# EXON COMPANY, U.S.A.

POST OFFICE BOX 4032 • CONCORD, CA. 94524-2032 • (415) 246-8700

MARKETING DEPARTMENT

**ENVIRONMENTAL ENGINEERING** 

G. D. GIBSON SENIOR ENVIRONMENTAL ENGINEER

May 17, 1990

Exxon RAS 7-0104 1725 Park Street Alameda, California

Mr. Ariu Levy Alameda County Environmental Health Department Hazardous Materials Division 80 Swan Way, Suite 200 Oakland, California 94621

Dear Mr. Levy:

Attached for your review and comment is a report by Harding Lawson Associates of Novato, California on the First Quarter 1990 Groundwater Sampling at the above referenced site in the City of Alameda. A detailed report on the Phase III Groundwater Investigation recently completed at this site is currently being reviewed and will be submitted to your office in the very near future.

Should you have any questions or concerns after your review, please contact me at (415) 246-8768. Thank you.

Canal D. Caban

GDG:vv 1110E Attachment

c - w/attachment:

Mr. L. Feldman - San Francisco Bay Region Water Quality Control Board

w/o attachment:

Mr. J. R. Hastings Mr. J. K. Hunter

Mr. L. W. Lindeen

Mr. M. Thomson - Alameda County District Attorney's Office

Ms. S. M. Watson - Harding Lawson Associates

EXON COMPANY, U.S.A.
P.O. BOX 4415-HOUSTON, TEXAS 77210-4415

MARKETING DEPARTMENT REAL ESTATE & ENGINEERING ENVIRONMENTAL ENGINEERING

J. KEVIN HUNTER STAFF ENVIRONMENTAL ENGINEER

July 28, 1989

Exxon R/S#: 7-0104 1725 Park St. Alameda, California

Mr. Lowell Miller 470 - 27th Street, Room 322 Oakland, California 94612

Dear Mr. Miller

Attached is a copy of the report on recent groundwater sampling at the referenced site.

While contaminant levels have declined significantly, they remain well above action levels in most of the wells.

Please call me at (713) 656-7755 if you have any questions about this site.

Sincerely, X Hunt

JKH:sg 0598D/p.2 Attachments

c - w/attachments:

Mr. S. G. Hugenberger - RWQCB San Francisco Bay

c - w/o attachments:

Mr. J. R. Hastings Mr. L. W. Lindeen

Mr. M. L. Siembieda - Harding Lawson Associates



June 28, 1989

04167,284.02

Exxon Company, USA Post Office Box 4415 Houston, Texas 77210-4415

Attention: Mr. J. Kevin Hunter Environmental Geologist

#### Gentlemen:

First Quarter Ground-Water Sampling Exxon Station Number 7-0104 Alameda, California

This letter summarizes the results of Harding Lawson Associates' (HLA) June 1989 monitoring of six ground-water wells at Exxon Station 7-0104, 1724 Park Street, Alameda, California (site). The site history and detailed monitoring well sampling procedures are described in HLA's Phase II Evaluation of Petroleum Hydrocarbons dated March 21, 1989. The first round of quarterly sampling was conducted on June 1, 1989.

### Water Level Monitoring and Ground-Water Sampling

Water level and free product measurements were taken with an oil interface probe. No floating product was measured in any of the wells. Prior to sample collection, the monitoring wells were purged a minimum of three well volumes by hand bailing or with a centrifigal pump. The purge water was stored in 55 gallon drums on site. Measurements of pH, conductivity, and temperature were taken during purging of the wells. Copies of the Ground Water Sampling Forms are attached. All water-level measurement and sampling equipment was decontaminated prior to use by steam cleaning.

Water samples were collected using a stainless steel bailer and decanted into 40 milliliter volatile organic analysis (VOA) vials. The samples were labeled, placed  $i\bar{n}$  a refrigerated environment and transported under chain of custody control to NET Pacific Laboratory, Santa Rosa, California (NET). NET is a state certified laboratory for the analyses requested.

### Laboratory Analysis -

The ground-water samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline and benzene, ethylbenzene, toluene, and xylenes (BETX). Ground-water analytical results are listed in Table 1, along

June 28, 1989 04167,284.02 Exxon Company, USA Mr. J. Kevin Hunter, Environmental Geologist Page 2

with ground-water analytical results from HLA's Phase II evaluation of petroleum hydrocarbons. Copies of the original laboratory reports are attached.

### Ground-Water Gradient and Flow Direction

Ground-water elevations are presented in Table 2. Since the previous monitoring on January 17, 1989, water level elevations have dropped slightly. The water table appears to be fluctuating in response to seasonal precipitation and precipitation induced recharge. Ground-water contours are shown on Plate 1. Ground-water flow is towards the east at a gradient of approximately 0.008 ft/ft. This flow direction is consistent with flow directions calculated throughout this investigation.

### Conclusions

In general, chemical concentrations appear to have declined in ground water samples collected from all of the wells at the site.

