AEGIS ENVIRONMENTAL, INC.
1050 Melody Lane, Suite 160, Roseville, CA 95678 ✦ 916 • 782-2110 / 916 • 969-2110 / FAX 916 • 786-7830

July 8, 1993

Mr. Neil Hamre
E. C. Buehrer Associates, Inc.
1061 Eastshore Highway
Albany, California 94710

Subject: **Quarterly Groundwater Monitoring Report**
E. C. Buehrer & Associates, Inc.
1061 Eastshore Highway, Albany, California

Dear Mr. Hamre:

Aegis Environmental, Inc. (Aegis), is pleased to provide E. C. Buehrer Associates, Inc. (E. C. Buehrer), this report documenting the results of quarterly groundwater monitoring conducted on March 15, 1993, at the subject site (Figure 1). The monitoring included collection of depth-to-groundwater measurements and water samples from five wells (MW-5 through MW-9) located on site (Figure 2). This report is based, in part, on information obtained by Aegis from E. C. Buehrer and is subject to modification as newly acquired information may warrant.

SITE DESCRIPTION

The E. C. Buehrer site is an active equipment rental and repair shop consisting of two buildings. The larger building, along the western boundary of the site, contains office space and work bays for equipment repair. The smaller building, along the southern boundary, is utilized as a welding and machine shop and a spray painting booth. Details of the site's current facilities, including underground storage tanks (UST) and utilities, were reported to E. C. Buehrer by Aegis in a "Problem Assessment Report," dated August 1, 1991. The project site is located in an industrial area of Albany.

BACKGROUND

In April 1990, Aegis installed groundwater monitoring wells MW-1 through MW-4 on site. The results of the investigation were reported to E. C. Buehrer by Aegis in a "Hydrogeological Investigation Results Report," dated June 12, 1990.

During April 1991, nine additional soil borings were drilled. Four of the borings were completed as groundwater monitoring wells MW-5 through MW-8 (Figure 2). Results were reported to E. C. Buehrer by Aegis in a "Problem Assessment Report," dated July 9, 1991.

Subsequent to the April 1990 well installations, Aegis conducted monthly depth-to-groundwater measurements and quarterly groundwater sampling. Monitoring was expanded to include the four additional wells in April 1991.

Wells MW-1 through MW-4 were abandoned in August 1991 in anticipation of soil excavation activities.

In May 1992, approximately 1,000 cubic yards of soil containing petroleum hydrocarbons and a 1,000-gallon UST were removed from the site. During the excavation, MW-8 was inadvertently destroyed. In June 1992, MW-8 was reinstalled and MW-9 was installed downgradient of the former UST (Figure 2). Soil excavation and well installation results were reported to E. C. Buehrer by Aegis in the "Excavation Results Report," dated June 12, 1992.

GROUNDWATER MONITORING

Groundwater

On March 15, 1993, Aegis personnel collected depth-to-groundwater measurements from MW-5 through MW-9. Since September 1992, groundwater levels have risen in all wells (Figure 3) an average of approximately 0.33 feet; ranging from 0.04 to 0.83-feet (Table 1). On the basis of the March 15, 1993, measurements, groundwater is estimated to flow to the west at an average gradient of approximately 0.023 ft/ft (Figure 4).

Previous groundwater levels are summarized in Table 1. All groundwater elevation measurements were conducted according to the Aegis standard operating procedures (SOP) included in Attachment 1.

Water Sampling and Analysis

On March 15, 1993, Aegis personnel collected groundwater samples from wells MW-5 through MW-9. The samples were collected according to the Aegis SOP included in Attachment 1, and submitted under chain-of-custody to Pace Incorporated of Novato, California, a state-certified analytical laboratory. The samples were analyzed for concentrations of:

- Total petroleum hydrocarbons (TPH), as gasoline, by modified EPA Method 8015.
- Benzene, toluene, ethylbenzene, and total xylenes by modified EPA Method 8020.
- TPH, as diesel, by EPA Method 3510/8015.
- Oil & grease, by Standard Method 5520.

The analytical results are summarized in Table 2. The analytical reports and chain-of-custody form are included in Attachment 2. Concentrations of TPH, as gasoline, and benzene reported in Table 2 are also shown on Figure 5.

REMARKS/SIGNATURES

The interpretations and conclusions contained within this report represent our professional opinions. These opinions are based on currently available information, and were developed in accordance with currently accepted geologic, hydrogeologic, and engineering practices at this time and for this specific site. Other than this, no warranty is implied or intended.

This report has been prepared solely for the use of E. C. Buehrer Associates, Inc. Any reliance on this report by third parties shall be at such parties' own risk. The work described herein was performed under the review and supervision of the professional geologist, registered with the State of California, whose signature appears below.

We appreciate the opportunity to provide E. C. Buehrer Associates, Inc., with geologic, engineering, and environmental consulting services, and trust this report meets your needs. If you have any questions or concerns, please call us at (916) 782-2110.

Sincerely,

AEGIS ENVIRONMENTAL, INC.

Owen M. Kittredge
Project Geologist

REGISTERED GEOLOGIST
PAUL GRAFF
No. 5600
Exp. 6/30/95
STATE OF CALIFORNIA

Paul Graff
Senior Geologist
CRG No. 5600

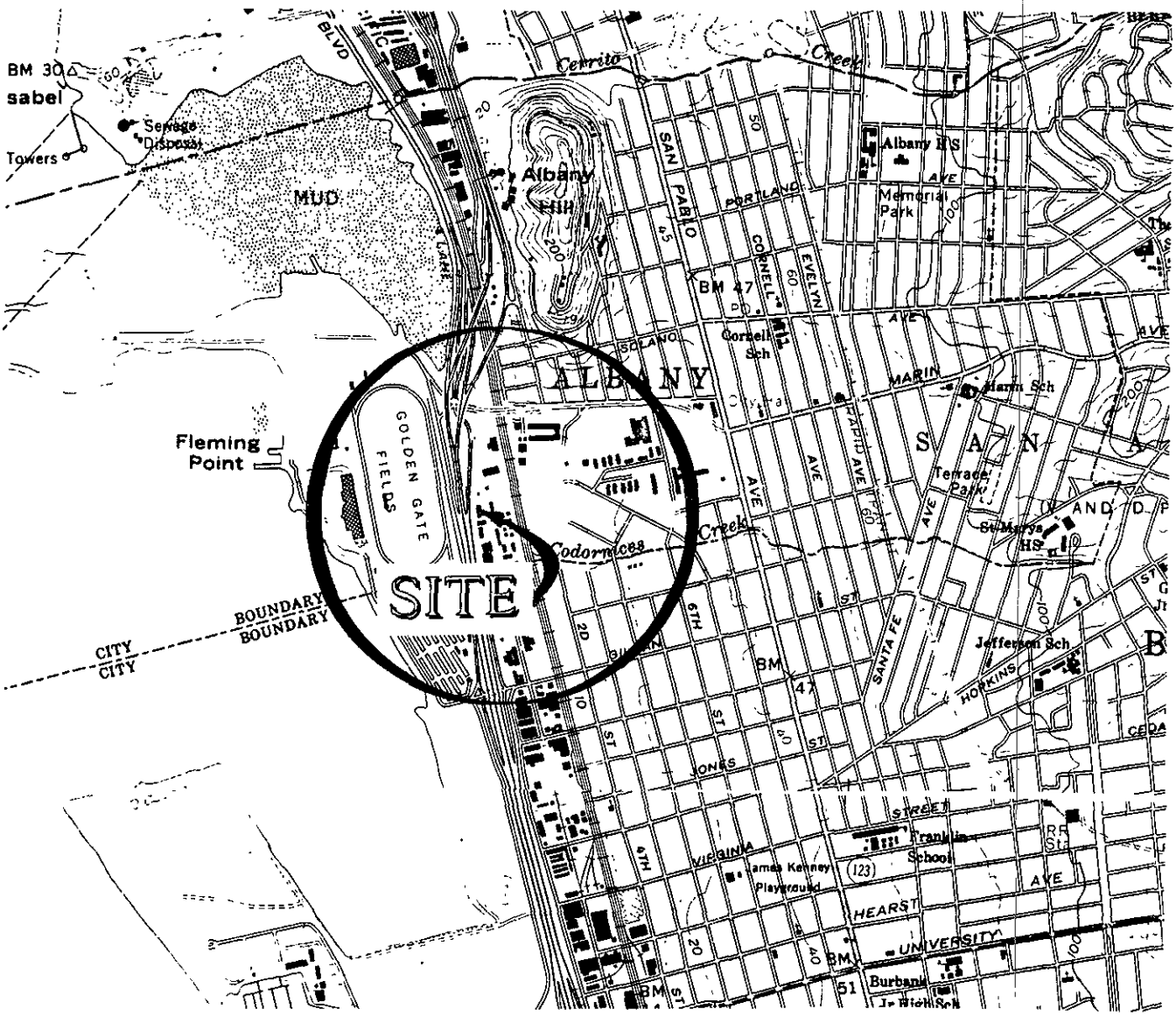
7/8/93
Date

OMK/PKG/law

Attachments

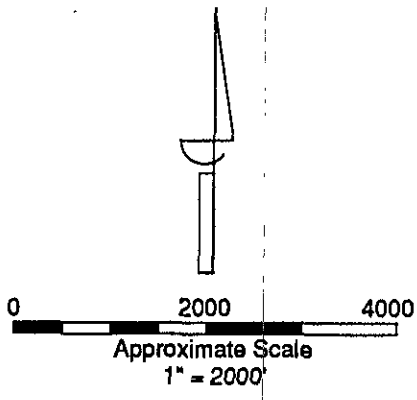
cc: San Francisco Bay Regional Water Quality Control Board
S. Hugo, Alameda County Department of Health Services

FIGURES

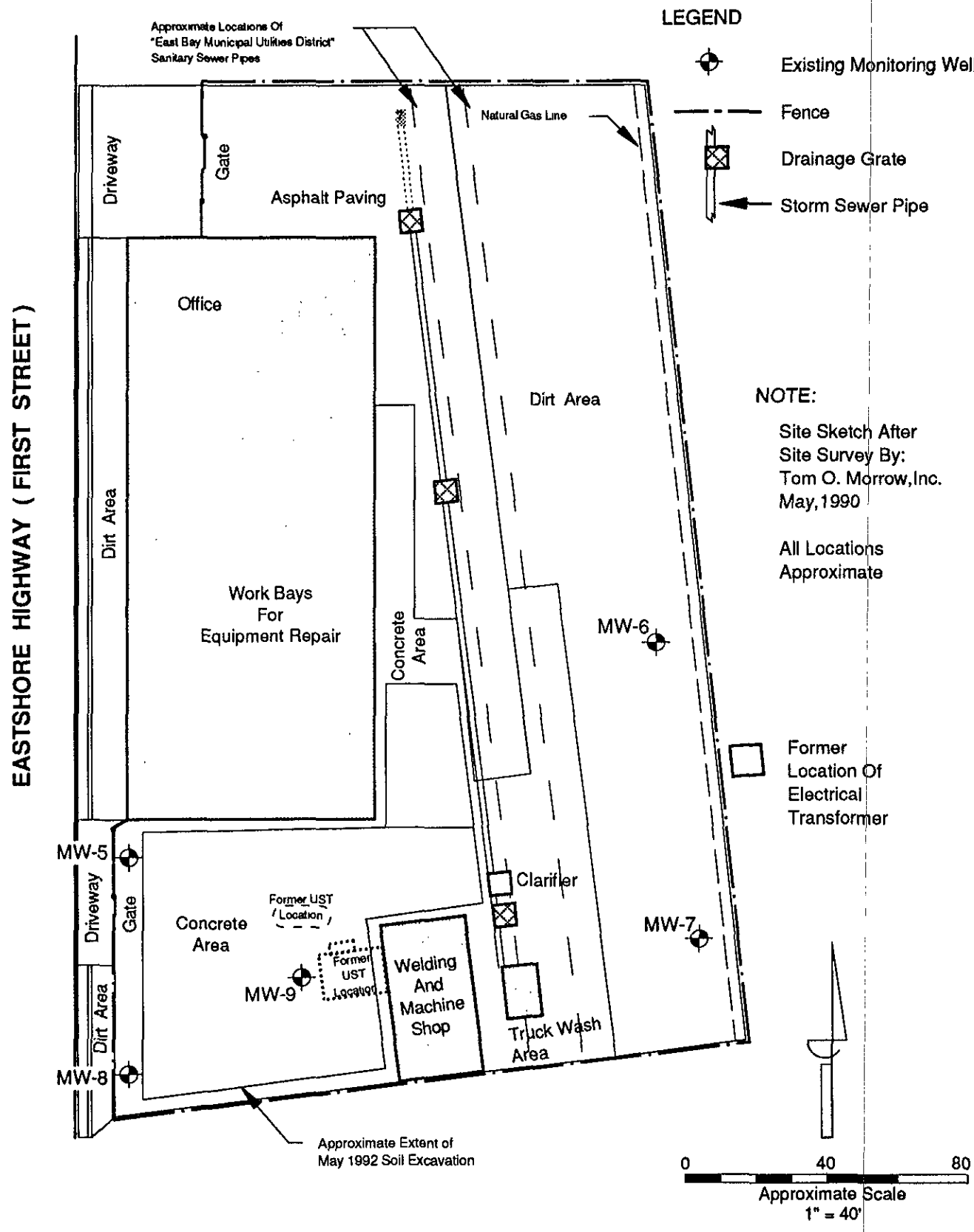


GENERAL NOTES:

