
	1st Carbon Pressure : 13 psi
	Flow meter Reading : 214604 Flow rate : 3.5 gpm
	Air Compressor : ON
	Air Sparging Flow Rate : 1.9 scfm Pressure : 25 psi
	Air Supply pressure : 65 psi
	Caustic level : <5 gal Nutrient level : 80 gal
	- Backwash sand Filter
	- Backwash carbon drums
	- Refill caustic ~~ct~~ tank
1830	Control panel : on Nutrient Pump : on pH : 6.65
	Caustic Pump : Auto Transfer Pump : Auto
	Sand Filter Pressure : 19 psi Bag Filter Pressure : 19 psi
	1st Carbon Pressure : 8 psi
	Flow meter Reading : 214692 Flowrate : 5.1 gpm
	Air compressor : on
	Air Sparging Flow Rate : 19. scfm , Pressure : 25 psi
	Air Supply Pressure : 65 psi
	Caustic level : 750 gal Nutrient level : 80 gal

Depart Job Site

Arrive ☐ Home ☐ Office ☐ Hotel

RESNA Working to Restore Nature

DAILY FIELD REPORT

Project No. 170077.01 Project Name EXXON 7-0164 By K. LEUNG To Date 4-9-93

Main Activity O & M

icle Type	☐ Rent ☐ WGR ☐ Personal	Odometer IN	Odometer OUT	Total Mileage

Time Description

Depart ☐ Home ☐ Office ☐ Hotel

10:15 Arrive at Job Site

Control Panel : ON Nutrient Pump : ON pH : 6.81

Caustic Pump : Auto Transfer Pump : Auto

Sand Filter Pressure : 18.2 psi Bag Filter Pressure : 18.2 psi

1st Carbon Pressure : 11 psi

Flowmeter Reading : 223530 Flow rate : 6.0 gpm

Air Compressor : ON

Air Sparging : Flow rate : 1.9 scfm, Pressure 25 psi

Air Supply pressure : 65 psi

Caustic Level : 50 gal Nutrient level : 78 gal.

- Backwash : Sand filters, Carbon drums.
- Replace bag filter

Depart Job Site

Arrive ☐ Home ☐ Office ☐ Hotel

DAILY FIELD REPORT

Project No. 170077.01 Project Name EXXON 7-0104 By K. LEUNG To Date 4-13-93

Main Activity O & M

cle Type	Odometer IN	Odometer OUT	Total Mileage
☐ Rent ☐ WGR ☐ Personal			

Time Description

Depart ☐ Home ☒ Office ☐ Hotel

1400 Arrive at Job Site

Control Panel : ON Nutrient Pump : ON pH : 6.97
Caustic Pump : Auto Transfer Pump : Auto
Sand Filter Pressure : 19.2 psi Bag Filter Pressure : 19.2 psi
1st Carbon Pressure : 15.8 psi
Flow meter Reading : 238370 Flow rate : 2.4 gpm
Air Compressor : ON
Air Sparging : Flow Rate : 1.9 scfm , Pressure : 25 psi
Caustic level : 46 gal Nutrient level : 75 gal
Air Supply Pressure : 65 psi

- Backwash : Sand filter, carbon drum.

1455 Control Panel : ON Nutrient Pump : ON pH : 6.88
Caustic Pump : Auto Transfer Pump : Auto
Sand Filter Pressure : 18.4 psi Bag Filter Pressure : 18.2 psi
1st Carbon Pressure : ~~15~~ 16 psi
Flow meter Reading 238450 Flow rate : 5.5 gpm
Air Compressor : ON
Air Sparging Flow Rate : 1.9 cfm Pressure : 25 psi
Caustic level : 46 gal , Nutrient level : 75 gal
Air Supply Pressure : 65 psi

Depart Job Site

Arrive ☐ Home ☐ Office ☐ Hotel

DAILY FIELD REPORT

Project No. 170077.01 Project Name EXXON - 7 - 0104 By K. LEUNG To Date 4-16-93

Main Activity O & M

icle Type	Odometer IN	Odometer OUT	Total Mileage
☐ Rent ☐ WGR ☒ Personal			

Time Description

Depart ☐ Home ☐ Office ☐ Hotel

950 Arrive at Job Site

Control Panel : ON Nutrient Pump : ON pH: 7.19

Caustic Pump : Auto Transfer Pump : Auto

~~Caustic~~ Sand Filter Pressure : 19.5 psi Bag Filter Pressure : 19.5 psi

1st Carbon Pressure : 17 psi

Flow meter Reading : 250960 Flow rate : 3.0 spm

Air Compressor : ON

Air Sparging Flow rate : 1.9 cfm , Pressure : 25 psi

Air Supply Pressure : 65 psi

Caustic level : 44 gal , Nutrient level : 76 gal.