HLA will submit a written report to Exxon presenting the results of each quarterly sampling event. Each report will include laboratory sampling results and a description of the ground water conditions at the site. If you have any questions please call us at (415) 892-0821.

No: 4001

Yours very truly,

HARDING LAWSON ASSOCIATES

S. Michelle Watson

S. Michelle Watson Staff Geologist

Michael L. Siembieda Associate Geologist - 4007

MW:het:086

Attachments:

Table 1

Table 2

Plate 1

Ground Water Sampling Forms

TABLE 1. Analytical Results
HLA Ground-Water Sampling
Exxon Station Number #7-0104 (ppb)\*

Well Number	Date	TPH Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes
MW-1	6/07/88	27,000	5,000	77	1,100	2,700
MW-1	1/17/89	6,800	2,000	91	800	1,600
MW-1	6/01/89	1,700	170	6.9	13	230
MW-2	6/07/88	110,000	12,000	12,000	2,100	12,000
MW-2	1/17/89	30,000	6,600	3,300	1,600	7,700
MW-2	6/01/89	8,700	330	280	680	1,200
MW-3	6/07/88	28,000	6,000	80	940	1,900
MW-3	1/17/89	5,300	2,500	230	590	1,100
MW-3	6/01/89	5,400	330	300	570	680
MW-4	1/17/89	19,000	1,000	1,500	360	2,200
MW-4	6/01/89	3,600	180	240	63	810
MW-5	1/17/89	26,000	8,700	3,900	990	5,900
MW-5	6/01/89	5,200	240	220	130	690
MW-6	1/17/89	38,000	7,400	9,300	2,000	9,900
MW-6	6/01/89	23,000	1,900	2,500	2,000	6,000

<sup>\*</sup>ppb - parts per billion

MW:het:087

Table 2
Exxon Station R/S #7-0104
er Elevations
(Feet)

Well No.	Elevation Top of Well Casing*	Depth Water BTOC**	Depth to Product	Product Thickness	Groundwater Elevation
MW-I	98.81	6.27	NP	Sheen	92.54
MW-2	97.94	6.32	NP	Sheen	91.62
MW-3	98.47	5.96	NP	NP	92.51
MW-4	98.69	6.01	NP	NP	92.68
MW-5	98.30	5.83	NP	Sheen	92.47
MW-6	98.96	6.25	NP	Sheen	92.71

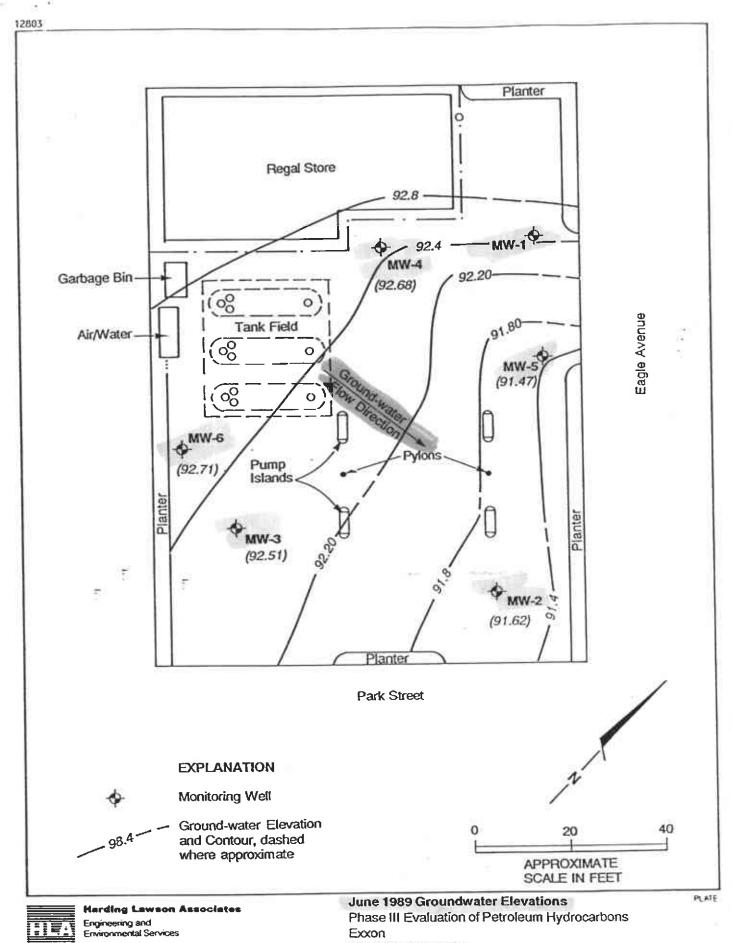
NP - No product

MJH/het:071

Table Pg. 3/

<sup>\*</sup>Elevations surveyed relative to an assumed common datum of 100 feet.

<sup>\*\*</sup>BTOC - Below top of casing.