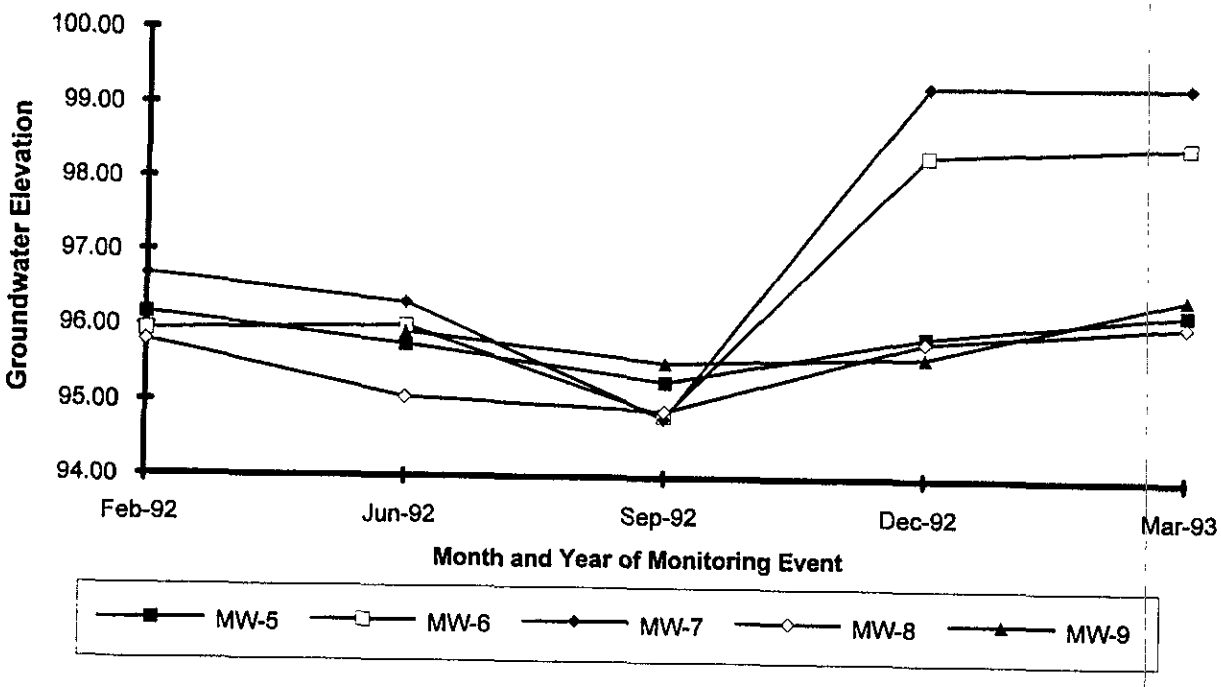
BASE MAP FROM USGS
7.5 MINUTE TOPOGRAPHIC
RICHMOND & OAKLAND WEST, CALIF.



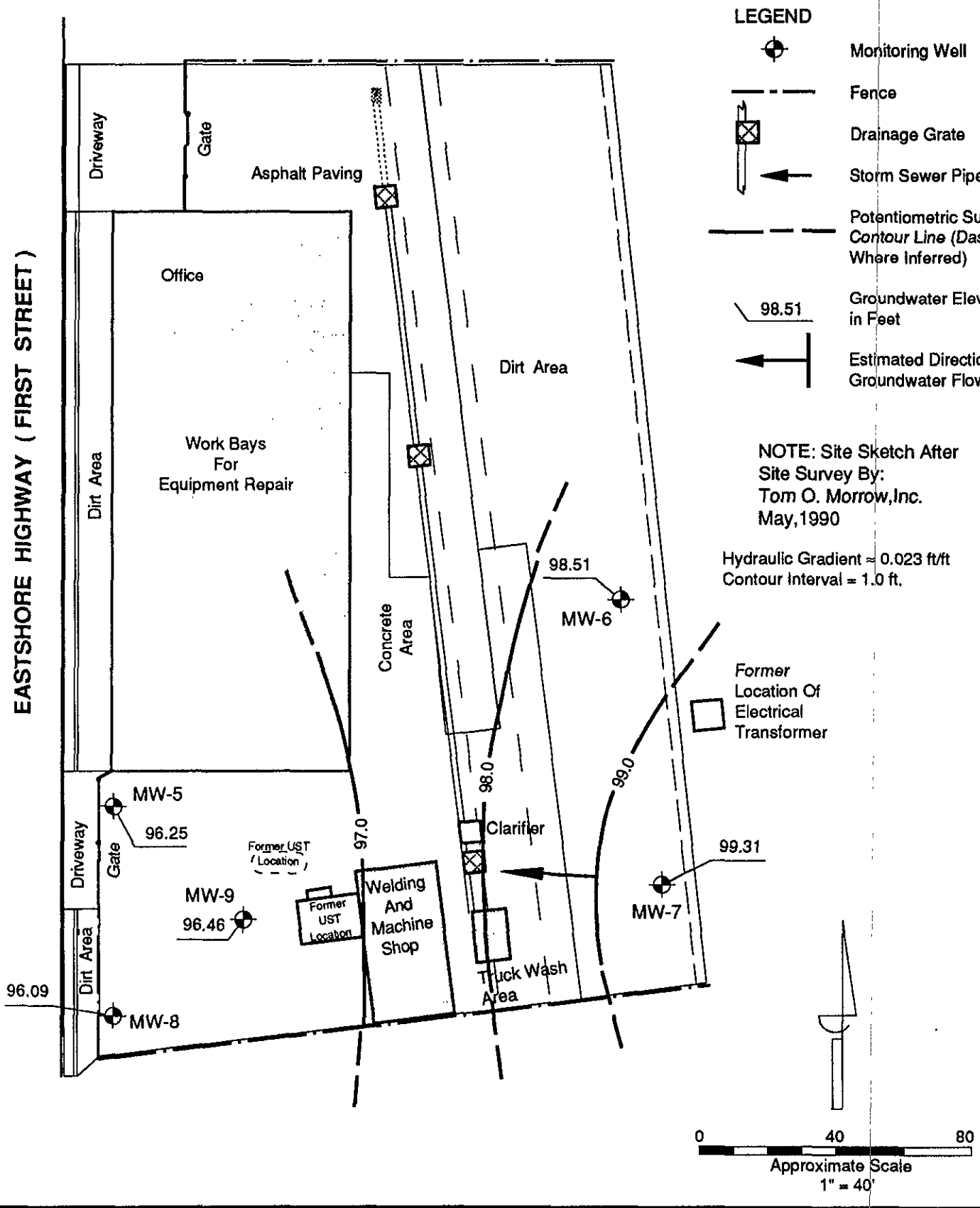
AEGIS ENVIRONMENTAL, INC.		SITE LOCATION MAP	FIGURE 1
DRAWN BY: Ed Bernard	DATE: May 15, 1992	E.C. Buehrer Associates, Inc. 1061 Eastshore Highway Albany, CA	PROJECT NUMBER: 10-90007
REVISED BY:	DATE:		
REVIEWED BY:	DATE:		



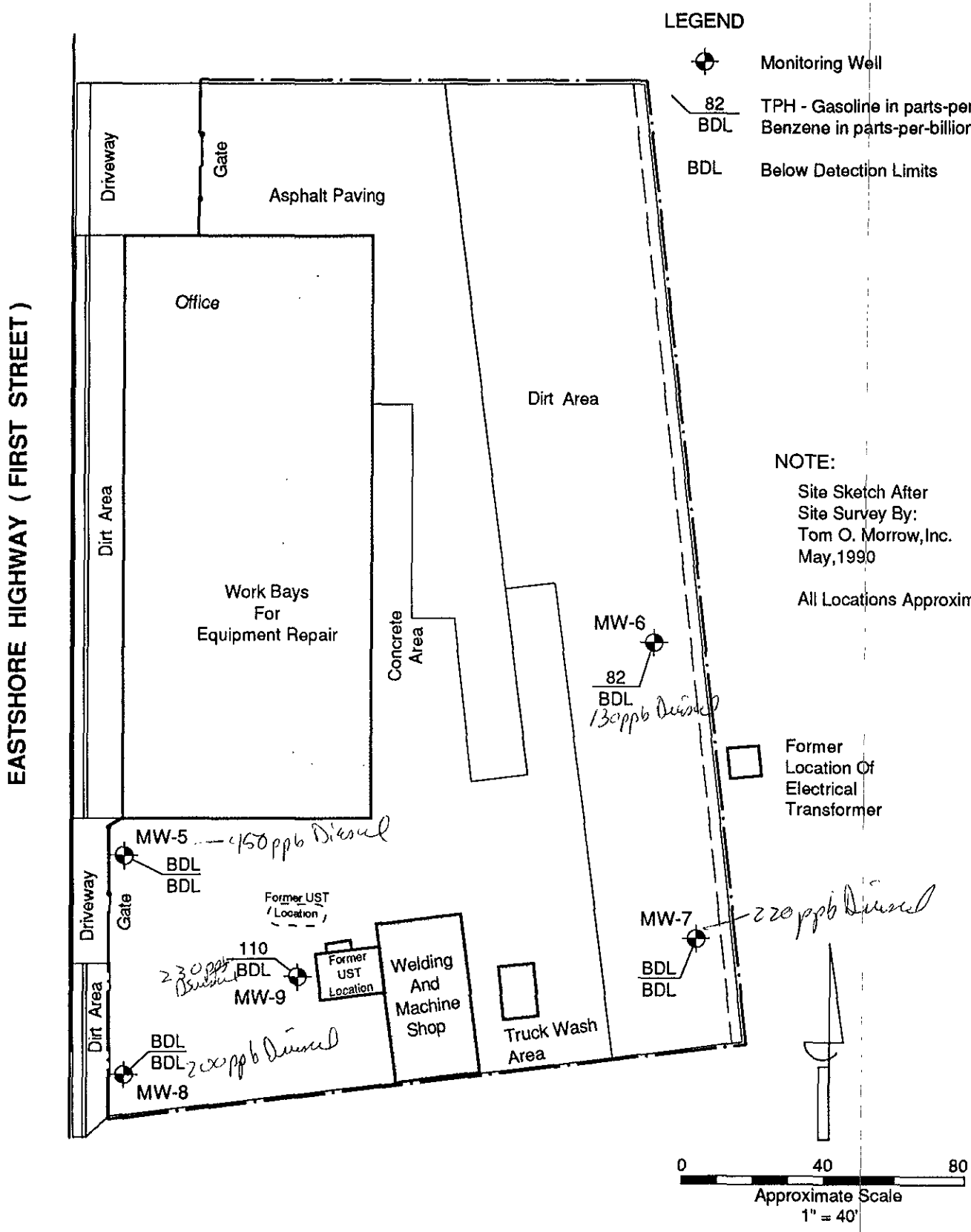
AEGIS ENVIRONMENTAL, INC.		SITE MAP	FIGURE 2
DRAWN BY: Ed Bernard	DATE: June 24, 1992	E.C. Buehrer Associates, Inc. 1061 Eastshore Highway Albany, CA	
REVISED BY:	DATE:		PROJECT NUMBER: 10-90007
REVIEWED BY:	DATE:		



AEGIS ENVIRONMENTAL, INC.		GROUNDWATER ELEVATION HYDROGRAPH	FIGURE 3
DRAWN BY: D. Hada	DATE: April 18, 1993	E.C. Buehrer Associates, Inc. 1061 Eastshore Highway Albany, CA	PROJECT NUMBER: 10-90007
REVISED BY:	DATE:		
REVIEWED BY:	DATE:		



AEGIS ENVIRONMENTAL, INC.		POTENTIOMETRIC SURFACE MAP March 15, 1993	FIGURE 4
DRAWN BY: D. Hada	DATE: April 18, 1993	E.C. Buehrer Associates, Inc. 1061 Eastshore Highway Albany, CA	PROJECT NUMBER: 10-90007
REVISED BY:	DATE:		
REVIEWED BY:	DATE:		



AEGIS ENVIRONMENTAL, INC.		DISTRIBUTION MAP OF TPH, AS GASOLINE, AND BENZENE IN GROUNDWATER March 15, 1993	FIGURE 5
DRAWN BY: D. Hada	DATE: April 18, 1993	E.C. Buehrer Associates, Inc. 1061 Eastshore Highway Albany, CA	PROJECT NUMBER: 10-90007
REVISED BY:	DATE:		
REVIEWED BY:	DATE:		

TABLES

TABLE 1

WATER LEVEL DATA

1061 EASTSHORE HIGHWAY, ALBANY, CALIFORNIA
(All measurements in feet)

Monitoring Well	Date	Reference Elevation[1]	Depth to Groundwater[1]	Groundwater Elevation[2]	Well Depth
MW-5	11/14/91	99.14	3.68	95.46	11.60
	02/04/92		2.98	96.16	11.59
	06/10/92		3.37	95.77	11.57
	09/16/92		3.85	95.29	11.57
	12/30/92		3.24	95.90	11.54
	3/15/93		2.89	96.25	11.56
MW-6	11/14/91	100.76	6.19	94.57	12.15
	02/04/92		4.82	95.94	12.10
	06/10/92		4.75	96.01	12.16
	09/16/92		5.92	94.84	12.17
	12/30/92		2.42	98.34	12.15
	3/15/93		2.25	98.51	12.15
MW-7	11/14/91	101.52	6.76	94.76	12.19
	02/04/92		4.84	96.68	12.11
	06/10/92		5.20	96.32	12.18
	09/16/92		6.72	94.80	12.20
	12/30/92		2.25	99.27	12.20
	3/15/93		2.21	99.31	12.20

NOTES:
[1] = Measurement from reference elevation at notch/mark on top north side of well casing.
[2] = Reference elevations surveyed by Tom O. Morrow, a surveyor licensed by the State of California, and referenced to a temporary bench mark with an assumed elevation of 100.00 feet.
Well Depth = Measurement from top of casing to bottom of well.
MW-1 through MW-4 were abandoned on August 15, 1991.

