QUARTERLY GROUNDWATER REPORT

5800 CHRISTIE AVENUE, EMERYVILLE, CALIFORNIA

JULY 31, 1993

SUBMITTED TO:

MR. BRIAN OLIVA
ALAMEDA COUNTY HEALTH CARE SERVICES
HAZARDOUS MATERIALS DIVISION
80 SWAN WAY, ROOM 200
OAKLAND, CALIFORNIA 94621

PREPARED FOR :

CROLEY & HERRING INVESTMENT COMPANY
448 THARP DRIVE,
MORAGA, CALIFORNIA 94556

PREPARED BY: *ETS ENVIRONMENT & TECHNOLOGY SERVICES*
2081 15TH STREET,
SAN FRANCISCO, CALIFORNIA 94114
TELEPHONE: 415-861-0810
FACIMILE: 415-861-3269

ETS *ENVIRONMENT & TECHNOLOGY SERVICES*

2081 15TH STREET, SAN FRANCISCO, CALIFORNIA 94114
PHONE 415-861-0810 *FAX 415-861-3269*

July 31, 1993

Mr. Dick Herring
President
Croley & Herring Investment Company
448 Tharp Avenue,
Moraga, California 94556

Subject: Quarterly Groundwater Report
5800 Christie Avenue, Emeryville, California

Dear Mr. Herring:

Enclosed please find a copy of the quarterly groundwater report for the July, 1993 water sampling period at the subject facility.

As per Alameda County Health Care Services and Bay Area Regional Water Quality Control Board request, an additional groundwater monitoring well MW4 was installed downgradient of well EW1. Water level and groundwater quality results of well MW4 are included in the attached report.

Please contact me if you have any question about this report.

Sincerely,

Walter W. Loo, RG CEG
President

CERTIFIED ENGINEERING GEOLOGIST
WALTER W. LOO
No. 1207
STATE OF CALIFORNIA

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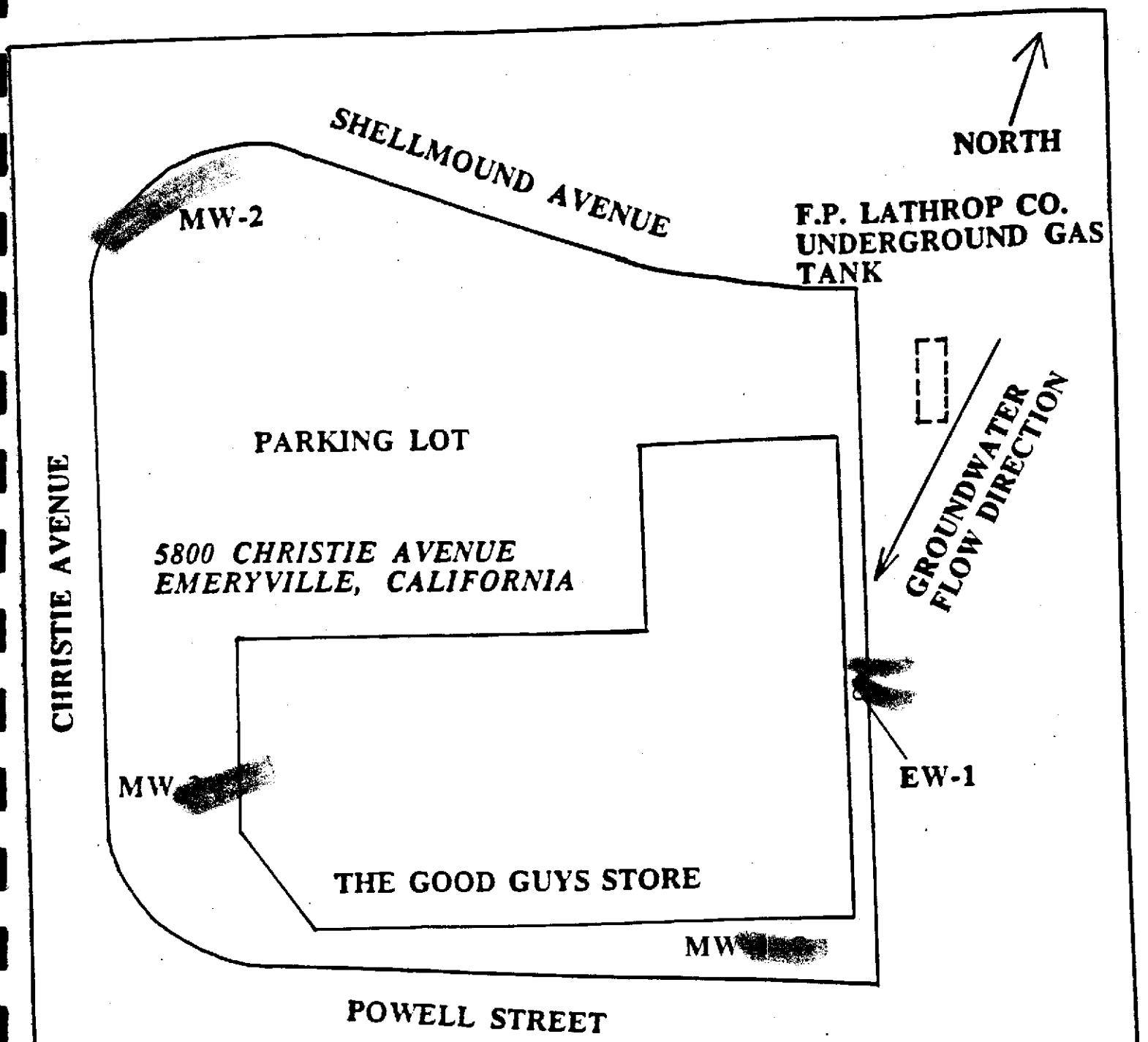
1.0 INTRODUCTION

Environment & Technology Services(ETS) was retained by Croley & Herring Investment Company to perform the 16th quarterly groundwater monitoring for the facility located at 5800 Christie Street in Emeryville, California. The subject facility is currently leased to an electronic merchandise retailer. Prior to leasing, soil contamination was identified at the subject facility. The contaminated soil was removed with the exception of that which was underlying the building because of safety concerns. The removed soil was remediated on-site and properly disposed of with the approval of the regulatory agencies.

A vapor extraction system(VES) was installed immediately adjacent to the northeastern side of the building to mitigate the residual volatile hydrocarbons contained in the soil. The residual volatile organic chemicals(VOCs) were remediated from an average VOCs concentration of about 660 ppm to a satisfactory level at an average of 0.82 ppm in soil. A soil closure plan was submitted(11/15/91) and approval of closure was received on 1/21/92 after submittal of confirmation soil sampling results. The soil vapor extraction system was decommissioned and the Bay Area Air Quality Management District was notified on 12/16/91. The final VES closure report was completed on August 29, 1992. An indoor vapor monitoring system Sierra Monitor Model 5000 was installed by the "Good Guys" electronic store in 1989 through March, 1993. No significant level of methane was detected for the monitoring period. The vapor monitoring system was disconnected in March, 1993 with the concurrence of Mr. Brian Oliva of Alameda County Health Care Services, March 15,1993 correspondence(Appendix A).

As part of the site activities, a quarterly groundwater monitoring program has been implemented. Previous quarterly monitoring [illegible] September 7, 1990, November 6, 1990, [illegible] December 4, 1990, [illegible] October 19, 1992, January 11, 1993, March 29, 1993 respectively. This quarterly monitoring event was conducted on July 7, 1993. Water samples were taken from the monitoring wells and sent to a State-certified laboratory for analysis under proper chain-of-custody procedures.

As per Alameda County Health Care Services and Bay Area Regional Water Quality Control Board request, an additional groundwater monitoring well MW4 was installed downgradient of well EW1. This report presents the results of this quarterly groundwater monitoring event on well EW1 and MW4 including laboratory analytical results, groundwater movement analysis, summary of findings, and conclusions and discussions. Boring and well log of MW4 is included in Appendix B.



ETS
ENVIRONMENT & TECHNOLOGY SERVICES

FIGURE 1
LOCATION MAP

2.0 GROUNDWATER MOVEMENT ANALYSIS

Prior to sample collection of this quarterly sampling, depth-to-water table in each of the three existing monitoring wells at the facility was measured for the analysis of groundwater movement. Table 1 presents a summary of the water levels in the three wells (EW1, MW2, MW3 and MW4) from the groundwater monitoring events prepared by ETS.

From the result of the water level measurements on July [redacted] water levels were decreased in the three wells as compared to the [redacted] in April [redacted]. Nevertheless, the groundwater flow direction remained the same direction, flowing towards southwest (Figure 1). The hydraulic gradient was 0.013 feet per horizontal foot.

Groundwater movement across the facility remains in a similar pattern, as compared to the result from the previous sampling event. Data of flow direction and hydraulic gradient are summarized in Table 2.

TABLE 1

SUMMARY OF WATER LEVEL DATA

WELL Name	Elev. of TOC (Ft-MSL)	11/6/89 DTW Ft.	11/6/89 SWL Ft.	2/20/90 DTW Ft.	2/20/90 SWL Ft.	5/31/90 DTW Ft.	5/31/90 SWL Ft.	9/7/90 DTW Ft.	9/7/90 SWL Ft.
EW-1	8.62	6.15	2.47	5.93	2.69	5.86	2.76	6.30	2.32
MW-2	7.42	4.37	3.05	4.26	3.16	4.26	3.16	4.60	2.82
MW-3	6.42	5.10	1.32	5.42	1.00	4.93	1.49	5.15	1.17

WELL Name	12/4/90 DTW Ft.	12/4/90 SWL Ft.	4/16/91 DTW Ft.	4/16/91 SWL Ft.	7/3/91 DTW Ft.	7/3/91 SWL Ft.	10/14/91 DTW Ft.	10/14/91 SWL Ft.	1/9/92 DTW Ft.	1/9/92 SWL Ft.
EW-1	7.39	2.23	6.02	2.60	6.20	2.42	6.5	2.12	6.20	2.42
MW-2	4.67	2.75	4.31	3.11	4.52	2.9	3.92	3.5	4.43	3.10
MW-3	5.96	1.35	5.25	1.17	5.33	1.09	4.63	1.79	6.50	-0.08

WELL Name	7/15/92 DTW Ft.	7/15/92 SWL Ft.	10/19/92 DTW Ft.	10/19/92 SWL Ft.	1/11/93 DTW Ft.	1/11/93 SWL Ft.	4/19/93 DTW Ft.	4/19/93 SWL Ft.
EW-1	6.10	2.52	6.1	2.52	5.5	3.12	5.95	2.67
MW-2	4.42	3.00	4.77	2.65	2.9	4.92	4.35	3.07
MW-3	5.23	1.19	5.37	1.05	3.6	2.82	5.1	1.32

TABLE 1(continue)

SUMMARY OF WATER LEVEL DATA

WELL Name	Elev. of TOC (Ft-MSL)	7/13/93 DTW Ft.	SWL Ft.
EW-1	8.62	6.2	2.42
MW-2	7.42	4.7	2.72
MW-3	6.42	5.35	1.07
MW-4	7.07*	5.75	1.32

* Adjusted elevation

Note:
- TOC top of casing
- DTW depth to water table
- SWL static water level above MSL
- MSL mean sea level

TABLE 2

GROUNDWATER MOVEMENT ANALYSIS

Date	4/25/89	11/6/89	2/20/90	5/31/90	9/7/90	12/4/90
Flow Towards	SW	S	S	S	S	S
Gradient	0.001	0.012	0.016	0.0125	0.0115	0.045

Date	4/16/91	7/3/91	10/14/91	1/9/92	7/15/92	10/19/92
Flow Towards	S	S	S	SW	S	S
Gradient	0.014	0.013	0.011	0.0238	0.013	0.0127

Date	1/11/93	4/19/93	7/7/93
Flow Towards	S	SW	SW
Gradient	0.011	0.013	0.013

3.0 GROUNDWATER QUALITY

On July 7, 1993, ETS field personnel visited the facility and collected water samples from monitoring well EW1 for laboratory analysis. These groundwater samples were sent to a state-certified laoratory for analyses of halocarbons using EPA method 601, total petroleum hydrocarbons (TPH) as gasoline and gasoline constituents benzene, toluene, ethylbenzene, and total xylenes (BTEX) using EPA method 602.

From the results of the laboratory analysis (Appendix C), water sample taken from well EW1 contained some volatile organic compounds. The VOCs detected in well EW-1 from the July 7, 1993 sampling episode are presented in Table 3.

In addition groundwater monitoring well MW4 was installed downgradient of well EW1 as per Alameda County Health Care Services and Bay Area Regional Water Quality Control Board request. Water level and groundwater quality results of well MW4 are included in Table 1, 2, 3 and 4 of this report.

TABLE 3

SUMMARY OF QUARTERLY GROUNDWATER QUALITY RESULTS OF WELL EW-1
5800 CHRISTIE AVENUE,
EMERYVILLE, CALIFORNIA

CONCENTRATIONS IN MG/L

COMPOUNDS	5/8/89	11/6/89	2/20/90	5/31/90	9/7/90	12/4/90	4/6/91	7/3/91	10/12/92	1/8/92	4/8/92
TPH as GASOLINE	NA	0.74	12.0	24.0	25.0	7.4	51.0	23.0	39.0	<5.0	12.0
BENZENE	ND	0.18	1.3	0.056	1.1	0.18	3.0	0.65	ND	ND	4.0
TOLUENE	0.19	0.039	3.6	6.1	0.8	3.2	12.0	8.7	1.3	0.58	ND
XYLENES	0.17	0.067	0.047	0.14	0.042	ND	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	0.0008	0.0071	0.017	ND	ND	ND	ND	ND	ND	ND
HALOCARBONS	0.718	1.1861	4.701	6.876	6.661	3.762	10.6	6.49	2.794	4.459	6.8
TCE	0.64	0.74	1.1	0.83	0.49	1.5	1.3	0.13	0.73	1.7	2.8
1,1 DCE	0.078	0.0023	0.014	0.069	0.036	ND	ND	ND	ND	ND	ND
1,2 DCE	ND	0.35	2.5	0.11	2.4	1.5	3.7	2.0	0.62	1.52	ND
1,1,1 TCA	ND	0.026	0.55	1.2	0.51	0.072	2.9	0.2	0.47	0.089	ND
1,1 DCA	ND	0.034	0.46	1.9	1.3	0.46	1.8	2.0	0.63	0.42	1.3
1,2 DCA	ND	0.0048	0.034	0.033	0.053	ND	ND	ND	0.12	0.25	2.7
VINYL CHLORIDE	ND	0.029	ND	2.6	1.7	0.23	0.9	1.99	0.17	0.48	ND
CHLOROETHANE	ND	ND	0.029	0.094	0.15	ND	ND	0.17	0.054	ND	ND
MET. CHLORIDE	ND	ND	0.014	0.04	0.022	ND	ND	ND	ND	ND	ND
TOTAL VOCs	1.078	1.9261	16.701	30.876	31.661	11.162	61.6	29.49	41.794	<9.459	18.8

NA NOT ANALYSED
ND NOT DETECTED OR BELOW DETECTION LIMITS
VOCs VOLATILE ORGANIC COMPOUNDS (TPH PLUS TOX)

TABLE 3(CONTINUE)

SUMMARY OF QUARTERLY GROUNDWATER QUALITY RESULTS OF WELL EW-1
5800 CHRISTIE AVENUE,
EMERYVILLE, CALIFORNIA

CONCENTRATIONS IN [redacted]

COMPOUNDS	7/15/92	10/19/92	1/11/93	3/29/93	7/7/93
TPH as GASOLINE	100.0	26.0	20.0	15.0	[redacted]
BENZENE	ND	ND	ND	ND	ND
TOLUENE	4.7	12.5	7.5	12.0	[redacted]
XYLENES	ND	ND	0.075	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
HALOCARBONS	2.461	5.07	0.065	2.5	1.7
PCE	ND	ND	0.042	ND	ND
TCE	0.68	0.27	0.023	2.0	ND
1,1 DCE	ND	4.8	ND	0.5	ND
1,2 DCE	0.6	ND	ND	ND	ND
1,1,1 TCA	0.42	ND	ND	ND	ND
1,1 DCA	0.6	ND	ND	ND	1.7
1,2 DCA	0.11	ND	ND	ND	ND
VINYL CHLORIDE	0.15	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND
MET. CHLORIDE	ND	ND	ND	ND	ND
TOTAL VOCs	102.461	31.07	20.065	17.5	41.7

NA NOT ANALYSED
ND NOT DETECTED OR BELOW DETECTION LIMITS
VOCs VOLATILE ORGANIC COMPOUNDS (TPH PLUS TOX)

TABLE 4

SUMMARY OF QUARTERLY GROUNDWATER QUALITY RESULTS OF WELL MW-4
5800 CHRISTIE AVENUE,
EMERYVILLE, CALIFORNIA

CONCENTRATIONS IN MG/L

COMPOUNDS	7/13/93
TPH as GASOLINE	<100.0*
BENZENE	0.8
TOLUENE	0.28
XYLENES	0.3
ETHYLBENZENE	0.27
HALOCARBONS	ND
PCE	ND
TCE	ND
1,1 DCE	ND
1,2 DCE	ND
1,1,1 TCA	ND
1,1 DCA	ND
1,2 DCA	ND
VINYL CHLORIDE	ND
CHLOROETHANE	ND
MET. CHLORIDE	ND
TOTAL VOCs	<100*

* TO BE CONFIRMED WITH LABORATORY
NA NOT ANALYSED
ND NOT DETECTED OR BELOW DETECTION LIMITS
VOCs VOLATILE ORGANIC COMPOUNDS (TPH PLUS TOX)

4.0 SUMMARY OF FINDINGS

Table 3 presents a summary of analytical results of well EW1 in time series. Table 4 presents the groundwater quality of well MW4. There are several factors that affect the changes in the hydrocarbon concentration. These factors are variations in water table, chemical breakdown due to biodegradation, and unidentified off-site sources.

It is obvious that there is no sign of downgradient or off site migration of the chlorinated solvents as indicated by NDs in Table 4.

MW4 detected elevated levels of BTEX compounds in the initial sample and analysis. The suspected sources of the BTEX compounds may have been originated from upgradient closed underground storage tank or from upgradient asphalt manufacturing plant. Well MW4 is located very close to underground utility lines along Powell Street which may serve as migration conduits from upgradient sources. During the construction of well MW4, asphaltic material of unknown origin(may be from upgradient asphalt manufacturing plant) was detected between 2 to 6 feet below grade.

However, there is still strong microbial activity in the subsurface as indicated in the microbiology reports on EW1 and MW4 prepared by Microbe Inotech Laboratories(Appendix D).

APPENDIX A

ALAMEDA COUNTY HEALTH CARE SERVICES
MARCH 15, 1993 CORRESPONDENCE

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

RAFAT A. SHAHID, Assistant Agency Director

DEPARTMENT OF ENVIRONMENTAL HEALTH
Hazardous Materials Division
80 Swan Way, Rm. 200
Oakland, CA 94621
(510) 271-4320

March 15, 1993

Crowley & Herring Investment Co.
448 Tharp Drive
Moraga, CA 94556

Subject: 5800 Christie, Emeryville, CA 94608

Dear Mr. Herring:

This letter is in response to your request for this office to concur with the discontinuation of the methane gas monitoring in the "Good Guys" electronics store located at the above site. In light of the fact that since the installation of the Sierra Monitor Model 5000 Methane Gas Detection System in 1989, that the system has never indicated any significant levels of methane, this office concurs with your contention that the monitoring may be discontinued.

Please be advised that such monitoring is strictly voluntary, and has never be regulated by this office. The monitoring has taken place at the request of your lessee, the "Good Guys". If you have any questions concerning any possible health risks at the site I suggest you contact an industrial hygienist.

If, however, there is any change in the conditions noted at the site, please contact this office immediately. The number is (510) 271-4320.

Sincerely,

Brian P. Oliva

Brian P. Oliva, REHS, REA
Hazardous Materials Specialist

cc: Frank Verni, % The Good Guys, 5800 Christie, Emeryville, CA
Ed Howell/files

TELSTAR ☆

1717 Solano Way • Unit 34 • Concord, California 94520 • (510) 671-2888 • FAX No. (510) 671-9507

February 10, 1993

The Good Guys
5800 Christie Ave.
Emeryville, CA 94608

Attn: Frank Verni
Subj: Gas Detection Calibrations
Ref: SR 5159

Dear Frank:

As you know, Telstar has been calibrating your Sierra Monitor Model 5000 Methane Gas Detection system at the Emeryville facility since November, 1989. We have experienced no problems with the system, other than the failure of the power supply that was repaired in November of 1991. We were never called out for any alarms on the system, and basically during our calibrations found no problems, other than the power supply.

If you have any questions, please contact me at 510-671-2888.

Sincerely,

June Johnson

for Dan Mensing
Regional Manager

DM/jj

cc: Croley & Herring Inv. Co. % Dick Herring
Alameda County Health Dept. % Brian Oliva

APPENDIX B

BORING AND WELL LOG MW4

SOIL BORING & WELL LOG

SB/MW # : MW4

Page 1 of 1

PROJECT CHIC
LOCATION : 5800 CHRISTIE STREET, EMERYVILLE, CA.
ELEVATION +7.0 MSL est.
MONITORING DEVICE WELL MW4
DRILLING DATE(S) JULY 10,1993
DRILLING METHOD HOLLOW STEM AUGER
SUBCONTRACTOR GREGG DRILLING

Depth Below Surface(ft.)	Penetration: Blows 6"-6"-6"	Penetration: BPF	Sampler Depth Interval (ft.)	Sample ID #	Hnu reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Sampled Depth	Borehole Well Construction Details
5						Fill and backfill soil. Asphaltic material Water level at 5 feet.	SM OL			10 feet PVC blank casing 2-inch dia.
10						Bay Mud Gray to dark, soft silty and clayey	OH			10 feet PVC slotted screen 2-inch dia. 0.010" slots
15										
20										Total Depth 20 Feet 12/16 sand pack 1 foot bentonite pellets at 1 foot above well screen to prevent migration of asphaltic material

REGISTERED GEOLOGIST
WALTER W. LOO
No. 3856
STATE OF CALIFORNIA

SIGNATURE OF FIELD SUPERVISOR

ENVIRONMENT & TECHNOLOGY SERVICES

APPENDIX C

GROUNDWATER LABORATORY ANALYSIS REPORT

mail To ETS.
by Dick Herring.
on 7/22/93

C K Y incorporated
Environmental Services

Date: 07/15/93
N9307-28

CHIC
448 Tharp Drive
Moraga, CA 94556

Attn: Mr. Walter Loo

Subject: Laboratory Report
Project: [redacted] Cal-T

Enclosed is the laboratory report for samples received on 07/08/93. The samples were received in coolers with ice and intact; the chain-of-custody forms were properly filled out. The data reported includes:

Method	No. of Analysis
EPA 8010	1 Water
M8015 (Gas)	1 Water
EPA 8020	1 Water

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely,

Danny Hoang
Laboratory Director

3942 Valley Avenue, Suite F, Pleasanton, CA 94566 • Telephone 510-846-3188 • Fax: 510-846-1236

EPA METHODS - 601

CLIENT: CHIC
PROJECT:
SAMPLE ID: Blank
CONTROL NO: N93007-28

DATE REC'D: 07/08/93
DATE ANALYZED: 07/14/93
MATRIX TYPE: Water

PARAMETERS (601)	RESULTS (ug/L)	DETECTION LIMIT (ug/L)
Dichlorodifluoromethane	ND	5
Chloromethane	ND	5
Vinyl Chloride	ND	5
Bromomethane	ND	5
Chloroethane	ND	5
Trichlorofluoromethane	ND	1
1,1-Dichloroethene	ND	1
Methylene Chloride	ND	1
Trans-1,2-Dichloroethene	ND	1
cis 1,2 -dichloroethene	ND	1
1,1-Dichloroethane	ND	1
Chloroform	ND	1
1,1,1-Trichloroethane	ND	1
Carbon Tetrachloride	ND	1
1,2-Dichloroethane	ND	1
Trichloroethene	ND	1
1,2-Dichloropropane	ND	1
Bromodichloromethane	ND	1
2-Chloroethylvinylether	ND	1
Trans-1,3-Dichloropropene	ND	1
Cis-1,3-Dichloropropene	ND	1
1,1,2-Trichloroethane	ND	1
Tetrachloroethene	ND	1
Dibromochloromethane	ND	1
Chlorobenzene	ND	1
Bromoform	ND	1
1,1,2,2-Tetrachloroethane	ND	1
M-Dichlorobenzene	ND	1
P-Dichlorobenzene	ND	1
O-Dichlorobenzene	ND	1

EPA METHODS - 601

CLIENT: CHIC
PROJECT:
SAMPLE ID: EW-1
CONTROL NO: N9307-28-1

DATE REC'D: 07/08/93
DATE ANALYZED: 07/14/93
MATRIX TYPE: Water

PARAMETERS (601)	RESULTS (ug/L)	DETECTION LIMIT (ug/L)
Dichlorodifluoromethane	ND	5
Chloromethane	ND	5
Vinyl Chloride	ND	5
Bromomethane	ND	5
Chloroethane	ND	5
Trichlorofluoromethane	ND	1
1,1-Dichloroethene	ND	1
Methylene Chloride	ND	1
Trans-1,2-Dichloroethene	ND	1
cis 1,2 -dichloroethene	ND	1
1,1-Dichloroethane	ND	1
Chloroform	ND	1
1,1,1-Trichloroethane	ND	1
Carbon Tetrachloride	ND	1
1,2-Dichloroethane	ND	1
Trichloroethene	ND	1
1,2-Dichloropropane	ND	1
Bromodichloromethane	ND	1
2-Chloroethylvinylether	ND	1
Trans-1,3-Dichloropropene	ND	1
Cis-1,3-Dichloropropene	ND	1
1,1,2-Trichloroethane	ND	1
Tetrachloroethene	ND	1
Dibromochloromethane	ND	1
Chlorobenzene	ND	1
Bromoform	ND	1
1,1,2,2-Tetrachloroethane	ND	1
M-Dichlorobenzene	ND	1
P-Dichlorobenzene	ND	1
O-Dichlorobenzene	ND	1

DILUTION FACATOR = 100

EPA METHOD 5030/Mod. 8015

TOTAL PETROLEUM HYDROCARBONS BY PURGE & TRAP

CLIENT: CHIC
PROJECT:
CONTROL NO: N9307-28

DATE REC'D: 07/08/93
DATE ANALYZED: 07/12/93
MATRIX: Water

SAMPLE ID:	CONTROL NO:	RESULTS (mg/L)	DET. LIMIT (mg/L)	% SURRO RECOVERY
Blank	N9307-28	ND	1.0	114
EW-1	N9307-28-1	[redacted]	1.0	91

EPA METHOD - 8020
BTEX

CLIENT: CHIC
PROJECT:
CONTROL NO: N9307-28

DATE REC'D: 07/08/93
DATE ANALYZED: 07/13/93
MATRIX TYPE: Water

SAMPLE ID:	CONTROL NO:	RESULTS (ug/L) Benz	Tol	Et Benz	Xyls	% SURRO RECOVERY
Blank	N9307-28	ND	ND	ND	ND	114
EW-1	N9307-28-1	ND	[redacted]	[redacted]	ND	91
DETECTION LIMIT		1	1	1	1	

* DETECTION LIMIT = 100 ug/L

QUALITY CONTROL DATA

CLIENT: CHIC
PROJECT:
CONTROL NO: N9307-28 **DATE ANALYZED:** 07/12/93

METHOD EPA 8010
MATRIX: Water

SAMPLE ID: Blank

COMPOUND	SAMPLE RESULTS (mg/L)	AMOUNT SPIKED (mg/L)	% REC.	DUP. % REC.	RPD
1,1-DCE	ND	50	84	92	9
TCE	ND	50	86	96	11
Chlorobenzene	ND	50	114	102	11

QUALITY CONTROL DATA

CLIENT: CHIC
PROJECT:
CONTROL NO: N9307-28 **DATE ANALYZED:** 07/13/93

METHOD EPA M8015G
MATRIX: Water

SAMPLE ID: Blank

COMPOUND	SAMPLE RESULTS (mg/L)	AMOUNT SPIKED (mg/L)	% REC.	DUP. % REC.	RPD
Gas	ND	2.0	106	120	12

QUALITY CONTROL DATA

CLIENT: CHIC
PROJECT:
CONTROL NO: N9307-28
DATE ANALYZED: 07/13/93

METHOD EPA 8020
MATRIX: Water

SAMPLE ID: Blank

COMPOUND	SAMPLE RESULTS (ug/L)	AMOUNT SPIKED (ug/L)	% REC.	DUP. % REC.	RPD
Benzene	ND	10	110	130	17
Toluene	ND	10	110	120	9
Ethyl Benzene	ND	10	100	110	10
Xylene	ND	20	100	115	14

N9307-28 R4

CHAIN OF CUSTODY RECORD
REQUEST FOR ANALYSIS

DATE: 7/7/93
PAGE 1 OF 1

CLIENT NAME: CHIC
ADDRESS: 448 THARP DRIVE
MORAGA, CA
PHONE NO. 415-861-0810 FAX NO. 415-861-5269
PROJECT NAME:
SEND REPORT TO: WALTER W. LOO

CKY Incorporated
Environmental Services
3942 Valley Avenue, Suite F
Pleasanton, CA 94566
Tel: 510-846-3188
Fax: 510-846-1236

SAMPLER NAME/SIGNATURE: WALTER LOO

TURN AROUND TIME
NORMAL ☑ 5 DAYS
RUSH ☐

(AS GASOLINE)

ANALYSES REQUIRED

SAMPLE NUMBER	SAMPLING DATE/TIME		PRESERVATIVE	CONTAINER SIZE/TYPE	SAMPLE DESCRIPTION: WATER	SOIL	OTHER	418.1	M8015	8010/601	8020/602	8080/608	8240/624	8270/625	CAM Metals
-1 EW-1	7/7/93	4:00P		40ML (2)	✓				✓	✓	✓				

COMMENTS: 8015 TPH DETECTION LIMIT 1 MG/L 1 PPM
FAX result to Walter Loo ASAP.

Relinquished by: (Signature)	Date:	Received by: (Signature)	Date:	Relinquished by: (Signature)	Date:	Received by: (Signature)	Date:
Company: ETS	Time: 4:00P	Company: CKY	Time: 10:30AM	Company:	Time:	Company:	Time:

Storage/Disposal of Samples: Sample will be stored at CKY for 30 days at no charge and at $10/sample/month thereafter. Disposal of sample by the Laboratory will be charged at $10/sample.

C K Y incorporated
Environmental Services

Date: 07/20/93
N9307-100

CHIC
448 Tharp Drive
Moraga, CA 94556

Attn: Mr. Walter Loo

Subject: Laboratory Report
Project:

Enclosed is the laboratory report for samples received on 07/13/93. The samples were received in coolers with ice and intact; the chain-of-custody forms were properly filled out. The ~~data~~ reported includes:

Method	No. of Analysis
EPA 8020	1 Water
M8015 (Gas)	1 Water
EPA 8010	1 Water

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely,

Danny Hoang
Laboratory Director

3942 Valley Avenue, Suite F, Pleasanton, CA 94566 • Telephone 510-846-3188 • Fax: 510-846-1236

EPA METHOD - 8020
BTEX

CLIENT:	CHIC	**DATE REC'D:**	07/13/93
PROJECT:		**DATE ANALYZED:**	07/16/93
CONTROL NO:	N9307-100	**MATRIX TYPE:**	Water

		RESULTS (ug/L)				% SURRO
SAMPLE ID:	CONTROL NO:	Benz	Tol	Et Benz	Xyls	RECOVERY
Blank	N9307-100	ND	ND	ND	ND	84
MW4	*N9307-100-1	800	280	270	200	[illegible]
DETECTION LIMIT		1	1	1	1	

* DETECTION LIMIT FOR ALL COMPOUNDS - 100 ug/L

EPA METHOD 5030/Mod. 8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE & TRAP

CLIENT: CHIC
PROJECT:
CONTROL NO: N9307-100

DATE REC'D: 07/13/93
DATE ANALYZED: 07/16/93
MATRIX: Water

SAMPLE ID:	CONTROL NO:	RESULTS (mg/L)	DET. LIMIT (mg/L)	% SURRO RECOVERY
Blank	N9307-100	ND	1.0	84
MW4*	N9307-100-1	ND*	100*	72

* Sample could not be run at a lower detection limit due to substantial interference. There is however a presence of compounds not identifiable as gasoline below the 100 mg/L detection limit.