Alameda, California

DRAWN JOB NUMBER APPROVED DATE REVISED DATE

MOI 4167,284.02 2/89



NET Pacific, Inc. 435 Tesconi Circle Santa Rosa, CA 95401 Tel: (707) 526-7200 Fax: (707) 526-9623

Formerly: ANATEC Labs, Inc.

M. Siembieda Harding Lawson Associates 7655 Redwood Blvd. PO Box 578 Novato, CA 94948 06-22-89

NET Pacific Log No: 6657

Series No: 281

Client Ref: Job #04167.284.02

Subject: Analytical Results for "Exxon ALameda, Source Code 23" Received

06-02-89

Dear Mr. Siembieda:

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Submitted by:

Approved by:

Brian Fies / Group Leader

Atomic Spectroscopy

Susān Joy GritÆ Group Leader

Gas Chromatography

/ml

Enc: Sample Custody Document



NET Pacific, Inc.

281/

LOG NO 6657

- 2 -

June 22, 1989

### KEY TO ABBREVIATIONS

mean : Average; the sum of the measurements divided by the total

number of measurements.

mg/Kg (ppm) 🕼 Concentration in units of milligrams of analyte per

kilogram of sample, wet-weight basis (parts per million).

mg/L : Concentration in units of milligrams of analyte per liter

of sample, unless noted otherwise.

mL/L/hr Milliliters per liter per hour.

MPN/100 mL 😰 Most probable number of bacteria per one hundred milliliters

of sample.

N/A Not applicable.

ND Not detected; the analyte concentration is less than the listed

reporting limit.

NR Not requested.

NTU Nephelometric turbidity units.

RL : Reporting limit.

RPD : Relative percent difference,  $[V^1-V^2/V \text{ mean}]x100$ .

SNA Standard not available.

ug/Kg (ppb) : Concentration in units of micrograms of analyte per kilogram

of sample, wet-weight basis (parts per billion).

ug/L Concentration in units of micrograms of analyte per liter

of sample.

ug/filter : Concentration in units of micrograms of analyte per filter.

umhos/cm : Micromhos per centimeter.

\* See cover letter for details.



NET Pacific, Inc.

281/

LOG NO 6657

- 3 -

June 22, 1989

		_Descriptor,	Lab No. and Re	sults (mg/L)
Parameter	Reporting Limit ( mg/L )	89060101 06-01-89 1452 (-28527 )	89060102 06-01-89 1540 (-28528 )	89060103 06-01-89 1648 (-28529 )
PETROLEUM HYDROCARBONS				
Volatile, as Gasoline DATE ANALYZED	0.05	23 06-16-89	5.4 06-16-89	5.2 06-16-89
		Descriptor,	Lab No. and Re	sults (ug/L)
Parameter	Reporting Limit ( ug/L )	89060101 06-01-89 1452 (-28527 )	89060102 06-01-89 1540 (-28528 )	89060103 06-01-89 1648 (-28529 )
Benzene Ethylbenzene Toluene Xylenes, total	0.5 1.5 0.5 1.5	1,900 2,000 2,500 6,000	330 570 300 680	240 130 220 690



NET Pacific, Inc.

281/ LOG NO 6657

= 4 =

June 22, 1989

		Descriptor,	Lab No. and Re	esults (mg/L)
Parameter PETROLEUM HYDROCARBONS	Reporting Limit ( mg/L )	89060104 06-01-89 1709 (-28530 )	89060105 06-01-89 1758 (-28531 )	89060106 06-01-89 1843 (-28532 )
Volatile, as Gasoline DATE ANALYZED	0.05	8.7 06-16-89	1.7 06-16-89	3.6 06-16-89
		Descriptor,	Lab No. and Re	esults (ug/L)
Parameter	Reporting Limit ( ug/L )	89060104 06-01-89 1709 (-28530 )	89060105 06-01-89 1758 (-28531 )	89060106 - 06-01-89 1843 (-28532 )
Benzene Ethylbenzene Toluene Xylenes, total	0.5 1.5 0.5 1.5	330 680 280 1,200	170 13 6.9 230	180 63 240 810