TABLE 1 (CONTINUED)

WATER LEVEL DATA

1061 EASTSHORE HIGHWAY, ALBANY, CALIFORNIA
(All measurements in feet)

Well No.	Date	Reference Elevation[1]	Depth to Groundwater[1]	Groundwater Elevation[2]	Well Depth
MW-8	11/14/91	99.64	4.41	95.23	11.83
	02/04/92		3.84	95.80	11.81
	06/10/92	99.63[3]	4.57	95.06	12.71
	09/16/92		4.73	94.90	12.77
	12/30/92		3.80	95.83	12.76
	3/15/93		3.54	96.09	12.72
MW-9	06/10/92	99.81	3.88	95.93	10.56
	09/16/92		4.27	95.54	10.56
	12/30/92		4.18	95.63	10.53
	3/15/93		3.35	96.46	10.53

NOTES:

[1] = Measurement from reference elevation at notch/mark on top north side of well casing.

[2] = Reference elevations surveyed by Tom O. Morrow, a surveyor licensed by the State of California, and referenced to a temporary bench mark with an assumed elevation of 100.00 feet.

[3] = Well reinstalled and resurveyed, June 1992.

Well Depth = Measurement from top of casing to bottom of well.

TABLE 2

ANALYTICAL RESULTS: GROUNDWATER

1061 EASTSHORE HIGHWAY, ALBANY, CALIFORNIA
(All results in parts-per- million)

Sample ID	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total Petroleum Hydrocarbons		Total Oil & Grease	Total Petroleum Hydrocarbons	
						Gasoline	Diesel		Motor Oil	Mineral Spirits
MW-5	04/08/91	<	0.0018	0.0006	0.0010	<	0.22	<	<<0.5	<<0.05
	08/12/91	<	<	<	<	<	0.14	<	<<0.5	<<0.05
	11/14/91	<	<	<	<	<	0.29	—	<<0.5	<<0.05
	02/04/92	<	<	<	<	<	0.62	—	<<0.5	<<0.05
	06/10/92	<	<	0.0006	0.0007	<	<<0.10	<<1.0	—	—
	09/16/92	<	<	<	<	<	<<0.10	<<0.5	—	—
	12/30/92	<	<	<	<	<	<<0.10	<<0.5	—	—
	3/15/93	<	<	<	<	<	0.45	<	—	—
MW-6	04/08/91	<	0.0018	0.0018	0.0010	<	0.21	<	<<0.5	0.15
	08/12/91	<	<	<	<	<	0.16	<	<<0.5	<<0.05
	11/14/91	<	<	<	<	<	0.15	—	<<0.5	<<0.05
	02/04/92	<	<	<	<	<	0.31	—	<<0.5	<<0.05
	06/10/92	<	<	0.0008	0.0043	0.082	<<0.10	<<1.0	—	—
	09/16/92	<	<	<	<	0.065	<<0.10	<<0.5	—	—
	12/30/92	<	<	<	<	0.012	<<0.10	<<0.5	—	—
	3/15/93	<	<	<	0.0006	0.082	0.13[1]	<	—	—
MW-7	04/08/91	<	0.0014	0.0014	0.0008	<	<	<	<<0.5	<<0.05
	08/12/91	<	<	<	<	<	0.07	<	<<0.5	<<0.05
	11/14/91	<	<	<	<	<	<	—	<<0.5	<<0.05
	02/04/92	<	<	<	<	<	<	—	<<0.5	<<0.05
	06/10/92	<	<	0.0009	0.0023	<	<	<<1.0	—	—
	09/16/92	<	<	<	<	<	<<0.10	<<0.5	—	—
	12/30/92	<	<	<	<	<	<<0.10	<<0.5	—	—
	3/15/93	<	<	<	<	<	0.22[1]	<	—	—

NOTES:
< = Below Practical Quantitation Reporting Limits per "Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites" (August 10, 1990). (PQL for BTEX = 0.005 ppm, TPH, as gasoline and diesel = 0.05 ppm, total oil & grease = 5.0 ppm.)
<< = Below the indicated detection limit.
— = Not analyzed.
1 = Lab reported "Peaks were observed in the diesel range. However, the peaks were not consistent with a diesel pattern.
MW-1 through MW-4 were abandoned on August 15, 1991.

TABLE 2 (CONTINUED)

ANALYTICAL RESULTS: GROUNDWATER

1061 EASTSHORE HIGHWAY, ALBANY, CALIFORNIA
(All results in parts-per-million)

Sample ID	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total Petroleum Hydrocarbons		Total Oil & Grease	Total Petroleum Hydrocarbons	
						Gasoline	Diesel		Motor Oil	Mineral Spirits
MW-8	04/08/91	<	<	0.0016	0.0001	<	<	<	<<0.5	<<0.05
	08/12/91	<	<	<	<	<	<	<	<<0.5	<<0.05
	11/14/91	<	<	<	<	<	0.12	—	<<0.5	<<0.05
	02/04/92	<	<	<	<	<	0.16	—	<<0.5	<<0.05
	06/10/92	<	<	0.0006	0.0007	<	<<0.10	<<1.0	—	—
	09/16/92	<	<	<	<	<	<<0.10	<<0.5	—	—
	12/30/92	<	<	<	<	<	<<0.10	<<0.5	—	—
	3/15/93	<	<	<	<	<	0.20[1]	<	—	—
MW-9	06/10/92	0.0009	0.0006	0.0009	0.0018	0.15	<<0.10	<<1.0	—	—
	09/16/92	0.0005	<	<	0.0006	0.33	<<0.10	<<0.5	—	—
	12/30/92	<	<	<	<	0.25	<<0.10	<<0.5	—	—
	3/15/93	<	<	<	<	0.11	0.23[1]	<	—	—

NOTES:
< = Below Practical Quantitation Reporting Limits per "Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites" (August 10, 1990). (PQL for BTEX = 0.0005 ppm, TPH, as gasoline and diesel =0.5 ppm, total oil & grease = 5.0 ppm.)
<< = Below the indicated detection limit.
— = Not analyzed.
1 = Lab reported "Peaks were observed in the diesel range. However, the peaks were not consistent with a diesel pattern.
MW-1 through MW-4 were abandoned on August 15, 1991.

ATTACHMENT 1

STANDARD OPERATING PROCEDURES

AEGIS ENVIRONMENTAL, INC.
STANDARD OPERATING PROCEDURES
RE: SAMPLE IDENTIFICATION AND CHAIN-OF-CUSTODY PROCEDURES
SOP-4

Sample identification and chain-of-custody procedures ensure sample integrity, and document sample possession from the time of collection to its ultimate disposal. Each sample container submitted for analysis is labeled to identify the job number, date, time of sample collection, a sample number unique to the sample, any in-field measurements made, sampling methodology, name(s) of on-site personnel and any other pertinent field observations also recorded on the field excavation or boring log.

Chain-of-custody forms are used to record possession of the sample from time of collection to its arrival at the laboratory. During shipment, the person with custody of the samples will relinquish them to the next person by signing the chain-of-custody form(s) and noting the date and time. The sample-control officer at the laboratory will verify sample integrity, correct preservation, confirm collection in the proper container(s), and ensure adequate volume for analysis.

If these conditions are met, the samples will be assigned unique laboratory log numbers for identification throughout analysis and reporting. The log numbers will be recorded on the chain-of-custody forms and in the legally-required log book maintained in the laboratory. The sample description, date received, client's name, and any other relevant information will also be recorded.

AEGIS ENVIRONMENTAL, INC.
STANDARD OPERATING PROCEDURES
RE: LABORATORY ANALYTICAL QUALITY ASSURANCE AND CONTROL
SOP-5

In addition to routine instrument calibration, replicates, spikes, blanks, spiked blanks, and certified reference materials are routinely analyzed at method-specific frequencies to monitor precision and bias. Additional components of the laboratory Quality Assurance/Quality Control program include:

1. Participation in state and federal laboratory *accreditation/certification programs*;

2. *Participation in* both U.S. EPA Performance Evaluation studies (WS and WP studies) and inter-laboratory performance evaluation programs;

3. Standard operating procedures describing routine and periodic instrument maintenance;

4. "Out-of-Control"/Corrective Action documentation procedures; and,

5. Multi-level review of raw data and client reports.

AEGIS ENVIRONMENTAL, INC.
STANDARD OPERATING PROCEDURE
RE: GROUNDWATER PURGING AND SAMPLING
SOP-7

Prior to water sampling, each well is purged by evacuating a minimum of three wetted well-casing volumes of groundwater. When required, purging will continue until either the discharge water temperature, conductivity, or pH stabilize, a maximum of ten well-bore volumes of groundwater have been recovered, or the well is bailed dry. When practical, the groundwater sample should be collected when the water level in the well recovers to at least 80 percent of its static level.

The sampling equipment consists of either a "Teflon" bailer, PVC bailer, or stainless steel bladder pump with a "Teflon" bladder. If the sampling system is dedicated to the well, then the bailer is usually "Teflon," but the bladder pump is PVC with a polypropylene bladder. In general and depending on the intended laboratory analysis, 40-milliliter glass, volatile organic analysis (VOA) vials, with "Teflon" septa, are used as sample containers.

The groundwater sample is decanted into each VOA vial in such a manner that there is no meniscus at the top of the vial. A cap is quickly secured to the top of the vial. The vial is then inverted and gently tapped to see if air bubbles are present. If none are present, the vial is labeled and refrigerated for delivery, under strict chain-of-custody, to the analytical laboratory. Label information should include a unique sample identification number, job identification number, date, time, type of analysis requested, and the sampler's name.

For quality control purposes, a duplicate water sample is collected from each well. This sample is put on hold at the laboratory. When required, a trip blank is prepared at the laboratory and placed in the transport cooler. It is labeled similar to the well samples, remains in the cooler during transport, and is analyzed by the laboratory along with the groundwater samples. In addition, a field blank may be prepared in the field when sampling equipment is not dedicated. The field blank is prepared after a pump or bailer has been either steam cleaned or properly washed, prior to use in the next well, and is analyzed along with the other samples. The field blank analysis demonstrates the effectiveness of the in-field cleaning procedures to prevent cross-contamination.

To minimize the potential for cross-contamination between wells, all well development and water sampling equipment not dedicated to a well is either steam cleaned or properly washed between use. As a second precautionary measure, wells are sampled in order of least to highest concentrations as established by available previous analytical data.

In the event the water samples cannot be submitted to the analytical laboratory on the same day they are collected (e.g., due to weekends or holidays), the samples are temporarily stored until the first opportunity for submittal either on ice in a cooler, such

AEGIS ENVIRONMENTAL, INC.
STANDARD OPERATING PROCEDURE
RE: MEASURING LIQUID LEVELS USING WATER LEVEL OR INTERFACE PROBE
SOP-12

Field equipment used for liquid-level gauging typically includes the measuring probe (water-level or interface) and product bailer(s). The field kit also includes cleaning supplies (buckets, TSP, spray bottles, and deionized water) to be used in cleaning the equipment between wells.

Prior to measurement, the probe tip is lowered into the well until it touches bottom. Using the previously established top-of-casing or top-of-box (i.e., wellhead vault) point, the probe cord (or halyard) is marked and a measuring tape (graduated in hundredths of a foot) is used to determine the distance between the probe end and the marking on the cord. This measurement is then recorded on the liquid-level data sheet as the "Measured Total Depth" of the well.

When necessary in using the interface probe to measure liquid levels, the probe is first electrically grounded to either the metal stove pipe or another metal object nearby. When no ground is available, reproducible measurements can be obtained by clipping the ground lead to the handle of the interface probe case.

The probe tip is then lowered into the well and submerged in the groundwater. An oscillating (beeping) tone indicates the probe is in water. The probe is slowly raised until either the oscillating tone ceases or becomes a steady tone. In either case, this is the depth-to-water (DTW) indicator and the DTW measurement is made accordingly. The steady tone indicates floating hydrocarbons. In this case, the probe is slowly raised until the steady tone ceases. This is the depth-to-product (DTP) indicator and the DTP measurement is made accordingly.

The process of lowering and raising the probe must be repeated several times to ensure accurate measurements. The DTW and DTP measurements are recorded on the liquid-level data sheet. When floating product is indicated by the probe's response, a product bailer is lowered partially through the product-water interface to confirm the product on the water surface, and as further indication of product thickness, particularly in cases where the product layer is quite thin. This measurement is recorded on the data sheet as "product thickness."

In order to avoid cross-contamination of wells during the liquid-level measurement process, wells are measured in the order of "clean" to "dirty" (where such information is available). In addition, all measurement equipment is cleaned with TSP or similar solution and thoroughly rinsed with deionized water before use, between measurements in respective wells, and at the completion of the day's use.