EPA METHODS - 601

CLIENT: CHIC	**DATE REC'D:** 07/13/93
PROJECT:	**DATE ANALYZED:** 07/16/93
SAMPLE ID: MW4	**MATRIX TYPE:** Water
CONTROL NO: N9307-100-1	

PARAMETERS (601)	RESULTS (ug/L)	DETECTION LIMIT (ug/L)
Dichlorodifluoromethane	ND	500
Chloromethane	ND	500
Vinyl Chloride	ND	500
Bromomethane	ND	500
Chloroethane	ND	500
Trichlorofluoromethane	ND	100
1,1-Dichloroethene	ND	100
Methylene Chloride	ND	100
Trans-1,2-Dichloroethene	ND	100
cis 1,2 -dichloroethene	ND	100
1,1-Dichloroethane	ND	100
Chloroform	ND	100
1,1,1-Trichloroethane	ND	100
Carbon Tetrachloride	ND	100
1,2-Dichloroethane	ND	100
Trichloroethene	ND	100
1,2-Dichloropropane	ND	100
Bromodichloromethane	ND	100
2-Chloroethylvinylether	ND	100
Trans-1,3-Dichloropropene	ND	100
Cis-1,3-Dichloropropene	ND	100
1,1,2-Trichloroethane	ND	100
Tetrachloroethene	ND	100
Dibromochloromethane	ND	100
Chlorobenzene	ND	100
Bromoform	ND	100
1,1,2,2-Tetrachloroethane	ND	100
M-Dichlorobenzene	ND	100
0-Dichlorobenzene	ND	100
O-Dichlorobenzene	ND	100

* HIGHER DET. LIMIT DUE TO SAMPLE MATRIX.

EPA METHODS - 601

CLIENT:	CHIC	**DATE REC'D:**	07/13/93
PROJECT:		**DATE ANALYZED:**	07/16/93
SAMPLE ID:	Blank	**MATRIX TYPE:**	Water
CONTROL NO:	N9307-100		

PARAMETERS (601)	RESULTS (ug/L)	DETECTION LIMIT (ug/L)
Dichlorodifluoromethane	ND	5
Chloromethane	ND	5
Vinyl Chloride	ND	5
Bromomethane	ND	5
Chloroethane	ND	5
Trichlorofluoromethane	ND	1
1,1-Dichloroethene	ND	1
Methylene Chloride	ND	1
Trans-1,2-Dichloroethene	ND	1
cis 1,2 -dichloroethene	ND	1
1,1-Dichloroethane	ND	1
Chloroform	ND	1
1,1,1-Trichloroethane	ND	1
Carbon Tetrachloride	ND	1
1,2-Dichloroethane	ND	1
Trichloroethene	ND	1
1,2-Dichloropropane	ND	1
Bromodichloromethane	ND	1
2-Chloroethylvinylether	ND	1
Trans-1,3-Dichloropropene	ND	1
Cis-1,3-Dichloropropene	ND	1
1,1,2-Trichloroethane	ND	1
Tetrachloroethene	ND	1
Dibromochloromethane	ND	1
Chlorobenzene	ND	1
Bromoform	ND	1
1,1,2,2-Tetrachloroethane	ND	1
M-Dichlorobenzene	ND	1
P-Dichlorobenzene	ND	1
O-Dichlorobenzene	ND	1

QUALITY CONTROL DATA

CLIENT: CHIC
PROJECT:
CONTROL NO: N9307-100

DATE EXTC'D: N/A
DATE ANALYZED: 07/16/93

METHOD EPA 8020
MATRIX: Water

SAMPLE ID: N9307-127-5

COMPOUND	SAMPLE RESULTS (ug/L)	AMOUNT SPIKED (ug/L)	% REC.	DUP. % REC.	RPD
Benzene	ND	10	70	80	13
Toluene	ND	10	80	90	12
Ethyl Benzene	ND	10	70	80	13
Xylene	ND	20	80	90	12

QUALITY CONTROL DATA

CLIENT: CHIC
PROJECT:
CONTROL NO: N9307-100
DATE EXTRACTED: N/A
DATE ANALYZED: 07/16/93

METHOD EPA M8015G
MATRIX: Water

SAMPLE ID: n9307-127-5

COMPOUND	SAMPLE RESULTS (mg/L)	AMOUNT SPIKED (mg/L)	% REC.	DUP. % REC.	RPD
Gas	ND	1.0	100	100	0

QUALITY CONTROL DATA

CLIENT: CHIC
PROJECT:
CONTROL NO: N9307-100
DATE EXTRACTED: N/A
DATE ANALYZED: 07/16/93

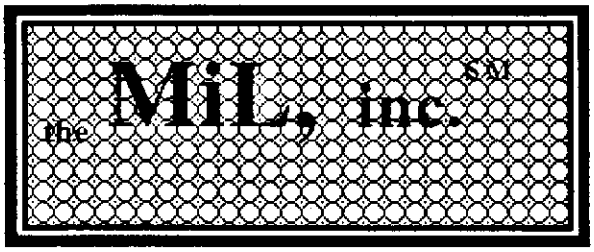
METHOD EPA 8010
MATRIX: Water

SAMPLE ID: N9307-128-4

COMPOUND	SAMPLE RESULTS (mg/L)	AMOUNT SPIKED (mg/L)	% REC.	DUP. % REC.	RPD
TCE	ND	20	100	115	14
Chlorobenzene	ND	20	100	85	16

APPENDIX D

MICROBIOLOGY ANALYSIS



Microbe Inotech Laboratories, inc.
1840 Craig Road
St. Louis, MO
63146-4712
U.S.A.
Telephone: (314) 878-6626
(800) 688-9144
FAX: (314) 878-9376
E-mail: Bruce C. Hemming
76177.204@compuserve.com

Total Heterotrophic Plate Count Analysis & Microbial Identification

Report Prepared For:

Environmental & Technical Services
ATTN: Walter Loo, R.G., C.E.G.
2081 15th Street
San Francisco, CA 94114

Client Phone (415) 861-0810
Client Fax (415) 861-3269

Report No. MILB—2305

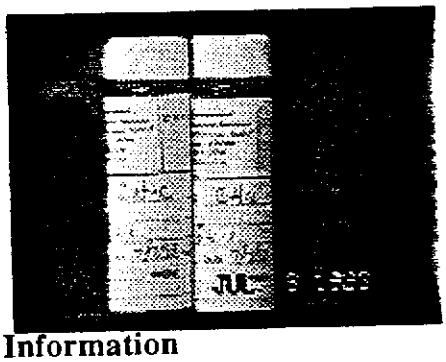
PO Number none

July 19, 1993

Summary Report of Analysis
[No. 2305]

Environmental & Technical Services
ATTN: Walter Loo, R.G., C.E.G.
2081 15th Street
San Francisco, CA 94114

Description:
Fri, July 9, 1993 2:30 p.m. : Received by 2nd day Fedex one water sample labeled EW-1 in two 40 ml vials. Analyses requested are Total Plate Count and Bacterial ID. MiL #2305 jk. pict file. Strains may be tested for co-metabolic study—to be confirmed later.



Chain of Custody Record Information
Purchase Order No.—none
MiL, Inc. REPORT & Invoice No.: MILB-2305

Processing:
[Standard Bacterial Plate Count - serial dilution method and direct spread plate count] Within 20 minutes of reception aliquots from the sample was checked for volume and then serially diluted. Each dilution was sterilely transferred in a laminar flow biological cabinet and placed on previously prepared and dried trypticase soy broth agar (TSBA) medium in Petri plates. Observations for colony forming units (CFU) were made at 24 and 48 hrs. of incubation at 28°C for the sample. Colony differentiation was noted at 48 hrs.

Summary Final Results—Total Heterotrophic Plate Count:

DATA:	Direct Count: Colony Forming Units (CFU/ g) on TSBA Medium	
	24 Hrs.	48 Hrs.
Sample:		
EW-1	4.59×10^5	4.64×10^5

Distinct morphological Colony Types at 48 Hrs. in Sample
3

Summary of GC-FAME/Biolog Analyses							
Strain Name	Primary Identification by GC	Sim. Coef.	Dist Coef.	Primary ID by Biolog™	Plate Type	Sim. Coef	Dist. Coef
2305-1	*Staphylococcus xylosus*	0.013	9.561	***Staphylococcus hominis***	GP	0.994	0.51
2305-2	***Bacillus maroccanus***	0.287	5.104	*CDC Group D-2*	GP	0.286	9.994
2305-3	*Comamonas testosteroni*	0.13	6.533	***Alcaligenes faecalis type II***	GN	0.769	2.432

GC-FAME & Biolog™ Processing:
Following isolation the strains were individually streaked out onto TSBA. The TSBA plates were processed after 24 hr incubation by [Method 1 - Standard GC-FAME]. The strains were examined against both the newly installed Aerobe (TSBA [rev. 3.70]) and Clinical Aerobe (CLIN [rev.3.70]) GC-FAME databases. Subsequently the strains were prepared for Biolog™ analysis by suspending them in sterile saline and loading the solutions into the appropriate microtiter plates (Gram negative or Gram positive). The plates were incubated for 24 hours and then examined against version 3.0 of the Biolog™ database using an automated microplate reader.

Similarity and Distance Coefficient
In order to create the database that we use to identify your organisms, thousands of species of bacteria had to be tested. In fact each species itself had to be tested hundreds of times to determine a set of characteristics unique to it. The species characteristics that are in our database are an "average" of the characteristics of hundres of tested bacteria of the same species. The Similarity and Distance Coefficient of your organism refers to the similarity and distance to the hypothetical 'mean' organism in the database. The database organism has a similarity coefficient of one and a distance of zero. So the closer your strain is to one and zero the more closely it matches the mean organism in the database.
A good match is one with a similarity coefficient greater than **.5** and a distance coefficient of less than **7.**

Thank you from the staff on project.

Julie Milke - Laboratory Manager

Dr. Bruce C. Hemming - Operations Director

CALIB. 1 CALIBRATION STANDARD [AEROBE] 15-JUL-93 00:31:25 Area: 644208 % Named: 98
** GOOD PEAK MATCHING: PEAK POSITION MATCHING ERROR (RMS) IS 0.0022. **

CALIB. 1 CALIBRATION STANDARD [AEROBE] 15-JUL-93 01:01:44 Area: 643[illegible] % Named: 98
** GOOD PEAK MATCHING: PEAK POSITION MATCHING ERROR (RMS) IS 0.0012. **

2 2305-1 L00 [AEROBE] 15-JUL-93 02:02:25 Area: 102968 % Named: 100
TSBA [Rev 3.70] Staphylococcus 0.013
S. xylosus 0.013
CLIN [Rev 3.70] * NO MATCH *

3 2305-2 L00 [AEROBE] 15-JUL-93 02:32:46 Area: 1048 % Named: 100
TOTAL AREA LESS THAN 50000.
TSBA [Rev 3.70] Bacillus . . . . . 0.287 (not an approved name)
B. marocanus . . . . . 0.287 (not an approved name)
CLIN [Rev 3.70] * NO MATCH *

[illegible]

CALIB. 1 CALIBRATION STANDARD [AEROBE] 16-JUL-93 01:38:39 Area: 425000 % Named: 100
** GOOD PEAK MATCHING: PEAK POSITION MATCHING ERROR (RMS) IS 0.0019. **

CALIB. 1 CALIBRATION STANDARD [AEROBE] 17-JUL-93 02:08:52 Area: 484904 % Named: 100
** GOOD PEAK MATCHING: PEAK POSITION MATCHING ERROR (RMS) IS 0.0013. **

1 2305-3 [AEROBE] 17-JUL-93 02:39:07 Area: 108040 % Named: 98
TSBA [Rev 3.70] Comamonas . . . . . 0.068 (Pseudomonas testosteroni)
C. testosteroni . . . . . 0.068 (Pseudomonas testosteroni)
Variovorax . . . . . 0.050 (Alcaligenes paradoxus)
V. paradoxus . . . . . 0.050 (Alcaligenes paradoxus)
V. p. GC subgroup B . . . . . 0.050 (Alcaligenes paradoxus)
V. p. GC subgroup A . . . . . 0.028 (Alcaligenes paradoxus)
Pseudomonas 0.046
P. putida 0.046
P. p. biotype B 0.046
P. syringae 0.035
P. s. syringae 0.035
P. s. savastanoi pv. fraxinus 0.028
P. s. phaseolicola 0.019
P. corrugata 0.033
CLIN [Rev 3.70] Comamonas . . . . . 0.130 (Pseudomonas testosteroni)
C. testosteroni . . . . . 0.130 (Pseudomonas testosteroni)

ID: 1 CALIBRATION STANDARD Date of run: 15-JUL-93 01:01:44
Bottle: 1 CALIBRATION [AEROBE]

RT	Area	Ar/Ht	Respon	ECL	Name	%	Comment 1	Comment 2
1.674	135145472	0.023	. . .	7.041	SOLVENT PEAK		< min rt	
1.956	504	0.020	. . .	7.595	. . . . .		< min rt	
2.312	1536	0.022	. . .	8.295	. . . . .			
2.671	27664	0.024	1.170	9.000	9:0	5.13		
3.071	2496	0.024	. . .	9.786	. . . . .			
3.180	56688	0.026	1.122	10.000	10:0	10.08	Peak match -0.0004	
3.980	29528	0.029	1.081	11.000	11:0	5.06	Peak match -0.0007	
4.024	11688	0.030	1.076	11.156	10:0 2OH	2.03	Peak match 0.0010	
4.269	6056	0.031	1.066	11.421	10:0 3OH	1.02	Peak match 0.0018	
4.419	2048	0.030	. . .	11.583	. . . . .			
4.805	61904	0.032	1.047	12.000	12:0	10.27	Peak match -0.0010	
5.962	31552	0.036	1.018	13.000	13:0	5.09	Peak match -0.0001	
6.420	1472	0.035	. . .	13.334	. . . . .			
7.333	63864	0.039	0.994	14.000	14:0	10.06	Peak match 0.0004	
8.875	33904	0.044	0.974	15.000	15:0	5.24	Peak match -0.0016	
9.212	13864	0.049	0.971	15.203	14:0 2OH	2.13	Peak match 0.0023	
9.685	6944	0.045	0.966	15.487	Sum In Feature 3 . .	1.06	Peak match 0.0015	14:0 3OH/16:1 I50 I
10.537	66720	0.044	0.959	16.000	16:0	10.14	Peak match -0.0010	
11.433	1384	0.041	. . .	16.519	. . . . .			
12.265	33608	0.046	0.947	17.000	17:0	5.09	Peak match -0.0008	
12.675	14240	0.048	0.944	17.234	16:0 2OH	2.13	Peak match 0.0012	
14.019	68624	0.048	0.957	18.000	18:0	10.20	Peak match -0.0005	
15.050	2576	0.051	. . .	18.590	. . . . .			
15.765	34280	0.049	0.930	19.000	19:0	5.05	Peak match 0.0003	
16.631	2032	0.047	. . .	19.502	. . . . .			
17.489	69944	0.050	0.925	20.000	20:0	10.25		
18.480	2400	0.050	. . .	20.575	. . . . .			
19.052	10560	0.118	. . .	20.907	. . . . .		> max ar/ht	
19.342	21560	0.216	. . .	21.075	. . . . .		> max ar/ht	
19.814	31168	0.312	. . .	21.349	. . . . .		> max ar/ht	
*******	6944	. . . . .		. . .	SUMMED FEATURE 3 . .	1.06	12:0 ALDE ?	unknown 10.928
*******	. . . . .	. . . . .		. . .	. . . . .		16:1 I50 I/14:0 3OH	14:0 3OH/16:1 I50 I

Solvent Ar	Total Area	Named Area	% Named	Total Amnt	Nbr Ref	ECL Deviation	Ref ECL Shift
135145472	643272	631264	98.13	630859	8	. . . . .	. . . . .

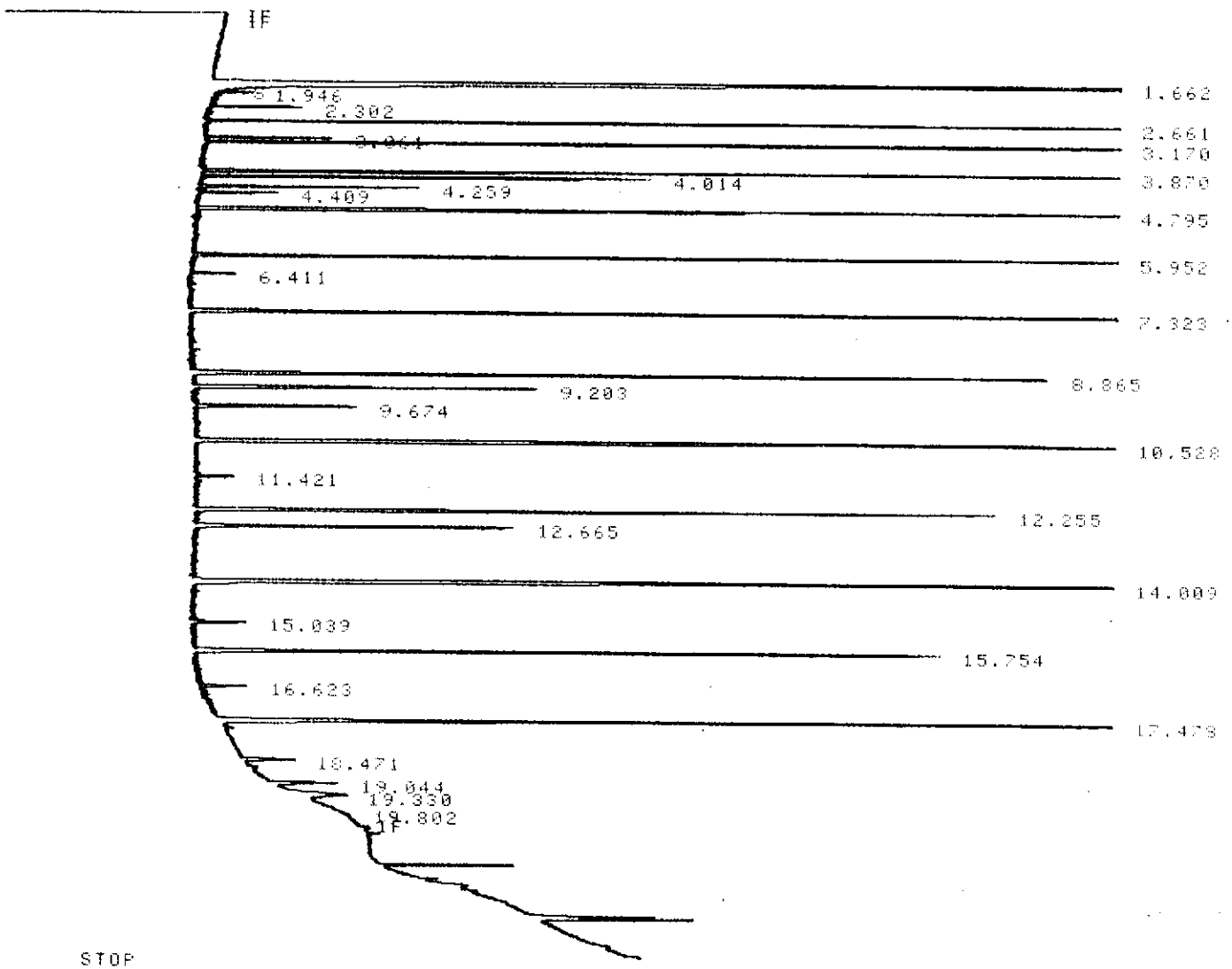
GOOD PEAK MATCHING: PEAK POSITION MATCHING ERROR (RMS) IS 0.0012.

[redacted] BOTTLE 1 ID#: 1THU 15-JUL-93 01:48:52

FILE DATA:F93715046

CALIBRATION STANDARD

RUN # 2 JUL 15, 1993 01:01:44
START



STOP

RUN # 2 JUL 15, 1993 01:01:44
START-No plot
END OF SIGNAL

#

ID: 2 2305-1 LOG Date of run: 15-JUL-93 02:02:25
Bottle: 3 SAMPLE [AEROBIC]

RT	Area	Ar/Ht	Respon	ECL	Name	%	Comment 1	Comment 2
1.671	125063744	0.028	. . .	7.040	SOLVENT PEAK	. . .	< min rt	
6.795	2640	0.040	1.002	13.617	14:0 ISO	2.67	ECL deviates -0.001	Reference -0.010
8.275	12424	0.041	0.981	14.621	15:0 ISO	12.29	ECL deviates 0.000	Reference -0.010
8.415	49320	0.041	0.979	14.712	15:0 ANTEISO	48.71	ECL deviates 0.001	Reference -0.009
9.896	800	0.048	0.964	15.626	16:0 ISO	0.79	ECL deviates -0.000	Reference -0.012
11.603	2432	0.047	0.951	16.629	17:0 ISO	2.33	ECL deviates 0.000	Reference -0.012
11.763	4168	0.046	0.950	16.722	17:0 ANTEISO	3.99	ECL deviates 0.000	Reference -0.013
13.349	896	0.048	0.940	17.631	18:0 ISO	0.85	ECL deviates -0.001	Reference -0.014
13.994	5040	0.049	0.937	17.999	18:0	4.76	ECL deviates -0.001	Reference -0.014
15.100	5608	0.049	0.933	18.633	19:0 ISO	5.27	ECL deviates -0.000	Reference -0.014
15.269	5264	0.049	0.932	18.730	19:0 ANTEISO	4.95	ECL deviates 0.001	
17.465	14276	0.078	0.925	20.001	20:0	13.40	ECL deviates 0.001	Reference -0.014
18.535	15424	0.149	. . .	20.621	. . . . .	. . .	> max rt	
18.707	21016	0.166	. . .	20.721	. . . . .	. . .	> max rt	
19.599	65866	0.399	. . .	21.186	. . . . .	. . .	> max rt	
19.922	37504	0.170	. . .	21.426	. . . . .	. . .	> max rt	

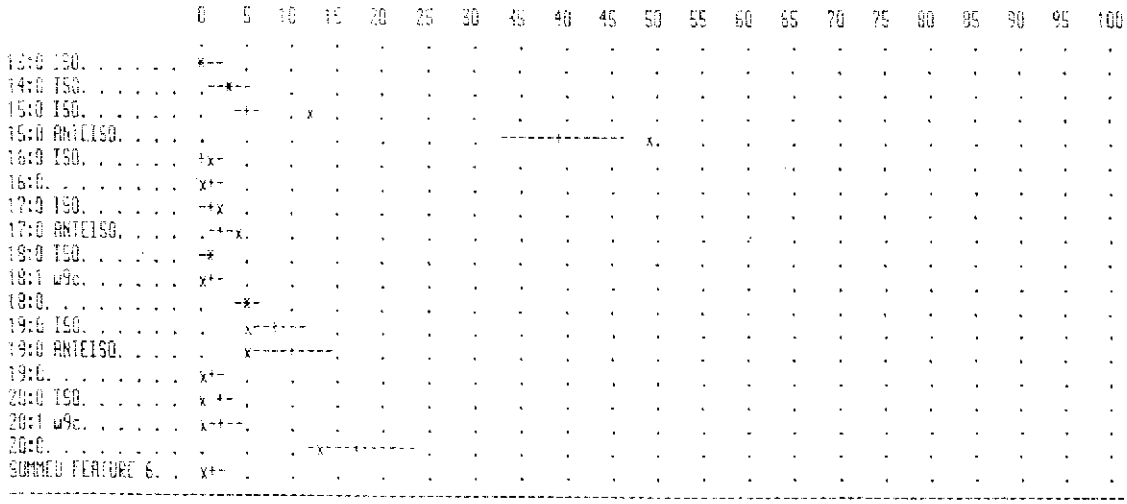
Solvent Ar	Total Area	Named Area	% Named	Total Amnt	Nbr Ref	ECL Deviation	Ref ECL Shift
125063744	102968	102968	100.00	99183	10	0.001	0.012

TSBA [Rev 3.70] Staphylococcus 0.013
S. xylosus 0.013
CLIN [Rev 3.70] * NO MATCH *

Comparison with TSBA [Rev 3.70]: Staphylococcus-xylosus Distance: 9.561

```
                  0   5   10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90  95  100
                  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
13:0 ISO. . . . . x+--  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
14:0 ISO. . . . . --+x  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
14:0. . . . . x+-   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
15:0 ISO. . . . . .   .   . x ----------+---------.   .   .   .   .   .   .   .   .   .   .   .   .
15:0 ANTEISO. . . . .   .   .   .   .   .   .   .   .----+------ x.   .   .   .   .   .   .   .   .
16:0 ISO. . . . . .*-   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
16:0. . . . . x -+--    .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
17:0 ISO. . . . . . x ---+---   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
17:0 ANTEISO. . . . .---*----   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
18:0 ISO. . . . . +x-   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
18:0. . . . . .  --x+---.   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
19:0 ISO. . . . . .-+--x    .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
19:0 ANTEISO. . . . +--  x  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
20:1 w9c. . . . . x+-   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
20:0. . . . . .  ---+----- x .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
```

Comparison with CLIN [Rev 2.70]: Staphylococcus-auricularis Distance: 10.729



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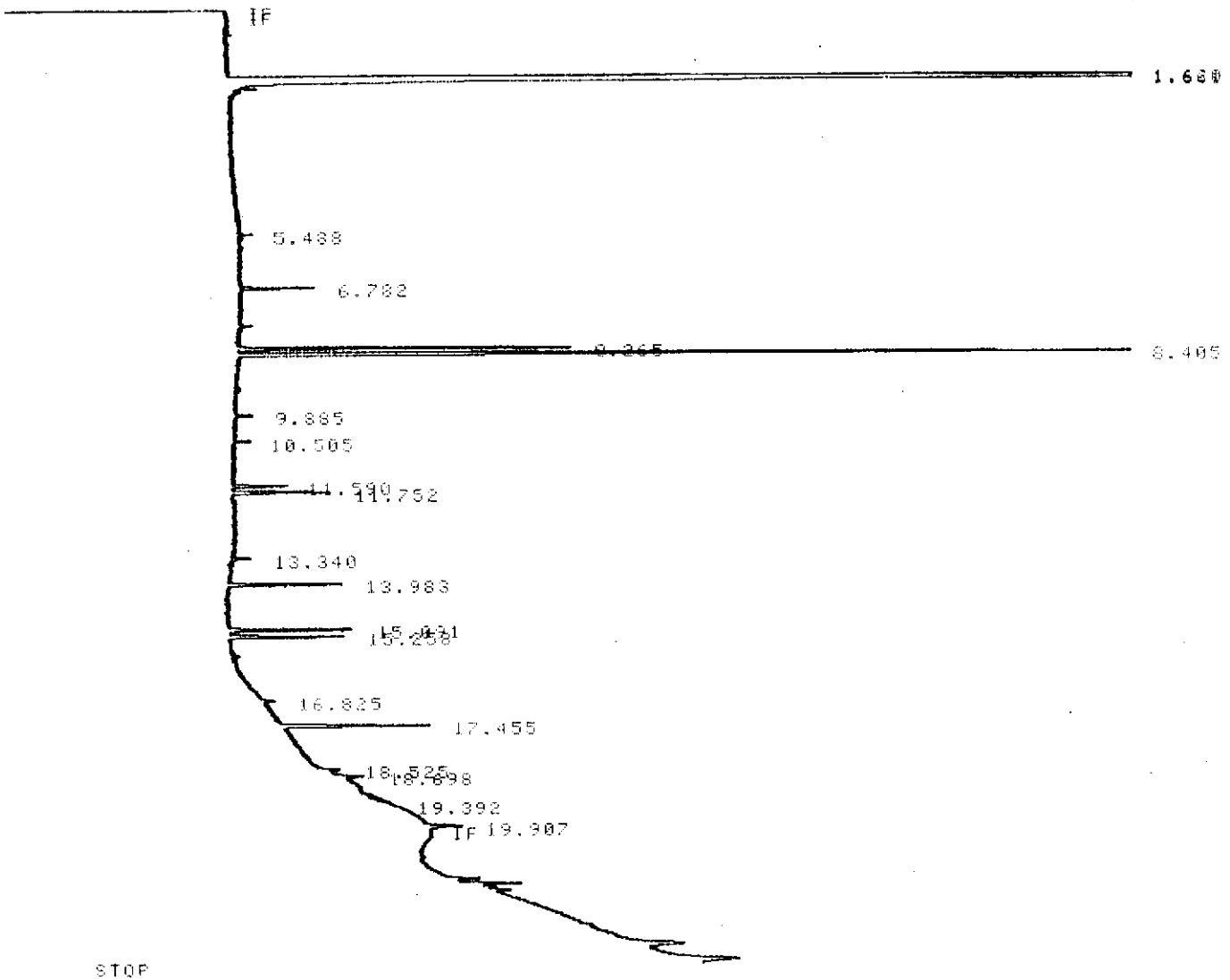
FILE DATA:F93715046

2305-1 L00

RUN # 4 JUL 15, 1993 02:02:25
START



STOP

RUN # 4 JUL 15, 1993 02:02:25
START-No plot
END OF SIGNAL

#

ID: 3 2305-2 LOG Date of run: 15-JUL-93 02:32:46
Bottle: 4 SAMPLE [AEROBE]

RT	Area	Ar/Ht	Respon	ECL	Name	%	Comment 1	Comment 2
1.670	126686336	0.028	. . .	7.040	SOLVENT PEAK		< min rt	
1.920	424	0.022	. . .	7.521	. . . . .		< min rt	
8.410	1048	0.045	0.979	14.705	15:0 ANTEISO	100.00	ECL deviates -0.006	Reference -0.013
18.718	32432	0.268	. . .	20.719	. . . . .		> max rt	
18.922	25760	0.190	. . .	20.837	. . . . .		> max rt	
19.085	23872	0.157	. . .	20.932	. . . . .		> max rt	
19.504	71080	0.391	. . .	21.175	. . . . .		> max rt	
19.920	39832	0.174	. . .	21.416	. . . . .		> max rt	

Solvent Ar	Total Area	Named Area	% Named	Total Amnt	Nbr Ref	ECL Deviation	Ref ECL Shift
126686336	1048	1048	100.00	1026	1	0.006	0.013

TOTAL AREA LESS THAN 50000.