Job Nam Proj	e/	P N 4	O A O B ovat 5 a elecc	osh o, C 92-0 ppy: er at	Lar 610 alilo 0821 415	ndin 7 orni 1 5/89	94 94 04	948 586	( } ×6.	2,2		TA.	75	7	61	29	F.				ŧā.	Sa —	am	pl	er	S	T	TA T	V	DRINICARI) FENTON  M Duthauf ure Required)		Lal	D:		ANA	A LA	0 0	RE	QUE	STE	D		
SOURCE		M	Sediment	۲I)	<	-	#C#		TA ES		RS		_	S/NU	MI OF LA	BEI		2	I	Yr		Λo	D	ATI	E		me			STATION DESC NOTES		EPA 601/8010	EPA 602/8020 EPA 624/8240	EPA 625/8270	Priority Piltnt. Metals	Total Dated Hadener	lotal retroi, riy						
23	_	X	+	+	+	7	3	+	+	t	t	8		-	-+	0	17	_	12	89	_	-	0	-	_	4	5	_	11			1			Х	X	П	П					
1	H		+	+	$^{\dagger}$	1	췫	$^{+}$	+	t	1	0	=	₹			1	_	+	1	F	ř	5		-	_		0	lt			111		П	X	X		$\Box$	$\top$				$\prod$
H)	Н	#	+	+	+	1	Í	$^{+}$	+	+	╁	Н		7	t	7	1	_	+	$^{\dagger}$	+	H	17		7	_		8	lŀ			111	1	Н	-Y	k				$\Box$	1	$\top$	
-	H	$^{\dagger\dagger}$	+	+	+	+	3	+	+	+	╁	H	Н	7	7	4		4	+	+	t	t	#		7	2	_	9	lŀ					H	X	(h		$\Box$	T		$\top$		
-	Н	H	+	+	+	+	3	+	+	۰	╁	⊢	Н	7	-1		_	3	+	+	+		$\vdash$		1	7	5"	ç	lŀ			111	+	H	X	Y	$\top$	$\top$	+	$\Box$		$\top$	
1	Н	U	+	+	+	_	3	+	+	+	╁	H	H	H	→	+	-	_	-	+	+	1	H	Н	1	_		3	lŀ	17		11	+	Н	x	1.		$\vdash$	+	$\vdash$	+	$^{+}$	
1	Н	4	+	+	+	-	2	+	+	+	+	H	H	+	+	2	4	0 6	+	+	╁	F	H	Н	Н	2	Н	4	ŀ			+	+	Н	-	+	+	+	+	H	+	+	
1	Н	4	+	4	4	4	4	4	+	+	+	L	Ш	4	4	4	4	+	+	+	+	H	H	Ш		Н	Ц	_	H			H	+	Н	+	+	+	+	+	H	+	+	
+	Н	4	+	4	4	4	4	4	+	+	╀	L	Н	4	4	+	+	+	+	+	+	L	⊢	_			Н	_	-			H	-	Н	+	+	+	+	+	$\vdash$	+	+	-
	Ц	1	1	1	1	4	4	4	-					4	4	4	1	1	1	1	-	L	_						1			1	-	H	-	+	+	1	+	$\vdash$	+	1	
	Ц											L		Ц	_						_		L						IL			Ш		Ш					$\perp$	Ш		Ш	Щ
Yr	N	LA UM	BEI	R	_			EPT IN EE		M	OL		coi					N	/IIS	CE	LL	AN	EO	US							CHAIN OF	cust	ODY	RE	.coi	RD							

	L# NUM			DEPTH IN	COL	QA CODE	MISCELLANEOUS	CHAIN OF CUSTODY RECORD
Yr	Wk	Se	q	FEET	CD			RELINQUISHED BY: (Signature) RECTIVED BY: (Signature) DATE/TIME
								RELINQUISHED BY: (Signature)  RECEIVED BY: (Signature)  DATE/TIME  RECEIVED BY: (Signature)  RECEIVED BY: (Signature)  DATE/TIME
			+					DISPATCHED BY: (Signature) DATE/TIME RECEIVED FOR LAB BY: DATE/TIME (Signature)
$\vdash$	Ш	$\top$	+	111	+	++++		METHOD OF SHIPMENT

#### GROUND-WATER SAMPLING FORM **Harding Lawson Associates** Engineers and Geoscientists Well No. MW-1 Well Type: ØMonitor ☐ Extraction ☐ Other \_\_ Well Material: MPVC ☐ St. Steel ☐ Other — Job Name EXXCH ALAMEDA Date 6/1/69 Time 1758 Job Number OHIL Recorded by \_ TELL WELL-PURGING TO THE TOTAL TO THE TELL PURGING TO THE TELL PUR PURGE METHOD PURGE VOLUME Bailer - Type: \_\_\_ PVC Casing Diameter (D in inches): ☐ Submersible (Macentrifugal ☐ Bladder; Pump No.: \_\_ 2-inch X4-inch 6-inch Other\_ Total Depth of Casing (TD in feet BTOC): 20.7 Other - Type: \_ PUMP INTAKE SETTING Water Level Depth (WL in feet BTOC):\_\_\_\_ ☐ Near Bottom ☐ Near Top ☐ Other \_ Number of Well Volumes to be purged (# Vols) Depth in feet (BTOC): \_\_\_\_\_ Screen Interval in feet (BTOC): ⊠3 □4 □5 □10 □ Other\_ from \_\_\_ PURGE VOLUME CALCULATION: 4 2 X 3 X 0.0408 = 28.3 D (inches) X Vols X 0.0408 = Calculated Purge Volume "ACTUAL" PURGE VOLUME PURGE RATE PURGE TIME \_ gallons 1732Start 1752Stop 20 Elapsed \_gpm Final \_\_ FIELD PARAMETER MEASUREMENT Minutes Since Pumping Began Other\_74/93 Cond. (µmhos/cm) Other TURB Minutes Since Pumping Began Cond. (µmhos/cm) 2100 6.5 24.5 0 2100 >100 21.9 77 10 20.4 15 >100 ZO Observations During Purging (Well Condition, Turbidity, Color, Odor): Cher, slight gasoline actor, booms grey, muly of 5 gals Storm Sewer Discharge Water Disposal: Sanitary Sewer WELL SAMPLING Same As Above SAMPLING METHOD Baller - Type: \_\_\_55 Grab - Type: \_\_\_ Other - Type:\_\_\_ Submersible Centrifugal Bladder; Pump No.: \_\_ Sample Series: 8906 SAMPLE DISTRIBUTION Comments Lab Volume/Cont. Analysis Requested Preservatives Sample No. NET THY AS 645 CETKE NONE QUALITY CONTROL SAMPLES Other Samples Blank Samples **Duplicate Samples** Sample No. Original Sample No. Duplicate Sample No. Sample No. Type