ATTACHMENT 2

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY FORM

pace
INCORPORATED
THE ASSURANCE OF QUALITY

April 28, 1993

Mr. Owen Kittredge
Aegis Environmental
1050 Melody Lane, Suite 160
Roseville, CA 95678

RE: PACE Project No. 430319.512
Client Reference: Aegis #90-007/Albany/83Z-481

Dear Mr. Kittredge:

As per our phone conversation yesterday April 27, 1993 we have re-issued your report adding a (*) flag to MW-5 and MW-8. After reviewing the data it's my opinion that your samples MW-5 to MW-9 contain peaks within the diesel range inconsistent with a fresh diesel pattern. The hydrocarbon contamination we observed may be aged diesel.

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

Sincerely,

Darrell C. Cain

Darrell C. Cain
Regional Director

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

pace INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

Aegis Environmental
1050 Melody Lane, Suite 160
Roseville, CA 95678

April 28, 1993
PACE Project Number: 430319512
WPPLab Number: 2348
Re-issue of 04/02/93

Attn: Ms. Laura Odenthal

Client Reference: Albany/83Z-481

PACE Sample Number:			70 0031796	
Date Collected:			03/15/93	
Date Received:			03/19/93	
			MW-5	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	03/26/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	03/26/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	03/26/93
Benzene	ug/L	0.5	ND	03/26/93
Toluene	ug/L	0.5	ND	03/26/93
Ethylbenzene	ug/L	0.5	ND	03/26/93
Xylenes, Total	ug/L	0.5	ND	03/26/93
EXTRACTABLE FUELS EPA 3510/8015				
Extractable Fuels, as Diesel	mg/L	0.05	0.45(*)	03/24/93
Date Extracted			03/22/93	
OIL AND GREASE, SILICA GEL (LUFT)				
Oil and Grease, Gravimetric (SM5520)	mg/L	5.0	ND	03/29/93
Date Extracted			03/29/93	

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

AEGIS ENVIRONMENTAL, INC.

1050 Melody Lane, Suite 160, Roseville, CA 95678 ✦ 916 • 782-2110 / 916 • 969-2110 / FAX 916 • 786-7830

July 9, 1993

Ms. Gail Clark
Federated Insurance Company
6060 Sunrise Vista Drive, Suite 2500
Post Office Box 586
Citrus Heights, California 95610

Subject: **E. C. Buehrer Associates Inc.**
1061 Eastshore Highway, Albany, California
Claim No. 83Z-481

Dear Ms. Clark:

Aegis Environmental, Inc. (Aegis), is pleased to provide Federated Insurance Company this summary of findings and recommendations following review of the most recent data collected as a result of quarterly monitoring conducted on March 15, 1993, at the subject site. The data is summarized in the enclosed "Quarterly Groundwater Monitoring Report," dated July 8, 1993.

SUMMARY

- Groundwater has risen in all wells an average of approximately 0.33-feet. Aegis believes that this rise is responsible for the analytical data showing minor levels of diesel hydrocarbons. This phenomena is not unusual. When water levels rise residual hydrocarbons may be "washed" from the soil and show up in groundwater samples.

- The groundwater flow direction was to the west at an average gradient of 0.023 ft/ft.

- All samples were nondetect for gasoline constituents with the exception of monitoring well MW-9 which had a total petroleum hydrocarbons, as gasoline, concentration of 0.11 parts per million which is has continued to decrease over the last four quarters.

Aegis appreciates the opportunity to provide Federated Insurance Company with professional geologic, engineering, and environmental consulting services, and trusts this response meets your needs. If you have any questions or comments, please call me at (916) 782-2110.

Sincerely,

AEGIS ENVIRONMENTAL, INC.

Laura J. Odenthal
Project Manager

LJO/law

Enclosure

cc: Neil Hamre, E. C. Buehrer Associates, Inc.

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April 28, 1993
PACE Project Number: 430319512

Client Reference: Albany/83Z-481

PACE Sample Number:			70 0031800	
Date Collected:			03/15/93	
Date Received:			03/19/93	
Client Sample ID:			MW-6	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	03/26/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	82	03/26/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	03/26/93
Benzene	ug/L	0.5	ND	03/26/93
Toluene	ug/L	0.5	ND	03/26/93
Ethylbenzene	ug/L	0.5	0.6	03/26/93
Xylenes, Total	ug/L	0.5	ND	03/26/93
EXTRACTABLE FUELS EPA 3510/8015				
Extractable Fuels, as Diesel	mg/L	0.05	0.13(*)	03/23/93
Date Extracted			03/22/93	
OIL AND GREASE, SILICA GEL (LUFT)				
Oil and Grease, Gravimetric (SM5520)	mg/L	5.0	ND	03/29/93
Date Extracted			03/29/93	

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

Ms. Laura Odenthal
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April 28, 1993
PACE Project Number: 430319512

Client Reference: Albany/83Z-481

PACE Sample Number:			70 0031818	
Date Collected:			03/15/93	
Date Received:			03/19/93	
Client Sample ID:			MW-7	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	03/26/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	03/26/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	03/26/93
Benzene	ug/L	0.5	ND	03/26/93
Toluene	ug/L	0.5	ND	03/26/93
Ethylbenzene	ug/L	0.5	ND	03/26/93
Xylenes, Total	ug/L	0.5	ND	03/26/93
EXTRACTABLE FUELS EPA 3510/8015				
Extractable Fuels, as Diesel	mg/L	0.05	0.22(*)	03/23/93
Date Extracted			03/22/93	
OIL AND GREASE, SILICA GEL (LUFT)				
Oil and Grease, Gravimetric (SM5520)	mg/L	5.0	ND	03/29/93
Date Extracted			03/29/93	

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REPORT OF LABORATORY ANALYSIS

April 28, 1993
PACE Project Number: 430319512

Client Reference: Albany/83Z-481

PACE Sample Number:			70 0031826	
Date Collected:			03/15/93	
Date Received:			03/19/93	
Client Sample ID:			MW-8	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	03/26/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	03/26/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	03/26/93
Benzene	ug/L	0.5	ND	03/26/93
Toluene	ug/L	0.5	ND	03/26/93
Ethylbenzene	ug/L	0.5	ND	03/26/93
Xylenes, Total	ug/L	0.5	ND	03/26/93
EXTRACTABLE FUELS EPA 3510/8015				
Extractable Fuels, as Diesel	mg/L	0.05	0.20(*)	03/23/93
Date Extracted			03/22/93	
OIL AND GREASE, SILICA GEL (LUFT)				
Oil and Grease, Gravimetric (SM5520)	mg/L	5.0	ND	03/29/93
Date Extracted			03/29/93	

REPORT OF LABORATORY ANALYSIS

April 28, 1993
PACE Project Number: 430319512

Client Reference: Albany/83Z-481

PACE Sample Number:			70 0031834	
Date Collected:			03/15/93	
Date Received:			03/19/93	
Client Sample ID:			MW-9	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	03/26/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	110	03/26/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	03/26/93
Benzene	ug/L	0.5	ND	03/26/93
Toluene	ug/L	0.5	ND	03/26/93
Ethylbenzene	ug/L	0.5	ND	03/26/93
Xylenes, Total	ug/L	0.5	ND	03/26/93
EXTRACTABLE FUELS EPA 3510/8015				
Extractable Fuels, as Diesel	mg/L	0.05	0.23(*)	03/23/93
Date Extracted			03/22/93	
OIL AND GREASE, SILICA GEL (LUFT)				
Oil and Grease, Gravimetric (SM5520)	mg/L	5.0	ND	03/29/93
Date Extracted			03/29/93	

These data have been reviewed and are approved for release.

Darrell C. Cain
Regional Director

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Novato, CA 94949
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FOOTNOTES
for pages 1 through 5

April 28, 1993
PACE Project Number: 430319512

Client Reference: Albany/83Z-481

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

Special footnote for Diesel values:
(*) Peaks were observed in the diesel range. However, the peaks were not consistent with a diesel pattern.

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QUALITY CONTROL DATA

April 28, 1993
PACE Project Number: 430319512

Client Reference: Albany/83Z-481

EXTRACTABLE FUELS EPA 3510/8015
Batch: 70 19626
Samples: 70 0031796, 70 0031800, 70 0031818, 70 0031826, 70 0031834

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Extractable Fuels, as Diesel	mg/L	0.05	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Extractable Fuels, as Diesel	mg/L	0.05	1.00	44%	44%	0%

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QUALITY CONTROL DATA

April 28, 1993
PACE Project Number: 430319512

Client Reference: Albany/83Z-481

OIL AND GREASE, SILICA GEL (LUFT)
Batch: 70 19757
Samples: 70 0031796, 70 0031800, 70 0031818, 70 0031826, 70 0031834

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Oil and Grease, Gravimetric (SM5520)	mg/L	5.0	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Oil and Grease, Gravimetric (SM5520)	mg/L	5.0	20.0	80%	90%	11%

Ms. Laura Odenthal
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QUALITY CONTROL DATA

April 28, 1993
PACE Project Number: 430319512

Client Reference: Albany/83Z-481

PURGEABLE FUELS AND AROMATICS
Batch: 70 19775
Samples: 70 0031796, 70 0031800, 70 0031818, 70 0031826, 70 0031834

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	93%	95%	2%
Benzene	ug/L	0.5	40.0	111%	108%	2%
Toluene	ug/L	0.5	40.0	108%	107%	0%
Ethylbenzene	ug/L	0.5	40.0	105%	101%	3%
Xylenes, Total	ug/L	0.5	120	104%	101%	2%

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FOOTNOTES
for pages 7 through 9

April 28, 1993
PACE Project Number: 430319512

Client Reference: Albany/83Z-481

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

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pace® INCORPORATED THE ASSURANCE OF QUALITY

FEDERATED INSURANCE
P.O. Box 586, Citrus Heights, CA 95611
CHAIN OF CUSTODY

430319.512

☒ Novato, CA, 11 Digital Drive, 94949
Phone: (415) 883-6100 Fax: (415) 883-2673

Consultant's Name: AEGIS ENVIRONMENTAL
Name of Insured: NEAL HAMRE
Page 1 of 1
Address: 1050 MELODY LN. STE-160 ROSEVILLE, CA. 95678
Federated Site Location: ALBANY
Project Contact: LAURA ODENTHAL
Phone #: (916) 782-2110 Fax #: 786-7830
Federated Contact: GAIL CLARK
Sampled by (print): STEVE OSBORN
Sampler's Signature: [signature]
Phone #: 729-2122 Fax #: 729-2129
Shipment Method:
Consultant Project #: 90-007
Federated Claim #: 832-481

TAT: ☐ 24 hr ☐ 48 hr ☐ 72 hr ☒ Standard (10 day)

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

Sample Description	Collection Date/Time	Matrix Soil/(Water)	Prsv (PER CONTAINERS - CC 3/22)	# of Cont	PACE Sample #	TPH/GAS/BTEX EPA 8015/8020	TPH/Diesel EPA 8015	TOTAL OIL & GREASE									COMMENTS
MW-5	3-15/1:02	H_2O	HCL	5	3179.6	X	X	X									
MW-6	3-15/1:22	↓	↓	5	80.0	↓	↓	↓									
MW-7	3-15/12:50	↓	↓	5	81.8	↓	↓	↓									
MW-8	3-15/1:12	↓	↓	5	82.6	↓	↓	↓									
MW-9	3-15/1:33	↓	↓	5	83.4	↓	↓	↓									

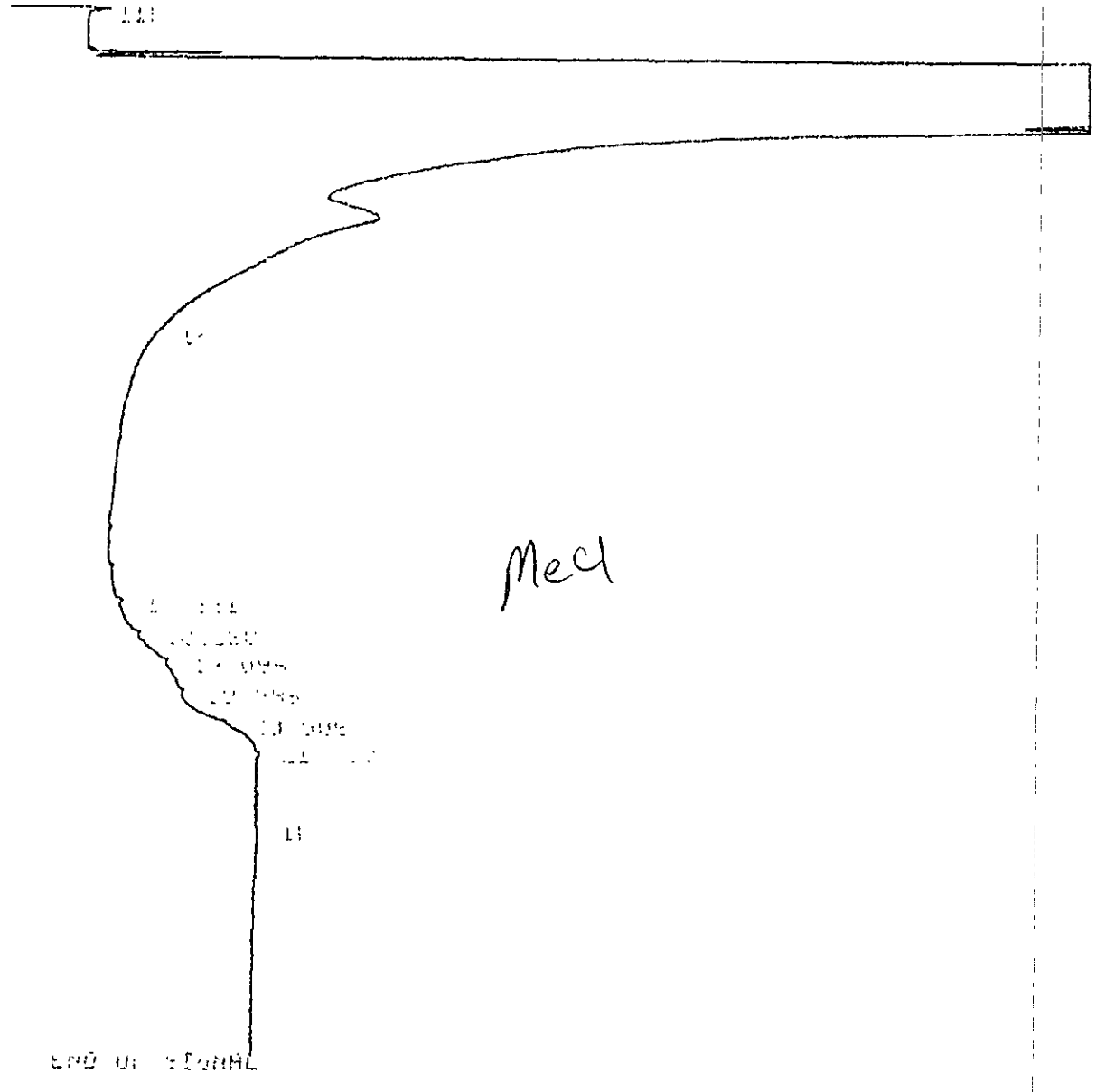
9/1, 611

Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time	Additional Comments:
[signature] / Aegis Environmental	3-19-93	2:15	C. Crampton / PACE	3-19-93	2:15	O&G LUFT - PER CES - CC 3/22
C. Crampton / PACE	3-19	4:48	[signature] / Pace	3/19	1648	