ISBA [Rev 3.70] Bacillus . . . . . 0.287 (not an approved name)
B. maraccanus . . . . . 0.287 (not an approved name)
CLIN [Rev 3.70] * NO MATCH *

Comparison with ISBA [Rev 3.70]: Bacillus-maraccanus (not an approved name) Distance: 5.104

	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
14:0 ISO.	x	---	+	---	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
14:0.	x	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
15:0 ISO.	x	-----	+	-----	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
15:0 ANTEISO. . . .	.	.	.	.	.	.	.	.	.	.	.	----------	+	----------	.	.	.	.	.	.	.	x
16:1 w7c alcohol. .	x	-+--	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
16:0 ISO.	x	--+--	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
16:1 w11c	x	--+--	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
16:0.	x	--+-	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
17:0 ANTEISO. . . .	x	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
SUMMED FEATURE 5. .	x	+-	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

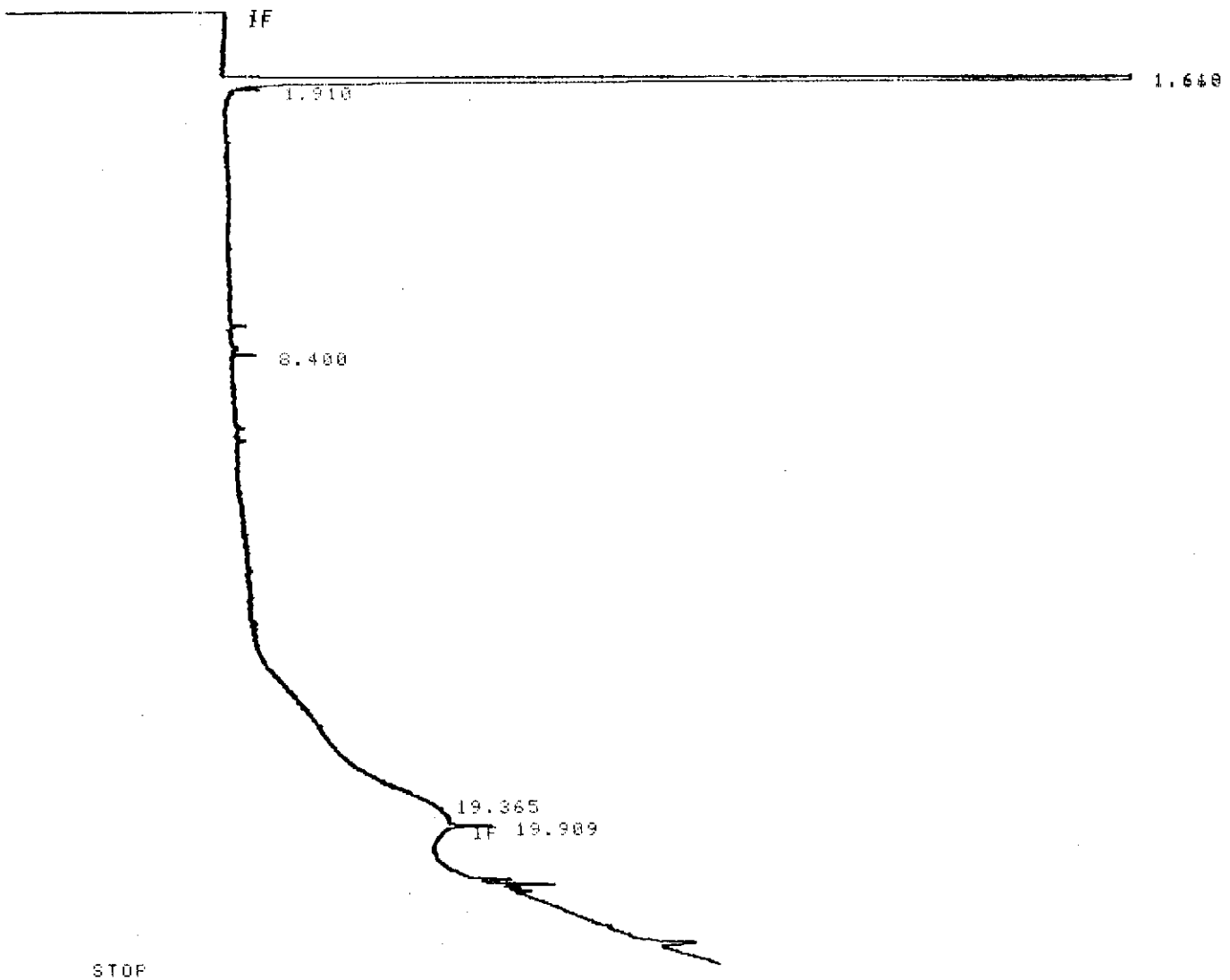
Comparison with CLIN [Rev 3.70]: Micrococcus-roseus Distance: 14.915

	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
14:0.	x	-+--	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
15:0 ISO.	x	---	+	---	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
15:0 ANTEISO. . . .	.	.	.	.	.	.	.	.	.	.	.	--------	+	--------	.	.	.	.	.	.	.	x
16:0 ISO.	x	+---	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
16:1 w7c.	x	+--	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
16:0.	x	---	+	---	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
17:0 ISO.	x	+--	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
17:0 ANTEISO. . . .	x	-------	+	-------	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
18:1 w9c.	x	--+-	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
18:0.	x	--+--	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
SUMMED FEATURE 6. .	x	-+-	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

BOTTLE: 4 ID#: THU 15-JUL-93 02:19:51 FILE DATA:F9371546

2305-2 L00

RUN # 5 JUL 15, 1993 02:32:46
START



STOP

RUN # 5 JUL 15, 1993 02:32:46
START-No plot
END OF SIGNAL

#
BREAK

*

ID: 1 CALIBRATION STANDARD Date of run: 16-JUL-93 01:38:39
Bottle: 1 CALIBRATION AEROBIC

RT	Area	Ar/Ht	Respon	ECL	Name	%	Comment 1	Comment 2
1.671	133543744	0.023	. . .	2.033	SOLVENT PEAK	. . .	< min rt	
2.667	20720	0.024	1.171	9.000	9:0	5.11		
3.135	42680	0.026	1.121	10.000	10:0	10.07	Peak match -0.0013	
3.876	22360	0.029	1.079	11.000	11:0	5.08	Peak match -0.0031	
4.019	9112	0.030	1.073	11.155	10:0 2OH	2.06	Peak match 0.0026	
4.264	4672	0.032	1.063	11.420	10:0 3OH	1.05	Peak match 0.0018	
4.800	46800	0.032	1.044	12.000	12:0	10.29	Peak match -0.0030	
5.956	23886	0.036	1.015	13.000	13:0	5.11	Peak match -0.0016	
7.326	48376	0.039	0.992	14.000	14:0	10.11	Peak match -0.0021	
8.868	24688	0.042	0.974	15.000	15:0	5.06	Peak match -0.0018	
9.206	10496	0.044	0.971	15.203	14:0 2OH	2.15	Peak match 0.0016	
9.679	5224	0.045	0.966	15.488	Sum In Feature 3 . .	1.06	Peak match 0.0015	14:0 3OH/16:1 ISO I
10.531	50408	0.044	0.960	16.000	16:0	10.19	Peak match -0.0023	
12.260	25480	0.046	0.949	17.000	17:0	5.09	Peak match -0.0013	
12.670	10776	0.049	0.947	17.234	16:0 2OH	2.15	Peak match 0.0014	
14.015	51392	0.048	0.940	18.000	18:0	10.18	Peak match -0.0013	
15.763	25920	0.049	0.933	19.000	19:0	5.10	Peak match -0.0001	
17.486	52008	0.049	0.927	20.000	20:0	10.16		
*******	5224	. . .	. . .	. . .	SUMMED FEATURE 3 . .	1.06	12:0 ALDE ?	unknown 10.928
*******	. . . . .	. . .	. . .	. . .	. . . . .	. . .	16:1 ISO I/14:0 3OH	14:0 3OH/16:1 ISO I

Solvent Ar	Total Area	Named Area	% Named	Total Amnt	Nbr Ref	ECL Deviation	Ref ECL Shift
133543744	475000	475000	100.00	474805	0	. . . . .	. . . . .

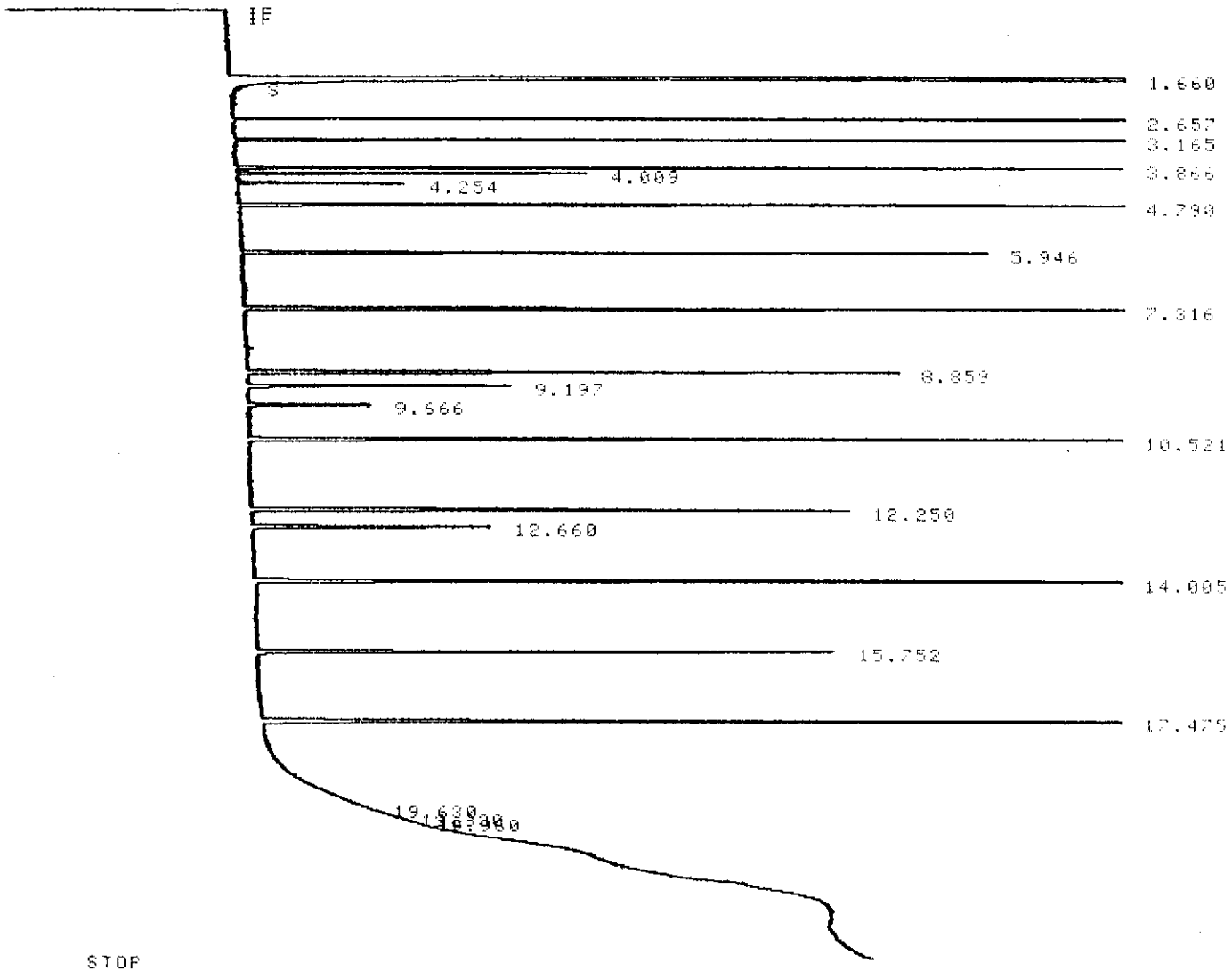
GOOD PEAK MATCHING: PEAK POSITION MATCHING ERROR (RMS) IS 0.0019.

BOTTLE: 1 ID#: 1FRI 16-JUL-93 23:35:52

FILE DATA:F93716849

CALIBRATION STANDARD

RUN # 1 JUL 16, 1993 01:38:39
START



STOP

RUN # 1 JUL 16, 1993 01:38:39
START-No plot
END OF SIGNAL

#

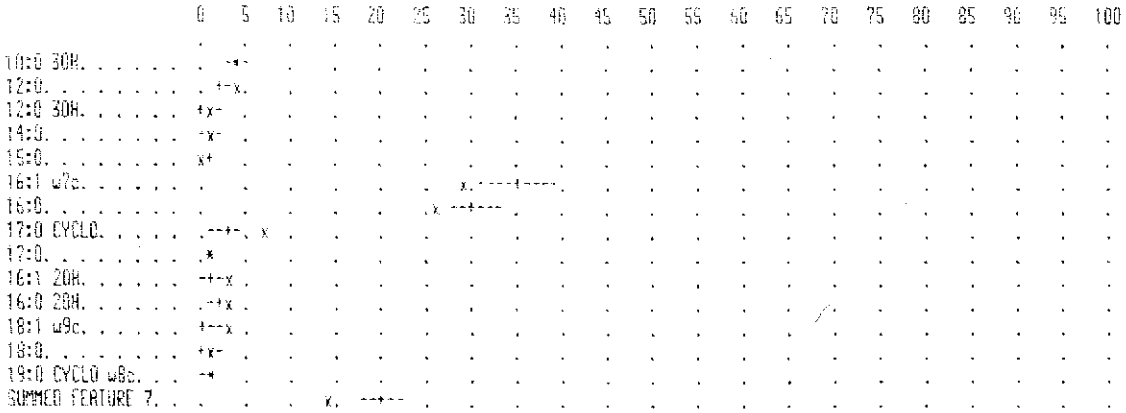
ID: 1 2305-3 Date of run: 17-JUL-93 02:39:07
Bottle: 2 SAMPLE [AEROBIC]

RT	Area	Ar/Rt	Respon	ECL	Name	%	Comment 1	Comment 2
1.669	122711872	0.028	. . .	7.046	SOLVENT PEAK		< min rt	
1.995	1240	0.026	. . .	7.686	. . . . .		< min rt	
4.260	4184	0.032	1.076	11.421	10:0 3OH	4.31	ECL deviates -0.002	
4.794	4128	0.032	1.055	12.000	12:0	4.17	ECL deviates 0.000	Reference -0.003
4.960	1736	0.036	. . .	12.145	. . . . .			
6.569	856	0.041	1.018	13.454	12:0 3OH	0.83	ECL deviates -0.001	
7.316	680	0.042	1.008	14.000	14:0	0.66	ECL deviates -0.000	Reference -0.004
10.215	31446	0.045	0.979	15.818	16:1 w7c	29.50	ECL deviates 0.001	
10.517	28216	0.044	0.976	16.000	16:0	26.39	ECL deviates -0.000	Reference -0.004
12.053	7568	0.047	0.961	16.889	17:0 CYCLO	6.97	ECL deviates 0.001	Reference -0.003
12.247	840	0.055	0.959	17.001	17:0	0.77	ECL deviates 0.001	Reference -0.003
12.330	3246	0.057	0.958	17.048	16:1 2OH	2.97	ECL deviates 0.001	
12.655	3664	0.047	0.955	17.233	16:0 2OH	3.35	ECL deviates -0.002	
13.597	3816	0.051	0.943	17.770	18:1 w9c	3.45	ECL deviates 0.001	
13.640	16048	0.049	0.942	17.824	Sum In Feature 7 . .	14.49	ECL deviates -0.001	18:1 w9c/w12t/w7c
13.997	1320	0.056	0.937	17.999	18:0	1.19	ECL deviates -0.001	Reference -0.005
15.575	1096	0.062	0.911	16.901	19:0 CYCLO w8c . . .	0.96	ECL deviates 0.001	Reference -0.002
19.567	78688	0.573	. . .	21.215	. . . . .		> max rt	
19.869	45672	0.297	. . .	21.390	. . . . .		> max rt	
*******	16048	. . .	. . .	. . .	SUMMED FEATURE 7 . .	14.48	18:1 w7c/w9t/w12t	18:1 w9c/w12t/w7c
*******	. . . . .				. . . . .		18:1 w12t/w9t/w7c	

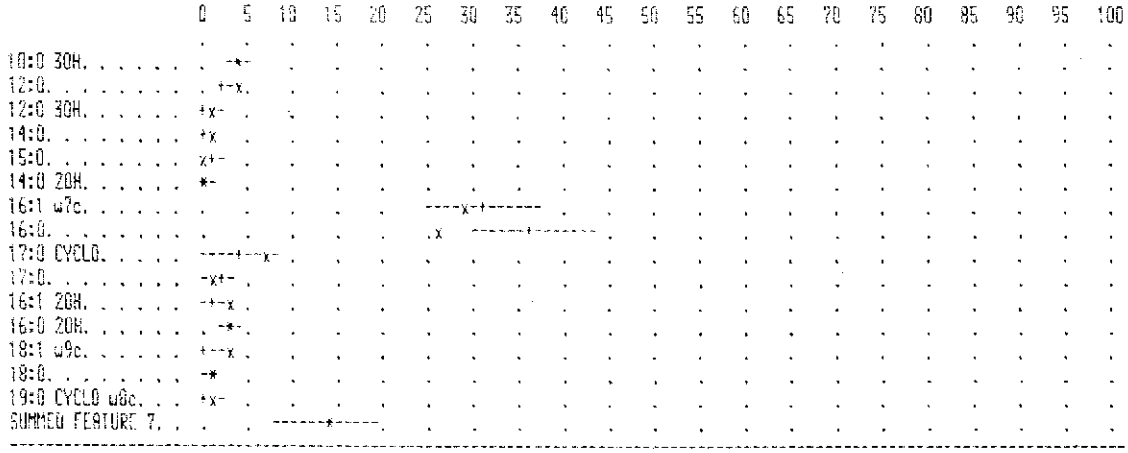
Solvent Ar	Total Area	Named Area	% Named	Total Amnt	Nbr Ref	ECL Deviation	Ref ECL Shift
122711872	109840	107104	98.40	104390	7	0.001	0.004

TSBA [Rev 3.70] Comamonas . . . . . 0.068 (Pseudomonas testosteroni)
C. testosteroni . . . . . 0.068 (Pseudomonas testosteroni)
Variovorax . . . . . 0.050 (Alcaligenes paradoxus)
V. paradoxus . . . . . 0.050 (Alcaligenes paradoxus)
V. p. GC subgroup B . . . . . 0.050 (Alcaligenes paradoxus)
V. p. GC subgroup A . . . . . 0.028 (Alcaligenes paradoxus)
Pseudomonas 0.046
P. putida 0.046
P. p. biotype B 0.046
P. syringae 0.035
P. s. syringae 0.035
P. s. savastanoi pv. fraxinus 0.028
P. s. phaseolicola 0.019
P. corrugata 0.035
ELIN [Rev 3.70] Comamonas . . . . . 0.130 (Pseudomonas testosteroni)
C. testosteroni . . . . . 0.130 (Pseudomonas testosteroni)

Comparison with TSBA [Rev 3.70]: Comamonas-testosteroni(Pseudomonas testosteroni) Distance: 7.487



Comparison with CLIN [Rev 3.70]: Comamonas-testosteroni(Pseudomonas testosteroni) Distance: 6.533

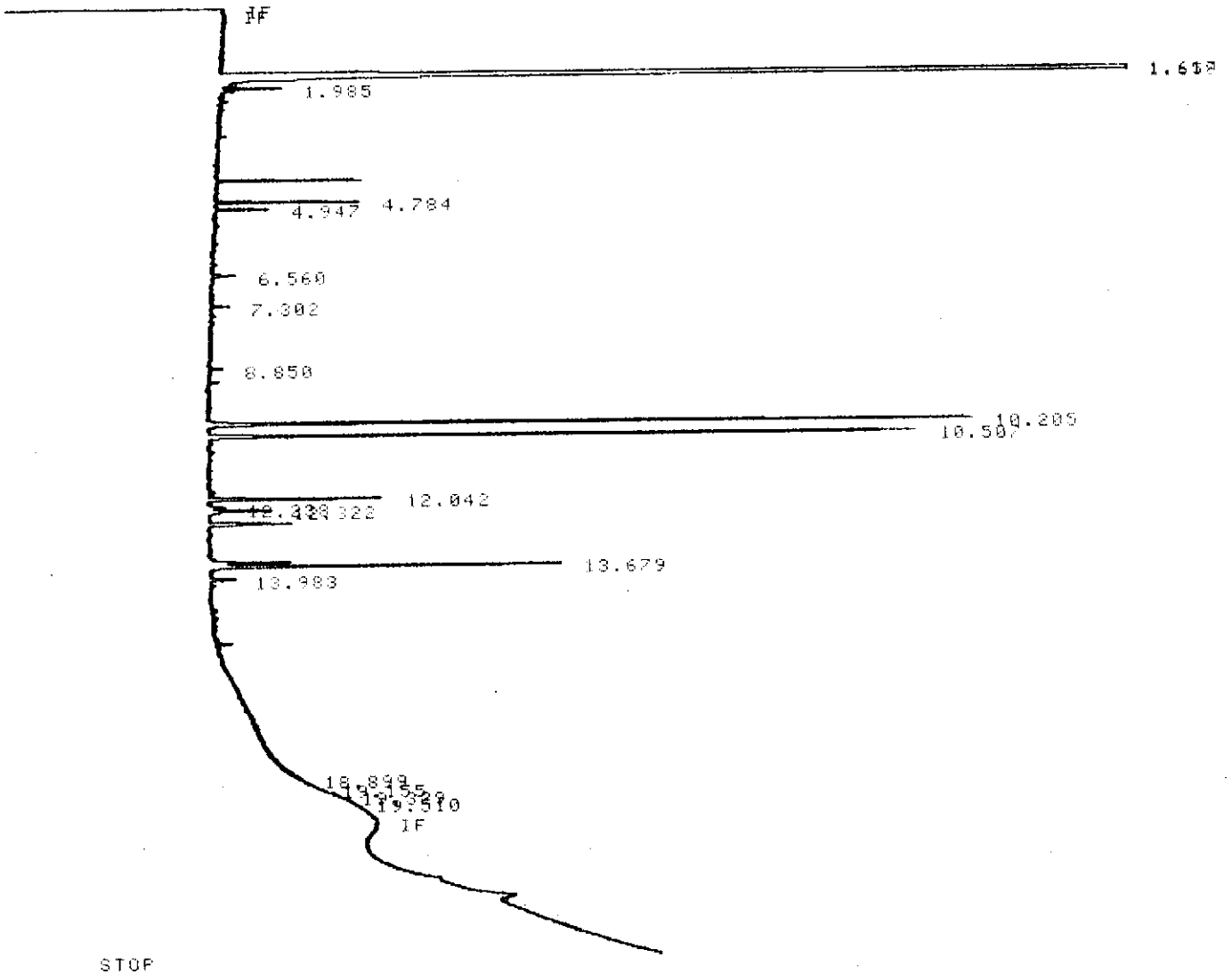


BOTTLE: 2 ID#: 1SAT 17-JUL-93 00:36:06

FILE DATA:F93716849

2305-3

RUN # 3 JUL 17, 1993 02:39:07
START



STOP

RUN # 3 JUL 17, 1993 02:39:07
START-No plot
END OF SIGNAL

#

Biolog™ Data
24 Hr. Time Point

the **MiL, inc.**

Interpretation of the Carbon Source Pattern Recognition Data using a Multi-well Plate Method (Biolog Microplate System™) -- Contact Us: 314-878-6626 or Fax 314-878-9376

The MiL, inc. utilizes the Biolog Microplate System™ for microbial identification and characterization by carbon source pattern recognition. The microplate technique allows for characterization by 95 different tests yielding a potential of 4×10^{28} patterns generated from a single microplate. Each strain of micro-organism yields a distinct pattern and the different species of bacteria will give distinct families of patterns that can be recognized by the Biolog MicroLog™ Software. Microplates are available for Gram Negative (GN), Gram Positive (GP) and E.coli/Salmonella (ES) Analysis. Custom analysis are performed by the MiL, inc. and can be particularly useful in biodegradation or additional selective media development studies. Additional interpretative instructions are provided with such custom services.

To characterize a given microbial isolate the organism is streaked onto a nutrient medium that will support vigorous growth (for example, Nutrient agar, tryptic soy agar or tryptic soy agar supplemented with 5% sheep red blood cells). The more fastidious organisms may require chocolate or BHI agar for growth, whereas many environmental organisms grow better in more minimal media. The culture plates are incubated at 28 to 35° C for 4-18 hours (environmental isolates are typically grown at 28° C with thermophyllic strains often incubated at 50° C). After incubation colonies are removed from the culture plate using a saline moistened cotton swab. A suspension of uniform turbidity is prepared in 0.85% saline by comparison with a known turbidimetric standard. The bacterial suspension is inoculated into the microplate wells (150 µl per well) and the plate covered with the microplate lid. The covered plates are incubated at 28-35° C for 4 hours or overnight (16-24 hours). Should other diluents be requested or used, such changes will be noted.

Microplates may be read at 4 or 24 hours because some organisms give results at 4 hours and may become unreadable at 24 hours. The plates are read in our microplate reader at 590 nm. The absorbance or transmittance (i.e. color) in each well is referenced against the negative control well (A-1) so that any purple color recorded above this control level is read as a positive utilization of the given carbon source. The data are reported as the percent color change as compared to well A-1 utilizing the following formula.

$$\text{Percent color change} = \frac{OD590(\text{well}) - OD590(\text{well A-1})}{OD590(\text{well A-1})}$$

Positive results will be reported in brackets ([ ]), generally if the Percent Color Change is equal to or greater than 40, the reaction in the given well is considered to be "positive" however the parameters for each substrate may be different and a positive test below a value of 40 is possible. The reported results will be otherwise considered negative. The computer algorithms employed provide standardization of settings ensuring repeatability and avoidance of operator bias. Names of all carbon source substrates employed are provided in the results regardless of response.

We, the MiL's microbiologists, find these methods to be excellent for strain characterization or differentiation between isolates. However, we urge caution in acceptance of the putative identifications to the commercial database and suggest these tests be conducted in conjunction with other methods (we recommend our GC-FAME analyses) when strain identifications are sought.

GN MicroPlate™

A1 water	A2 α-cyclodextrin	A3 dextrin	A4 glycogen	A5 tween 40	A6 tween 80	A7 N-acetyl-D-galactosamine	A8 N-acetyl-D-glucosamine	A9 adonitol	A10 L-arabinose	A11 D-arabitol	A12 cellobiose
B1 i-erythritol	B2 D-fructose	B3 L-fucose	B4 D-galactose	B5 gentiobiose	B6 α-D-glucose	B7 m-inositol	B8 α-D-lactose	B9 lactulose	B10 maltose	B11 D-mannitol	B12 D-mannose
C1 D-melibiose	C2 β-methyl D-glucoside	C3 D-psicose	C4 D-raffinose	C5 L-rhamnose	C6 D-sorbitol	C7 sucrose	C8 D-trehalose	C9 turanose	C10 xylitol	C11 methyl pyruvate	C12 mono-methyl succinate
D1 acetic acid	D2 cis-aconitic acid	D3 citric acid	D4 formic acid	D5 D-galactonic acid lactone	D6 D-galacturonic acid	D7 D-gluconic acid	D8 D-glucosaminic acid	D9 D-glucuronic acid	D10 α-hydroxybutyric acid	D11 β-hydroxybutyric acid	D12 γ-hydroxybutyric acid
E1 p-hydroxy phenylacetic acid	E2 itaconic acid	E3 α-keto butyric acid	E4 α-keto glutaric acid	E5 α-keto valeric acid	E6 D,L-lactic acid	E7 malonic acid	E8 propionic acid	E9 quinic acid	E10 D-saccharic acid	E11 sebacic acid	E12 succinic acid
F1 bromo succinic acid	F2 succinamic acid	F3 glucuronamide	F4 alaninamide	F5 D-alanine	F6 L-alanine	F7 L-alanyl-glycine	F8 L-asparagine	F9 L-aspartic acid	F10 L-glutamic acid	F11 glycyl-L-aspartic acid	F12 glycyl-L-glutamic acid
G1 L-histidine	G2 hydroxy L-proline	G3 L-leucine	G4 L-ornithine	G5 L-phenylalanine	G6 L-proline	G7 L-pyroglutamic acid	G8 D-serine	G9 L-serine	G10 L-threonine	G11 D,L-carnitine	G12 γ-amino butyric acid
H1 urocanic acid	H2 inosine	H3 uridine	H4 thymidine	H5 phenyl ethylamine	H6 putrescine	H7 2-amino ethanol	H8 2,3-butanediol	H9 glycerol	H10 D,L-α-glycerol phosphate	H11 glucose-1-phosphate	H12 glucose-6-phosphate

GP MicroPlate™

A1 water	A2 α-cyclodextrin	A3 β-cyclodextrin	A4 dextrin	A5 glycogen	A6 inulin	A7 mannan	A8 tween 40	A9 tween 80	A10 N-acetyl-D-glucosamine	A11 N-acetyl-D-mannosamine	A12 amygdalin
B1 L-arabinose	B2 D-arabitol	B3 arbutin	B4 cellobiose	B5 D-fructose	B6 L-fucose	B7 D-galactose	B8 D-galacturonic acid	B9 gentiobiose	B10 D-gluconic acid	B11 α-D-glucose	B12 m-inositol
C1 α-D-lactose	C2 lactulose	C3 maltose	C4 maltotriose	C5 D-mannitol	C6 D-mannose	C7 D-melezitose	C8 D-melibiose	C9 α-methyl D-galactoside	C10 β-methyl D-galactoside	C11 3-methyl glucose	C12 α-methyl D-glucoside
D1 β-methyl D-glucoside	D2 α-methyl D-mannoside	D3 palatinose	D4 D-psicose	D5 D-raffinose	D6 L-rhamnose	D7 D-ribose	D8 salicin	D9 sedoheptulosan	D10 D-sorbitol	D11 stachyose	D12 sucrose
E1 D-tagatose	E2 D-trehalose	E3 turanose	E4 xylitol	E5 D-xylose	E6 acetic acid	E7 α-hydroxybutyric acid	E8 β-hydroxybutyric acid	E9 γ-hydroxybutyric acid	E10 p-hydroxyphenyl acetic acid	E11 α-keto glutaric acid	E12 α-keto valeric acid
F1 lactamide	F2 D-lactic acid methyl ester	F3 L-lactic acid	F4 D-malic acid	F5 L-malic acid	F6 methyl pyruvate	F7 mono-methyl succinate	F8 propionic acid	F9 pyruvic acid	F10 succinamic acid	F11 succinic acid	F12 N-acetyl L-glutamic acid
G1 alaninamide	G2 D-alanine	G3 L-alanine	G4 L-alanyl-glycine	G5 L-asparagine	G6 L-glutamic acid	G7 glycyl-L-glutamic acid	G8 L-pyroglutamic acid	G9 L-serine	G10 putrescine	G11 2, 3-butanediol	G12 glycerol
H1 adenosine	H2 2'-deoxy adenosine	H3 inosine	H4 thymidine	H5 uridine	H6 adenosine-5'-monophosphate	H7 thymidine-5'-monophosphate	H8 uridine-5'-monophosphate	H9 fructose-6-phosphate	H10 glucose-1-phosphate	H11 glucose-6-phosphate	H12 D-L-α-glycerol phosphate

MICROLOG (TM) 2, RELEASE 3.00

Date : 16/07/93
Hour : 24
Plate Type : GP
Plate # : 1
Strain Name : 2305-1
Strain # : W.L00
Other Info : ?
Input Mode : Reader : BIOLOG MICROSTATION
Data Base : MicroLog GP

POSITIVE/NEGATIVE DATA
XXX = percent change in optical density versus A1 control well
<XXX> = positive, (XXX) = borderline, XXX = negative
-XXX = percent change negative
XXX+ = data negative or borderline, "=>" ID choice positive > 90% of time
XXX- = data positive or borderline, "=>" ID choice positive < 10% of time

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	10	34	<190>	<205>	22	-8	36	-4	-6	20	-33
B	-23	-11	-11	33	<222>	11	4	35	38	< 94>	<283>	-25
C	-3	8	<258>	<231>	13	(58)	<210>	-5	9	-9	48	-33
D	24	13	42	<146>	0	16	(82)	(76)	-15	19	14	< 92>
E	8	<205>	<224>	-2	30	15	(54)	-2	-17	-4	21	-17
F	46	<274>	<184>	10	2	<254>	1	-2	<175>	7	15	-33
G	17	<171>	<195>	<168>	24	13	21	4	<284>	35	(50)	<272>
H	-9	-1	-4	16	23	-3	5	21	-1	23	32	-10

BIO-NUMBER : 0600-0206-1440-0461-3000-3110-3411-0000

SPECIES IDENTIFICATION : STAPHYLOCOCCUS HOMINIS

	CLOSEST SPECIES :	SIM	DIST	AVG	MA
X					
=> 1)	STAPHYLOCOCCUS HOMINIS	0.994	0.510	0.750	2.7
37					
2)	STAPHYLOCOCCUS AURICULARIS	0.000	3.260	1.000	3.0
63					
3)	STAPHYLOCOCCUS HAEMOLYTICUS	0.000	3.287	1.375	4.3
75					
4)	STAPHYLOCOCCUS COHNII	0.000	4.462	0.938	5.0
25					
5)	STAPHYLOCOCCUS CAPITIS SS UREOLYTICUS	0.000	5.324	1.000	2.3
13					
6)	STAPHYLOCOCCUS EQUORUM	0.000	5.964	1.188	2.4
19					
7)	STAPHYLOCOCCUS ARLETTAE	0.000	6.685	0.656	6.1
31					
8)	ROTHIA DENTROCARIOSA	0.000	6.735	0.438	1.3
50					
9)	STAPHYLOCOCCUS WARNERI	0.000	7.107	0.438	3.4
56					
10)	STAPHYLOCOCCUS SAPROPHYTICUS	0.000	7.459	0.729	1.8
94					
	other 1	-----	-----	-----	---

MICROLOG GP DATA BASE Release 3.00

ABBREVIATED NAME : STA.HOM
FULL NAME : STAPHYLOCOCCUS HOMINIS
DATA BASE CATEGORY : ENVIRONMENTAL

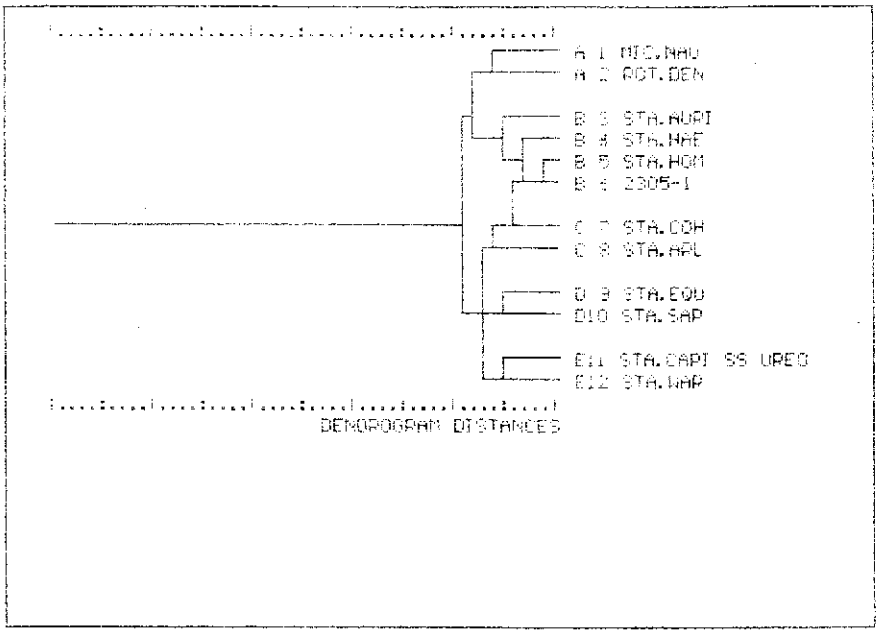
4 HOUR DATA :