Type

n746 A

#### **Harding Lawson Associates** GROUND-WATER SAMPLING FORM Engineers and Geoscientists Well No. \_ M W - 7 Well Type: Monitor □ Extraction □ Other \_\_\_\_\_ Job Name EXX CN ALAMEDA Well Material: ØPVC ☐ St. Steel ☐ Other\_ Job Number 04/167 28 Date \_ 6/1/89 Sampled by JJF/ Recorded by \_\_\_ WELL PURGING PURGE VOLUME PURGE METHOD Bailer - Type: PVC Casing Diameter (D in inches): 2-inch 24-inch 6-inch Other\_ Submersible Sentrilugal Bladder; Pump No.:\_\_\_\_ Total Depth of Casing (TD in feet BTOC): 15.9 Other - Type: \_\_\_ 6.32PUMP INTAKE SELTING Water Level Depth (WL in feet BTOC): \_\_\_\_ Number of Well Volumes to be purged (# Vols) ☐ Near Bottom ☐ Near Top ☐ Other \_\_\_ Depth in feet (BTOC): \_\_\_\_\_ Screen Interval in feet (BTOC): PURGE VOLUME CALCULATION: from \_\_\_\_\_\_ to \_\_\_ 4 2 x 3 x 0.0408 = 18.8 (inches) x Vols Calculated Purge Volume PURGE TIME PURGE RATE ACTUAL PURGE VOLUME 1600 Start 1702 Stop 6Z Blapsed 9 gallons Initial \_\_\_\_\_gpm Final \_\_\_\_gpm HELD PARAMETER MEASUREMENT Minutea Since Pumping Began Cond. (µmhos/cm) Cond. (µmhos/cm) Minutes Since TAC Other NTU THE Other VTV Pumping Began 6.8 940 6.0 900 2100 930 leb 7100 9.30 6.9 920 >100 890 Meter Nos. COMBO METER 5290 Observations During Purging (Well Condition, Turbidity, Color, Odor): COM BO SLIGHT SHEER + GAS ODER DOTHER SS BAL DRUM OH STIFE Discharge Water Disposal: Sanitary Sewer Sewer WELL SAMPLING SAMPLING METHOD ☐ Same As Above K Baller - Type: \_\_\_\_\_ Grab - Type: \_\_\_\_ Submersible Centrifugal Bladder, Pump No.: 8906 SAMPLE DISTRIBUTION Sample Series: Other - Type: .... Sample No. Volume/Cont. Analysis Requested Preservatives Lab Comments 3 VOA3 0104 TPH AS GASOLFHE NOME MET BTXE QUALITY CONTROL SAMPLES Duplicate Samples Blank Samples Other Samples Original Sample No. Duplicate Sample No. Type Sample No. Type Sample No.