[illegible]

TOTAL AREA= [illegible]
NUL FACTOR=1.000000E-00

[illegible]



[illegible]

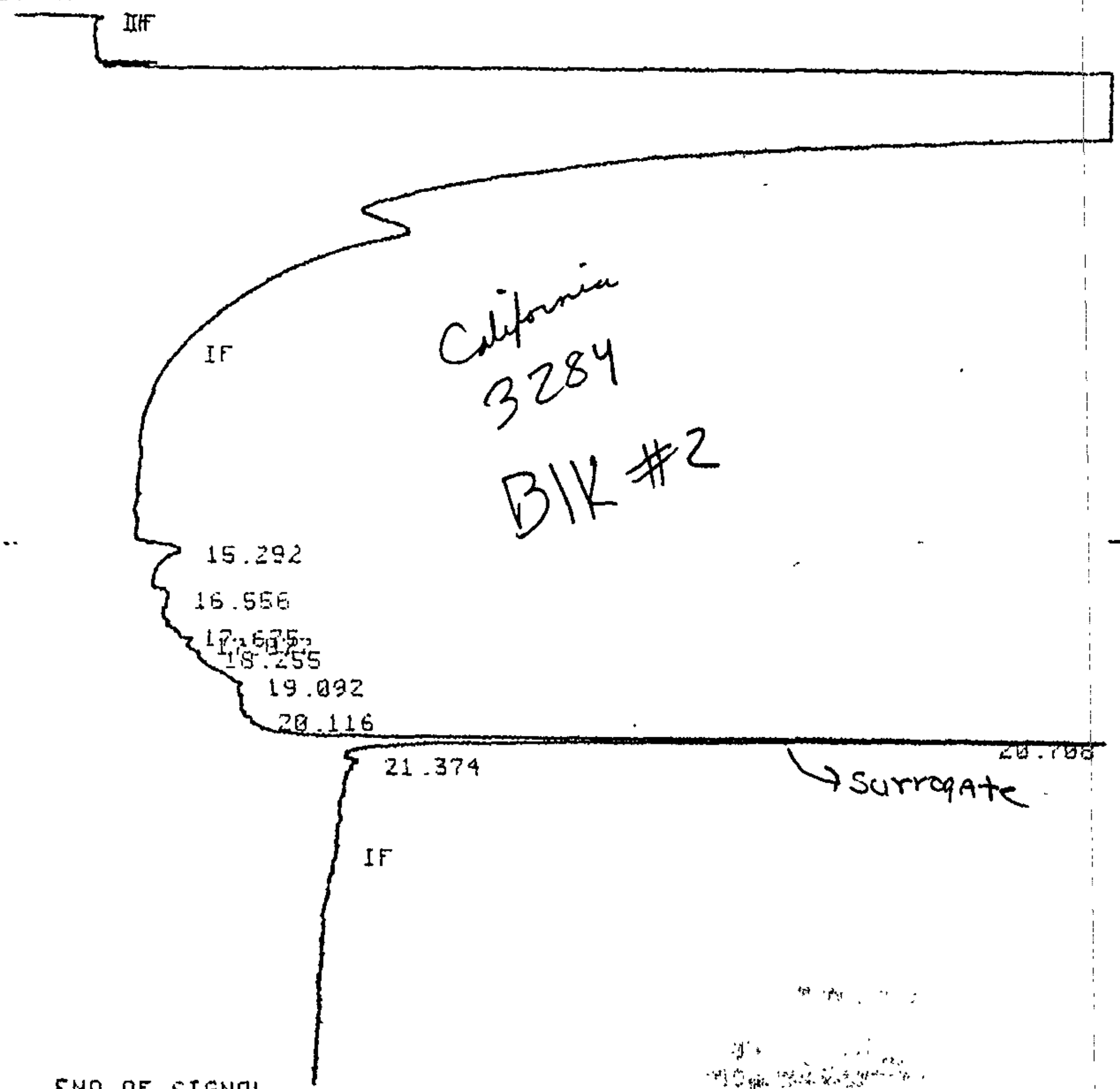
ESTD-AREA

BY	TYPE	AREA	WIDTH	CALC	%	REC	NAME
[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	

20.671	HH	65844	.166		.000
21.290	PH	156413	.142		.000 x cf = 37%
21.905	UP	4244	.140		.000
22.464	PP	2257	.095	1	.000 N-PENTACOSANE(SS
23.010	UP	1586	.071		.000
23.356	PP	1228	.065		.000
23.931 I	PP	2338	.093		.000 C_{28} (23.885 min)

TOTAL AREA=9.8764E+06 − 158 x cf = 1359 (.001 / .030) = 45
MUL FACTOR=1.0000E+00

BUFFER pk-wd=0.01 Sig 2 RUN # 9 MAR 24, 1993 10:42:04
START



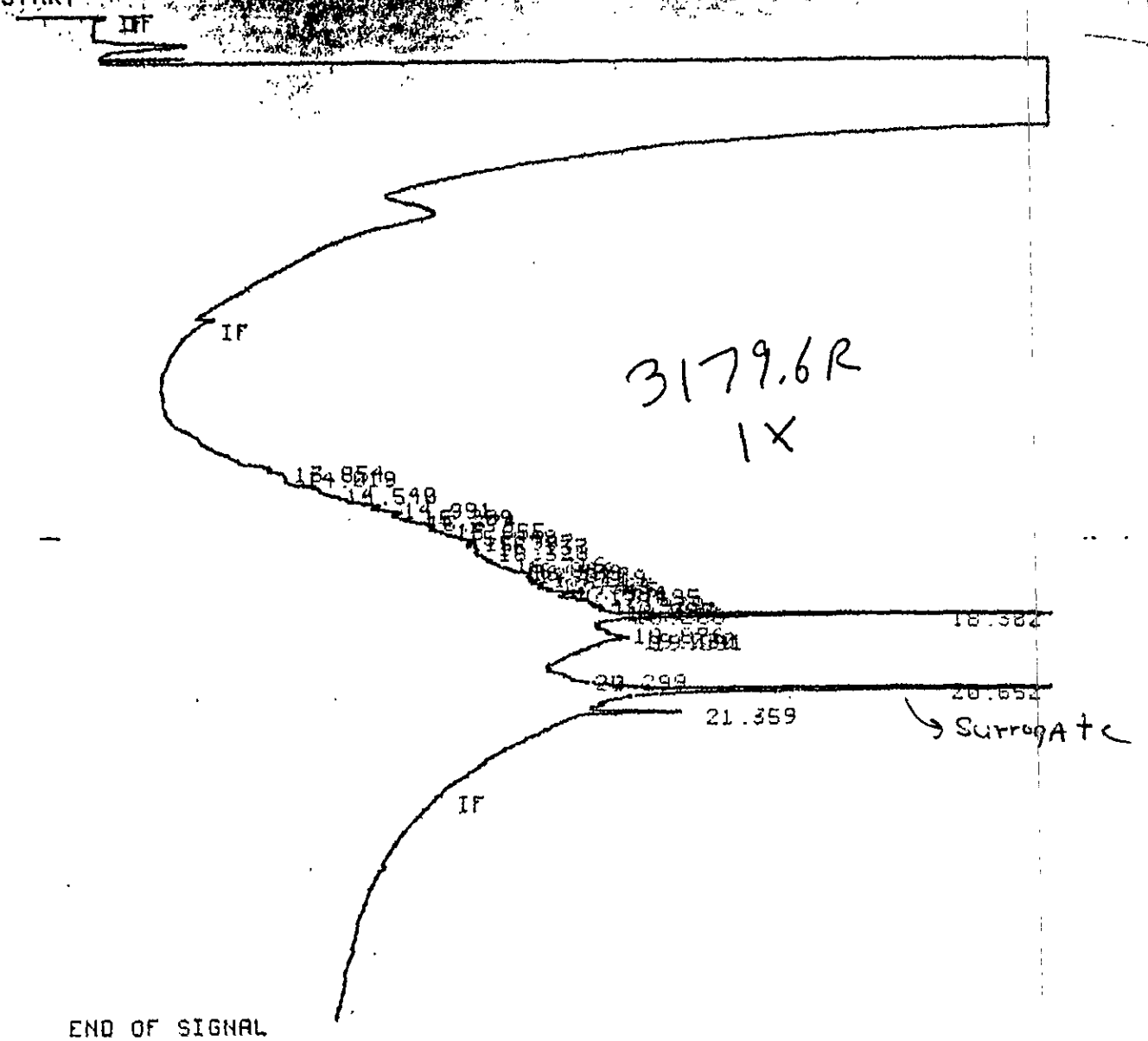
END OF SIGNAL

BUFFERED RUN# 9 MAR 24, 1993 10:42:04

CF(A)=0.1398 CF(B)=0.1442

BUFFER pk-wd=0.01 [illegible] RUN # 10 MAR 24, 1993 11:22:15

START



END OF SIGNAL

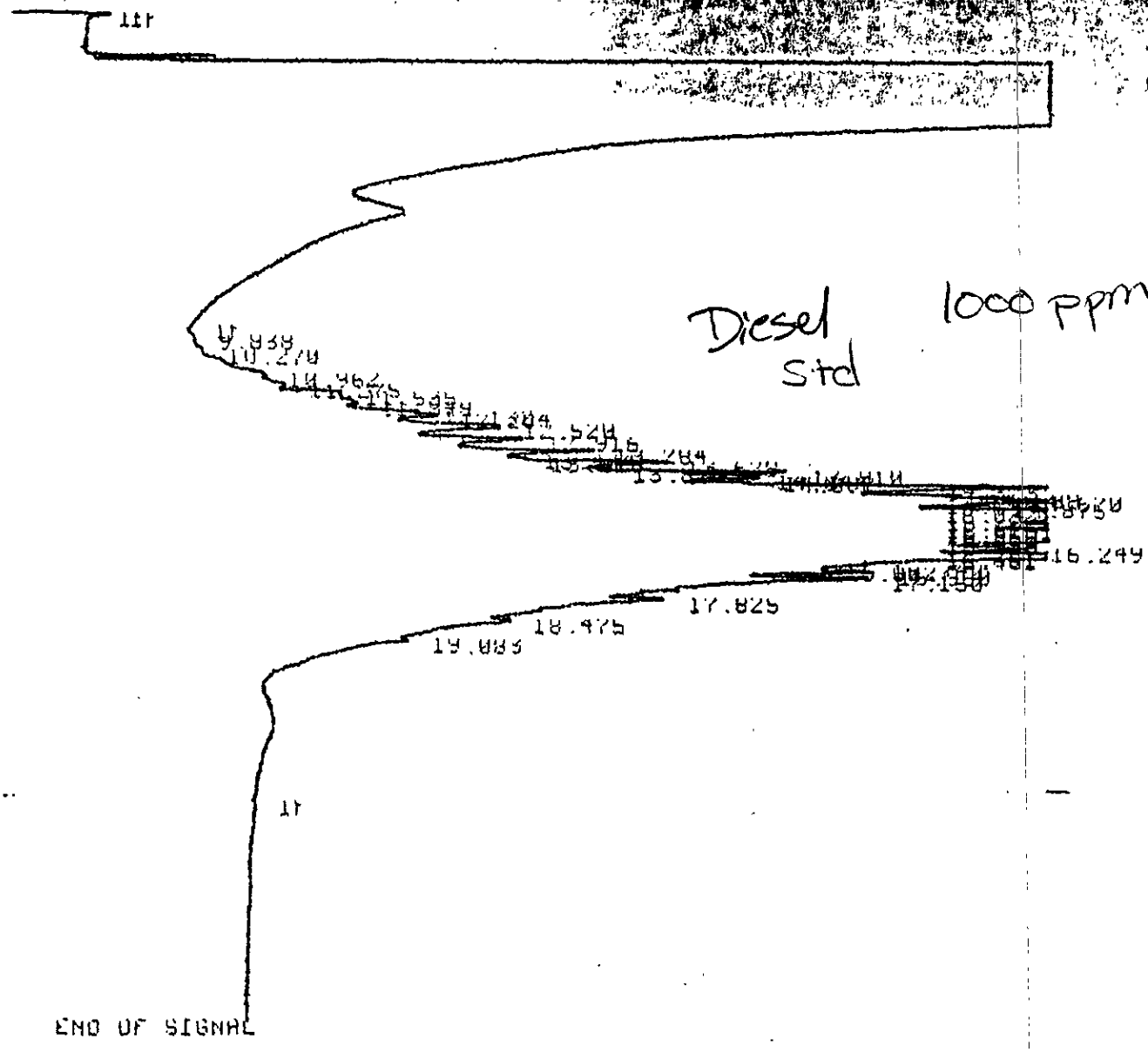
BUFFERED RUN# 10 MAR 24, 1993 11:22:15

CF(A)=0.1398 CF(B)=0.1442

NO CALIB PEAKS FOUND
AREA%

RT	AREA	TYPE	WIDTH	AREA%
13.854	153687	HH	.706	3.73853
14.019	30830	HH	.128	.74996
14.540	101136	HH	.318	2.46020
14.991	186896	HH	.430	4.54636
15.209	102070	HH	.215	2.48292
15.374	44841	HH	.093	1.09078
15.655	168898	HH	.310	4.10855
15.848	83597	HH	.148	2.03355