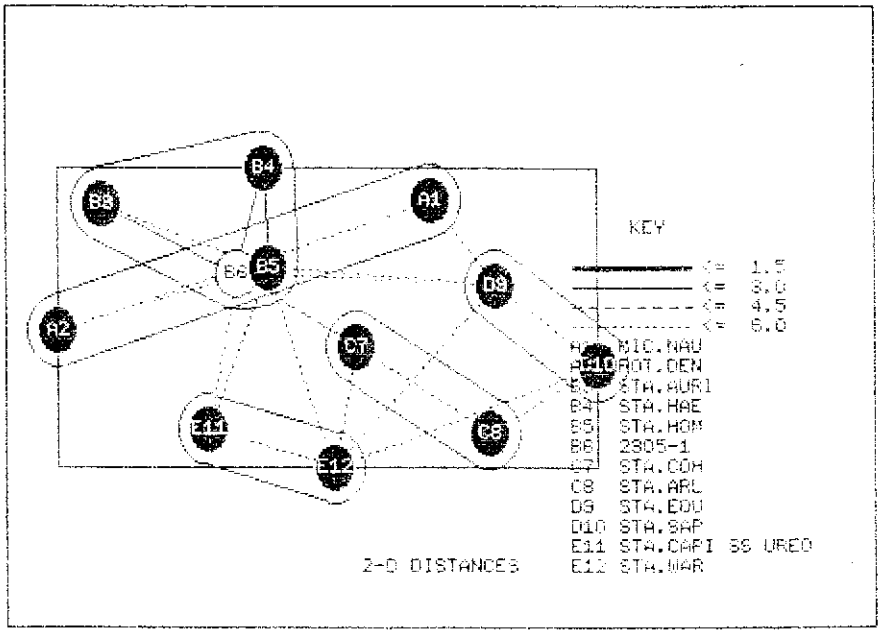
	1	2	3	4	5	6	7	8	9	10	11	12
A	0	0	0	100	83	0	0	0	0	20	0	0
B	0	13	0	0	100	0	0	0	0	30	100	0
C	20	20	100	100	0	38	56	0	0	0	52	0
D	0	0	0	92	0	0	56	47	0	0	0	100
E	0	87	100	0	63	0	53	0	0	0	0	0
F	60	100	92	0	0	100	0	0	100	0	0	0
G	0	83	83	43	0	0	0	0	75	0	37	90
H	0	0	0	0	0	0	0	0	31	0	0	0

24 HOUR DATA :

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	15	0	100	92	0	0	13	0	54	0	13
B	0	13	0	6	100	0	13	0	0	42	100	0
C	40	25	100	100	0	38	56	0	0	0	52	0
D	0	0	6	92	0	0	56	63	0	15	0	100
E	0	92	100	6	63	0	54	0	0	0	0	10
F	60	100	92	0	0	100	0	0	100	0	0	21
G	0	83	83	71	0	21	0	13	75	0	40	92
H	10	23	0	10	10	0	0	0	31	0	0	13

CLOSEST SPECIES :
1) 3.244 : STAPHYLOCOCCUS HAEMOLYTICUS
2) 4.949 : STAPHYLOCOCCUS EQUORUM
3) 5.897 : STAPHYLOCOCCUS AURICULARIS
4) 5.960 : STAPHYLOCOCCUS CAPITIS SS UREOLYTICUS
5) 6.171 : ROTHIA DENTROCARIOSA


A 1 MIC.NAU
A 2 ROT.DEN
B 3 STA.AURI
B 4 STA.HAE
B 5 STA.HOM
B 6 2305-1
C 7 STA.COH
C 8 STA.ARL
D 9 STA.EQU
D10 STA.SAP
E11 STA.CAPI SS UREO
E12 STA.WAR
DENDROGRAM DISTANCES


B4
B3
A1
B6
B5
D9
A2
D7
A10
E11
C8
E12
KEY
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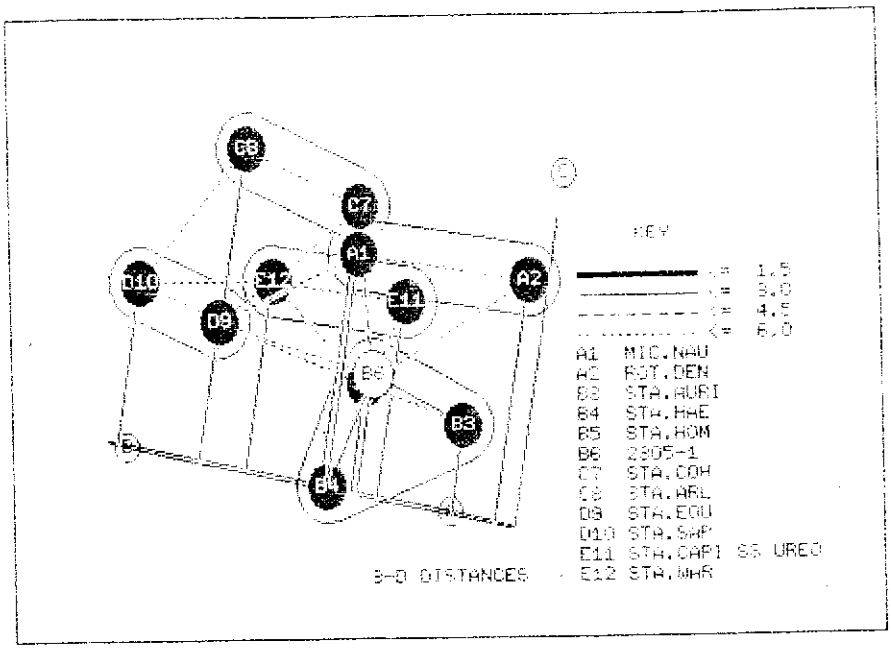
<= 3.0
<= 4.5
<= 6.0
MIC.NAU
ROT.DEN
STA.AURI
STA.HAE
STA.HOM
2305-1
STA.COH
STA.ARL
STA.EQU
STA.SAP
E11 STA.CAPI SS UREO
E12 STA.WAR
2-D DISTANCES


C6
C7
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A2
D10
E12
E11
D9
B5
B3
B4
KEY
<= 1.5
<= 3.0
<= 4.5
<= 6.0
A1 MIC.NAU
A2 RST.DEN
B3 STA.AURI
B4 STA.HAE
B5 STA.HOM
B6 2805-1
C7 STA.COH
C8 STA.ABL
D9 STA.EQU
D10 STA.SWP
E11 STA.CAPI SS UREO
E12 STA.WHR
3-D DISTANCES

MICROLOG (TM) 2, RELEASE 3.00

Date : 16/07/93
Hour : 24
Plate Type : GP
Plate # : 2
Strain Name : 2305-2
Strain # : W.L00
Other Info : ?
Input Mode : Reader : BIOLOG MICROSTATION
Data Base : MicroLog GP

POSITIVE/NEGATIVE DATA
XXX = percent change in optical density versus A1 control well
<XXX> = positive, (XXX) = borderline, XXX = negative
-XXX = percent change negative
XXX+ = data negative or borderline, "=>" ID choice positive > 90% of time
XXX- = data positive or borderline, "=>" ID choice positive < 10% of time

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	0	-2	-4	-2	-1	1	<409>	<285>	-16	3	9
B	-3	-3	5	-3	5	-10	2	-3	-21	5	5	4
C	-6	-4	-3	-5	-2	-7	-2	-3	-21	-11	6	7
D	-1	0	1	3	3	-7	8	-2	4	-17	5	8
E	8	0	4	2	25	<553>	<673>	<707>	<648>	17	<657-	<434-
F	(49)	<779-	<807>	<671-	<771>	<776>	<710>	<509-	<740>	<732>	<761>	<762>
G	<286>	<321-	<243>	<237-	<791>	<790>	<436>	<714>	<610>	1	(36-	25
H	23	<507-	<656>	16	19	13	15	17	<126-	9	26	25

BIO-NUMBER : 0030-0000-0000-0000-0173-3777-7770-3010

NO IDENTIFICATION

	CLOSEST SPECIES :	SIM	DIST	AVG	MA
X => 87	1) CDC GROUP D-2	0.296	9.994	0.375	1.5
75	2) CDC GROUP B-1 / B-3	0.120	10.251	0.333	3.1
19	3) MICROCOCCUS DIVERSUS	0.000	12.674	0.063	0.1
06	4) BACILLUS SPHAERICUS	0.000	13.105	2.188	4.0
38	5) CORYNEBACTERIUM PSEUDODIPHTHERITICUM	0.000	14.958	1.563	8.4
56	6) BACILLUS BADIUS	0.000	15.260	0.563	1.3
13	7) RHODOCOCCUS EQUI	0.000	16.837	0.250	2.3
19	8) RHODOCOCCUS RHODOCHROUS	0.000	18.934	0.063	0.1
38	9) CORYNEBACTERIUM VARIABILIS	0.000	17.007	0.375	3.3
69	10) RHODOCOCCUS ERYTHROPOLIS	0.000	17.085	0.781	1.0
--	other :	-----	-----	-----	---

MICROLOG GP DATA BASE Release 3.00

ABBREVIATED NAME : CDC D-2
FULL NAME   : CDC GROUP D-2
DATA BASE CATEGORY : ENVIRONMENTAL

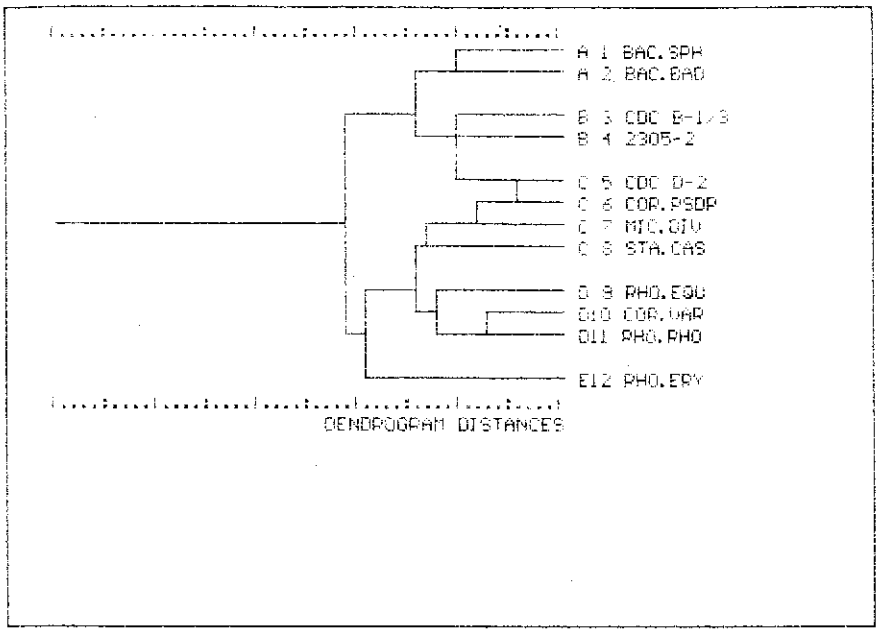
4 HOUR DATA :

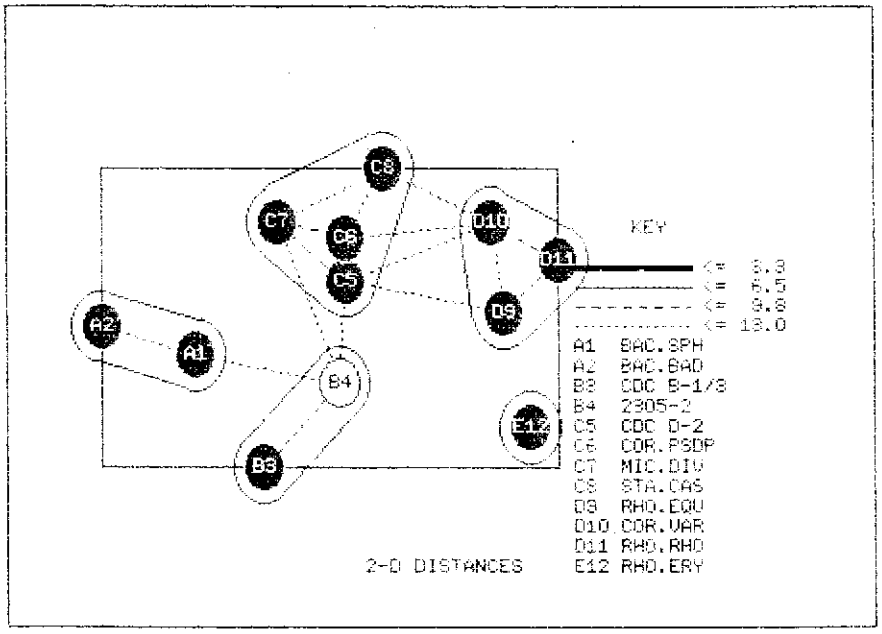
	1	2	3	4	5	6	7	8	9	10	11	12
A	0	8	0	0	0	0	58	50	50	0	0	0
B	25	0	0	0	0	50	0	0	0	0	17	0
C	0	0	0	0	0	17	0	0	0	0	17	0
D	0	0	0	0	0	42	75	8	0	0	0	0
E	17	0	0	17	57	100	58	33	17	0	8	0
F	58	0	58	0	100	100	17	8	100	100	50	100
G	42	0	17	0	100	100	33	100	67	0	0	8
H	50	0	0	0	50	0	0	25	0	0	0	0

24 HOUR DATA :

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	8	0	0	0	0	58	50	50	0	0	0
B	25	0	0	0	0	50	0	0	0	0	25	0
C	0	0	0	0	0	17	0	0	0	0	25	0
D	0	0	0	0	0	42	75	8	0	0	0	0
E	17	0	0	17	57	100	58	33	17	0	8	0
F	58	0	58	0	100	100	50	8	100	100	67	100
G	42	0	25	0	100	100	33	100	67	0	0	8
H	50	0	42	0	50	0	0	25	0	0	0	0

CLOSEST SPECIES :
1) 4.022 : CORYNEBACTERIUM PSEUDODIPHTHERITICUM
2) 8.129 : CDC GROUP F-1 SUBGROUP B
3) 8.308 : MICROCOCCUS DIVERSUS
4) 10.168 : CORYNEBACTERIUM CYSTITIDIS
5) 11.044 : BACILLUS BREVIS


A 1 BAC.SPH
A 2 BAC.BAD
B 3 CDC B-1/3
B 4 2305-2
C 5 CDC D-2
C 6 COR.PSDP
C 7 MIC.DIV
C 8 STA.CAS
D 9 RHO.EQU
D10 COR.VAR
D11 RHO.RHO
E12 RHO.ERY
DENDROGRAM DISTANCES


C8
C7
C6
C5
D10
D11
D9
A2
A1
B4
B3
E12
KEY
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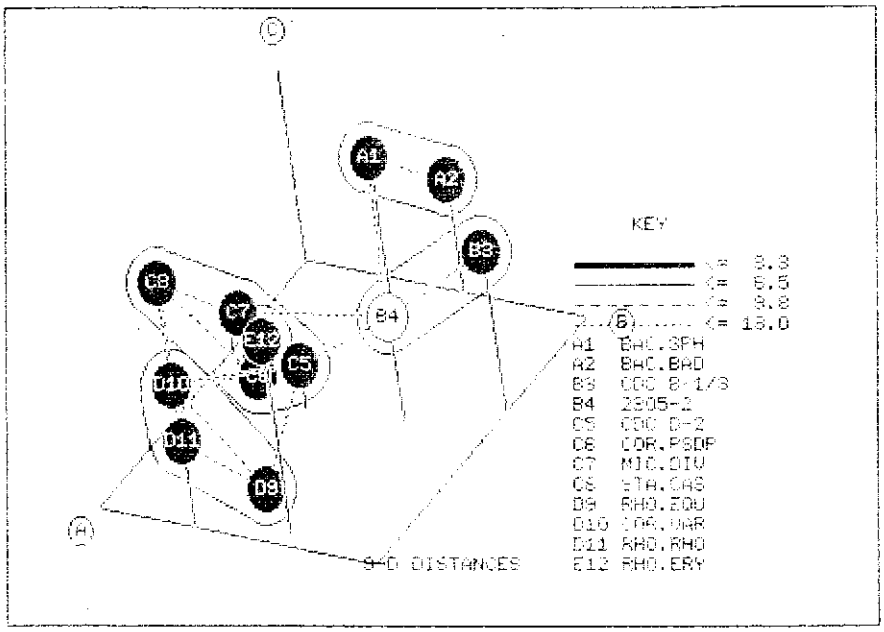
<= 6.5
<= 9.8
<= 13.0
A1 BAC.SPH
A2 BAC.BAD
B3 CDC B-1/3
B4 2305-2
C5 CDC D-2
C6 COR.PSDP
C7 MIC.DIV
C8 STA.CAS
D9 RHO.EQU
D10 COR.VAR
D11 RHO.RHO
E12 RHO.ERY
2-D DISTANCES


C
A1
A2
B3
B4
C8
C7
E12
C5
C6
D10
D11
D9
A
B
KEY
<= 3.3
<= 6.5
<= 9.8
<= 13.0
A1 BAC.SPH
A2 BAC.BAD
B3 COC 8-1/3
B4 2905-2
C5 COC 8-2
C6 COR.PSDP
C7 MIC.DIV
C8 STA.CAS
D9 RHO.EQU
D10 CPS.VAR
D11 RHO.RHO
E12 RHO.ERY
S-D DISTANCES

MICROLOG (TM) 2, RELEASE 3.00

Date : 18/07/93
Hour : 24
Plate Type : GN
Plate # : 1
Strain Name : 2305-3
Strain # : W.LOG
Other Info : ?
Input Mode : Reader : BIOLOG MICROSTATION
Data Base : MicroLog GN

POSITIVE/NEGATIVE DATA
XXX = percent change in optical density versus A1 control well
<XXX> = positive, (XXX) = borderline, XXX = negative
-XXX = percent change negative
XXX+ = data negative or borderline, "=>" ID choice positive > 90% of time
XXX- = data positive or borderline, "=>" ID choice positive < 10% of time

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	-10	-12	-8	<323>	<193>	-18	-13	-10	-6	-10	-5
B	-8	-8	-16	-12	-13	-16	-12	-14	-12	-14	-12	-11
C	-9	-11	-12	-11	-13	-11	-15	-13	-13	-16	<544>	<505>
D	<359>	<295>	-1	<306>	-17	-12	<122>	-10	-7	<300>	<501>	(48>
E	(83>	-10	<264>	<310>	-7+	<566>	-16	<370>	-6	-7	<317>	<567>
F	<407>	<561>	-14	(20+	(38+	(57>	(64>	<444>	<479>	<540>	-10	-3
G	(58>	-9	(95>	-7	(48>	<206>	<526>	-6	(24>	<143>	-7	-8
H	<426>	<375>	-4	-7	-8	-9	-10	(10-	3	0	-5	-7

BIO-NUMBER : 0300-0000-0003-6447-5523-6374-5344-6000

SPECIES IDENTIFICATION : ALCALIGENES FAECALIS TYPE II

	CLOSEST SPECIES :	SIM.	DIST.	AVG.	MA
=> 1)	ALCALIGENES FAECALIS TYPE II	0.765	2.432	1.938	5.0
94					
2)	COMAMONAS ACIDOVORANS	0.033	3.496	2.250	6.8
63					
3)	COMAMONAS TESTOSTERONI	0.004	4.203	1.688	5.1
81					
4)	ACINETOBACTER SPECIES GROUP 83	0.000	5.452	0.234	4.6
50					
5)	ALCALIGENES DENITRIFICANS/PIECHAUDII	0.000	6.495	0.857	3.8
25					
6)	ALCALIGENES FAECALIS SS FAECALIS	0.000	6.873	0.388	2.9
31					
7)	COMAMONAS TERRIGENA	0.000	7.076	1.938	8.3
44					
8)	PSEUDOMONAS PSEUDOALCALIGENES	0.000	7.176	1.750	7.2
13					
9)	CDC GROUP IVC-2	0.000	7.338	0.101	1.6
44					
10)	ACINETOBACTER GENOSPECIES 11	0.000	7.467	1.313	3.4
59					
other :		-----	-----	-----	---
--					

MICROLOG GN DATA BASE Release 3.00

ABBREVIATED NAME : ALC.FAE TYPE II
FULL NAME : ALCALIGENES FAECALIS TYPE II
DATA BASE CATEGORY : CLINICAL

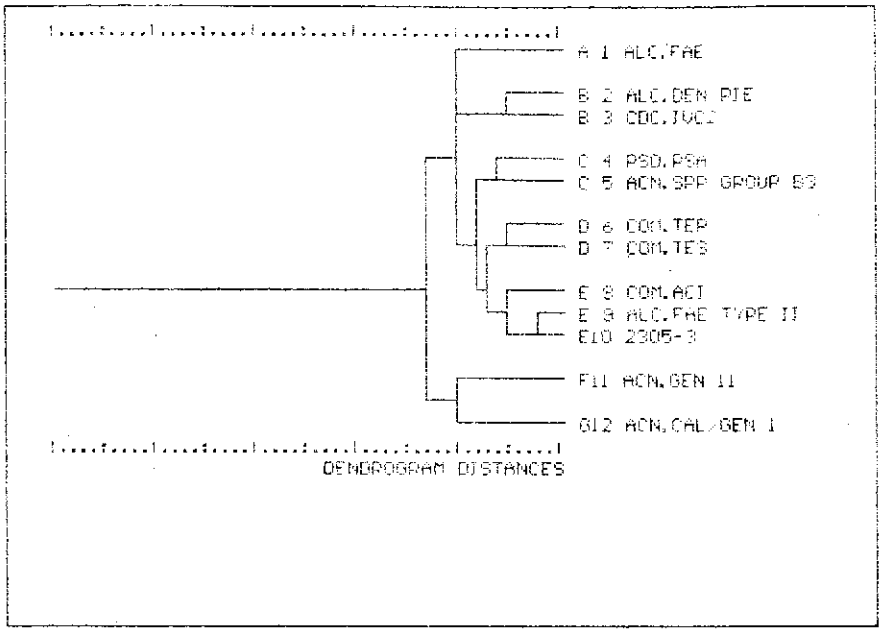
4 HOUR DATA :

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	16	16	52	52	52	0	8	0	0	0	0
B	20	0	0	0	0	0	0	0	0	0	0	0
C	0	16	8	0	8	0	0	0	0	0	76	76
D	92	44	28	60	0	8	28	8	16	76	100	0
E	52	28	92	76	64	100	28	80	24	0	40	92
F	92	92	16	48	84	76	16	92	84	100	12	40
G	36	16	84	44	88	88	56	44	60	24	0	28
H	52	36	12	0	24	12	0	12	8	0	0	0

24 HOUR DATA :

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	0	20	16	88	88	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	100	100
D	100	88	52	64	0	20	44	0	20	100	100	24
E	80	56	100	68	100	100	20	100	36	0	44	100
F	100	100	20	100	100	100	32	100	92	100	0	16
G	60	0	92	40	100	100	60	68	80	72	0	40
H	64	32	8	0	36	8	0	0	40	8	0	0

CLOSEST SPECIES :
1) 4.115 : ALCALIGENES FAECALIS SS FAECALIS
2) 4.827 : BORDETELLA BRONCHISEPTICA
3) 5.161 : AQUASPIRILLUM PUTRIDICONCHYLIUM
4) 5.247 : ACINETOBACTER SPECIES GROUP B3
5) 5.450 : ALCALIGENES DENITRIFICANS/PIECHAUDII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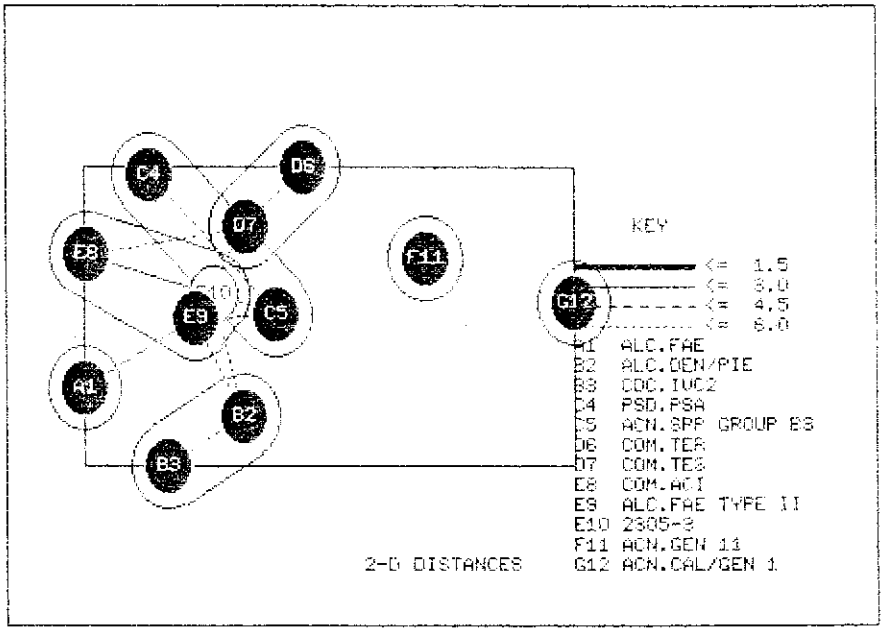
B 2 ALC.DEN PIE
B 3 CDC.IVC2
C 4 PSD.PSA
C 5 ACN.SPP GROUP B3
D 6 COM.TER
D 7 COM.TES
E 8 COM.ACI
E 9 ALC.FAE TYPE II
E10 2305-3
F11 ACN.GEN 11
G12 ACN.CAL/GEN 1
DENDROGRAM DISTANCES


C4
D6
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E10
E9
C5
A1
B2
B3
F11
G12
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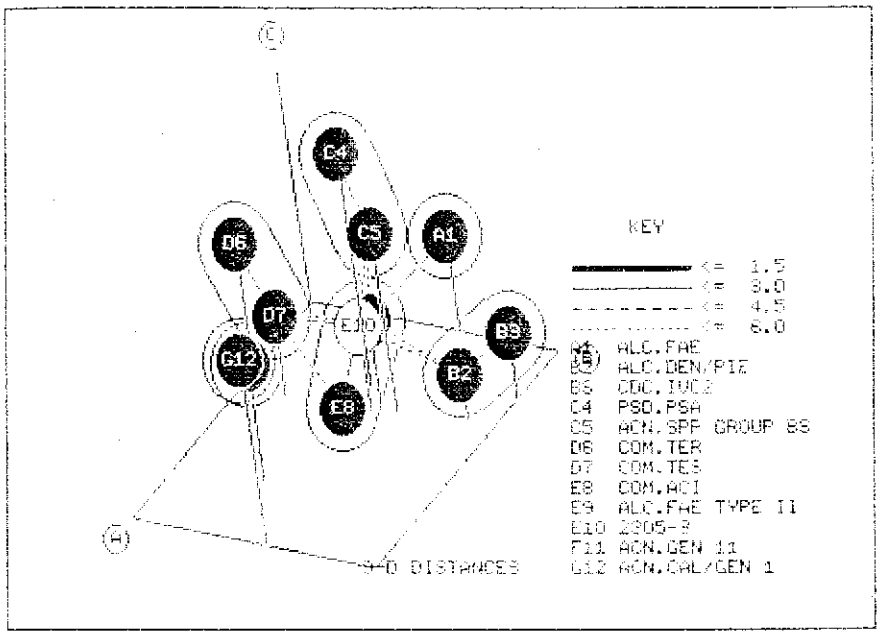
<= 3.0
<= 4.5
<= 6.0
A1 ALC.FAE
B2 ALC.DEN/PIE
B3 CDC.IVC2
C4 PSD.PSA
C5 ACN.SPP GROUP B3
D6 COM.TER
D7 COM.TES
E8 COM.ACI
E9 ALC.FAE TYPE II
E10 2305-3
F11 ACN.GEN 11
G12 ACN.CAL/GEN 1
2-D DISTANCES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C5
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D6
D7
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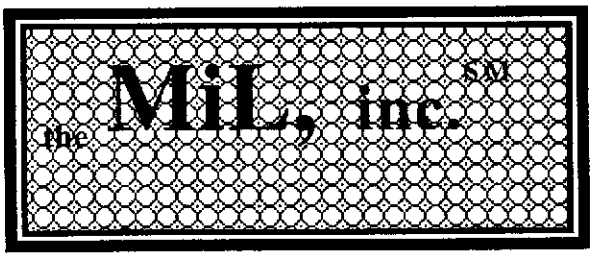
B3
G12
B2
E8
KEY
<= 1.5
<= 3.0
<= 4.5
<= 6.0
A1 ALC.FAE
B2 ALC.DEN/PIZ
B3 CDC.IVC2
C4 PSD.PSA
C5 ACN.SPF GROUP 8S
D6 COM.TER
D7 COM.TES
E8 COM.ACI
E9 ALC.FAE TYPE II
E10 2305-3
F11 ACN.GEN 11
G12 ACN.CAL/GEN 1

Warranty and Limits of Liability

In accepting analytical work, we warrant the accuracy of test results under the conditions employed in the laboratory. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied. We disclaim any other warranties, expressed or implied, including a Warranty of Fitness for Particular Purpose and Warranty of Merchantability. We accept no legal responsibility for the purposes for which the client uses the test results.



Microbe Inotech Laboratories, inc.
1840 Craig Road
St. Louis, MO
63146-4712
U.S.A.
Telephone: (314) 878-6626
(800) 688-9144
FAX: (314) 878-9376
E-mail: Bruce C. Hemming
76177.204@compuserve.com

Total Heterotrophic Plate Count Analysis & Microbial Identification

Report Prepared For:

Environmental & Technical Services
ATTN: Walter Loo, R.G., C.E.G.
2081 15th Street
San Francisco, CA 94114

Client Phone (415) 861-0810
Client Fax (415) 861-3269

Report No. MILB—2312

PO Number none

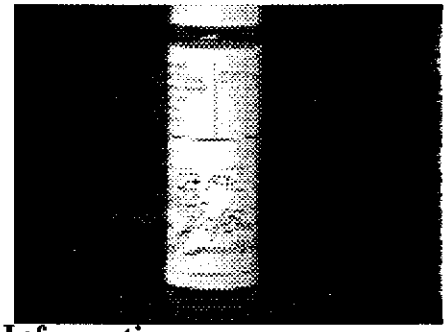
July 19, 1993

Summary Report of Analysis
[No. 2312]

Environmental & Technical Services
ATTN: Walter Loo, R.G., C.E.G.
2081 15th Street
San Francisco, CA 94114

July 19, 1993

Description:
Wed, Jul 14, 1993 - 1:00 PM : Received by FEDEX one 100 ml water sample labeled CHIC, MW4 taken 7-13-93 at 4:00 pm Analyses requested are Total Plate Count and Bacterial ID. MiL #2312 sac. pix



Chain of Custody Record Information
Purchase Order No.—none
MiL, Inc. REPORT & Invoice No.: MILB-2312

Processing:
[Standard Bacterial Plate Count - serial dilution method and direct spread plate count] Within 20 minutes of reception aliquots from each of the samples was checked for weight and then serially diluted. Each dilution was sterilely transferred in a laminar flow biological cabinet and placed on previously prepared and dried trypticase soy broth agar (TSBA) medium in Petri plates.
Observations for colony forming units (CFU) were made at 24 and 48 hrs. of incubation at 28°C for each sample. Colony differentiation was noted at 48 hrs.

Summary Final Results—Total Heterotrophic Plate Count:

DATA:	Direct Count: Colony Forming Units (CFU/ g) on TSBA Medium	
	24 Hrs.	48 Hrs.
Sample:		
CHIC-MW4	2.32×10^6	9.01×10^6

Distinct morphological Colony Types at 48 Hrs. in Sample
6

Percentages of Types In Sample:

Sample Strain	CHIC-MW4	Description
1	60%	large clear white & crusty
2	10%	small yellow
3	10%	small white
4	10%	rough, yellowish
5	5%	glossy center, rough edge, small yellowish
6	5%	fuzzy large yellow

Summary of GC-FAME/Biolog Analyses

Strain Name	Primary Identification by GC	Sim. Coef.	Dist Coef.	Primary ID by Biolog™	Plate Type	Sim. Coef	Dist. Coef
2312-1	*Pseudomonas stutzeri*	0.772	2.326	*Nearest neighbor: Pseudomonas stutzeri*	GN	0.23	13.644
2312-2	*Pseudomonas stutzeri*	0.713	2.659	*Pseudomonas alcaligenes A*	GN	0.904	1.591
2312-3	*Pseudomonas putida biotype B*	0.744	2.488	*Pseudomonas fluorescens B*	GN	0.889	1.307
2312-4	*Pseudomonas stutzeri*	0.311	4.941	*Pseudomonas stutzeri*	GN	0.51	8.193
2312-5	*Pseudomonas stutzeri*	0.666	2.912	*Nearest neighbor: 1) Vibrio mimicus 2)P. stutzeri*	GN	0.056	17.889 19.963
2312-6	*Pseudomonas aeruginosa*	0.799	2.168	*Pseudomonas aeruginosa*	GN	0.621	5.49

Note: P. stutzeri isolates shown are distinct strains as demonstrated by distinct metabolic profiles of the Biolog assay, colony morphologies, and significant differences in GCFAME indices.