- Backwash sand filters, carbon drums.
- Replace bag filter

Depart Job Site

Arrive ☐ Home ☐ Office ☐ Hotel

DAILY FIELD REPORT

Project No. 170077.01 Project Name EXXON -7-0104 By K. LEUNG To Date 4/30/97

Main Activity O & M

Vehicle Type	Odometer IN	Odometer OUT	Total Mileage
☐ Rent ☐ WGR ☐ Personal			

Time Description

Depart ☐ Home ☒ Office ☐ Hotel

1617 Arrive at Job Site · System down upon arrival

Control Panel : on Nutrient Pump : ON pH: 11.86

Caustic Pump: Auto Transfer Pump : Auto

Sand Filter Pressure : 0 psi Bag Filter Pressure : 0 psi

1st Carbon Pressure : 0 psi

Flowmeter Reading : 270400 Flowrate: 0 gpm

Air Compressor : ON,

Air Sparging Flow Rate: 1.9 cfm Pressure : 25 psi

Air Supply pressure : 65 psi

Caustic level : ~~E~~ 25 gal Nutrient level: 60 gal.

- Backwash sand filter, carbon down

1734 Control Panel: ON Nutrient Pump : ON pH: 11.84

Caustic Pump: Auto Transfer Pump: Auto

Sand Filter Pressure 18.5 psi Bag Filter Pressure : 18 psi

1st Carbon Pressure: 13 psi

Flowmeter Reading : 270411 Flowrate : 6.1 gpm

Air compressor : on

Air Sparging Flow Rate : 2.0 cfm Pressure 25 psi

Air Supply pressure : 65 psi

Caustic level : 25 gal, Nutrient level : 60 gal.

- COLLECTED SAMPLES FROM 'INFLUENT', 'A', 'B' AND 'C' TO BE ANALYZED FOR TPHG / BTEX.

Depart Job Site

Arrive ☐ Home ☐ Office ☐ Hotel

DAILY FIELD REPORT

Project No. 170077.01 Project Name EXXON 7-0104 By K. LEWIS To Date 5-6-93

Main Activity

cle Type	☐ Rent	☐ WGR	☒ Personal	Odometer IN	Odometer OUT	Total Mileage

Time Description

Depart ☐ Home ☒ Office ☐ Hotel

1030 Arrive at Job Site

RECEIVED CALL FROM DAVE DE MENT & GARY PISCHKE EARLY. THAT THE SYSTEM MALFUNCTIONED AND WATER WAS OBSERVED OVERFLOWING FROM THE ~~BT~~ TREATMENT COMPOUND INTO THE STORM DRAIN. UPON ARRIVED AT JOB SITE, THE CARBON DRUMS WERE FOUND CLOGGING UP. DISCHARG RATE WAS VERY SLOW (< 1 GPM). APPARENTLY THE EXTRACTION RATE OF THE WELL PUMPS WERE FASTER THAN THE DISCHARGE RATE. ~~AT~~ PARTIALLY TREATED WATER WAS OVERFLOWING FROM THE BIO REACTOR INTO THE DOUBLE CONTAINMENT. THE CONTAINMENT WAS FULL OF WATER ~~AND~~ AND WATER WAS OVERFLOWING THE TOP OF THE BERM INTO THE STREET.

1035 SHUT ~~DOWN~~ DOWN THE SYSTEM AND BEGAN TO INSTALL A SUMP PUMP TO PUMP WATER FROM THE CONTAINMENT BACK TO THE BIOREACTOR.