BUFFER pk-wd=0.01 Sig 2 RUN # 3 MAR 23, 1993 06:51:07
START



BUFFERED RUN# 3 MAR 23, 1993 06:51:07

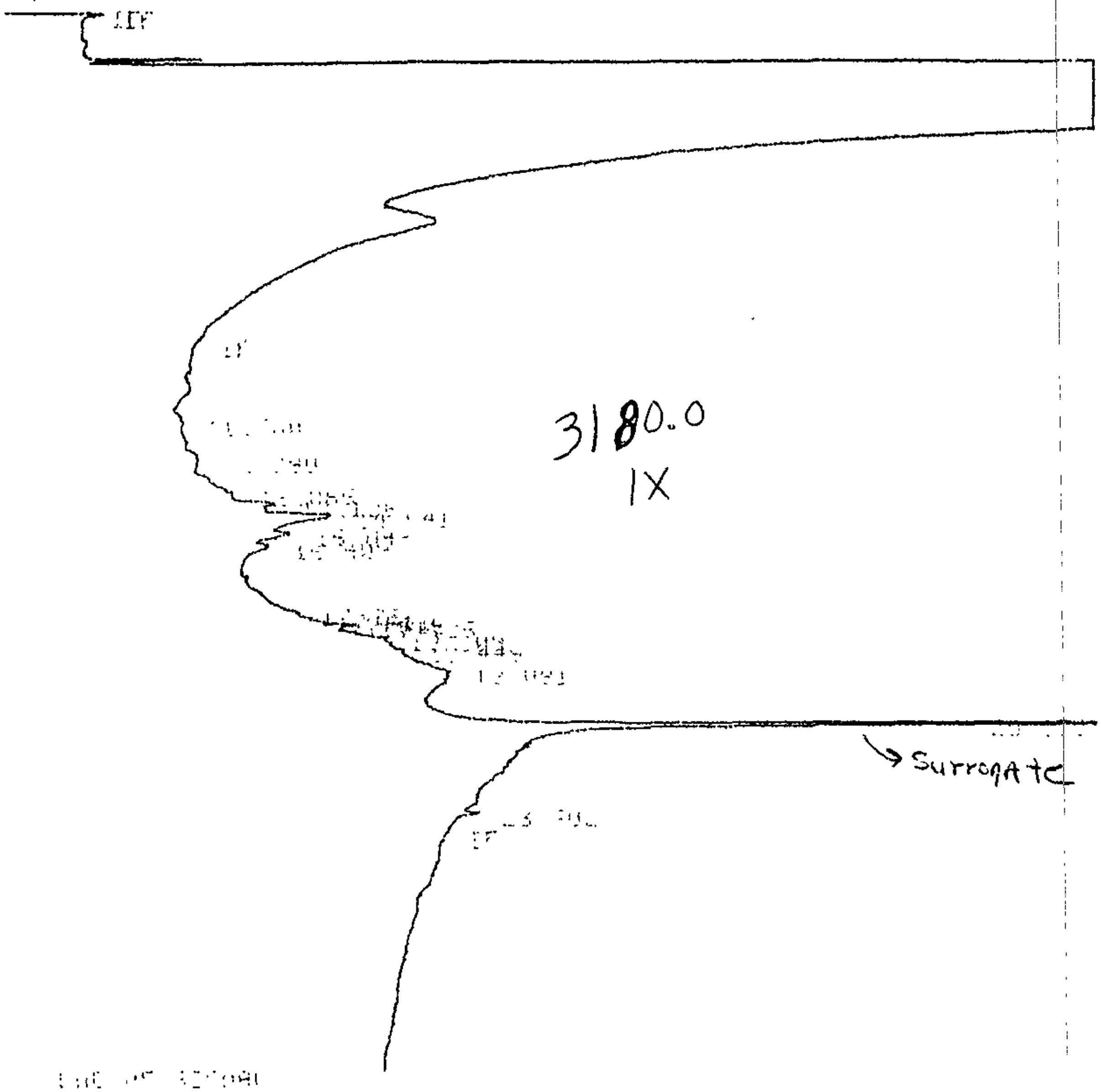
CF(A)=0.1398 CF(B)=0.1442

NO CALIB PEAKS FOUND
AREA%

RT	AREA	TYPE	WIDTH	AREA%
9.838	2218	PM	.143	.03019
10.270	8877	MM	.266	.12081

C_{10} (9.697 min)

BUFFER [illegible] 19 MAR 23, 1993 18:15:01
[illegible]



END OF SIGNAL

BUFFERED RUN# 19 MAR 23, 1993 18:15:01

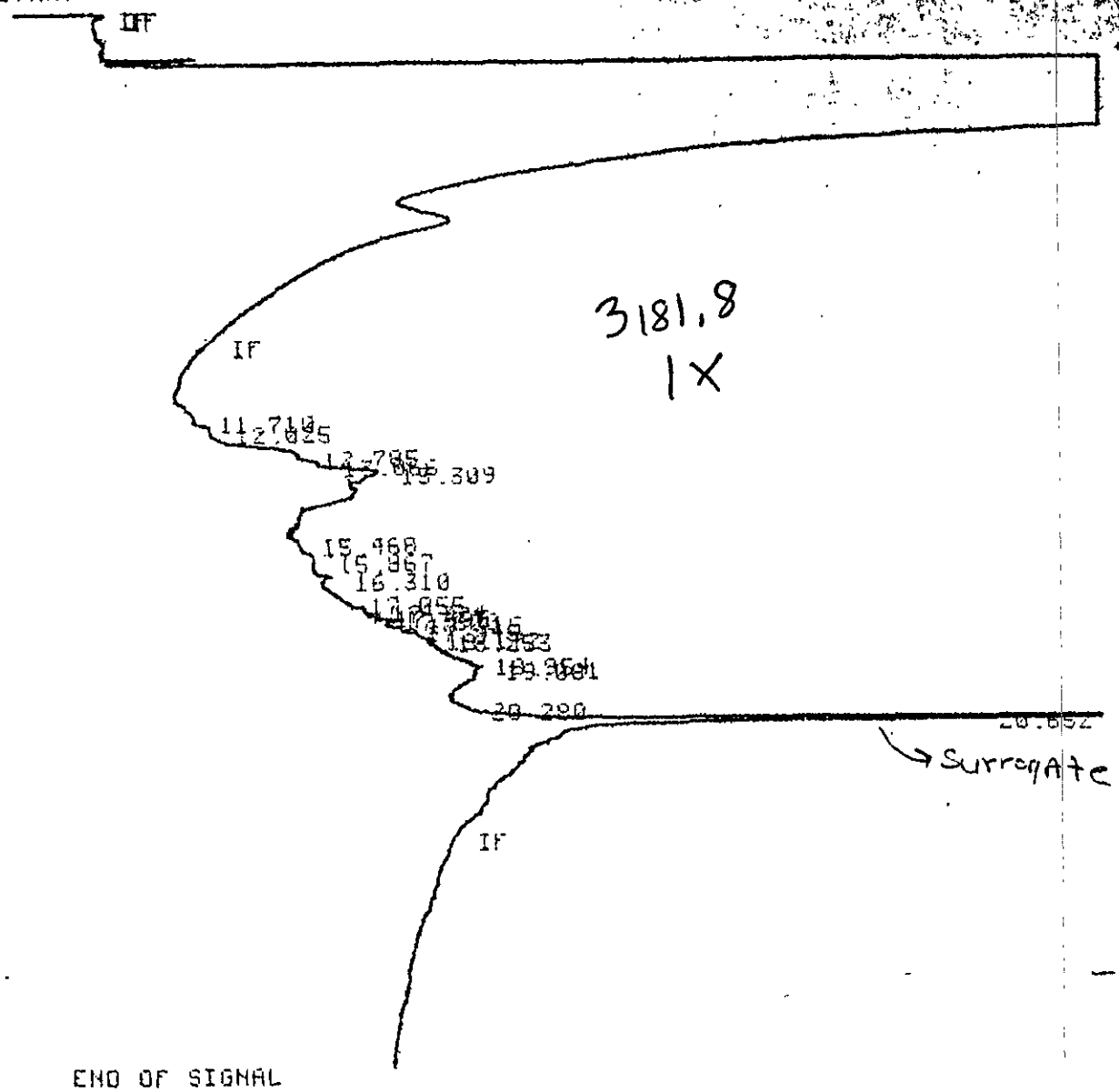
[illegible]

ESTD-AREA

RT	TYPE	AREA	WIDTH	CAL#	AMOUNT	NAME
11.790	BB	6344	.351		.000	
12.990	BH	14183	.413		.000	
13.265	HH	42996	.421		.000	
14.1[illegible]5	HH	45708	.143		.000	
14.541	HH	120119	.426		.000	
15.042	HH	39377	.191		.000	
15.409	HH	69935	.357		.000	
17.331	HH	127430	.576		.000	
17.511	HH	28629	.117		.000	
17.615	HH	29645	.110		.000	
17.715	HH	42666	.131		.000	
18.109	HH	92186	.242		.000	
[illegible]	HH	[illegible]	.112		.000	

BUFFER pk-wd=0.01 Sig 2 RUN # 20 MAR 23, 1993 18:53:51

START



END OF SIGNAL

BUFFERED RUN# 20 MAR 23, 1993 18:53:51

CF(A)=0.1398 CF(B)=0.1442

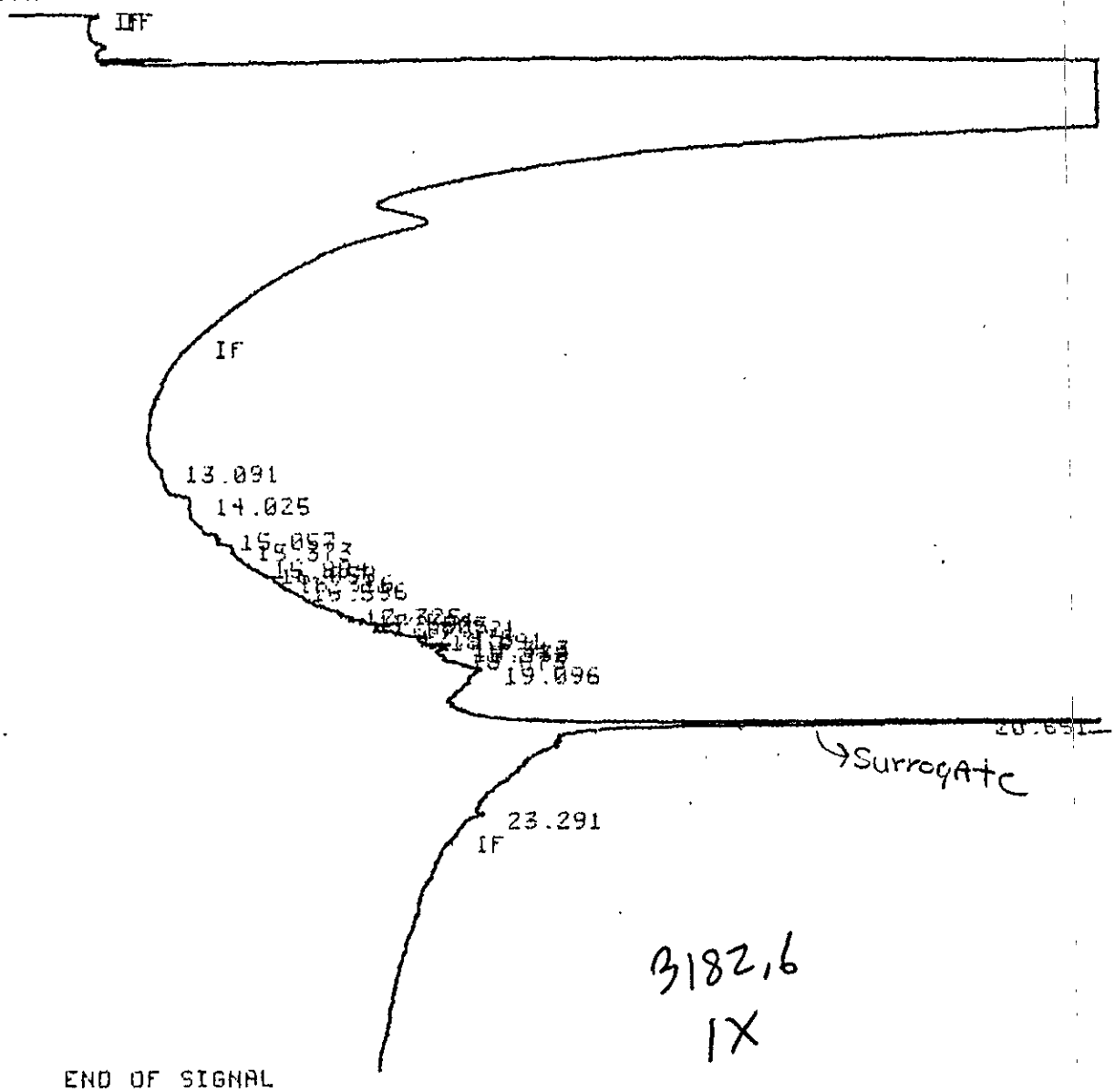
NO CALIB PEAKS FOUND

AREA%

RT	AREA	TYPE	WIDTH	AREA%
11.710	17284	BH	.433	.78481
12.025	15456	HH	.215	.70181
12.785	84654	HH	.358	3.84387
13.066	63348	HH	.231	2.87643
13.309	86100	HH	.223	3.90952
15.468	48771	HH	.209	2.21453
15.867	76118	HH	.288	3.45627
16.310	90990	HH	.309	4.13156
17.055	107333	HH	.334	4.87366
17.324	94759	HH	.262	4.30270
17.495	41575	HH	.112	1.88779
17.600	38043	HH	.098	1.72741