GC-FAME & Biolog™ Processing:

Following isolation the strains were individually streaked out onto TSBA. The TSBA plates were processed after 24 hr incubation by [Method 1 - Standard GC-FAME]. The strains were examined against both the newly installed Aerobe (TSBA [rev. 3.70]) and Clinical Aerobe (CLIN [rev.3.70]) GC-FAME databases. Subsequently the strains were prepared for Biolog™ analysis by suspending them in sterile saline and loading the solutions into the appropriate microtiter plates (Gram negative or Gram positive). The plates were incubated for 24 hours and then examined against version 3.0 of the Biolog™ database using an automated microplate reader.

Similarity and Distance Coefficient

In order to create the database that we use to identify your organisms, thousands of species of bacteria had to be tested. In fact each species itself had to be tested hundreds of times to determine a set of characteristics unique to it. The species characteristics that are in our database are an "average" of the characteristics of hundres of tested bacteria of the same species. The Similarity and Distance Coefficient of your organism refers to the similarity and distance to the hypothetical 'mean' organism in the database. The database organism has a similarity coefficient of one and a distance of zero. So the closer your strain is to one and zero the more closely it matches the mean organism in the database.

A good match is one with a similarity coefficient greater than **.5** and a distance coefficient of less than **7.**

Thank you from the staff on project

Julie Milke - Laboratory Manager

Dr. Bruce C. Hemming - Operations Director

CALIB. 1 CALIBRATION STANDARD [AEROBE] 16-JUL-93 01:38:39 Area: 475088 % Named: 100
** GOOD PEAK MATCHING: PEAK POSITION MATCHING ERROR (RMS) IS 0.0019. **

CALIB. 1 CALIBRATION STANDARD [AEROBE] 17-JUL-93 02:08:52 Area: 484904 % Named: 100
** GOOD PEAK MATCHING: PEAK POSITION MATCHING ERROR (RMS) IS 0.0013. **

2 2312-1 [AEROBE] 17-JUL-93 03:09:29 Area: 160129 % Named: 100
TSBA [Rev 3.70] Pseudomonas . . . . . 0.772 (includes P. perfectomarina)
P. stutzeri . . . . . 0.772 (includes P. perfectomarina)
P. alcaligenes 0.479
P. mendocina 0.444
CLIN [Rev 3.70] Pseudomonas 0.709
P. stutzeri 0.709

3 2312-2 [AEROBE] 17-JUL-93 03:39:42 Area: 226680 % Named: 100
TSBA [Rev 3.70] Pseudomonas . . . . . 0.331 (includes P. perfectomarina)
P. stutzeri . . . . . 0.331 (includes P. perfectomarina)
CLIN [Rev 3.70] Pseudomonas 0.713
P. stutzeri 0.713

4 2312-3 [AEROBE] 17-JUL-93 04:09:57 Area: 94416 % Named: 100
TSBA [Rev 3.70] Pseudomonas . . . . . 0.633 (Pseudomonas aureofaciens)
P. chlororaphis . . . . . 0.633 (Pseudomonas aureofaciens)
CLIN [Rev 3.70] Pseudomonas 0.744
P. putida 0.744
P. p. biotype B 0.744
P. p. biotype A 0.664
P. fluorescens 0.695

5 2312-4 [AEROBE] 17-JUL-93 04:40:13 Area: 290112 % Named: 100
TSBA [Rev 3.70] Pseudomonas . . . . . 0.101 (includes P. perfectomarina)
P. stutzeri . . . . . 0.101 (includes P. perfectomarina)
P. mendocina 0.054
Neisseria 0.072
N. mucosa 0.072
CLIN [Rev 3.70] Pseudomonas 0.311
P. stutzeri 0.311

16-JUL-93 23:35:51

6 2312-5 [AEROBE] 17-JUL-93 05:10:33 Area: 212816 % Named: 100
TSBA [Rev 3.70] Pseudomonas . . . . . 0.289 (includes P. perfectomarina)
P. stutzeri . . . . . 0.289 (includes P. perfectomarina)
Neisseria 0.187
N. mucosa 0.187
CLIN [Rev 3.70] Pseudomonas 0.666
P. stutzeri 0.666

7 2312-6 [AEROBE] 17-JUL-93 05:40:47 Area: 265376 % Named: 99
TSBA [Rev 3.70] Pseudomonas 0.657
P. aeruginosa 0.657
CLIN [Rev 3.70] Pseudomonas 0.799
P. aeruginosa 0.799

ID: 1 CALIBRATION STANDARD Date of run: 17-JUL-93 02:08:52
Bottle: 1 CALIBRATION [AEROBE]

RT	Area	Ar/Ht	Respon	ECL	Name	%	Comment 1	Comment 2
1.670	137742208	0.023	. . .	7.043	SOLVENT PEAK	. . .	< min rt	
2.666	20648	0.024	1.211	9.000	9:0	5.15		
3.175	42296	0.026	1.144	10.000	10:0	9.97	Peak match -0.0012	
3.834	22384	0.029	1.093	11.000	11:0	5.04	Peak match -0.0016	
4.017	9048	0.030	1.086	11.155	10:0 2OH	2.02	Peak match 0.0026	
4.262	4672	0.031	1.076	11.420	10:0 3OH	1.04	Peak match 0.0014	
4.797	47072	0.032	1.055	12.000	12:0	10.23	Peak match -0.0009	
5.952	24096	0.035	1.028	13.000	13:0	5.18	Peak match 0.0002	
7.322	48896	0.039	1.008	14.000	14:0	10.15	Peak match -0.0002	
8.863	25000	0.042	0.991	15.000	15:0	5.18	Peak match -0.0016	
9.200	10640	0.044	0.988	15.203	14:0 2OH	2.17	Peak match 0.0018	
9.672	5296	0.044	0.984	15.487	Sum In Feature 3 . .	1.07	Peak match 0.0020	14:0 3OH/16:1 ISO I
10.524	50768	0.044	0.976	16.000	16:0	10.21	Peak match -0.0011	
12.252	26016	0.046	0.959	17.000	17:0	5.14	Peak match -0.0008	
12.662	11344	0.050	0.955	17.234	16:0 2OH	2.23	Peak match 0.0011	
14.085	52112	0.048	0.937	18.000	18:0	10.06	Peak match -0.0001	
15.753	26344	0.049	0.907	19.000	19:0	4.92	Peak match 0.0001	
17.477	58280	0.053	0.866	20.000	20:0	10.40		
19.155	16960	0.188	. . .	20.973	. . . . .	. . .	> max ar/ht	
19.334	17536	0.165	. . .	21.077	. . . . .	. . .	> max ar/ht	
19.625	25728	0.196	. . .	21.246	. . . . .	. . .	> max ar/ht	
*******	5296	. . .	. . .	. . .	SUMMED FEATURE 3 . .	1.07	12:0 ALDE ?	unknown 10.928
*******	. . . . .	. . .	. . .	. . .	. . . . .	. . .	16:1 ISO I/14:0 3OH	14:0 3OH/16:1 ISO I

Solvent Ar	Total Area	Named Area	% Named	Total Amnt	Nbr Ref	ECL Deviation	Ref ECL Shift
137742208	484904	484904	100.00	485552	0	. . . . .	. . . . .

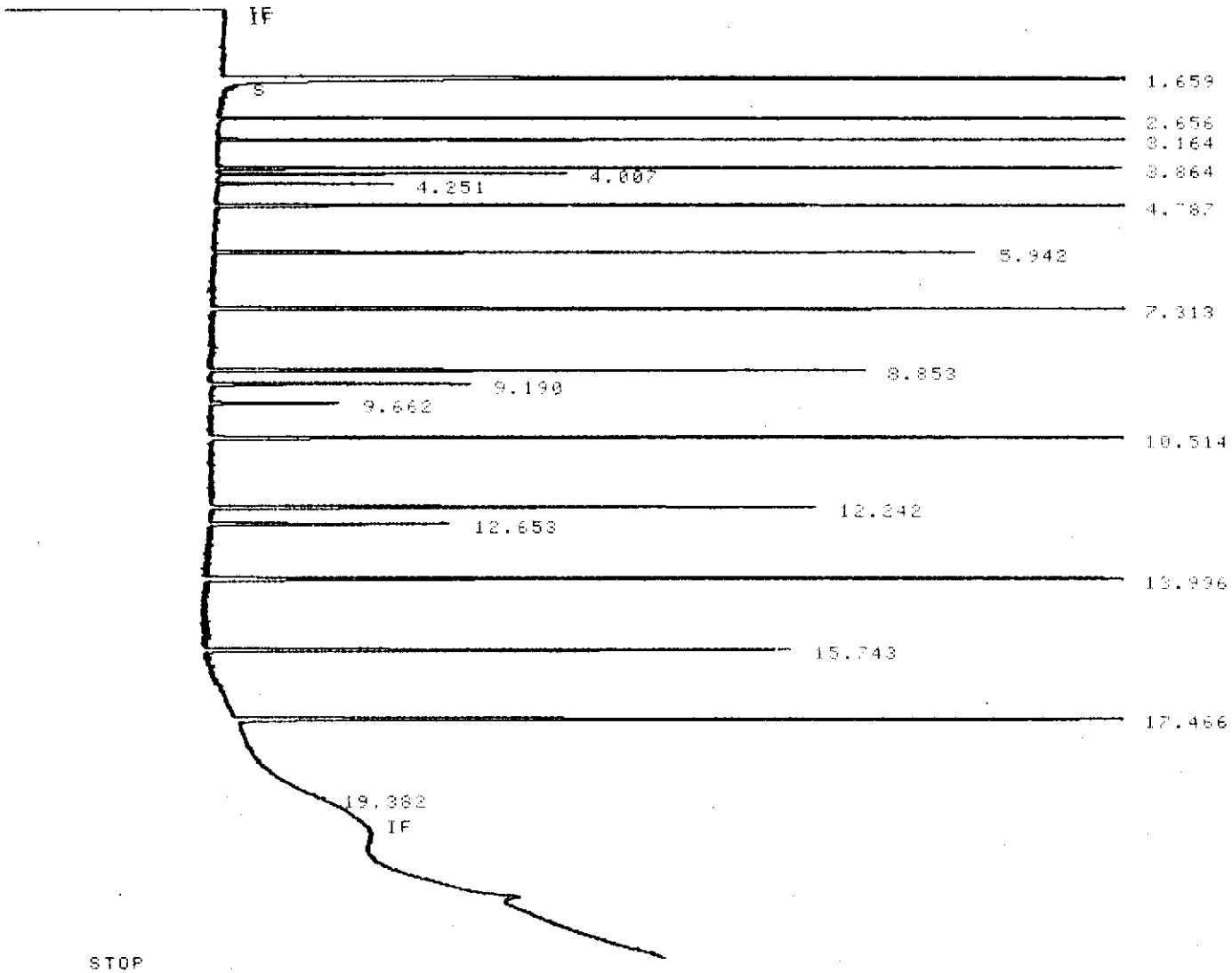
GOOD PEAK MATCHING: PEAK POSITION MATCHING ERROR (RMS) IS 0.0013.

BOTTLE: 1 ID#: 1SAT 17-JUL-93 00:05:47

FILE DATA:F93716849

CALIBRATION STANDARD

RUN # 2 JUL 17, 1993 02:08:52
START



STOP

RUN # 2 JUL 17, 1993 02:08:52
START-No plot
END OF SIGNAL

#

ID: 2 2312-1 Date of run: 17-JUL-93 03:09:29
Bottle: 3 SAMPLE [RERUBE]

RT	Area	Ar/Ht	Respon	ECL	Name	%	Comment 1	Comment 2
1.668	123767168	0.028	. . .	7.050	SOLVENT PEAK	. . .	< min rt	
3.170	624	0.029	1.144	9.999	10:0	0.46	ECL deviates -0.001	Reference -0.010
4.257	4160	0.032	1.076	11.423	10:0 3OH	2.87	ECL deviates -0.000	
4.792	10856	0.033	1.055	12.002	12:0	7.35	ECL deviates 0.002	Reference -0.005
6.568	4608	0.040	1.018	13.456	12:0 3OH	3.01	ECL deviates 0.001	
7.314	2000	0.040	1.008	14.000	14:0	1.29	ECL deviates -0.000	Reference -0.006
10.214	43720	0.047	0.979	15.818	16:1 w7c	27.45	ECL deviates 0.001	
10.515	32068	0.044	0.976	15.999	16:0	20.09	ECL deviates -0.001	Reference -0.005
12.050	1552	0.054	0.961	16.887	17:0 CYCLO	0.96	ECL deviates -0.001	Reference -0.005
13.688	59472	0.047	0.942	17.823	Sum In Feature 7 . .	35.92	ECL deviates 0.001	18:1 w7c/w9t/w12t
15.574	1040	0.054	0.911	18.901	19:0 CYCLO w8c . . .	0.61	ECL deviates 0.001	Reference -0.002
19.315	2952	0.212	. . .	21.068	. . . . .	. . .	> max rt	
*******	59472	. . . . .		. . .	SUMMED FEATURE 7 . .	35.92	18:1 w7c/w9t/w12t	18:1 w9c/w12t/w7c
*******	. . . . .			. . .	. . . . .	. . .	18:1 w12t/w9t/w7c	

Solvent Ar	Total Area	Named Area	% Named	Total Amnt	Nbr Ref	ECL Deviation	Ref ECL Shift
123767168	160120	160120	100.00	155943	6	0.001	0.006

TSBA [Rev 3.70] Pseudomonas . . . . . 0.772 (includes P. perfectomarina)
P. stutzeri . . . . . 0.772 (includes P. perfectomarina)
P. alcaligenes 0.479
P. mendocina 0.444
CLIN [Rev 3.70] Pseudomonas 0.709
P. stutzeri 0.709

Comparison with TSBA [Rev 3.70]: Pseudomonas-stutzeri(includes P. perfectomarina) Distance: 2.326

```
                    0   5   10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90  95  100
                    .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
10:0. . . . . *--   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
10:0 3OH. . . . .   *-. .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
12:0. . . . . .     . x+-.  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
12:0 3OH. . . . .   x+. .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
14:0. . . . . -*    .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
16:1 w7c. . . . .   .   .   .   .   .---+-x--.  .   .   .   .   .   .   .   .   .   .   .   .   .   .
16:0. . . . . .     .   .   .  -----+x----.  .   .   .   .   .   .   .   .   .   .   .   .   .   .
17:0 ISO. . . . .   *-  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
17:0 CYCLO. . . .   +x- .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
18:0. . . . . .     *-  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
19:0 CYCLO w8c. .   -*- .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
SUMMED FEATURE 7.   .   .   .   .   .   .   .  --x-+----  .   .   .   .   .   .   .   .   .   .   .
```

Comparison with CLIN [Rev 3.70]: Pseudomonas-stutzeri Distance: 2.681

```
                  0   5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90  95 100
                  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
10:0. . . . . .  *--  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
10:0 3OH. . . . .  -*--  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
12:0. . . . . .    .-x+--   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
12:0 3OH. . . . .  .--*--   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
14:0. . . . . .  .*-  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
16:1 w7c. . . . .  .   .   .  --------+-----x---   .   .   .   .   .   .   .   .   .   .   .   .
16:0. . . . . .  .   .   .   .  -x----+------   .   .   .   .   .   .   .   .   .   .   .   .   .
17:0 ISO. . . . .  x+  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
17:0 CYCLO. . . .  -*--  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
18:0. . . . . .  x+  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
19:0 CYCLO w8c. . .  -x+--.   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
SUMMED FEATURE 7. .  .   .   .   .   .   .  -------+--x---.   .   .   .   .   .   .   .   .   .
                  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
```

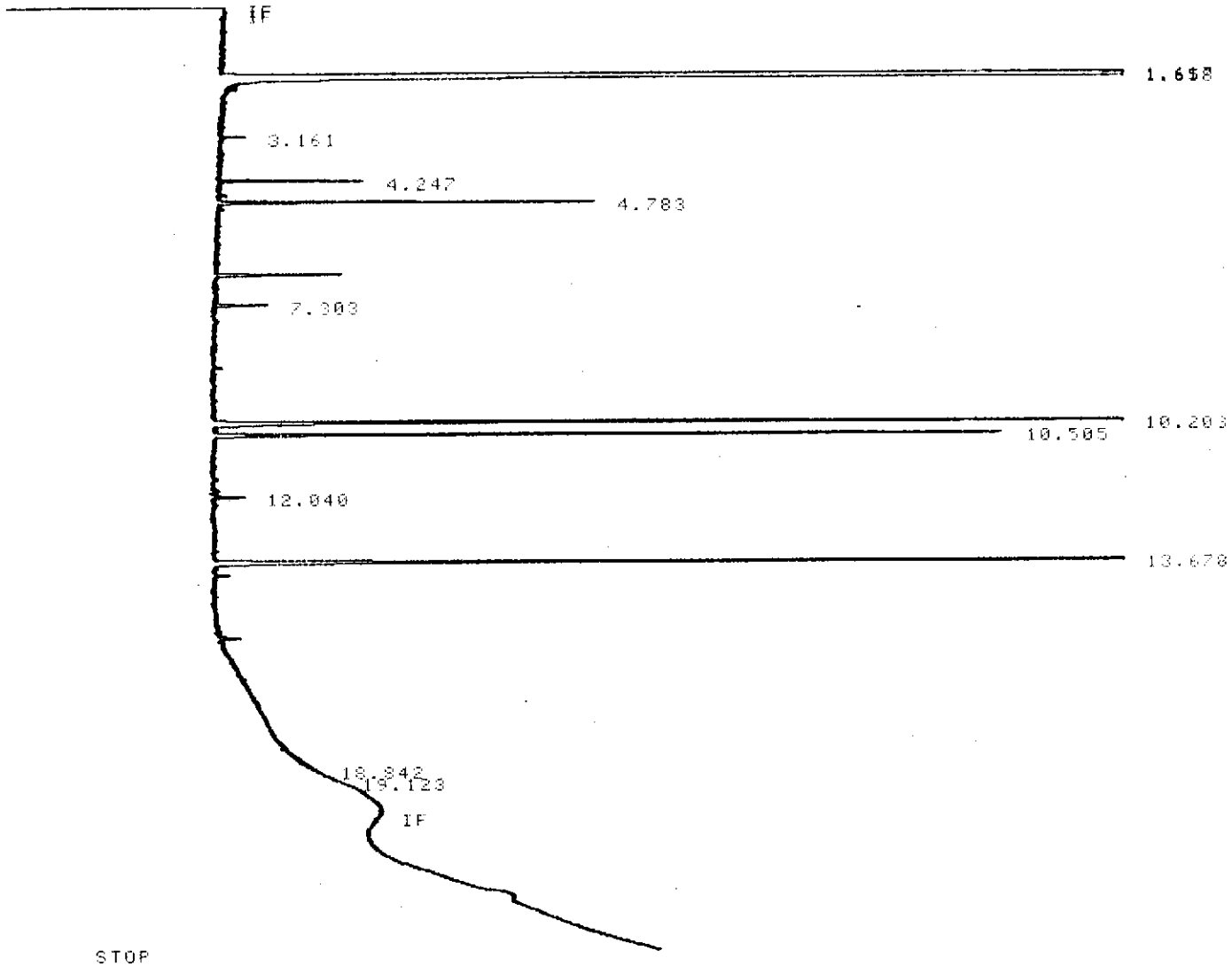
BOTTLE: 3 ID#: 2SAT 17-JUL-93 01:07:09

FILE DATA:F93716849

2312-1

RUN # 4 JUL 17, 1993 03:09:29

START



STOP

RUN # 4 JUL 17, 1993 03:09:29

START-No plot

END OF SIGNAL

ID: 3 2312-2 Date of run: 17-JUL-93 03:39:42
Bottle: 4 SAMPLE [AEROBE]

RT	Area	Ar/Ht	Respon	ECL	Name	%	Comment 1	Comment 2
1.668	122559040	0.028	. . .	7.048	SOLVENT PEAK	. . .	< min rt	
1.995	920	0.027	. . .	7.690	. . . . .	. . .	< min rt	
4.256	8328	0.031	1.076	11.422	10:0 3OH	4.06	ECL deviates -0.001	
4.790	17312	0.033	1.055	12.000	12:0	8.27	ECL deviates 0.000	Reference -0.000
4.957	992	0.037	. . .	12.146	. . . . .	. . .		
6.565	7408	0.039	1.018	13.454	12:0 3OH	3.42	ECL deviates -0.001	
7.312	4464	0.040	1.008	14.000	14:0	2.04	ECL deviates -0.000	Reference -0.007
8.852	1264	0.043	0.991	14.999	15:0	0.57	ECL deviates -0.001	Reference -0.007
10.211	60336	0.044	0.979	15.818	16:1 w7c	26.75	ECL deviates 0.001	
10.513	58096	0.044	0.976	16.000	16:0	25.69	ECL deviates -0.000	Reference -0.007
11.603	824	0.049	0.966	16.631	17:0 ISO	0.36	ECL deviates 0.002	Reference -0.005
13.685	64736	0.049	0.942	17.824	Sum In Feature 7 . .	27.61	ECL deviates -0.001	18:1 w9c/w12t/w7c
13.992	2920	0.049	0.937	17.999	18:0	1.24	ECL deviates -0.001	Reference -0.007
19.000	584	0.094	. . .	20.889	. . . . .	. . .	> max rt	
19.212	1928	0.167	. . .	21.012	. . . . .	. . .	> max rt	
*******	64736	. . . . .		. . .	SUMMED FEATURE 7 . .	27.61	18:1 w7c/w9t/w12t	18:1 w9c/w12t/w7c
*******	. . . . .	. . . . .		. . .	. . . . .	. . .	18:1 w12t/w9t/w7c	

Solvent Ar	Total Area	Named Area	% Named	Total Amnt	Nbr Ref	ECL Deviation	Ref ECL Shift
122559040	226680	225688	99.56	220824	6	0.001	0.007

TSBA [Rev 3.70] Pseudomonas . . . . . 0.331 (includes P. perfectomarina)
P. stutzeri . . . . . 0.331 (includes P. perfectomarina)
CLIN [Rev 3.70] Pseudomonas 0.713
P. stutzeri 0.713

Comparison with TSBA [Rev 3.70]: Pseudomonas-stutzeri(includes P. perfectomarina) Distance: 4.805

```
                    0   5   10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90  95  100
                    .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
10:0 3OH. . . . . . +x.  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
12:0. . . . . .  .-*-.   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
12:0 3OH. . . . . x+.    .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
14:0. . . . . -+x .      .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
15:0. . . . . +x- .      .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
16:1 w7c. . . . . .      .   .   .   .  ---+-x--  .   .   .   .   .   .   .   .   .   .   .   .   .   .
16:0. . . . . .          .   .  -----+------.x    .   .   .   .   .   .   .   .   .   .   .   .   .   .
17:0 ISO. . . . . *-     .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
18:0. . . . . +x .       .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
19:0 CYCLO w8c. . . x+-  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
SUMMED FEATURE 7. . .    .   .   .   .   .  x.   ----+---- .   .   .   .   .   .   .   .   .   .   .
```

Comparison with CLIN [Rev 3.70]: Pseudomonas-stutzeri Distance: 2.659

```
                    0   5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90  95 100
                    .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
10:0 3OH. . . . . . .-+x-   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
12:0. . . . . . . . .   .--*--  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
12:0 3OH. . . . . . .--*--  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
14:0. . . . . . . . .+x .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
15:0. . . . . . . . +x- .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
16:1 w7c. . . . . .   .   .   .---------+-----x---  .   .   .   .   .   .   .   .   .   .   .   .   .
16:0. . . . . . . . .   .   .   .   ------+x-----  .   .   .   .   .   .   .   .   .   .   .   .   .
17:0 ISO. . . . . . x+  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
17:0 CYCLO. . . . . x+--.   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
18:0. . . . . . . . .*  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
19:0 CYCLO w8c. . . x-+--.  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
SUMMED FEATURE 7. . .   .   .   .   .   .   -x----+------.   .   .   .   .   .   .   .   .   .   .
```

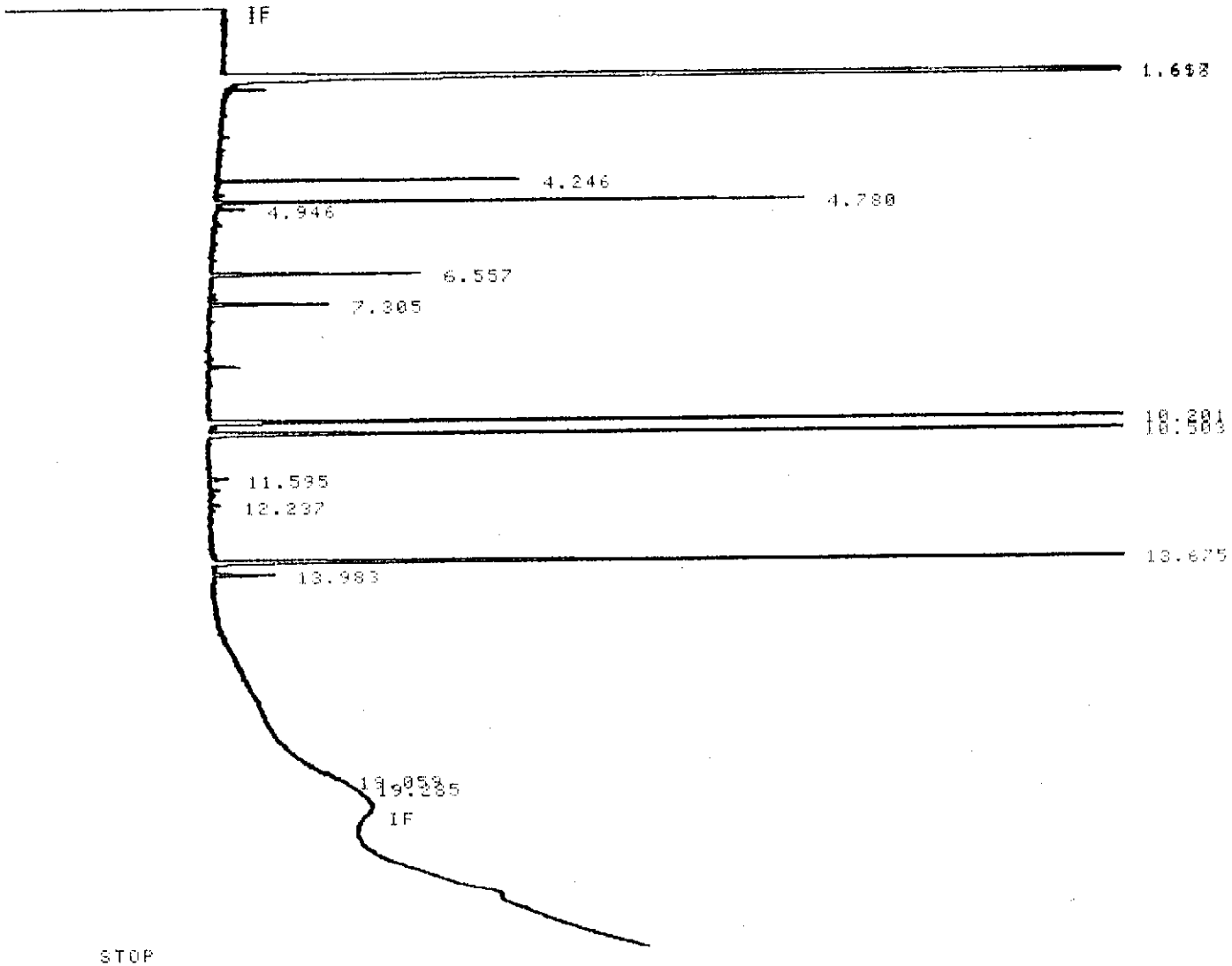
BOTTLE: 4 ID#: 3SAT 17-JUL-93 01:36:56

FILE DATA:F93716849

2312-2

RUN # 5 JUL 17, 1993 03:39:42

START



STOP

RUN # 5 JUL 17, 1993 03:39:42

START-No plot

END OF SIGNAL

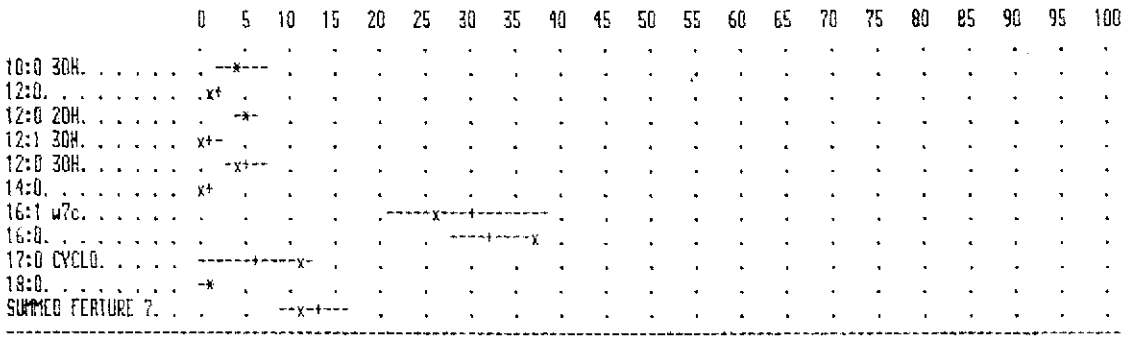
ID: 4 2312-3 Date of run: 17-JUL-93 04:09:57
Bottle: 5 SAMPLE [AEROBE]

RT	Area	Ar/Ht	Respon	ECL	Name	%	Comment 1	Comment 2
1.667	123970688	0.028	. . .	7.046	SOLVENT PEAK	. . .	< min rt	
4.255	3032	0.032	1.076	11.423	10:0 3OH	3.53	ECL deviates -0.000	
4.788	1256	0.044	1.055	12.000	12:0	1.43	ECL deviates -0.000	Reference -0.010
6.184	4712	0.038	1.024	13.179	12:0 2OH	5.22	ECL deviates 0.001	
6.565	3808	0.039	1.018	13.457	12:0 3OH	4.19	ECL deviates 0.002	
10.209	24368	0.045	0.979	15.819	16:1 w7c	25.81	ECL deviates 0.002	
10.510	34752	0.045	0.976	16.000	16:0	36.70	ECL deviates -0.000	Reference -0.008
12.046	10688	0.047	0.961	16.889	17:0 CYCLO	11.11	ECL deviates 0.001	Reference -0.007
13.682	10944	0.048	0.942	17.824	Sum In Feature 7 . .	11.15	ECL deviates -0.001	18:1 w9c/w12t/w7c
13.990	856	0.045	0.937	17.999	18:0	0.87	ECL deviates -0.001	Reference -0.009
18.758	824	0.172	. . .	20.752	. . . . .	. . .	> max rt	
*******	10944	. . . . .	. . .	. . .	SUMMED FEATURE 7 . .	11.15	18:1 w7c/w9t/w12t	18:1 w9c/w12t/w7c
*******	. . . . .	. . . . .	. . .	. . .	. . . . .	. . .	18:1 w12t/w9t/w7c	

Solvent Ar	Total Area	Named Area	% Named	Total Amnt	Nbr Ref	ECL Deviation	Ref ECL Shift
123970688	94416	94416	100.00	92465	4	0.001	0.009

TSBA [Rev 3.70] Pseudomonas . . . . . 0.633 (Pseudomonas aureofaciens)
P. chlororaphis . . . . . 0.633 (Pseudomonas aureofaciens)
CLIN [Rev 3.70] Pseudomonas 0.744
P. putida 0.744
P. p. biotype B 0.744
P. p. biotype A 0.664
P. fluorescens 0.695

Comparison with TSBA [Rev 3.70]: Pseudomonas-chlororaphis(Pseudomonas aureofaciens) Distance: 3.092