### Harding Lawson Associates

Engineers and Geoscientists

		Well No	MW-3	<del></del>
Company of the control of the contro			Monitor □ Extraction	
ob Name EXXON A			al: PPVC St. Stee	el Other
ob Number 04/6/7 2	84 02	Date	1/89 T	ime <u>1540</u>
ecorded by	7.	Sampled by		MD
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(Signature)	PURGING		neliais)
PURGE VOLUME	PORPORED DIFFERENCE STREET, AND	PURGE M	1100	TO LOOK TO THE THE BOOK TO SERVE TO
STATISTICS CONTRACTOR CANADA		☐ Bailer - Ty	and distance of the same	
Casing Diameter (D in inches):	Ook.		le 🕱 Centrifugal 🗌 Bladd	ar Pumo No -
☐ 2-inch ☐ 4-inch ☐ 6-inch  Total Depth of Casing (TD in feet 6	14./		pe;	or, rump no
Water Level Depth (WL in feet BTC	5,96	and the second s	AKE SETTING	
Number of Well Volumes to be put		Per American		ner
12002		•	· ·	n Interval in feet (BTOC):
PURGE VOLUME CALCULA		Deput in leet		to
, III I F GI	// 2	7		
(14.1 - 5.76)	х_ <del></del>	- 12 V2	= /(o, O Calculated Pu	gallons
\ TD (feet) WL (feet) /		Vols		
PURGETIME	Statement of the later of the l	GE RATE	ACTU	AL PURGESYOLUME
15/3 start 1536 stop	and the second control of the second control	gpm Final_	gpm/	gallons
FIELD PARAMETER MEASU	AND THE PERSON NAMED IN			
Minutes Since Pumping Began PH (μmho	d. TO'E Other N	Minutes Since Pumping Bega	pH Cond. (µmhos/cm)	T C Other
Dlott 10.6 910				
4 6.6 800		0		
8 6.8 85				
	7 16 7100			
10 7-1 76			COMBO METER	5290
		do het au	olice odor, clouds	
Observations During Purging (Well Discharge Water Disposal: Sa		13.53	, , , , , ,	
Uscalaige Water Usposai.	nitary Sewer	Wei Other	west Autoria	product a particular as
· 10年11年 日本	VVE	E SAMPLING		TO THE STATE OF
SAMPLING METHOD		☐ Same As	Above	
Baller - Type:	- <u></u>	Grab - Ty	pe:	
☐ Submersible ☐ Centrifugal ☐	Bladder; Pump No.:	Other - Ty	pe:	
SAMPLE DISTRIBUTION	Sample Series: 8906	_		
Sample No. Volume/Con		Preservatives	Lab	Comments
8906-0102 3 VOAS	TPH AS 645 & BTXE	NONE	NET	
	*			
		7.5		
-				-
	PG-28	l	1 -	1
QUALITY CONTROL SAMP	SEA-GET	2203200	2	reconvenience
Original Sample No. Duplicate 5	Annual Company of the	Blank Samples	The second secon	her Samples
Original Sample No.   Corplicate :	Sample No. Type	Sample N	lo. Type	Sample No.
			1.1	