MUL FACTOR=1.0000E+00

BUFFER pk-wd=0.01 Sig 2 RUN # 21 MAR 23, 1993 19:32:36
START



3182,6
1X

END OF SIGNAL

BUFFERED RUN# 21 MAR 23, 1993 19:32:36

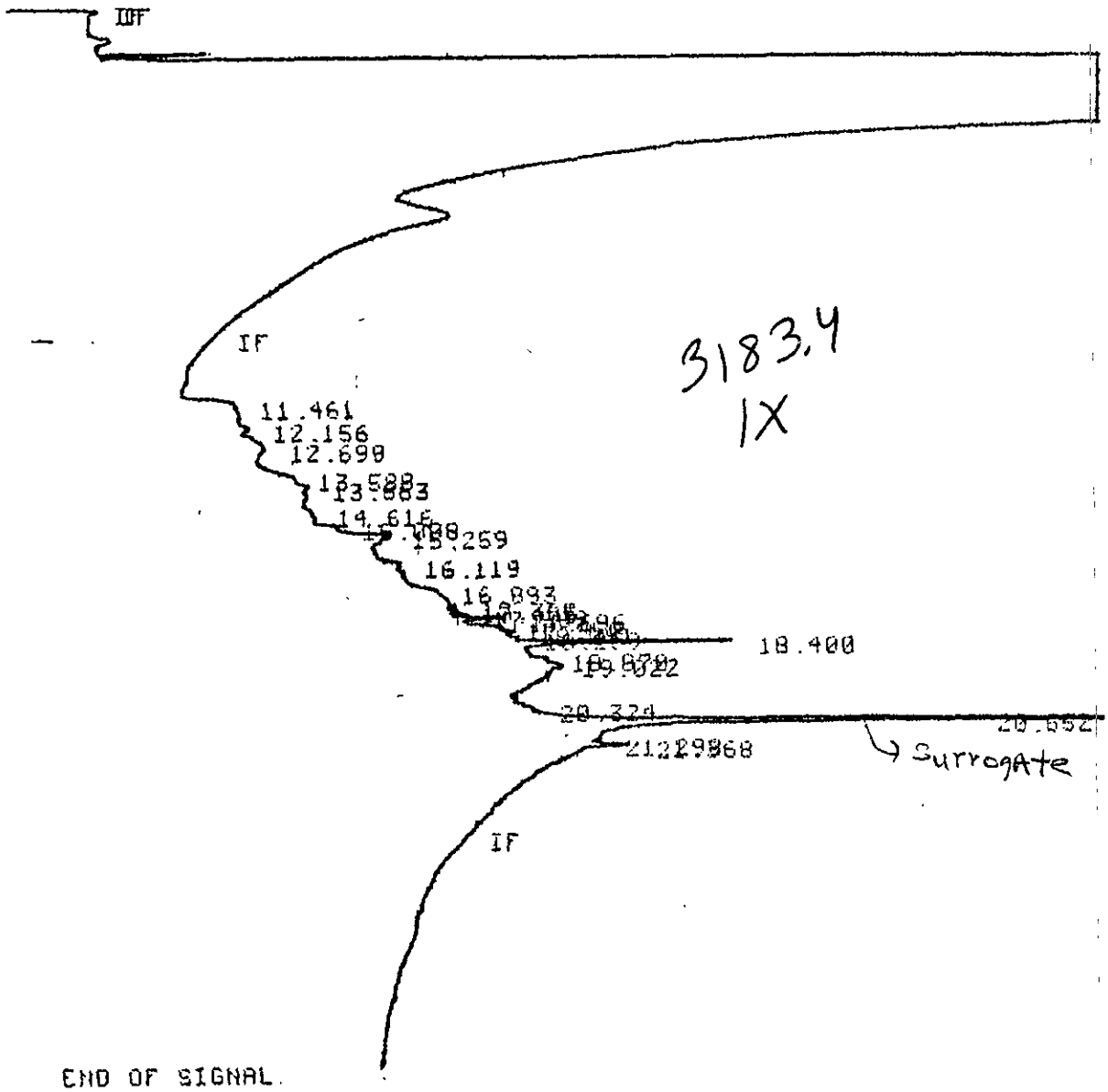
CF(A)=0.1398 CF(B)=0.1442

ESTD-AREA					
	PK-TYPE	AREA	WIDTH	CAL#	
13.091	HH	3388	.314		
14.025	HH	20860	.379		
15.057	HH	6781	.280		
15.378	HH	23193	.298		
16.894	HH	45189	.239		

20.692	HH	64589	.056		.000	
20.806	HH	147459	.123		.000	
21.234	HH	780794	.254		.000	
22.053	HH	384970	.307	1	.000	N-PENTACOSANE(SS

TOTAL AREA=5330259 = 1893 x 480 $\left(\frac{1}{980}\right)$ = 0.49
MUL FACTOR=1.0000E+00