Comparison with CLIN [Rev 3.70]: Pseudomonas-putida-biotype B Distance: 2.488

	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
10:0 3OH.	.	-+x-	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
12:0.	-x+---	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
12:0 2OH.	.	---*---	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
12:0 3OH.	---+x--	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
14:0.	x+-	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
16:1 w7c.	.----------+---x----------	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
16:0.	.	.	.	.	.	.	.	.-x--+---	.	.	.	.	.	.	.	.	.	.	.	.	.	.
17:0 CYCLO.	----------+x----------	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
18:0.	-*-	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
19:0 CYCLO w8c.	x+--	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
SUMMED FEATURE 7.	.	-------+x------	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

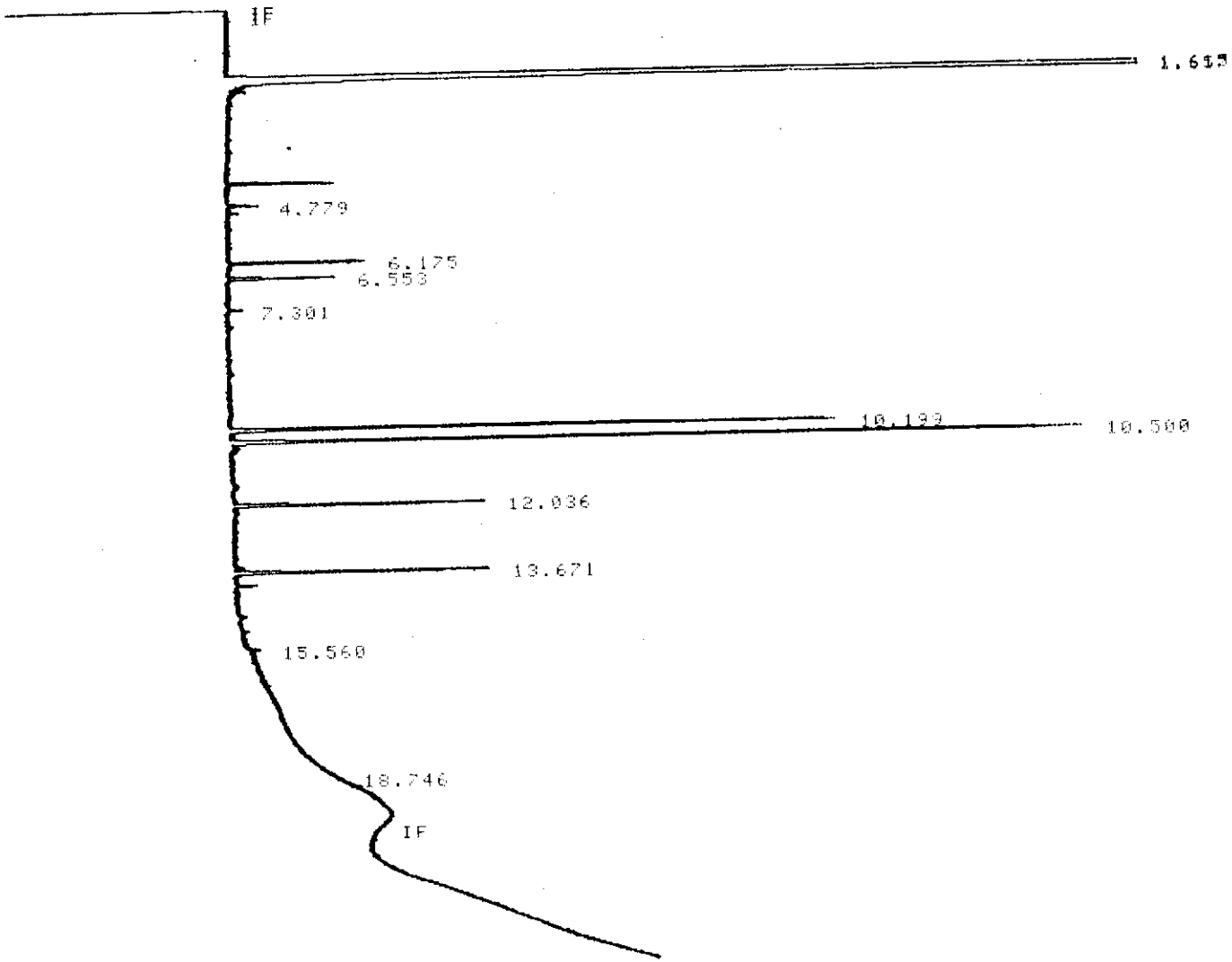
BOTTLE: 5 ID#: 4SAT 17-JUL-93 02:07:17

FILE DATA:F93716049

2312-3

RUN # 6 JUL 17, 1993 04:09:57

START



STOP

RUN # 6 JUL 17, 1993 04:09:57

START-No plot

END OF SIGNAL

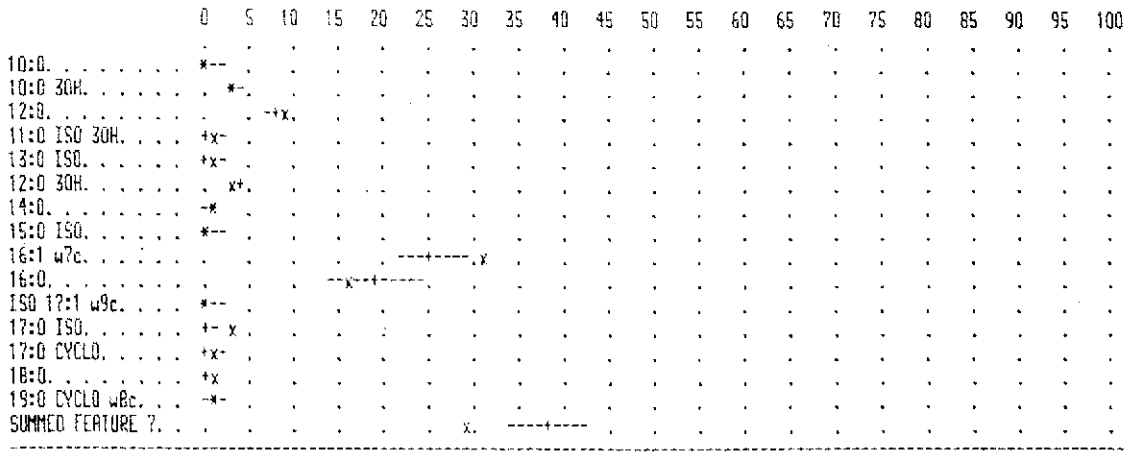
ID: 5 2312-4 Date of run: 17-JUL-93 04:40:13
Bottle: 6 SAMPLE [AEROBIC]

RT	Area	Ar/Ht	Respon	ECL	Name	%	Comment 1	Comment 2
1.667	122219712	0.028	. . .	7.048	SOLVENT PEAK	. . .	< min rt	
3.169	592	0.029	1.144	9.999	10:0	0.24	ECL deviates -0.001	Reference -0.012
4.255	7336	0.032	1.076	11.422	10:0 3OH	2.78	ECL deviates -0.001	
4.789	23192	0.032	1.055	12.008	12:0	8.63	ECL deviates 0.000	Reference -0.009
4.890	2448	0.034	1.053	12.090	11:0 ISO 3OH	0.91	ECL deviates -0.000	
5.496	2624	0.036	1.038	12.614	13:0 ISO	0.96	ECL deviates 0.002	Reference -0.007
6.563	7272	0.039	1.018	13.454	12:0 3OH	2.61	ECL deviates -0.001	
7.309	2720	0.040	1.008	13.998	14:0	0.97	ECL deviates -0.002	Reference -0.009
8.270	1240	0.047	0.997	14.623	15:0 ISO	0.44	ECL deviates 0.002	Reference -0.006
10.209	89688	0.044	0.979	15.818	16:1 w7c	30.97	ECL deviates 0.001	
10.509	47472	0.044	0.976	15.998	16:0	16.35	ECL deviates -0.002	Reference -0.009
11.231	1208	0.047	0.970	16.417	ISO 17:1 w9c	0.41	ECL deviates 0.001	
11.597	9480	0.047	0.966	16.628	17:0 ISO	3.23	ECL deviates -0.001	Reference -0.008
12.045	4264	0.050	0.961	16.888	17:0 CYCLO	1.45	ECL deviates -0.000	Reference -0.008
13.682	86200	0.048	0.942	17.823	Sum In Feature 7 . .	28.63	ECL deviates 0.001	18:1 w7c/w9t/w12t
13.990	2072	0.051	0.937	17.999	18:0	0.68	ECL deviates -0.001	Reference -0.009
15.567	2304	0.052	0.911	18.902	19:0 CYCLO w8c . . .	0.74	ECL deviates 0.002	Reference -0.006
18.870	1072	0.131	. . .	20.817	. . . . .	. . .	> max rt	
*******	86200	. . . . .	. . .	. . .	SUMMED FEATURE 7 . .	28.63	18:1 w7c/w9t/w12t	18:1 w9c/w12t/w7c
*******	. . . . .	. . . . .	. . .	. . .	. . . . .	. . .	18:1 w12t/w9t/w7c	

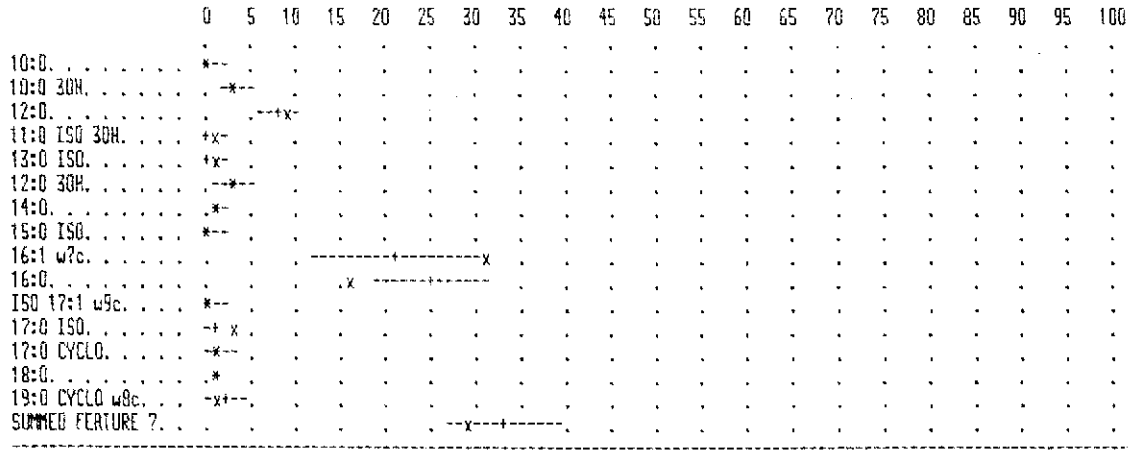
Solvent Ar	Total Area	Named Area	% Named	Total Amnt	Nbr Ref	ECL Deviation	Ref ECL Shift
122219712	290112	290112	100.00	283551	10	0.001	0.008

ISBR [Rev 3.70]	Pseudomonas	0.101 (includes P. perfectomarina)
	P. stutzeri	0.101 (includes P. perfectomarina)
	P. mendocina	0.054
	Neisseria	0.072
	N. mucosa	0.072
CLIN [Rev 3.70]	Pseudomonas	0.311
	P. stutzeri	0.311

Comparison with TSBA [Rev 3.70]: Pseudomonas-stutzeri(includes P. perfectomarina) Distance: 6.920



Comparison with CLIN [Rev 3.70]: Pseudomonas-stutzeri Distance: 4.941

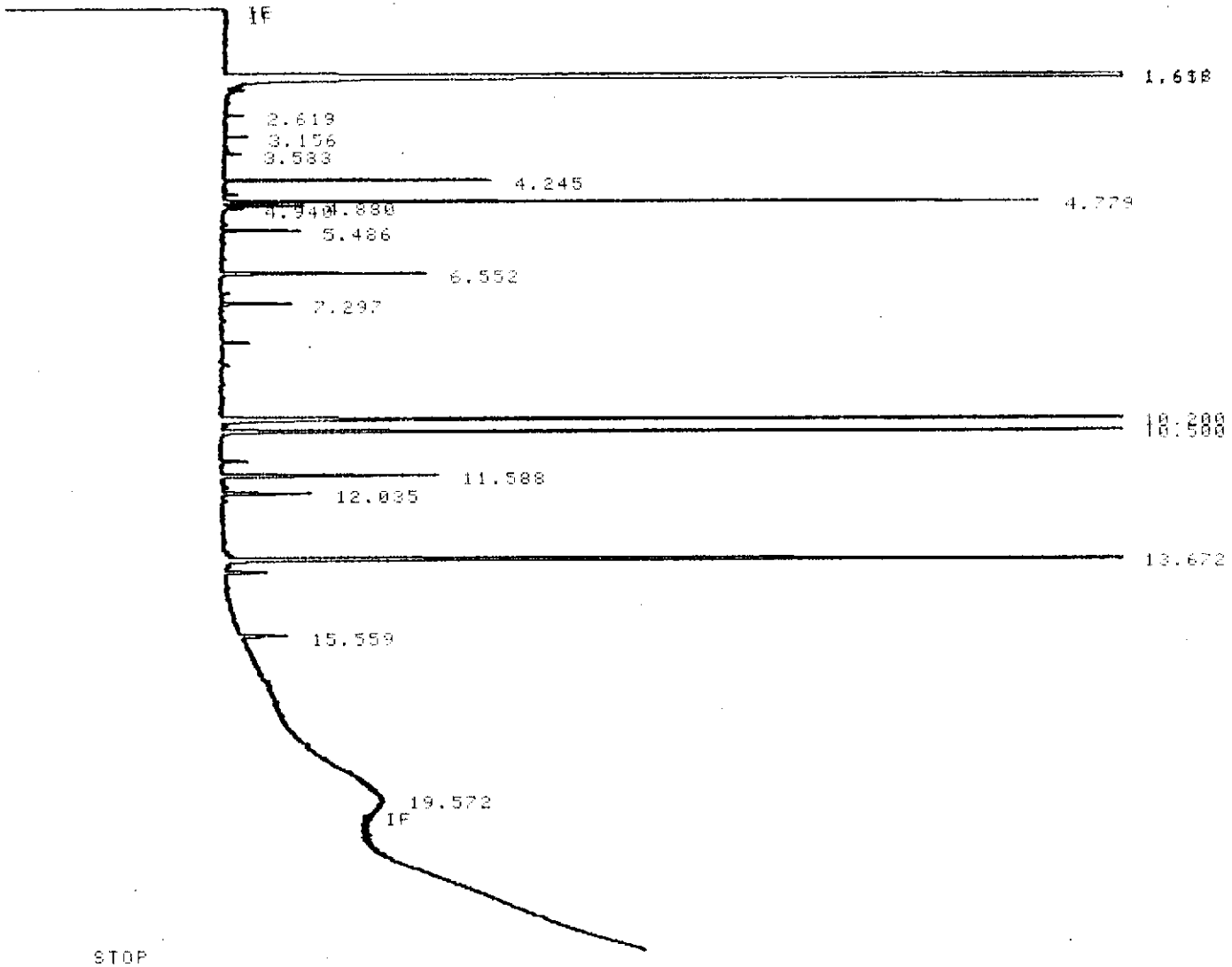


BOTTLE: 6 ID#: SSAT 17-JUL-93 02:37:18

FILE DATA:F93716849

2312-4

RUN # 7 JUL 17, 1993 04:40:13
START



STOP

RUN # 7 JUL 17, 1993 04:40:13
START-No plot
END OF SIGNAL

ID: 6 2312-5 Date of run: 17-JUL-93 05:10:33
Bottle: 7 SAMPLE [AEROBE]

RT	Area	Ar/Ht	Respon	ECL	Name	%	Comment 1	Comment 2
1.667	122789824	0.028	. . .	7.046	SOLVENT PEAK	. . .	< min rt	
3.167	472	0.030	1.144	9.993	10:0	0.26	ECL deviates -0.007	
4.254	6096	0.032	1.076	11.421	10:0 3OH	3.15	ECL deviates -0.002	
4.788	16472	0.033	1.055	11.999	12:0	8.36	ECL deviates -0.001	Reference -0.010
4.890	656	0.036	1.053	12.089	11:0 ISO 3OH	0.33	ECL deviates -0.001	
5.495	616	0.037	1.038	12.613	13:0 ISO	0.31	ECL deviates 0.001	Reference -0.008
6.562	5768	0.039	1.018	13.454	12:0 3OH	2.82	ECL deviates -0.001	
7.309	2216	0.040	1.008	14.000	14:0	1.07	ECL deviates -0.000	Reference -0.009
10.207	69424	0.045	0.979	15.818	16:1 w7c	32.69	ECL deviates 0.001	
10.508	39232	0.044	0.976	15.999	16:0	18.42	ECL deviates -0.001	Reference -0.010
11.596	2088	0.049	0.966	16.629	17:0 ISO	0.97	ECL deviates 0.000	Reference -0.009
13.680	68424	0.048	0.942	17.824	Sum In Feature 7 . .	30.99	ECL deviates -0.001	18:1 w9c/w12t/w7c
13.989	1352	0.049	0.937	18.000	18:0	0.61	ECL deviates -0.000	Reference -0.009
19.019	2352	0.213	. . .	20.904	. . . . .	. . .	> max rt	
*******	68424	. . .	. . .	. . .	SUMMED FEATURE 7 . .	30.99	18:1 w7c/w9t/w12t	18:1 w9c/w12t/w7c
*******	. . . . .	. . .	. . .	. . .	. . . . .	. . .	18:1 w12t/w9t/w7c	

Solvent Ar	Total Area	Named Area	% Named	Total Amnt	Nbr Ref	ECL Deviation	Ref ECL Shift
122789824	212816	212816	100.00	207922	6	0.002	0.009

TSBA [Rev 3.70] Pseudomonas . . . . . 0.289 (includes P. perfectomarina)
P. stutzeri . . . . . 0.289 (includes P. perfectomarina)
Neisseria 0.187
N. mucosa 0.187
CLIN [Rev 3.70] Pseudomonas 0.666
P. stutzeri 0.666

Comparison with TSBA [Rev 3.70]: Pseudomonas-stutzeri(includes P. perfectomarina) Distance: 5.093

```
                    0   5   10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90  95  100
                    .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
10:0. . . . . *--   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
10:0 3OH. . . . .   *-. .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
12:0. . . . . .     .  -*-. .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
11:0 ISO 3OH. . . *--   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
13:0 ISO. . . . . *--   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
12:0 3OH. . . . .   x+. .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
14:0. . . . . -*    .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
16:1 w7c. . . . .   .   .   .   .   .---+---.  x  .   .   .   .   .   .   .   .   .   .   .   .   .
16:0. . . . . .     .   .   .  ----x+-----.  .   .   .   .   .   .   .   .   .   .   .   .   .   .
17:0 ISO. . . . . +x    .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
18:0. . . . . +x    .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
19:0 CYCLO w8c. . . x+-  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
SUMMED FEATURE 7. .   .   .   .   .   .   .   .x ----+----  .   .   .   .   .   .   .   .   .   .   .
```

Comparison with CLIN [Rev 3.70]: Pseudomonas-stutzeri . Distance: 2.912

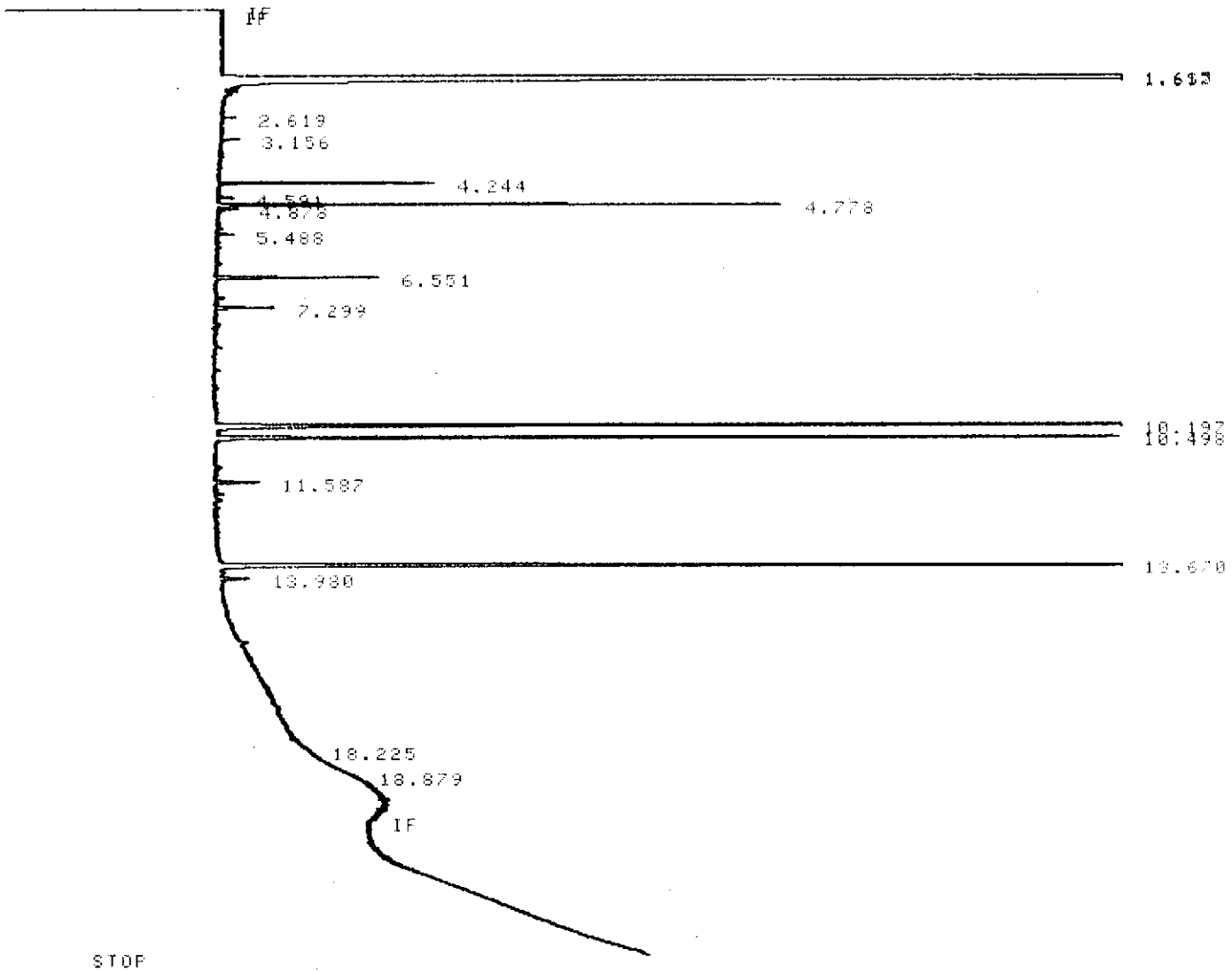
```
                    0   5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90  95 100
                    .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
10:0. . . . . . . *--  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
10:0 3OH. . . . . .  -*--  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
12:0. . . . . . . .   .--*--   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
11:0 ISO 3OH. . . *--  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
13:0 ISO. . . . . *--  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
12:0 3OH. . . . . .--*--   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
14:0. . . . . . . .*-  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
16:1 w7c. . . . . .   .   .   .---------+---------x .   .   .   .   .   .   .   .   .   .   .   .   .
16:0. . . . . . . .   .   .   .   x------+------   .   .   .   .   .   .   .   .   .   .   .   .   .
17:0 ISO. . . . . -*  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
17:0 CYCLO. . . . x+--  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
18:0. . . . . . . .*  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
19:0 CYCLO w8c. . x-+--.   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
SUMMED FEATURE 7.. .   .   .   .   .   .   .---x-+------.   .   .   .   .   .   .   .   .   .   .   .
```

BOTTLE: 7 ID#: 6SAT 17-JUL-93 03:08:13

FILE DATA:F93716849

2312-5

RUN # 8 JUL 17, 1993 05:10:33
START



STOP

RUN # 8 JUL 17, 1993 05:10:33
START-No plot
END OF SIGNAL

ID: 7 2312-6 Date of run: 17-JUL-93 05:40:47
Bottle: 8 SAMPLE [AEROBE]

RT	Area	Ar/Ht	Respon	ECL	Name	%	Comment 1	Comment 2
1.667	124880512	0.028	. . .	7.049	SOLVENT PEAK	. . .	< min rt	
2.308	688	0.024	. . .	8.308	. . . . .	. . .	< min rt	
3.161	968	0.040	. . .	9.984	. . . . .	. . .		
3.495	856	0.030	. . .	10.469	. . . . .	. . .		
4.254	7480	0.032	1.076	11.423	10:0 3OH	3.16	ECL deviates -0.000	
4.787	7368	0.035	1.055	12.008	12:0	3.05	ECL deviates 0.000	Reference -0.011
5.190	640	0.035	. . .	12.351	. . . . .	. . .		
6.182	10424	0.039	1.024	13.178	12:0 2OH	4.19	ECL deviates 0.000	
6.335	1312	0.043	1.022	13.298	12:1 3OH	0.53	ECL deviates 0.001	
6.561	8248	0.039	1.018	13.455	12:0 3OH	3.30	ECL deviates -0.000	
7.308	1400	0.043	1.008	14.000	14:0	0.55	ECL deviates -0.000	Reference -0.010
8.848	888	0.049	0.991	15.000	15:0	0.35	ECL deviates 0.000	Reference -0.010
10.205	31336	0.045	0.979	15.818	16:1 w7c	12.04	ECL deviates 0.001	
10.508	73744	0.044	0.976	16.000	16:0	26.26	ECL deviates -0.000	Reference -0.010
12.043	3432	0.050	0.961	16.888	17:0 CYCLO	1.30	ECL deviates 0.000	Reference -0.009
13.680	110576	0.048	0.942	17.824	Sum In Feature 7	40.87	ECL deviates -0.001	18:1 w9c/w12t/w7c
13.988	1792	0.046	0.937	17.999	18:0	0.66	ECL deviates -0.001	Reference -0.010
15.563	4912	0.051	0.911	18.900	19:0 CYCLO w8c	1.76	ECL deviates 0.000	Reference -0.009
18.702	1184	0.137	. . .	20.719	. . . . .	. . .	> max rt	
19.024	3720	0.287	. . .	20.906	. . . . .	. . .	> max rt	
*******	110576	. . .	. . .	. . .	SUMMED FEATURE 7	40.87	18:1 w7c/w9t/w12t	18:1 w9c/w12t/w7c
*******	. . . . .	. . .	. . .	. . .	. . . . .	. . .	18:1 w12t/w9t/w7c	

Solvent Ar	Total Area	Named Area	% Named	Total Amnt	Nbr Ref	ECL Deviation	Ref ECL Shift
124880512	265376	262912	99.07	254794	7	0.001	0.010

TSBA [Rev 3.70] Pseudomonas 0.657
P. aeruginosa 0.657
CLIN [Rev 3.70] Pseudomonas 0.799
P. aeruginosa 0.799

Comparison with TSBA [Rev 3.70]: Pseudomonas-aeruginosa Distance: 2.962

```
                  0   5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90  95 100
                  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
10:0 3OH. . . . . .-x+-  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
12:0. . . . . .  -*-.   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
12:0 2OH. . . . .  .-*--.   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
12:1 3OR. . . . . +x-  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
12:0 3OH. . . . .  .x+-  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
14:0. . . . . .-*  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
15:0. . . . . *--  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
16:1 w7c. . . . .  .   .  .-x---+------  .   .   .   .   .   .   .   .   .   .   .   .   .   .
16:0. . . . . .  .   .   .   .  .---+---x  .   .   .   .   .   .   .   .   .   .   .   .   .   .
17:0 CYCLO. . . . +x-  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
18:0. . . . . .-*  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
19:0 CYCLO w8c. . -+x  .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
SUMMED FEATURE 7. .  .   .   .   .   .   .   .  .----+x----  .   .   .   .   .   .   .   .   .
```