**GROUND-WATER SAMPLING FORM** 

Hardin	g Lawer	on Associates			GROUN	1D-M	ATER SA	AMPLI	NG FOF
		erpsic instituti			Well No.	Mu	1-4		
					Well Type: □			on 🗆 Ot	her
ob Name	VVA	ALA	MEDA	1-	Well Material:	ØΡV	C St. Ste	el 🗆 Ot	her
ob Number	Cill il	47 78	34 0	2	Data 6//	720	7 1	lime	1843
ecorded by	11/1	4117	in	-	Sampled by		JJF/ I	MP	
	177	// (signic		55 to 4 - 1 - 1 - 1		-			Mark English
	4.6	Value of	<b>建</b>	WELL	PURGING	a celebrate		17 SAL 10	
PURGE VOLU	ME				PURGE MET		,		
Casing Diameter (	D in incl	nes):			D Bailer - Type:				
]2-inch   ☐ 4-ir	nch 🛘	6-inch Oth	er	A 17	☐ Submersible		rifugal Blade	der; Pump	No.:
Total Depth of Ca	sing (TD	in feet BTOC):	·	1.2	Other - Type:		ar y Marke I y a g		
Water Level Depti	ı (WL in	feet BTOC):	6	2-01	PUMP INTAK	The the state of the sail			
Number of Well V	olumes t	to be purged (#	≠ Vois)		Near Bottom				
23 □4 □5	□10 □	] Other			Depth in feet (B)	TOC);			
PURGE VOLU			./ .						_ to
182	los	2/) x	4	x 3	X 0.0408 =	-	23.	1	galk
TD (feet)	WL (	feet) ^ D	(inches)	# Vo	is.		Calculated P	urge Volun	ne
PURGE TIME	į			PURGE	RATE		ACTU	AL PUR	GE VOLUM
の後の とうしょう 一大変 基本な からち		2Z E	lapsed	Initial	gpm Final	gpr	η	24	gallo
FIELD PARAM				1111252	cos				
Minutes Since Pumping Began	BETTE THE T	Corid.	-D°C	Other TURS	Minutes Since	ρН	Cond.	T⊠°C	Other Trais
Pumping Began		(µmhos/cm)		10	Pumping Began	7.1	(µmhos/cm)	20.1	2100
- 0	6-8	732 747	22.4	7100		T-1-	621	20.7	1720
5	-		20.8	7/00	-			100	
19	19	216							
10	6.9	712	minimum man or						
15	6.9	702	19.7	7100	Mater Nos				
15	7.0	702	19.7	7109	Meter Nos.	of LOX	ofine- much	ک شری ت	Fools -
15 20 Observations Dur	6.9 7.0 ring Purg	702 712 ging (Well Cond	19.7 19.4 dition, Turb	7100 7100 idity, Color, Ox	ton: dear, very stip	of 645	ODUR, MURE	7 at 9	gals =
15 20 Observations Dur Discharge Water	6.9 7.0 ring Purg Disposal	702 712 ging (Well Cond	19.7 19.4 dition, Turbi Sewer [	7109 2100 idity, Color, Oc ☐ Storm Sewer	tor): dear, va sti	[0]_0	onur, much		
15 20 Observations Dur Discharge Water	6.9 7.0 ring Purg Disposal	702 712 ging (Well Cond	19.7 19.4 dition, Turbi Sewer [	7109 2100 idity, Color, Oc ☐ Storm Sewer	tor): Clear, va., st. j	inters	onor, much		gals
0 Observations Due Discharge Water	6.9 7.0 ring Purg Disposal	702 712 ging (Well Cond	19.7 19.4 dition, Turbi Sewer [	7109 2100 idity, Color, Oc ☐ Storm Sewer	tor): dear, va sti	[a]_c	onue, muet frum		
0 Discharge Water	6.9 7.0 ring Purg Disposal	702 712 ging (Well Cond	19.7 19.4 dition, Turbi Sewer [	7109 2100 idity, Color, Oc ☐ Storm Sewer	tor): Clear, va. strij Other 55 g	ove	trun		
20 Observations Dur Discharge Water	6.9 7.0 ring Purg Disposal	702 712 ging (Well Conc I: Sanitary	19.7 19.4 dition, Turbi Sewer [	zie9 zie0 idity, Color, Oc Storm Sewer WELL	SAMPLING  Grab - Type:	ove	trun		
Observations Dus Discharge Water  SAMPLING M Baller - Type: Submersible   SAMPLE DIS	6.9 7.0 ring Purg Disposal	702 712 ging (Well Cond): Sanitary	19.7 19.4 dition, Turbi Sewer [ er; Pump N	7109  7100  idity, Color, Oc  Storm Sewer  WELL  lo.:  \$906	SAMPLING  Same As Ab  Grab - Type	ove	drun.	17	
Observations Dus Discharge Water  SAMPLING M Baller - Type: Submersible ( SAMPLE DIS Sample No.	6.9 7.0 Disposal METHOL Contri	702 712 ging (Well Cond): Sanitary	19.7 19.4 dition, Turbi Sewer [ er; Pump N nple Series: Analysis Re	7103   7100     7100	SAMPLING    Same As Ab   Grab - Type:   Other - Type:	ove	Lab	17	
Observations Dus Discharge Water  SAMPLING M Baller - Type: Submersible   SAMPLE DIS	6.9 7.0 Disposal METHOL Contri	702 712 ging (Well Cond): Sanitary	19.7 19.4 dition, Turbi Sewer [ er; Pump N	7103   7100     7100	SAMPLING  Same As Ab  Grab - Type	ove	Lab	17	
Observations Dus Discharge Water  SAMPLING M Baller - Type: Submersible ( SAMPLE DIS Sample No.	6.9 7.0 Disposal METHOL Contri	702 712 ging (Well Cond): Sanitary	19.7 19.4 dition, Turbi Sewer [ er; Pump N nple Series: Analysis Re	7103   7100     7100	SAMPLING    Same As Ab   Grab - Type:   Other - Type:	ove	Lab	17	
Observations Dus Discharge Water  SAMPLING M Baller - Type: Submersible ( SAMPLE DIS Sample No.	6.9 7.0 Disposal METHOL Centri	702 712 ging (Well Cond): Sanitary	19.7 19.4 dition, Turbi Sewer [ er; Pump N nple Series: Analysis Re	7103   7100     7100	SAMPLING    Same As Ab   Grab - Type:   Other - Type:	ove	Lab	17	
Observations Dus Discharge Water  SAMPLING M Baller - Type: Submersible ( SAMPLE DIS Sample No.	6.9 7.0 Disposal METHOL Centri	702 712 ging (Well Cond): Sanitary	19.7 19.4 dition, Turbi Sewer [ er; Pump N nple Series: Analysis Re	7103   7100     7100	SAMPLING    Same As Ab   Grab - Type:   Other - Type:	ove	Lab	17	
Observations Dus Discharge Water  SAMPLING M Baller - Type: Submersible ( SAMPLE DIS Sample No.	6.9 7.0 Disposal METHOL Centri	702 712 ging (Well Cond): Sanitary	19.7 19.4 dition, Turbi Sewer [ er; Pump N nple Series: Analysis Re	7103   7100     7100	SAMPLING    Same As Ab   Grab - Type:   Other - Type:	ove	Lab	17	
Observations Dus Discharge Water  SAMPLING M Baller - Type: Submersible ( SAMPLE DIS Sample No.	6.9 7.0 Disposal METHOL Centri	702 712 ging (Well Cond): Sanitary	19.7 19.4 dition, Turbi Sewer [ er; Pump N nple Series: Analysis Re	7103   7100     7100	SAMPLING    Same As Ab   Grab - Type:   Other - Type:	ove	Lab	17	
Observations Dus Discharge Water  SAMPLING M Baller - Type: Submersible ( SAMPLE DIS Sample No.	6.9 7.0 Disposal METHOL Centri	702 712 ging (Well Cond): Sanitary	19.7 19.4 dition, Turbi Sewer [ er; Pump N nple Series: Analysis Re	7103   7100     7100	SAMPLING    Same As Ab   Grab - Type:   Other - Type:	ove	Lab	17	
Observations Dur Discharge Water  SAMPLING M Baller - Type: Submersible   SAMPLE DIS Sample No. 8900 - 010	6.9 7.0 ring Purg Disposal IETHOL TRIBUT	702 712 ging (Well Cond): Sanitary  GS ifugal Bladdo  HON San  lume/Cont.  VOATS 7	19.7 19.4 dition, Turbi Sewer [ er; Pump N mple Series: Analysis Re PH 43 645	7103   7100     7100	SAMPLING    Same As Ab   Grab - Type:   Other - Type:	ove	Lab	17	
Observations Dur Discharge Water  SAMPLING M Baller - Type: Submersible   SAMPLE DIS Sample No. 8700 - 010	6.9 7.0 ring Purg Disposal IETHOL Vol 4 3	702 712 ging (Well Cond): Sanitary  D S S S S S S S S S S S S S S S S S S	19.7 19.4 dition, Turbi Sewer [ er; Pump N mple Series: Analysis Re PH 43 645	7109  7100  idity, Color, Ox  Storm Sewer  WELL  to::  \$906  equested  € \$7x€	SAMPLING  Same As Ab Grab - Type: Other - Type  Preservatives	ove	Lab	17	Comments
Observations Dur Discharge Water  SAMPLING M Baller - Type: Submersible   SAMPLE DIS Sample No. 870(-010	6.9 7-0 ring Purg Disposal  IETHOL  Vol  3 ONTROI	702 712 ging (Well Cond): Sanitary  D S Situgal Bladde FION San Samples  L SAMPLES Samples	19.7 19.4 dition, Turbi Sewer [ er; Pump N nple Series: Analysis Re	7109  7100  idity, Color, Oc.  Storm Sewer  WELL  lo.:  \$90 €  Bla	SAMPLING    Same As Ab   Grab - Type:   Other - Type:	ove Mc	Lab		Comments
Observations Due Discharge Water  SAMPLING M Baller - Type: Submersible   SAMPLE DIS Sample No. 870(-010	6.9 7-0 ring Purg Disposal  IETHOL  Vol  3 ONTROI	702 712 ging (Well Cond): Sanitary  D S S S S S S S S S S S S S S S S S S	19.7 19.4 dition, Turbi Sewer [ er; Pump N nple Series: Analysis Re	7109  7100  idity, Color, Ox  Storm Sewer  WELL  to::  \$906  equested  € \$7x€	SAMPLING  Same As Ab Grab - Type: Other - Type Preservatives	ove Mc	Lab		Comments