BUFFER pk-wd=0.01 Sig 2 RUN # 22 MAR 23, 1993 20:11:25
START



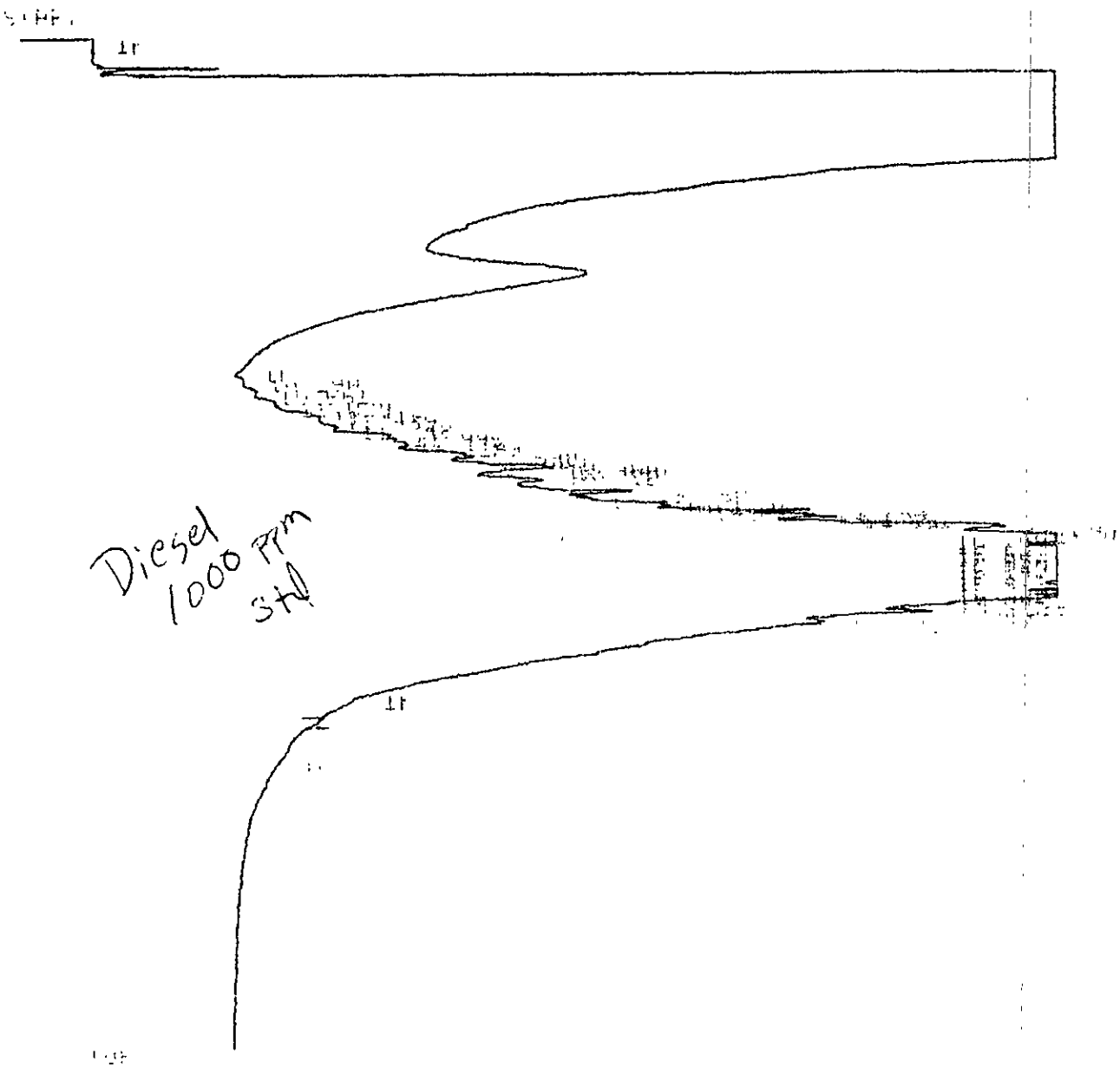
END OF SIGNAL

BUFFERED RUN# 22 MAR 23, 1993 20:11:25

CF(A)=0.1398 CF(B)=0.1442

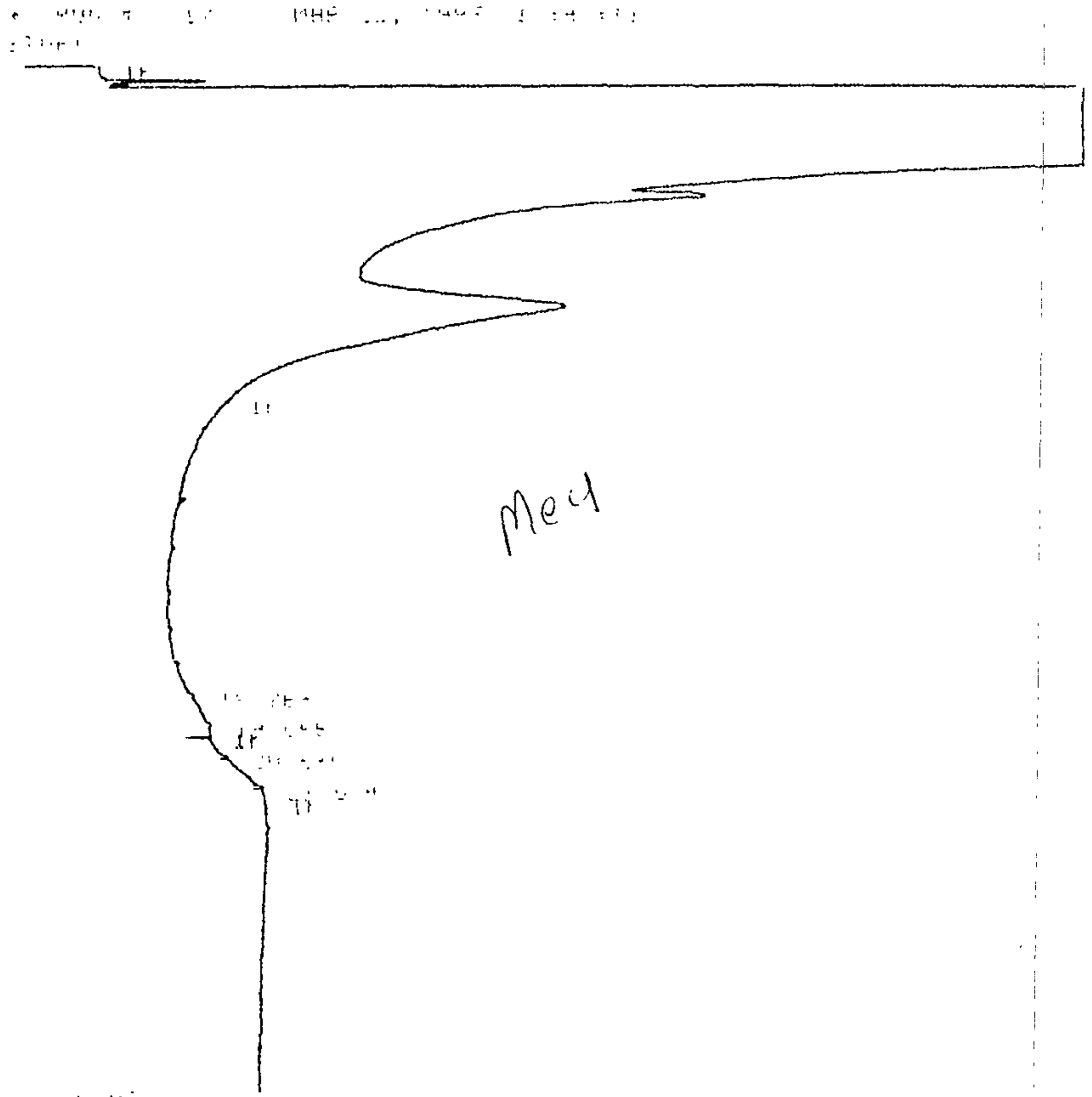
NO CALIB PEAKS FOUND
AREA%

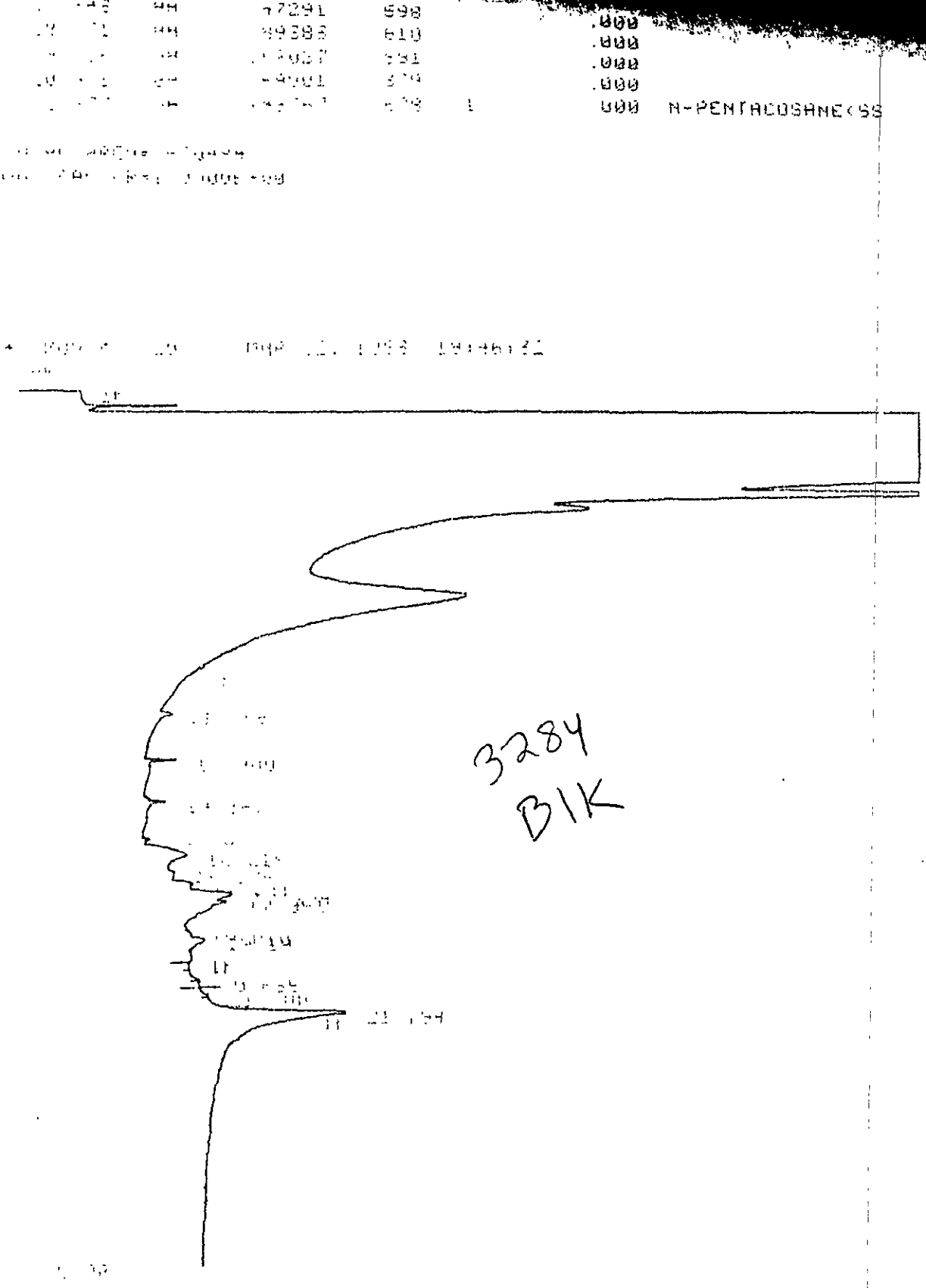
RT	AREA	TYPE	WIDTH	AREA%


Diesel
1000 ppm
std

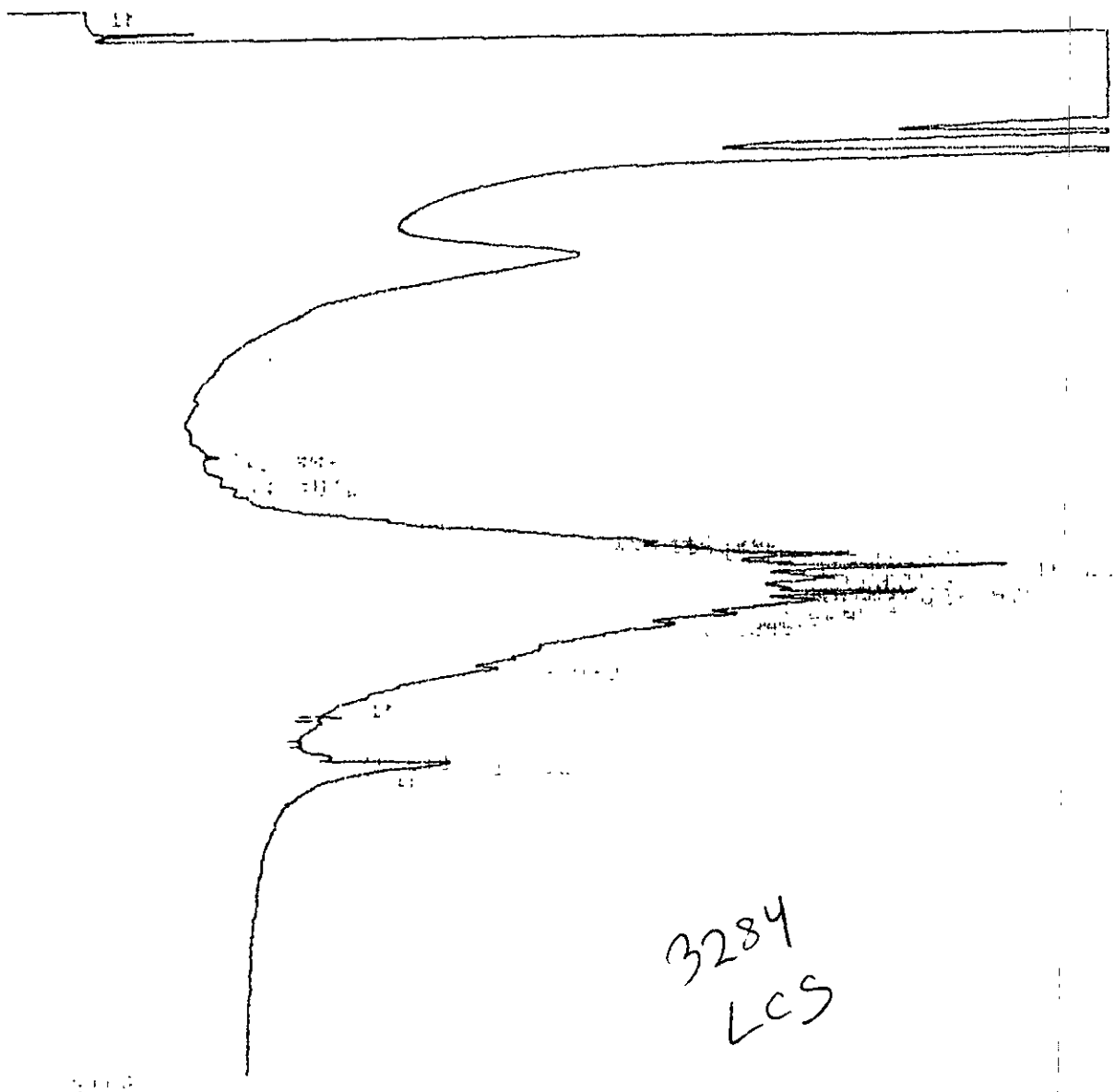
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
19.726	HH	72194	.440	.000	
19.859	HH	18124	.102	.000	
20.120	BH	741354	.127	.000	
20.577	HH	183022	.118 (54%)	.000	
21.445 I	HH	58810	.221	.000	N-PENTACOSANE<SS

TOTAL AREA=2135352 − 991 × cf = $165\left(\frac{1}{1000}\right) = 0.16$
MUL FACTOR=1.0000E+00

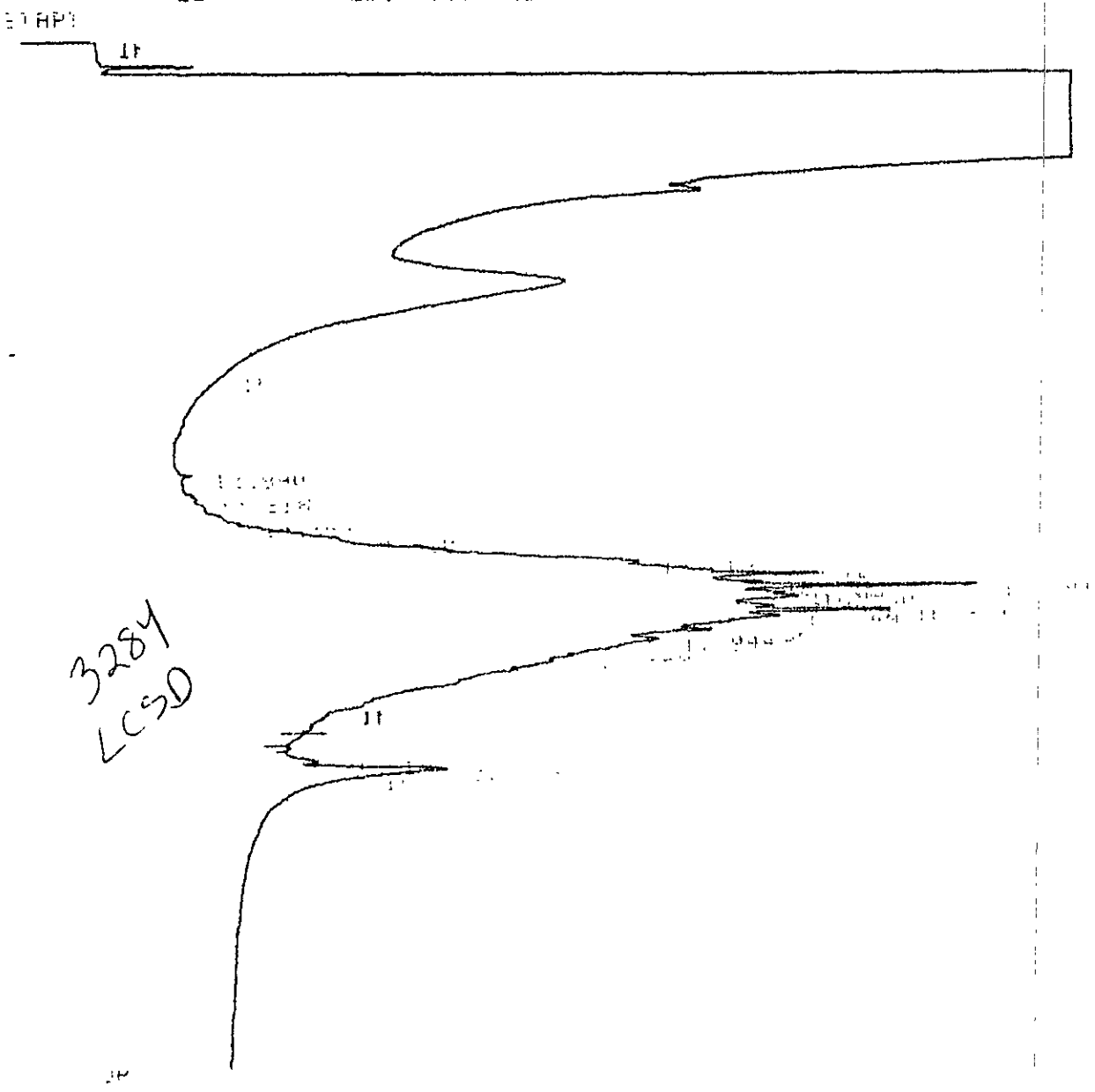



3284
BIK

1284.7 28.59%



3284
LCS


3284
LC-SD