Comparison with CLIN [Rev 3.70]: Pseudomonas-aeruginosa Distance: 2.168

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                  0    5   10   15   20   25   30   35   40   45   50   55   60   65   70   75   80   85   90   95  100
                  .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .
10:0 3OH. . . . . .  -*--  .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .
12:0. . . . . . . .  -*--  .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .
12:0 2OH. . . . . .  -x+-  .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .
12:1 3OH. . . . . .  +x-   .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .
12:0 3OH. . . . . .   x-+-  .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .
14:0. . . . . . . .  -*    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .
15:0. . . . . . . .  *--   .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .
16:1 w7c. . . . . .     .------*------  .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .
16:0. . . . . . . .  .    .    .    .    .   ---x+-----.    .    .    .    .    .    .    .    .    .    .    .    .
17:0 CYCLO. . . . .  -x+---  .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .
18:1 w9c. . . . . .  x+-   .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .
18:0. . . . . . . .  -*    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .
19:0 CYCLO w8c. . .  --x-+--------  .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .
SUMMED FEATURE 7. .  .    .    .    .   ----------+------x---.    .    .    .    .    .    .    .    .    .    .    .
```

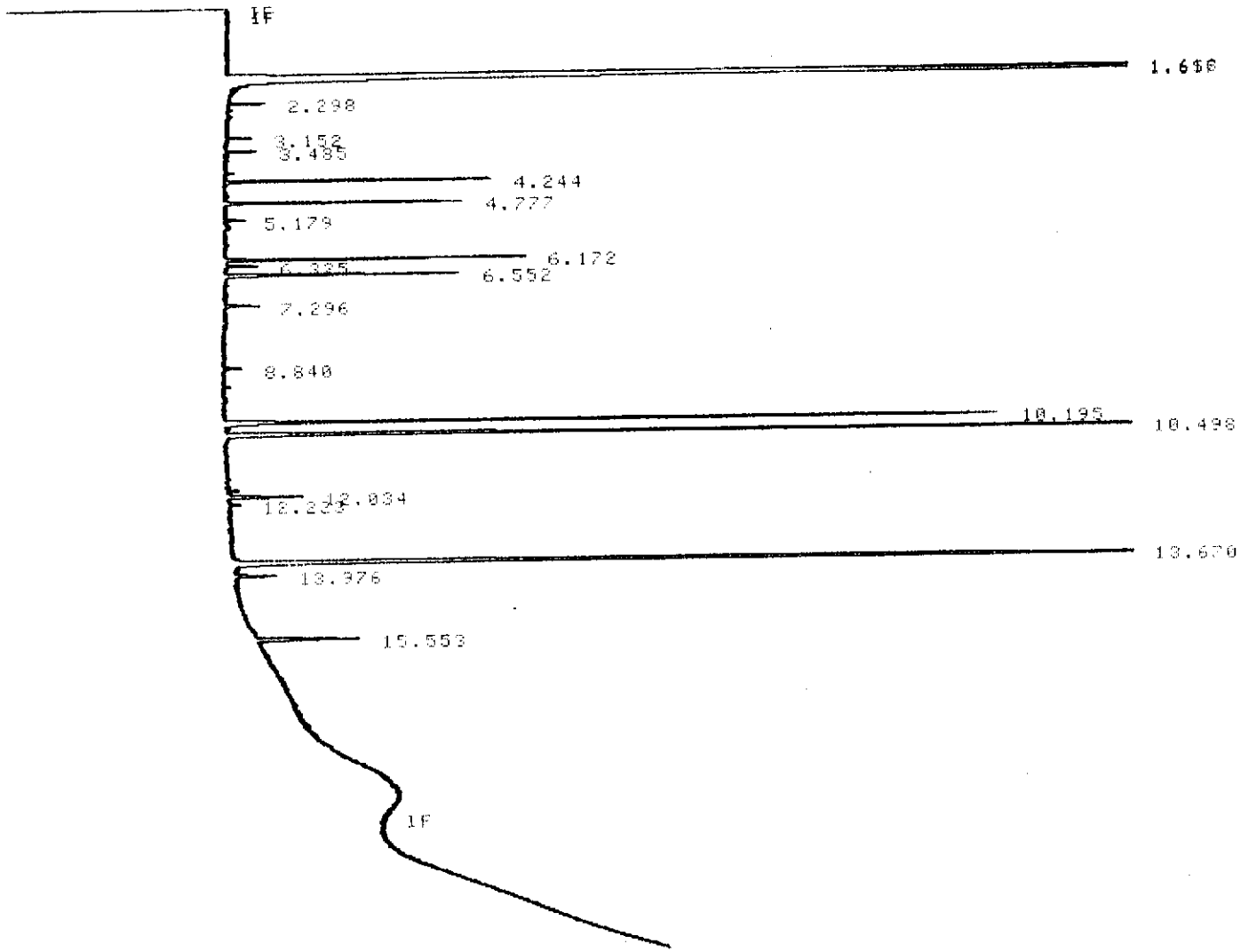
BOTTLE: 8 ID#: 7SAT 17-JUL-93 03:38:17

FILE DATA:F93716849

2312-6

RUN # 9 JUL 17, 1993 05:40:47

START



STOP

Biolog™ Data
24 Hr Time Point

the **MiL, inc.**

Interpretation of the Carbon Source Pattern Recognition Data using a Multi-well Plate Method (Biolog Microplate System™) -- Contact Us: 314-878-6626 or Fax 314-878-9376

The MiL, inc. utilizes the Biolog Microplate System™ for microbial identification and characterization by carbon source pattern recognition. The microplate technique allows for characterization by 95 different tests yielding a potential of 4×10^{28} patterns generated from a single microplate. Each strain of micro-organism yields a distinct pattern and the different species of bacteria will give distinct families of patterns that can be recognized by the Biolog MicroLog™ Software. Microplates are available for Gram Negative (GN), Gram Positive (GP) and E.coli/Salmonella (ES) Analysis. Custom analysis are performed by the MiL, inc. and can be particularly useful in biodegradation or additional selective media development studies. Additional interpretative instructions are provided with such custom services.

To characterize a given microbial isolate the organism is streaked onto a nutrient medium that will support vigorous growth (for example, Nutrient agar, tryptic soy agar or tryptic soy agar supplemented with 5% sheep red blood cells). The more fastidious organisms may require chocolate or BHI agar for growth, whereas many environmental organisms grow better in more minimal media. The culture plates are incubated at 28 to 35° C for 4-18 hours (environmental isolates are typically grown at 28° C with thermophyllic strains often incubated at 50° C). After incubation colonies are removed from the culture plate using a saline moistened cotton swab. A suspension of uniform turbidity is prepared in 0.85% saline by comparison with a known turbidimetric standard. The bacterial suspension is inoculated into the microplate wells (150 µl per well) and the plate covered with the microplate lid. The covered plates are incubated at 28-35° C for 4 hours or overnight (16-24 hours). Should other diluents be requested or used, such changes will be noted.

Microplates may be read at 4 or 24 hours because some organisms give results at 4 hours and may become unreadable at 24 hours. The plates are read in our microplate reader at 590 nm. The absorbance or transmittance (i.e. color) in each well is referenced against the negative control well (A-1) so that any purple color recorded above this control level is read as a positive utilization of the given carbon source. The data are reported as the percent color change as compared to well A-1 utilizing the following formula.

$$\text{Percent color change} = \frac{OD590(\text{well}) - OD590(\text{well A-1})}{OD590(\text{well A-1})}$$

Positive results will be reported in brackets ([ ]), generally if the Percent Color Change is equal to or greater than 40, the reaction in the given well is considered to be "positive" however the parameters for each substrate may be different and a positive test below a value of 40 is possible. The reported results will be otherwise considered negative. The computer algorithms employed provide standardization of settings ensuring repeatability and avoidance of operator bias. Names of all carbon source substrates employed are provided in the results regardless of response.

We, the MiL's microbiologists, find these methods to be excellent for strain characterization or differentiation between isolates. However, we urge caution in acceptance of the putative identifications to the commercial database and suggest these tests be conducted in conjunction with other methods (we recommend our GC-FAME analyses) when strain identifications are sought.

MICROLOG (TM) 2, RELEASE 3.00

Date : 18/07/93
Hour : 24
Plate Type : GN
Plate # : 1
Strain Name : 2312-1
Strain # : W.L00
Other Info : ?
Input Mode : Reader : BIOLOG MICROSTATION
Data Base : MicroLog GN

POSITIVE/NEGATIVE DATA
XXX = percent change in optical density versus A1 control well
<XXX> = positive, {XXX} = borderline, XXX = negative
-XXX = percent change negative
XXX+ = data negative or borderline, "=>" ID choice positive > 90% of time
XXX- = data positive or borderline, "=>" ID choice positive < 10% of time

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	1	<244>	< 76>	<152>	< 73>	-30	-23	-19	<436-	< 69>	1
B	-25	10	-15	-8	-9	< 47>	-30	-22	-29	<217>	< 71>	{ 21}
C	-22	-16	-21	-25	-32	-20	-30	-25	-23	<355-	<584>	<193>
D	< 95>	<451>	<452>	-26	-20	<112>	<101>	-22	<319>	<174>	<385>	-19
E	-4	<176>	< 65>	<378>	0	<547>	<111>	<141>	< 73-	-41	-84+	-84+
F	<280>	{ 36}	10	< 48>	{ 36}	{ 49+	1	<278>	<224>	<481>	-17	-23
G	23	<420-	<220>	19	-9	<233>	-17	-20	< 55>	<503>	<147-	< 82>
H	< 39-	19+	-22	-11	-34	<163-	-19	-5	-4+	< 67-	-7	2

BIO-NUMBER : 1706-0106-0007-7156-3570-4534-3117-0104

NO IDENTIFICATION

	CLOSEST SPECIES :	SIM	DIST	AVG	MA
X => 37	1) PSEUDOMONAS STUTZERI	0.230	13.644	1.875	7.6
38	2) PSEUDOMONAS MENDOCINA	0.000	15.868	1.750	4.9
81	3) PSEUDOMONAS PUTIDA A	0.000	16.578	1.813	8.3
94	4) ALCALIGENES FAECALIS TYPE II	0.000	16.718	1.938	5.0
00	5) PSEUDOMONAS VIRIDILIVIDA A	0.000	16.931	0.875	3.2
22	6) PSEUDOMONAS FLUORESCENS E	0.000	18.625	1.438	4.7
69	7) ACINETOBACTER CALCOACETICUS/GENOSPECIES1	0.000	18.732	2.438	4.4
81	8) PSEUDOMONAS SOLANACEARUM A	0.000	18.737	1.354	6.8
84	9) PSEUDOMONAS AZELAICA	0.000	19.298	0.781	3.0
75	10) ACINETOBACTER BAUMANNII/GENOSPECIES 2	0.000	19.399	2.000	5.4
--	other :	-----	-----	-----	---

MICROLOG GN DATA BASE Release 3.00

ABBREVIATED NAME : PSD.STU
FULL NAME : PSEUDOMONAS STUTZERI
DATA BASE CATEGORY : CLINICAL

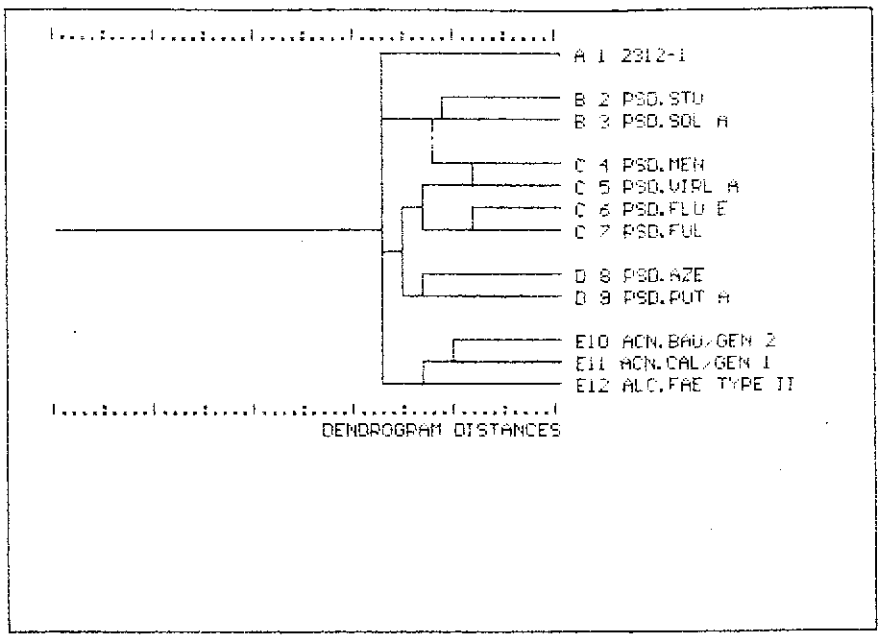
4 HOUR DATA :

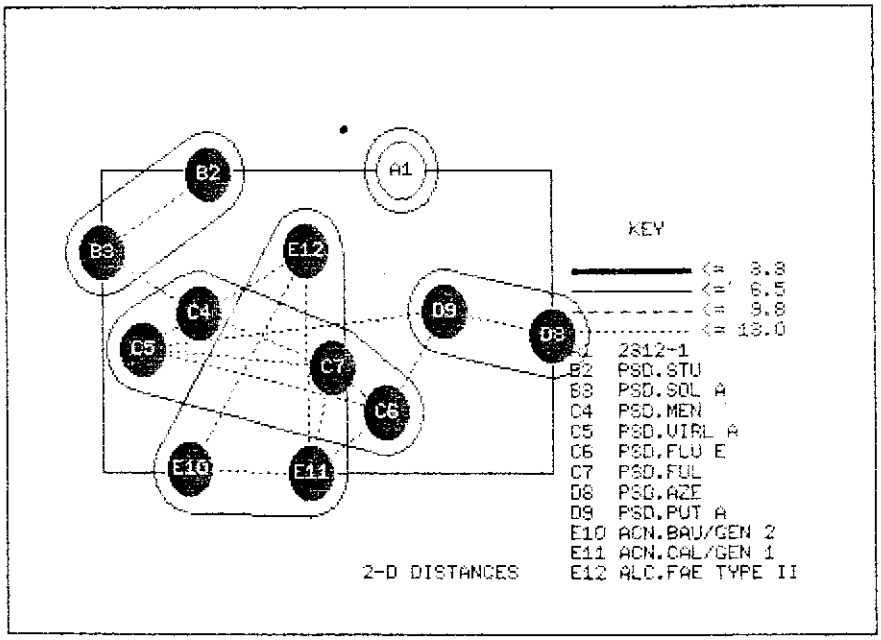
	1	2	3	4	5	6	7	8	9	10	11	12
A	0	24	34	41	36	36	0	0	0	0	9	9
B	16	72	0	0	14	86	0	9	0	36	36	57
C	0	9	59	7	9	41	14	0	19	0	60	24
D	74	53	43	16	0	9	29	0	0	45	91	36
E	0	45	79	57	16	79	57	36	0	17	0	79
F	71	43	9	43	45	41	7	86	48	79	0	31
G	0	0	93	14	24	53	45	0	16	38	0	21
H	21	55	9	0	10	0	19	21	48	0	0	0

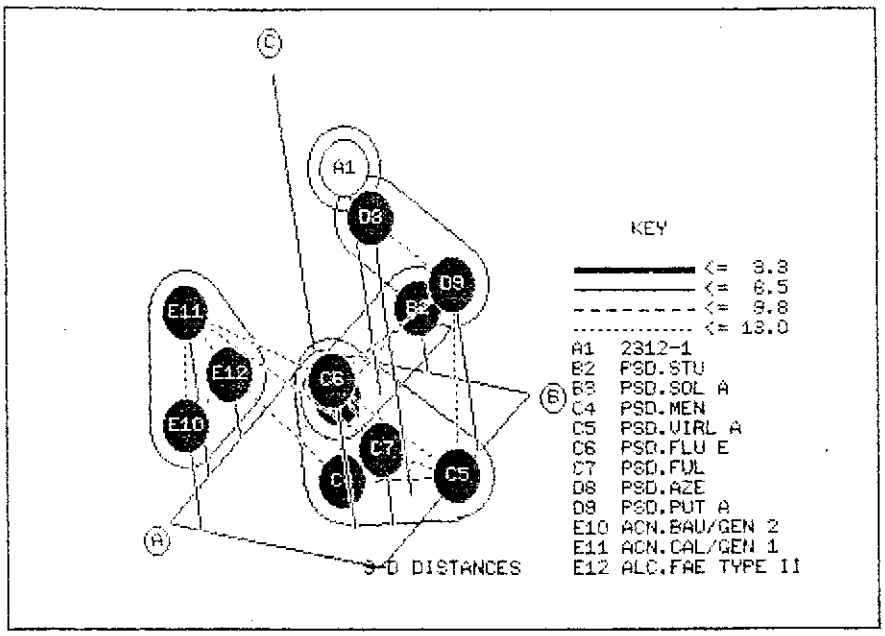
24 HOUR DATA :

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	0	100	88	100	100	0	0	0	0	36	0
B	0	81	0	0	7	100	0	0	0	93	76	86
C	0	0	69	0	0	16	0	12	0	0	100	100
D	83	100	90	57	0	50	83	0	59	81	100	24
E	0	100	81	100	62	100	100	84	0	57	91	100
F	100	83	47	83	86	100	55	100	79	100	0	0
G	0	0	100	0	12	100	81	0	17	40	0	29
H	7	100	0	0	14	0	22	9	100	0	0	0

CLOSEST SPECIES :
1) 11.288 : PSEUDOMONAS SOLANACEARUM A
2) 13.499 : PSEUDOMONAS ALCALIGENES B
3) 13.765 : CDC GROUP IVC-2
4) 13.828 : ALCALIGENES FAECALIS TYPE II
5) 13.911 : PSEUDOMONAS MENDOCINA


A 1 2312-1
B 2 PSD.STU
B 3 PSD.SOL A
C 4 PSD.MEN
C 5 PSD.VIRL A
C 6 PSD.FLU E
C 7 PSD.FUL
D 8 PSD.AZE
D 9 PSD.PUT A
E10 ACN.BAU/GEN 2
E11 ACN.CAL/GEN 1
E12 ALC.FAE TYPE II
DENDROGRAM DISTANCES


A1
B2
B3
C4
C5
C7
C6
E12
E10
E11
D9
D8
KEY
<= 8.8
<= 6.5
<= 9.8
<= 13.0
A1 2312-1
B2 PSD.STU
B3 PSD.SOL A
C4 PSD.MEN
C5 PSD.VIRL A
C6 PSD.FLU E
C7 PSD.FUL
D8 PSD.AZE
D9 PSD.PUT A
E10 ACN.BAU/GEN 2
E11 ACN.CAL/GEN 1
E12 ALC.FAE TYPE II
2-D DISTANCES


A1
D8
D9
B2
E11
E12
C6
E10
C7
C4
C5
KEY
<= 3.3
<= 6.5
<= 9.8
<= 13.0
A1 2312-1
B2 PSD.STU
B3 PSD.SOL A
C4 PSD.MEN
C5 PSD.VIRL A
C6 PSD.FLU E
C7 PSD.FUL
D8 PSD.AZE
D9 PSD.PUT A
E10 ACN.BAU/GEN 2
E11 ACN.CAL/GEN 1
E12 ALC.FAE TYPE II
3-D DISTANCES

MICROLOG (TM) 2, RELEASE 3.00

Date : 18/07/93
Hour : 24
Plate Type : GN
Plate # : 2
Strain Name : 2312-2
Strain # : W.L00
Other Info : ?
Input Mode : Reader : BIOLOG MICROSTATION
Data Base : MicroLog GN

POSITIVE/NEGATIVE DATA
XXX = percent change in optical density versus A1 control well
<XXX> = positive, {XXX} = borderline, XXX = negative
-XXX = percent change negative
XXX+ = data negative or borderline, "=>" ID choice positive > 90% of time
XXX- = data positive or borderline, "=>" ID choice positive < 10% of time

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	-10	-10	-4	<342>	<196>	-15	-15	-11	-4	-14	-9
B	-8	-8	-3	-11	-14	-5	-5	-2	-8	-11	-13	-15
C	-6	0	-9	-9	-11	-9	-10	-19	-13	-2	<469>	<240>
D	<220>	<207>	{ 82+	-3	-11	-4	-14	-10	-15	<242>	<570>	-9
E	{ 7-	0	<189>	-19	<269>	<696>	-14	<379>	<580-	-3	-6	<672>
F	<307>	{ 39}	-9	{124+	{114+	<221>	{ 31+	<371>	<368>	<704>	-9	-6
G	<402>	<552>	<224>	<204>	{ 39}	<300>	-6	-8	<258>	{ 42}	-4	<314>
H	-1	-9	-9	-10	-12	<233>	-11	{ 4-	-7	-12	-7	-9

BIO-NUMBER : 0300-0000-0003-7006-1331-4734-7511-0100

SPECIES IDENTIFICATION : PSEUDOMONAS ALCALIGENES A

	CLOSEST SPECIES :	SIM.	DIST.	AVG.	MA
=>	1) PSEUDOMONAS ALCALIGENES A	0.904	1.591	1.125	4.5
	2) ALCALIGENES FAECALIS TYPE II	0.004	3.423	1.938	5.0
	3) AQUASPIRILLUM PUTRIDICONCHYLIUM	0.000	4.481	0.313	1.1
	4) AQUASPIRILLUM DISPAR	0.000	7.000	0.083	0.4
	5) PSEUDOMONAS PSEUDOALCALIGENES	0.000	7.373	1.750	7.2
	6) ACINETOBACTER CAL. BV ALCALIGENES	0.000	7.446	0.250	3.3
	7) ACINETOBACTER GENOSPECIES 15	0.000	7.635	1.250	10.7
	8) ACINETOBACTER CALCOACETICUS/GENOSPECIES1	0.000	7.946	2.438	4.4
	9) ACINETOBACTER JUNII/GENOSPECIES 5	0.000	8.505	1.000	5.2
	10) ACINETOBACTER SPECIES GROUP B3	0.000	8.616	0.234	4.6
	other :	-----	-----	-----	---

MICROLOG GN DATA BASE Release 3.00

ABBREVIATED NAME : PSD.ALC A
FULL NAME : PSEUDOMONAS ALCALIGENES A
DATA BASE CATEGORY : CLINICAL

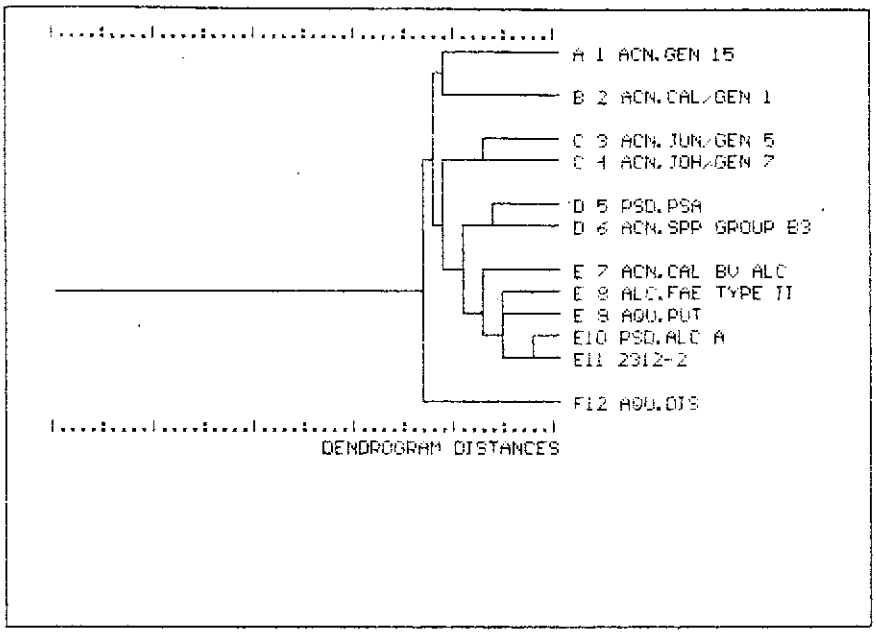
4 HOUR DATA :

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	17	0	0	100	100	0	0	0	0	0	17
B	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	8	0	0	0	92	0
D	83	67	58	8	0	0	0	0	0	58	58	33
E	0	0	75	8	75	100	0	67	0	0	0	83
F	67	67	0	67	75	83	83	92	92	100	17	83
G	42	67	100	67	42	92	25	50	100	58	0	67
H	50	33	0	8	0	75	8	0	8	0	0	17

24 HOUR DATA :

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	0	0	0	100	100	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	8	0
C	0	0	0	0	0	0	0	0	0	0	100	33
D	92	100	92	17	0	0	0	0	0	100	83	17
E	0	0	100	25	100	100	0	100	0	0	8	83
F	100	83	0	92	100	100	100	100	100	100	8	67
G	75	75	100	83	67	100	33	58	100	83	0	83
H	50	33	0	8	0	100	8	0	17	0	0	8

CLOSEST SPECIES :
1) 5.776 : AQUASPIRILLUM PUTRIDICONCHYLIUM
2) 6.123 : ALCALIGENES FAECALIS TYPE II
3) 8.317 : AQUASPIRILLUM BENGAL
4) 8.476 : BORDETELLA AVIUM
5) 8.553 : PSEUDOMONAS PSEUDOALCALIGENES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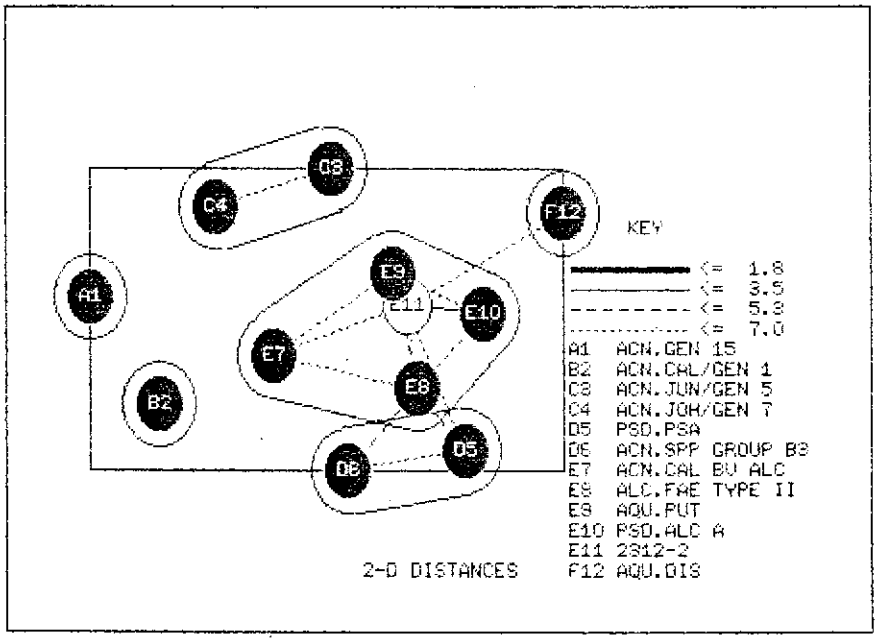
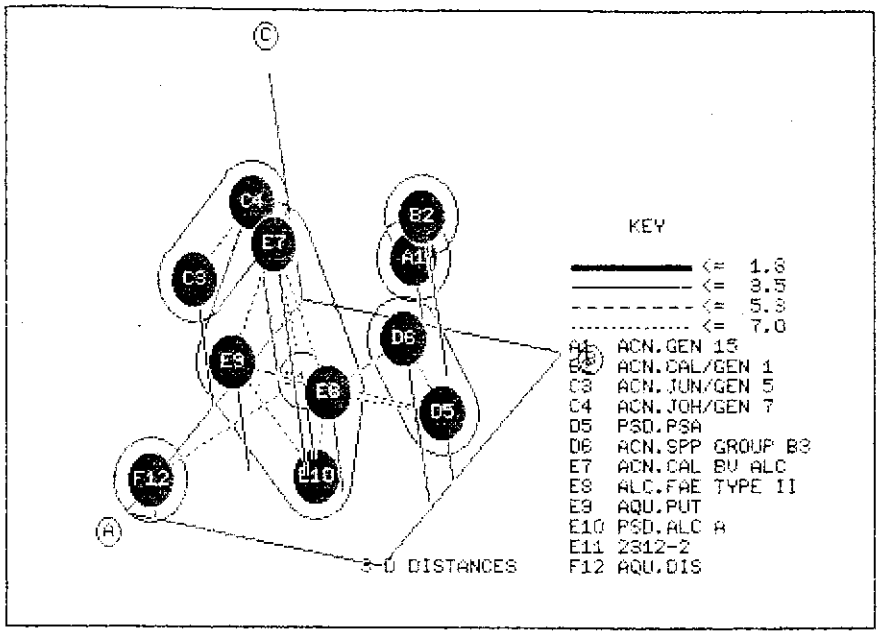
B 2 ACN.CAL/GEN 1
C 3 ACN.JUN/GEN 5
C 4 ACN.JOH/GEN 7
D 5 PSD.PSA
D 6 ACN.SPP GROUP B3
E 7 ACN.CAL BV ALC
E 8 ALC.FRE TYPE II
E 9 AQU.PUT
E10 PSD.ALC A
E11 2312-2
F12 AQU.DIS
DENDROGRAM DISTANCES


C8
C4
F12
E9
E11
E10
A1
E7
E8
B2
D5
D6
KEY
<= 1.8
<= 3.5
<= 5.3
<= 7.0
A1 ACN.GEN 15
B2 ACN.CAL/GEN 1
C8 ACN.JUN/GEN 5
C4 ACN.JOH/GEN 7
D5 PSD.PSA
D6 ACN.SPP GROUP B3
E7 ACN.CAL BV ALC
E8 ALC.FRE TYPE II
E9 AQU.PUT
E10 PSD.ALC A
E11 2312-2
F12 AQU.DIS
2-D DISTANCES


C
C4
E7
B2
A1
C3
D6
E9
E8
D5
F12
E10
A
3-D DISTANCES
KEY
<= 1.8
<= 3.5
<= 5.3
<= 7.0
A1 ACN.GEN 15
B2 ACN.CAL/GEN 1
C3 ACN.JUN/GEN 5
C4 ACN.JOH/GEN 7
D5 PSD.PSA
D6 ACN.SPP GROUP B3
E7 ACN.CAL BV ALC
E8 ALC.FAE TYPE II
E9 AQU.PUT
E10 PSD.ALC A
E11 2312-2
F12 AQU.DIS

MICROLOG (TM) 2, RELEASE 3.00

Date : 18/07/93
Hour : 24
Plate Type : GN
Plate # : 3
Strain Name : 2312-3
Strain # : W.L00
Other Info : ?
Input Mode : Reader : BIOLOG MICROSTATION
Data Base : MicroLog GN

POSITIVE/NEGATIVE DATA
XXX = percent change in optical density versus A1 control well
<XXX> = positive, (XXX) = borderline, XXX = negative
-XXX = percent change negative
XXX+ = data negative or borderline, "=>" ID choice positive > 90% of time
XXX- = data positive or borderline, "=>" ID choice positive < 10% of time

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	10	(49)	27	<170>	< 77>	-9	<184>	-4	<436>	<201>	9