#### Harding Lawson Associates **GROUND-WATER SAMPLING FORM** Engineers and Geoscientists Well No. MW-S EXXON ALAMEDA Job Name Well Material: XPVC □ St. Steel □ Other \_ Job Number \_ 0416 Date <u>6/1/89</u> Recorded by \_ Sampled by \_\_\_\_\_ WELLPURGING PURGE VOLUME PURCE VIEWOD Bailer - Type: \_\_\_PVC Casing Diameter (D in inches): 2-inch 34-inch 6-inch Other\_ Total Depth of Casing (TD in feet BTOC);\_\_\_\_\_ Other - Type: \_\_\_\_\_ Water Level Depth (WL in feet BTOC):\_\_\_\_\_ PUMP INTAKE SETTING Number of Well Volumes to be purged (# Vols) Near Bottom Near Top Other\_ Ø3 □4 □5 □10 □ Other\_ Depth in feet (BTOC): \_\_\_\_\_ Screen Interval in feet (BTOC): PURGE VOLUME CALCULATION from \_\_\_\_\_\_ to \_\_\_\_ 4 2 X 3 X 0.0408 = 25.4 D (inches) X Vols Calculated Purge Volume gallons PURGE TIME PURGERATE ACTUAL PURGE VOLUME 1620 Start 1645 Stop 25 Blapsed gpm Final \_\_\_\_ FIELD PARAMETER MEASUREMENT Minutes Since Cond. (µmhos/cm) Minutes Since Pumping Began Cond. (µmhos/cm) Other MTZL THE Other STU Pumping Began 900 256A4 7100 850 100 900 10 290 2100 280 11 860 7100 Meter Nos. Observations During Purging (Well Condition, Turbidity, Color, Odor, MCLOUDY, SLIGHT CAS COER & SHEEN Storm Sewer Dother \_\_\_ 55 GAI DRUM CNISTE Discharge Water Disposal: Sanitary Sewer \*WELL SAMPLING SAMPLING METHOD ☐ Same As Above ABaller - Type: SS Grab - Type: \_\_\_\_ ☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.: Other - Type:\_\_\_ Sample Series: 8906 SAMPLE DISTRIBUTION Volume/Cont. Sample No. Analysis Requested Preservatives Comments 0103 3 VOAS TPH AS GASOLTHE NONE NET & BITXE

## QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

	Blank	Samp	les
_		1	- 0

Other Samples

Туре	Sample No.	Type	Sample No.
	1		