1050 TURN ON POWER TO THE TRANSFER ~~UP~~ PUMP AND BEGAN BACKWASH THE CARBON DRUMS.

1125 THE DISCHARGE RATE WAS BACK TO ABOVE 6 GPM. AFTER THE BACKWASH. BEGAN PUMPING OVERFLOWED WATER BACK TO ~~THE~~ THE BIOREACTOR, ~~AND~~

1615 REMOVED ALL WATER FROM THE FLOOR OF THE DOUBLE CONTAINMENT. INSPECTED SYSTEM TO LOCATED THE CAUSE OF MALFUNCTION.

1630 JERRY WILSKI WAS ON SITE TO HELP DETERMINE THE CAUSE OF SYSTEM MALFUNCTION.

~~1720~~ 1720 RESULTS ~~PENDING~~ OF THE CIRCUIT TESTING INDICATED THE CAUSE WAS THE SOLENOID VALVE CONTROLLING THE FLOW OF COMPRESSED AIR TO THE EXTRACTION PUMPS. RECORD THE MODEL NO. AND MAKE OF THE UNIT. THE UNIT APPEARED FUNCTIONING ~~ABNORMALLY~~ NORMALLY AFTER REPAIR. HOWEVER, IF THE DISCHARGE CAN ~~BE~~ NOT KEEP ~~@~~ UP WITH EXTRACTION RATE, ANOTHER OVERFLOW COULD OCCUR. JERRY RECOMMENDED REPLACEMENT OF THE VALVE

1910 LEFT SITE.

Depart Job Site

Arrive ☐ Home ☐ Office ☐ Hotel

DAILY FIELD REPORT

Project No. 170077.01 Project Name EXXON 7-0104 By K. LEUNG To Date 5-11-93

Main Activity O & M

icle Type	☐ Rent	☐ WGR	☐ Personal	Odometer IN	Odometer OUT	Total Mileage

Time Description

Depart ☐ Home ☐ Office ☐ Hotel

1430 Arrive at Job Site

Control Panel : ON Nutrient Pump : ON pH : 11.66
Caustic Pump : Auto Transfer Pump : Auto
Sand Filter Pressure : 19 psi Bag Filter Pressure : 17 psi
1st Carbon Pressure : 16 psi
Flow meter Reading : 308640 Flow rate : 5.5 gpm
Air Compressor : on Hour meter 91762
Air Sparging Flowrate : 2 cfm, Pressure : 25 psi
Air Supply Pressure : 65 psi
Caustic level : 15 gal Nutrient level : 55 gal.
- Backwash sand filters, carbon drums.
- Replace bag filter.

1600 Control panel : ON Nutrient Pump : ON pH : 12.54
Caustic Pump : Auto Transfer Pump : Auto
Sand Filter Pressure : 19 psi Bag Filter Pressure : 17 psi
1st Carbon Pressure : 16 psi
Flow meter Reading : 309098 Flow rate : 6 gpm
Air Compressor : on Hour meter 91896
Air Sparging Pressure : ~~65~~ 25 psi, Flow rate : 2 cfm
Air Supply Pressure : 65 psi
Caustic level : 15 gal, Nutrient level : 55 gal.

Depart Job Site

Arrive ☐ Home ☐ Office ☐ Hotel

DAILY FIELD REPORT

Project # 170077.01 Project Name EXXON 7-010 By K. LEUNG To Date 5/20/93

Main Activity O&M

Vehicle Type	Odometer IN	Odometer OUT	Total Mileage
☐ Rent ☐ RESNA ☒ Personal			

Time	Description
1000	ARRIVE AT JOB SITE,
	CONTROL PANEL : ON NUTRIENT PUMP : ON pH: 8.45
	CAUSTIC PUMP : ON/AUTO TRANSFER PUMP: AUTO
	SAND FILTER PRESSURE : 18.2 PSI BAG FILTER PRESSURE 16.0 PSI
	1ST CARBON PRESSURE: 16.7 PSI
	FLOW METER READING : 346407 FLOW RATE : 6.3 GPM
	AIR COMPRESSOR : ON HOUR METER 1297
	AIR SPARGING FLOW RATE : 2 CFM PRESSURE : 25 PSI
	AIR SUPPLY PRESSURE : 65 PSI
	CAUSTIC LEVEL : 13 GAL. NUTRIENT LEVEL: 35 GAL
	- REPLACED SOLENOID VALVE
	- BACKWASH SAND FILTER & CARBON DRUMS
	- ONE CARBON DRUM WAS LEAKING.
	- SHUT DOWN SYSTEM BEFORE LEAVING SITE.
	- NO SAMPLE WAS COLLECTED.
	-
	Depart Job Site
	Arrive ☐ Home ☐ Office ☐ Hotel