B	7	<256>	-1	<330>	< 94>	<379>	-21	6	-3	< 79>	<258>	<237>
C	< 69>	8	< 92>	3	-3	12	-4	<173>	5	2	<116>	<194>
D	<242>	<511>	<494>	<122>	<207>	< 75>	<438>	<204>	21	<131>	<340>	-10
E	4	11	<111>	<407>	<122>	<421>	<142>	<245>	<304>	<482>	(56)	<326>
F	<160>	<158>	<143>	<125>	<110>	<134>	<145>	<263>	<200>	<322>	12	<209>
G	< 83>	<343>	<198>	< 95>	< 91>	<232>	<316>	< 82>	<197>	<116>	<114>	<259>
H	<299>	<331>	<121>	8	1	<135>	<100>	(18-	<257>	< 90>	12	0

BIO-NUMBER : 0326-2707-5023-7766-1777-7775-7777-7154

SPECIES IDENTIFICATION : PSEUDOMONAS FLUORESCENS B

	CLOSEST SPECIES :	SIM	DIST	AVG	MA
X => 87	1) PSEUDOMONAS FLUORESCENS B	0.889	1.307	2.250	5.7
62	2) PSEUDOMONAS FUSCOVAGINAE	0.000	7.703	0.688	3.1
56	3) PSEUDOMONAS CORRUGATA	0.000	8.279	1.703	4.4
81	4) PSEUDOMONAS PUTIDA A	0.000	8.994	1.813	8.3
00	5) PSEUDOMONAS FRAGI	0.000	9.240	2.500	9.0
50	6) PSEUDOMONAS FLUORESCENS C	0.000	9.755	2.000	4.6
50	7) PSEUDOMONAS PUTIDA B	0.000	9.900	2.188	8.2
13	8) PSEUDOMONAS FLUORESCENS A	0.000	9.919	1.625	4.6
31	9) FLAVIMONAS ORYZIHABITANS	0.000	9.935	2.203	4.8
62	10) PSEUDOMONAS GLADIOLI	0.000	10.144	1.375	6.6
--	other :	-----	-----	-----	---

MICROLOG GN DATA BASE Release 3.00

ABBREVIATED NAME : PSD.FLU B
FULL NAME : PSEUDOMONAS FLUORESCENS B
DATA BASE CATEGORY : CLINICAL

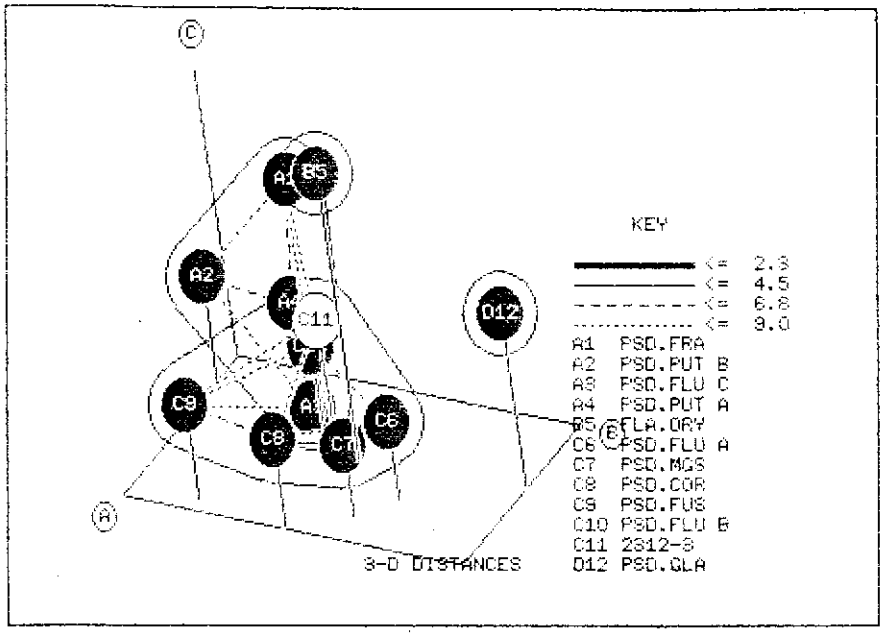
4 HOUR DATA :

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	0	14	7	77	46	0	38	0	85	62	0
B	0	77	0	77	31	92	0	0	7	15	69	77
C	15	0	69	0	0	7	46	54	7	0	15	38
D	79	77	85	54	77	8	100	54	14	23	77	0
E	7	0	8	85	15	85	31	77	54	92	15	100
F	85	8	15	8	23	62	62	100	77	100	23	100
G	8	46	79	38	23	54	54	31	92	62	15	85
H	31	77	38	7	0	15	54	0	62	23	0	7

24 HOUR DATA :

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	0	14	7	100	100	0	86	0	100	93	0
B	0	100	0	100	43	100	0	0	7	86	100	100
C	29	0	100	7	0	7	64	86	7	0	100	79
D	79	100	100	79	100	14	100	93	14	64	100	50
E	7	0	57	100	57	100	100	100	100	100	29	100
F	100	100	64	100	100	100	100	100	100	100	29	100
G	100	50	79	64	43	100	100	64	100	100	93	100
H	100	100	93	7	7	71	93	0	100	86	7	7

CLOSEST SPECIES :
1) 6.137 : PSEUDOMONAS CORRUGATA
2) 6.730 : PSEUDOMONAS AURANTIACA
3) 7.157 : PSEUDOMONAS FUSCOVAGINAE
4) 7.739 : PSEUDOMONAS FLUORESCENS A
5) 7.791 : PSEUDOMONAS PUTIDA A


KEY
<= 2.3
<= 4.5
<= 6.8
<= 9.0
A1 PSD.FRA
A2 PSD.PUT B
A3 PSD.FLU C
A4 PSD.PUT A
B5 FLA.ORY
C6 PSD.FLU A
C7 PSD.MGS
C8 PSD.COR
C9 PSD.FUS
C10 PSD.FLU B
C11 2312-8
D12 PSD.GLA
3-D DISTANCES

MICROLOG (TM) 2, RELEASE 3.00

Date : 18/07/93
Hour : 24
Plate Type : GN
Plate # : 4
Strain Name : 2312-4
Strain # : W.LOG
Other Info : ?
Input Mode : Reader : BIOLOG MICROSTATION
Data Base : MicroLog GN

POSITIVE/NEGATIVE DATA
XXX = percent change in optical density versus A1 control well
<XXX> = positive, (XXX) = borderline, XXX = negative
-XXX = percent change negative
XXX+ = data negative or borderline, "=>" ID choice positive > 90% of time
XXX- = data positive or borderline, "=>" ID choice positive < 10% of time

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	< 52-	<104>	< 94>	43+	14+	-47	-40	-35	-49	-58	-40
B	-49	-26	-45	(29-	-42	(129)	-39	-9	-20	< 49>	-50	-28
C	-32	-32	-30	-28	-36	-36	-50	-6	-26	-50	<139>	< 74>
D	<118>	<108>	< 99>	2	-20	<111>	< 80>	-22	<109>	< 86>	<131>	-11
E	-62	< 41>	<116>	< 83>	< 90>	<151>	< 97>	<122>	-11	<114>	-7+	<123>
F	<100>	-42	10	-18	23	(40+	1	<120>	< 70>	<103>	-43	-10
G	-55	-49	<100>	-29	-31	< 66>	-41	-46	< 87>	< 46>	-54	17
H	-44	<110>	-27	-54	-62	-58	-19	-4	(39+	-54	-47	-46

BIO-NUMBER : 3400-0104-0003-7156-3765-4034-1114-2000
FALSE POSITIVE WARNING : High optical density in A1 control well. True positives could be under-reported. Check innoculation procedures.
SPECIES IDENTIFICATION : PSEUDOMONAS STUTZERI

	CLOSEST SPECIES :	SIM	DIST	AVG	MA
=> 1)	PSEUDOMONAS STUTZERI	0.510	8.193	1.875	7.6
37					
2)	ALCALIGENES FAECALIS TYPE II	0.000	13.531	1.938	5.0
94					
3)	PSEUDOMONAS MENDOCINA	0.000	14.398	1.750	4.9
38					
4)	NEISSERIA DENITRIFICANS	0.000	14.803	1.531	11.4
06					
5)	PSEUDOMONAS SOLANACEARUM A	0.000	15.321	1.354	6.8
81					
6)	PSEUDOMONAS VESICULARIS	0.000	15.334	2.438	4.7
75					
7)	GILARDI PINK GRAM NEGATIVE ROD	0.000	15.620	2.813	9.5
06					
8)	OLIGELLA UREOLYTICA/URETHRALIS	0.000	15.828	1.813	5.5
06					
9)	NEISSERIA ANIMALIS	0.000	15.865	0.563	6.6
44					
10)	COMAMONAS TERRIGENA	0.000	16.810	1.938	8.3
44					
other :		-----	-----	-----	---
--					

MICROLOG GN DATA BASE Release 3.00

ABBREVIATED NAME : PSD.STU
FULL NAME : PSEUDOMONAS STUTZERI
DATA BASE CATEGORY : CLINICAL

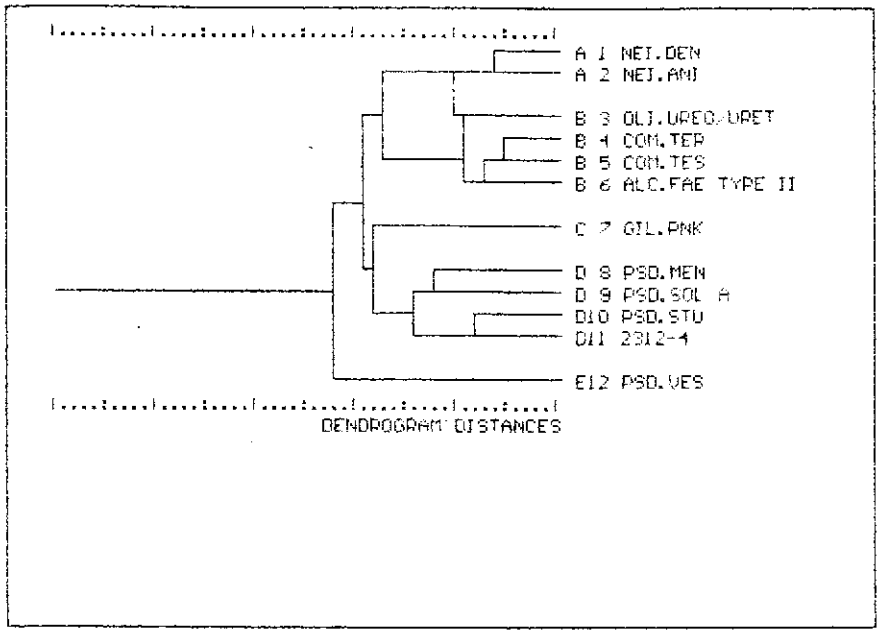
4 HOUR DATA :

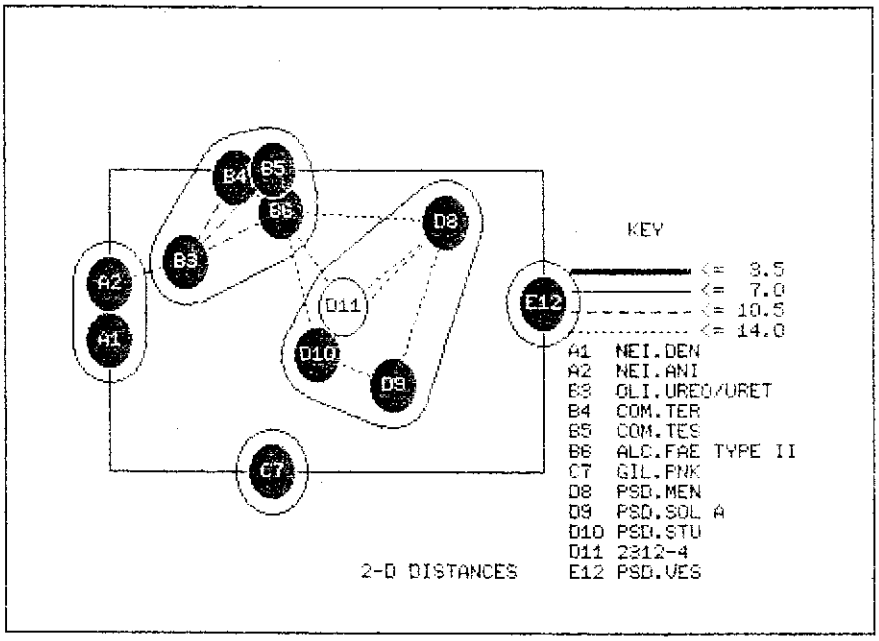
	1	2	3	4	5	6	7	8	9	10	11	12
A	0	24	34	41	36	36	0	0	0	0	9	9
B	16	72	0	0	14	86	0	9	0	36	36	57
C	0	9	59	7	9	41	14	0	19	0	60	24
D	74	53	43	16	0	9	29	0	0	45	91	36
E	0	45	79	57	16	79	57	36	0	17	0	79
F	71	43	9	43	45	41	7	86	48	79	0	31
G	0	0	93	14	24	53	45	0	16	38	0	21
H	21	55	9	0	10	0	19	21	48	0	0	0

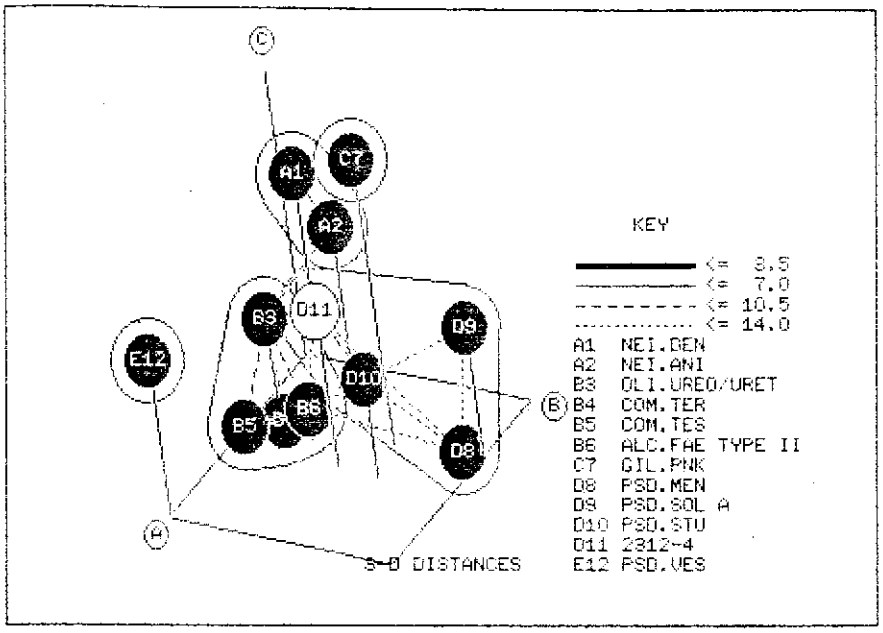
24 HOUR DATA :

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	0	100	88	100	100	0	0	0	0	36	0
B	0	81	0	0	7	100	0	0	0	93	76	66
C	0	0	69	0	0	16	0	12	0	0	100	100
D	83	100	90	57	0	50	83	0	59	81	100	24
E	0	100	81	100	62	100	100	84	0	57	91	100
F	100	83	47	83	86	100	55	100	79	100	0	0
G	0	0	100	0	12	100	81	0	17	40	0	29
H	7	100	0	0	14	0	22	9	100	0	0	0

CLOSEST SPECIES :
1) 11.288 : PSEUDOMONAS SOLANACEARUM A
2) 13.499 : PSEUDOMONAS ALCALIGENES B
3) 13.765 : CDC GROUP IVC-2
4) 13.828 : ALCALIGENES FAECALIS TYPE II
5) 13.911 : PSEUDOMONAS MENDOCINA


A 1 NEI.DEN
A 2 NEI.ANI
B 3 GLI.UREO/URET
B 4 COM.TER
B 5 COM.TES
B 6 ALC.FAE TYPE II
C 7 GIL.PNK
D 8 PSD.MEN
D 9 PSD.SOL A
D10 PSD.STU
D11 2312-4
E12 PSD.VES
DENDROGRAM DISTANCES


B4
B5
B6
B3
A2
A1
D11
D10
D9
D8
E12
C7
KEY
<= 3.5
<= 7.0
<= 10.5
<= 14.0
A1 NEI.DEN
A2 NEI.ANI
B3 GLI.UREO/URET
B4 COM.TER
B5 COM.TES
B6 ALC.FAE TYPE II
C7 GIL.PNK
D8 PSD.MEN
D9 PSD.SOL A
D10 PSD.STU
D11 2312-4
E12 PSD.VES
2-D DISTANCES


C
A1
C7
A2
B3
D11
D9
E12
D10
B
B4
B5
B6
D8
A
S-D DISTANCES
KEY
<= 3.5
<= 7.0
<= 10.5
<= 14.0
A1 NEI.DEN
A2 NEI.ANI
B3 OLI.UREO/URET
B4 COM.TER
B5 COM.TES
B6 ALC.FAE TYPE II
C7 GIL.PNK
D8 PSD.MEN
D9 PSD.SOL A
D10 PSD.STU
D11 2312-4
E12 PSD.VES

MICROLOG (TM) 2, RELEASE 3.00

Date : 18/07/93
Hour : 24
Plate Type : GN
Plate # : 5
Strain Name : 2312-5
Strain # : W.L00
Other Info : ?
Input Mode : Reader : BIOLOG MICROSTATION
Data Base : MicroLog GN

POSITIVE/NEGATIVE DATA
XXX = percent change in optical density versus A1 control well
<XXX> = positive, (XXX) = borderline, XXX = negative
-XXX = percent change negative
XXX+ = data negative or borderline, "=>" ID choice positive > 90% of time
XXX- = data positive or borderline, "=>" ID choice positive < 10% of time

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	-48	(21+	< 29>	18	-3	< 43>	< 32>	< 49-	-66	-42	-57
B	-65	-44	-68	-56	-46	< 41>	-63	< 48>	-54	3+	-53+	-50+
C	-64	-66	-61	-65	-23	-59	-58	-37+	< 41>	8	< 45>	7
D	-4	< 28-	< 33-	-19	-65	< 38-	< 62>	-54	< 36>	5	< 40-	-59
E	-69	-7	< 17-	(22)	< 22-	< 43>	< 17-	9	-26	-5	-47	< 40>
F	< 23>	-55	-49	-40	-9	-22	-34	< 50>	< 35>	< 31>	-66+	-30
G	-78	-74	< 14-	-67	-48	-19	-63	-33	8	-19	-67	-43
H	< 27-	< 32>	-67	-65	-73	-68	-55	-23	< 34>	< 39>	-51	-61

BIO-NUMBER : 0470-0120-0012-3152-1341-4034-1000-6014
FALSE POSITIVE WARNING : High optical density in A1 control well. True positives could be under-reported. Check innoculation procedures.
NO IDENTIFICATION

	CLOSEST SPECIES :	SIM	DIST	AVG	MA
=>	1) VIBRIO MIMICUS	0.056	17.889	2.313	4.1
09					
	2) DELEYA AESTA	0.036	18.045	2.000	4.8
13					
	3) PSYCHROBACTER IMMOBILIS	0.030	18.117	2.250	5.1
62					
	4) METHYLOBACTERIUM MESOPHILICUM	0.001	19.072	2.125	5.3
87					
	5) CDC GROUP EF-4	0.000	19.928	1.625	4.9
25					
	6) PSEUDOMONAS STUTZERI	0.000	19.963	1.875	7.6
37					
	7) PLESIOMONAS SHIGELLOIDES	0.000	20.071	2.031	6.4
19					
	8) MORAXELLA BOVIS	0.000	20.111	1.625	5.8
25					
	9) HYDROGENOPHAGA PALLERONII	0.000	20.868	1.125	6.3
13					
	10) SHEWANELLA PUTREFACIENS A	0.000	21.169	2.219	5.5
31					
	other :	-----	-----	-----	---
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MICROLOG GN DATA BASE Release 3.00

ABBREVIATED NAME : VIB.MIM
FULL NAME : VIBRIO MIMICUS
DATA BASE CATEGORY : CLINICAL

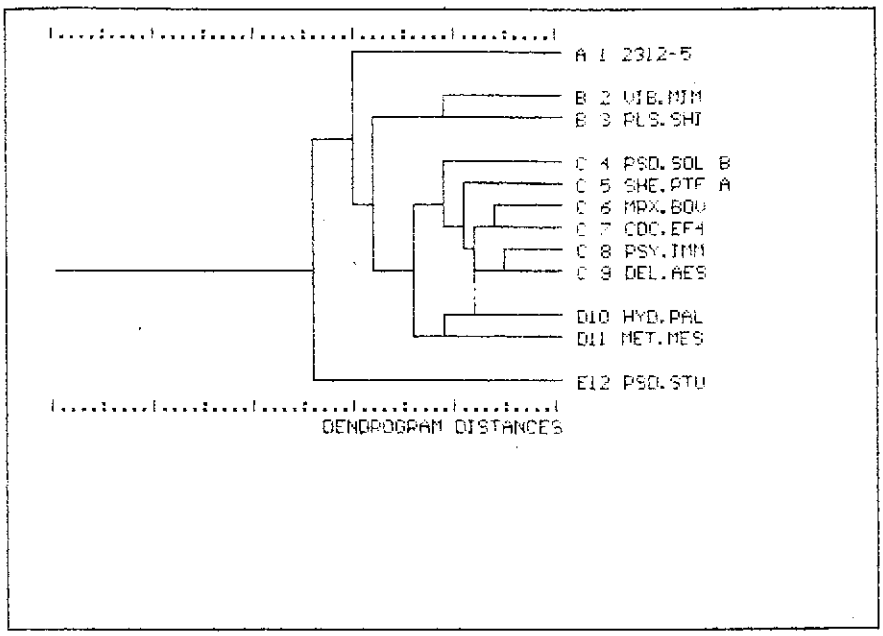
4 HOUR DATA :

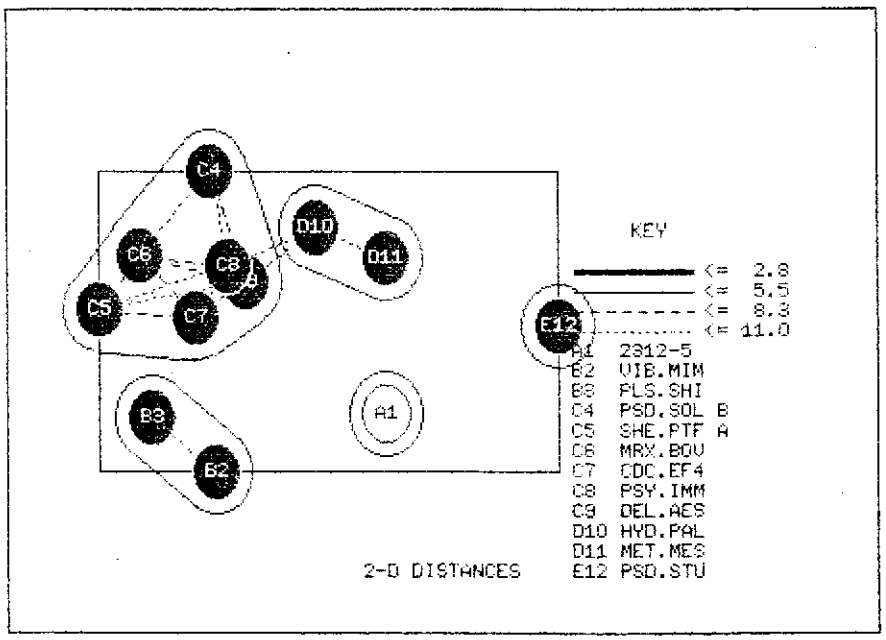
	1	2	3	4	5	6	7	8	9	10	11	12
A	0	36	84	68	44	28	12	100	0	0	0	0
B	12	72	0	16	52	100	0	12	16	76	76	60
C	0	32	72	8	0	64	0	76	40	0	88	44
D	40	0	0	0	0	8	52	0	0	0	0	0
E	0	0	0	20	0	92	0	0	0	0	0	80
F	20	24	0	8	0	8	12	56	20	44	36	60
G	0	0	0	0	0	36	0	0	16	0	0	0
H	0	92	52	56	8	0	0	0	48	12	12	0

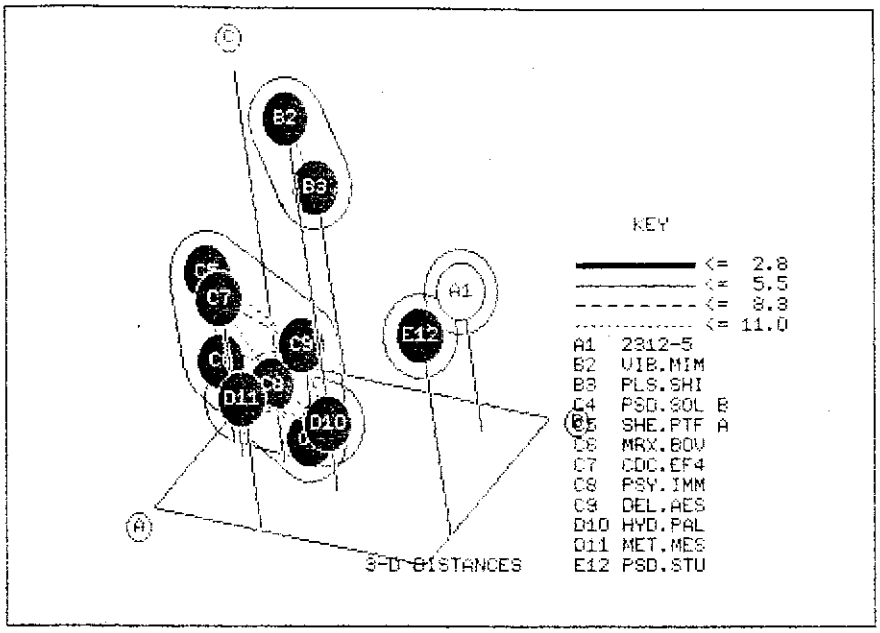
24 HOUR DATA :

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	0	100	100	52	52	64	100	0	0	0	0
B	0	80	0	28	36	100	0	92	12	100	100	100
C	0	48	88	0	0	68	0	100	20	0	100	56
D	28	0	8	0	0	0	100	0	72	0	0	0
E	0	0	0	16	0	100	0	0	0	0	0	88
F	16	24	24	0	0	0	16	88	76	72	92	72
G	0	0	0	0	0	40	0	0	12	0	0	0
H	8	100	64	68	0	0	0	0	48	48	0	0

CLOSEST SPECIES :
1) 6.086 : VIBRIO CHOLERAE
2) 7.865 : VIBRIO SPLENDIDUS 2
3) 8.549 : VIBRIO VULNIFICUS
4) 9.178 : VIBRIO DAMSELA
5) 9.313 : AEROMONAS DNA GROUP 11


A 1 2312-5
B 2 VIB.MIM
B 3 PLS.SHI
C 4 PSD.SOL B
C 5 SHE.PTF A
C 6 MRX.BOU
C 7 CDC.EF4
C 8 PSY.IMM
C 9 DEL.AES
D10 HYD.PAL
D11 MET.MES
E12 PSD.STU
DENDROGRAM DISTANCES


C4
D10
C6
C8
D11
C5
C7
E12
B3
A1
B2
KEY
<= 2.8
<= 5.5
<= 8.3
<= 11.0
A1 2312-5
B2 VIB.MIM
B3 PLS.SHI
C4 PSD.SOL B
C5 SHE.PTF A
C6 MRX.BOU
C7 CDC.EF4
C8 PSY.IMM
C9 DEL.AES
D10 HYD.PAL
D11 MET.MES
E12 PSD.STU
2-D DISTANCES


B2
B3
C7
C9
C8
D11
D10
A1
E12
3-D DISTANCES
KEY
<= 2.8
<= 5.5
<= 8.8
<= 11.0
A1 2312-5
B2 VIB.MIM
B3 PLS.SHI
C4 PSD.SOL B
C5 SHE.PTF A
C6 MRX.BOV
C7 CDC.EF4
C8 PSY.IMM
C9 DEL.AES
D10 HYD.PAL
D11 MET.MES
E12 PSD.STU

MICROLOG (TM) 2, RELEASE 3.00

Date : 18/07/93
Hour : 24
Plate Type : GN
Plate # : 6
Strain Name : 2312-6
Strain # : W.L00
Other Info : ?
Input Mode : Reader : BIOLOG MICROSTATION
Data Base : MicroLog GN

POSITIVE/NEGATIVE DATA
XXX = percent change in optical density versus A1 control well
<XXX> = positive, {XXX} = borderline, XXX = negative
-XXX = percent change negative
XXX+ = data negative or borderline, "=>" ID choice positive > 90% of time
XXX- = data positive or borderline, "=>" ID choice positive < 10% of time

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	15	63	42	<187>	<124>	-8	<196>	-15	56	30	-11
B	0	<125>	29	< 86-	48	<287>	0	10	2	< 89>	<162>	36
C	12	46	< 84>	21	19	20	5	<141-	13	2	<164>	<159>
D	<254>	<309>	<305>	<180>	20	17	<309>	2	-5	<133>	<267>	-11
E	<322>	<260>	<159>	<305>	<176>	<216>	<126>	<243>	<159>	-3	< 98>	<251>
F	<246>	<179>	< 77-	<162>	<159>	<172>	<104>	<312>	<228>	<233>	17	13
G	<265>	<170>	<145>	<138>	< 99>	<150>	<298>	< 89>	<167>	<118>	{ 64+	<188>
H	<250>	<309>	48	3	-12	<256>	<282>	<111>	<237>	-3	-13	-25

BIO-NUMBER : 0320-2506-1023-7446-7773-7774-7777-6170

SPECIES IDENTIFICATION : PSEUDOMONAS AERUGINOSA

	CLOSEST SPECIES :	SIM	DIST	AVG	MA
X => 94	1) PSEUDOMONAS AERUGINOSA	0.621	5.490	1.297	4.1
50	2) PSEUDOMONAS FLUORESCENS C	0.003	7.193	2.000	4.6
81	3) PSEUDOMONAS PUTIDA A	0.001	7.649	1.813	8.3
00	4) PSEUDOMONAS FRAGI	0.000	10.491	2.500	9.0
50	5) PSEUDOMONAS PUTIDA B	0.000	11.176	2.188	8.2
87	6) PSEUDOMONAS FLUORESCENS B	0.000	11.726	2.250	5.7
31	7) PSEUDOMONAS CITRONELLOLIS	0.000	12.058	0.234	2.9
81	8) PSEUDOMONAS SOLANACEARUM A	0.000	12.838	1.354	6.8
19	9) PSEUDOMONAS AURANTIACA	0.000	13.785	0.719	5.0
94	10) ALCALIGENES FAECALIS TYPE II	0.000	14.055	1.938	5.0
--	other :	-----	-----	-----	---

MICROLOG GN DATA BASE Release 3.00

ABBREVIATED NAME : PSD.AER
FULL NAME : PSEUDOMONAS AERUGINOSA
DATA BASE CATEGORY : CLINICAL

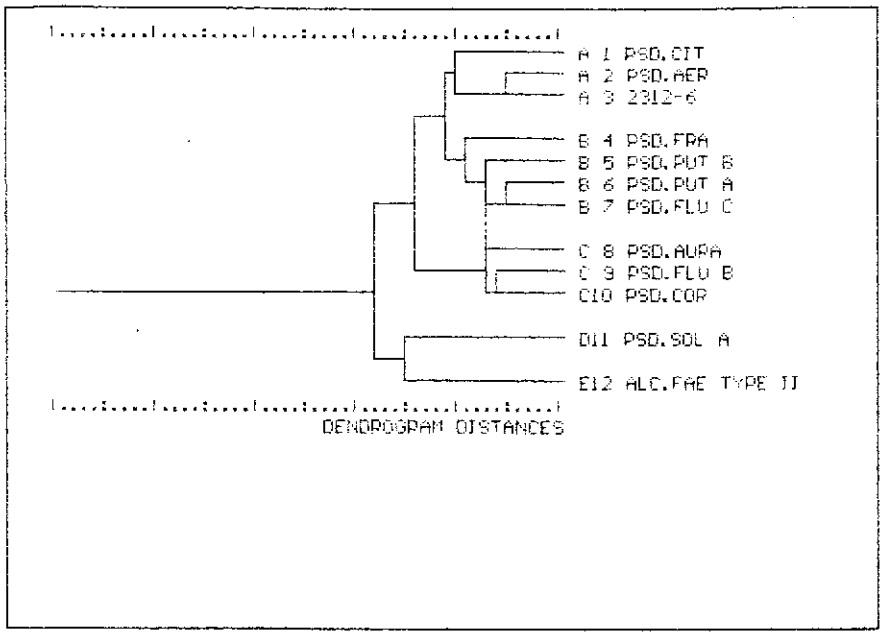
4 HOUR DATA :

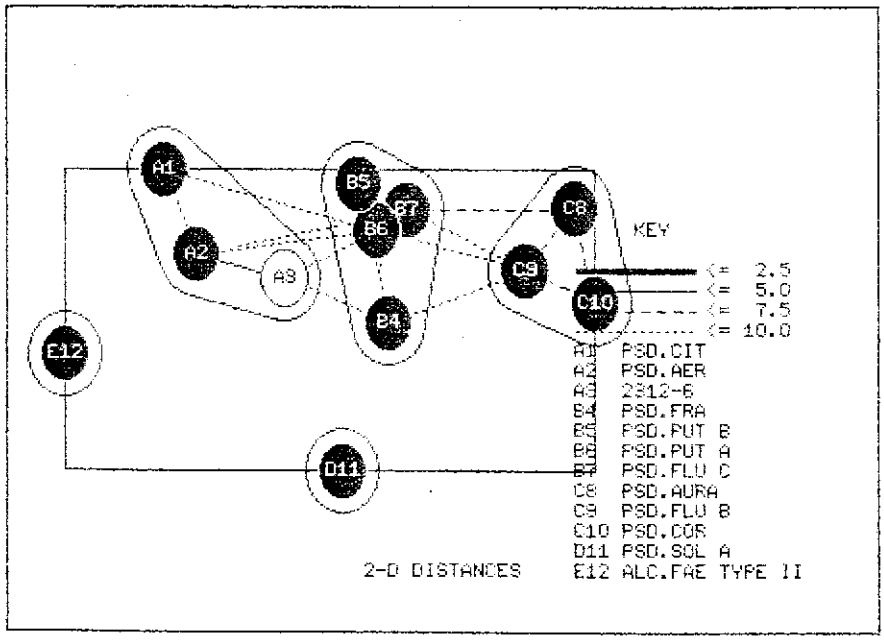
	1	2	3	4	5	6	7	8	9	10	11	12
A	0	0	0	0	35	22	0	22	0	0	0	0
B	0	31	0	0	0	65	0	[illegible]	0	0	0	10
C	0	0	22	0	0	0	0	[illegible]	0	0	14	27
D	57	45	51	24	0	0	45	0	0	20	47	0
E	14	35	35	53	20	51	29	37	0	0	0	76
F	61	33	0	42	57	51	24	57	47	83	0	12
G	43	29	47	37	12	24	43	24	51	38	18	57
H	71	57	8	0	0	27	61	8	43	0	0	0

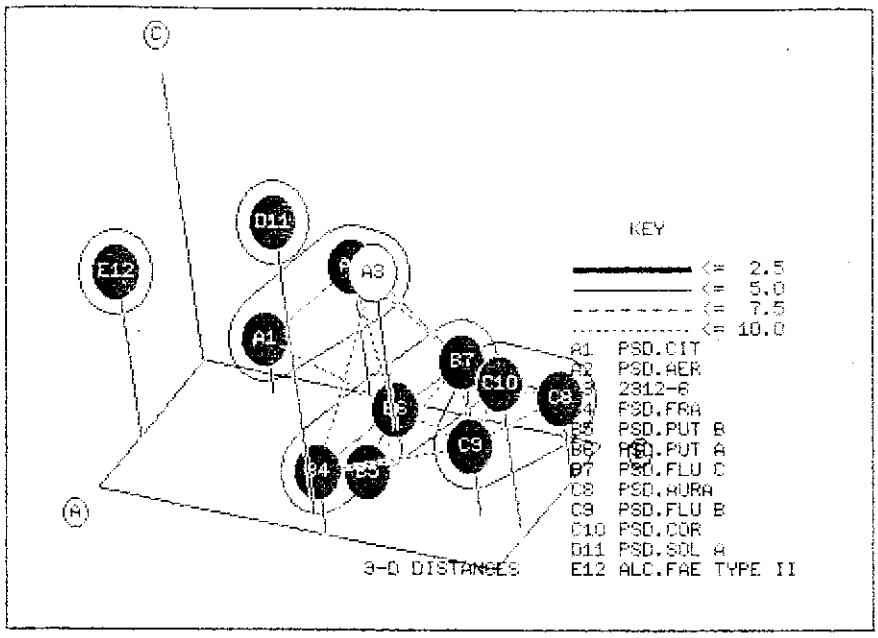
24 HOUR DATA :

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	0	0	0	88	81	0	94	0	0	10	0
B	0	100	0	0	0	100	0	0	0	15	100	10
C	0	0	28	0	0	0	0	0	0	0	100	94
D	57	100	100	87	0	0	100	0	0	49	100	0
E	93	100	75	100	72	100	100	85	100	0	85	100
F	100	100	0	42	93	100	51	100	100	100	0	12
G	100	100	85	100	12	100	100	24	100	45	100	100
H	100	100	27	0	0	100	100	28	100	0	0	0

CLOSEST SPECIES :
1) 7.599 : PSEUDOMONAS CITRONELLOLIS
2) 9.463 : PSEUDOMONAS FLUORESCENS C
3) 9.782 : PSEUDOMONAS PUTIDA A
4) 12.051 : PSEUDOMONAS FLUORESCENS E
5) 12.085 : PSEUDOMONAS PUTIDA B


A 1 PSD.CIT
A 2 PSD.AER
A 3 2312-6
B 4 PSD.FRA
B 5 PSD.PUT B
B 6 PSD.PUT A
B 7 PSD.FLU C
C 8 PSD.AURA
C 9 PSD.FLU B
C10 PSD.COR
D11 PSD.SOL A
E12 ALC.FAE TYPE II
DENDROGRAM DISTANCES


A1
A2
A3
B4
B5
B6
B7
C8
C9
C10
D11
E12
KEY
<= 2.5
<= 5.0
<= 7.5
<= 10.0
A1 PSD.CIT
A2 PSD.AER
A3 2312-6
B4 PSD.FRA
B5 PSD.PUT B
B6 PSD.PUT A
B7 PSD.FLU C
C8 PSD.AURA
C9 PSD.FLU B
C10 PSD.COR
D11 PSD.SOL A
E12 ALC.FAE TYPE II
2-D DISTANCES


KEY
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<= 5.0
<= 7.5
<= 10.0
A1 PSD.CIT
A2 PSD.AER
A3 2812-B
A4 PSD.FRA
B5 PSD.PUT B
B6 PSD.PUT A
B7 PSD.FLU C
C8 PSD.AURA
C9 PSD.FLU B
C10 PSD.COR
D11 PSD.SOL A
E12 ALC.FAE TYPE II
3-D DISTANCES

Warranty and Limits of Liability

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