DAILY FIELD REPORT

Project # 170071-01 Project Name EXXON 7-0104 By K. LEUNG To Date 6/14/93

Main Activity O&M / REPLACE CARBON CANISTERS

Vehicle Type	Odometer IN	Odometer OUT	Total Mileage
☐ Rent ☐ RESNA ☐ Personal			

Time	Description
0920	ARRIVE ON SITE, SYSTEM WAS DOWN, REFIT HOSES
1145	NEW CARBON DRUMS ARRIVED, BEGAN HOOK UP
1320	BACK WASH CARBON DRUMS.
1435	TURN ON SYSTEM.
	CONTROL PANEL: ON NUTRIENT PUMP: ON pH: 7.20
	CAUSTIC PUMP: AUTO TRANSFER PUMP: AUTO
	SAND FILTER PRESSURE: 6.5 PSI
	FLOW METER READING: 346410 FLOW-RATE: 6.3 GPM
	AIR COMPRESSOR: ON HOUR METER: 1299
	AIR SPARGING FLOW RATE: 2 CFM, PRESSURE: 25 PSI
	AIR SUPPLY PRESSURE: 65 PSI
	CAUSTIC LEVEL: 13 GAL NUTRIENT LEVEL: 55 GAL
	Depart Job Site
	Arrive ☐ Home ☐ Office ☐ Hotel

DAILY FIELD REPORT

Project #	Project Name	By	To	Date
170077.01	EXXON 7-0100	K. LEUNG		6/24/93

Main Activity: O & M

Vehicle Type	Odometer IN	Odometer OUT	Total Mileage
☐ Rent ☐ RESNA ☐ Personal			

Time	Description
1520	ARRIVE ON SITE
	CONTROL PANEL : ON NUTRIENT PUMP : ON pH : 6.51
	CAUSTIC PUMP : AUTO TRANSFER PUMP AUTO
	SAND FILTER PRESSURE : ~~18~~ 20.5 PSI BAG FILTER PRESSURE : 16.8 PSI
	1ST CARBON " : 15.2 PSI
	FLOW METER READING : 393810 FLOW RATE : 2.8 GPM
	AIR COMPRESSOR : ON HOUR READING : 1503.7
	AIR SPARGING FLOW RATE : 3 CFM PRESSURE : 25 PSI
	CAUSTIC LEVEL 10 GAL NUTRIENT LEVEL : 5 GAL
	- BACK WASH SAND FILTERS, CARBON DRUMS
	- SAND FILTER PRESSURE : 19.0 PSI BAG FILTER : 16.7 PSI
	1ST CARBON : 8.0 PSI
	Depart Job Site
	Arrive ☐ Home ☐ Office ☐ Hotel

DAILY FIELD REPORT

Project # 170077.01 Project Name EXXON 7-0104 By K. CHUNG To Date 6/29/93

Main Activity O & M

Vehicle Type	Odometer IN	Odometer OUT	Total Mileage
☐ Rent ☐ RESNA ☒ Personal			

Time	Description
10:10	ARRIVE AT SITE, SYSTEM RUNNING FINE
	CONTROL PANEL: ON NUTRIENT PUMP: ON pH: 6.88
	CAUSTIC PUMP: AUTO TRANSFER PUMP: AUTO
	SAND FILTER: 19.2 PSI BAG FILTER: 17.8 PSI
	1ST CARBON: 13.0 PSI
	FLOW METER READING: 415739 FLOW RATE: 6.8 GPM
	AIR COMPRESSOR: ON HOUR: 16021
	AIR SPARGING FLOW RATE: 2 CFM PRESSURE: 25 PSI
	AIR SUPPLY: 65 PSI
	CAUSTIC LEVEL: <5 GAL. NUTRIENT: 50 GAL
	- BACKWASH SAND FILTER & CARBON
	pH: 6.81 SAND FILTER 18.2 PSI
	BAG FILTER: 17.0 PSI 1ST CARBON: 7.2 PSI
	FLOW RATE: 6.3 GPM.
	Depart Job Site
	Arrive ☐ Home ☐ Office ☐ Hotel