

TO J.W. Goetsch	FIELD POINT OR DEPT. & BLDG. NO.	DATE YOUR LETTER
FROM D.P. O'Keefe	FIELD POINT OR DEPT. & BLDG. NO.	DATE THIS LETTER 2/1/78
SUBJECT		

Toxic Dust Monitoring Results

Results for toxic dust and mist samples collected during October, 1977 were received on 1/31/78.

Twenty-two samples were submitted to the Brecksville Environmental Laboratory in mid-December for analysis of various toxic heavy metals. These samples represented several areas of concern in our compounding operations, specifically:

- . Potential hexavalent chromium exposure to mill operators - source: misting from strip tanks.
- . Contamination potential of water fountain in mixing area vs stairwell.
- . Toxic dust exposure of weighmen.

Conclusions

1. When operating in accordance with established procedures, there is no indication of excessive exposure potential to hexavalent chromium from misting in the strip tank area. Procedures call for the use of chromate containing refrigerated water for some flexible compounds and clarified water (no chromates) for other flexibles and all rigids. Earlier results suggesting a chromium exposure problem were collected while chromate containing water was inadvertently used during a rigid compound run. Heating of this water created misting.
2. The stairwell is a more acceptable location for the water fountain. Some cleaning frequency should be established to prevent accumulation of toxic materials. The water fountain was moved in December per OSHA's recommendations.
3. Results in the weighing area reinforce OSHA's monitoring results.

Results

Hexavalent Chromium

Six stationary and breathing zone samples were collected under various operating conditions in the strip tank area. All results were less than $2 \mu\text{g}/\text{m}^3$. The proposed NIOSH limits for this type of chromium is $25 \mu\text{g}/\text{m}^3$.

26191001

BFG46743

toxic dust monitoring results

Page 2:

Water Fountain Contamination

The water fountain location in the mixing area was monitored for airborne lead, cadmium, and antimony contamination on seven occasions. Results for the 6 to 7 hour samples were:

<u>DATE</u>	<u>LEAD</u>	<u>CADMIUM</u> mg/m ³	<u>ANTIMONY</u>
10/5/77	0.118	<.003	<.01
10/6/77	0.109		0.09
10/10/77	0.095		0.123
10/12/77	0.160		0.158
10/13/77	0.099		0.146
10/18/77	0.012		0.012
10/26/77	0.101		0.102

Note: These results are also an indication of ambient conditions in the general mixing area to which mixing techs are exposed.

The stairwell was monitored on 6 occasions as an alternative location for the water fountain. Results:

<u>DATE</u>	<u>LEAD</u>	<u>CADMIUM</u> mg/m ³	<u>ANTIMONY</u>
10/5/77	0.033	<.003	<.012
10/6/77	0.015		0.021
10/12/77	0.030		0.018
10/13/77	0.011		<.015
10/18/77	0.024		<.012
10/26/77	0.037		0.036

Weighmen Exposures

- On 20/7/77, D.D. Price was monitored while weighing the following toxic materials: S-76, S-10, F-16. His 6 hour TWA results were:

Lead - 0.725 mg/m³
 Cadmium - <.004 mg/m³
 Antimony - 1.383 mg/m³

BFG46744

26191002

toxic dust monitoring results

Page 3:

2. On 10/24/77, J.G. Geary was monitored while weighing S-3 and S-10. His 5½ hour TWA results were:

Lead - 1.377 mg/m³
Cadmium - <.003 mg/m³
Antimony - <.027 mg/m³

3. On 10/25/77, B.E. Hoffman was monitored while weighing S-67 and F-16. His 6½ hr. TWA results were:

Lead - 0.119 mg/m³
Cadmium - <.003 mg/m³
Antimony - 0.024 mg/m³

Note: Current OSHA limits are:

Lead - 0.2 mg/m³
Cadmium - 0.2 mg/m³
Antimony - 0.5 mg/m³

Future Plans

Our dust monitoring program is being revised to shift the emphasis from total dust monitoring to specific toxic dust monitoring. This change will result in a shift of the analytical responsibilities from our lab to the Brecksville lab. So that we do not create an over-burdensome workload for the Brecksville environmental staff, we must carefully plan our sampling program. As a starting point, I offer the following proposal:

1. Monitor each weighing and mixing tech once under maximum potential exposure conditions.
This will require scheduling by your department.
2. During each of these sampling periods, observe general work habits of each employee.
3. Repeat above monitoring to evaluate effect of control measures and/or training.

Items 1 and 2 will help to identify if our assumption, that much of our problem is work practice related, is accurate or not. Item 3 will indicate if we are attacking the right problems.

We would like to initiate this program (steps 1 and 2) by mid-February. Please advise.

DPOK

Dennis P. O'Keefe
DPOK/re

cc: K.L. Blanton
W.A. Reed
D.A. Piel
C.D. Eisenhart
H. Waltemate - Cleveland
J.A. Klupar - Cleveland
E.B. Katzenmeyer, Jr. - T.S. Bialke - Akron
P.M. Zakriski - Brecksville

BFG46745

26191003

Inter-organization Correspondence

BFGoodrich

TO D. P. O'Keefe	FIELD POINT OR DEPT. & BLOC. NO. Pedricktown	DATE YOUR LETTER
FROM J. A. Wallbrown	FIELD POINT OR DEPT. & BLOC. NO. Brecksville R & D Center, D/8506	DATE THIS LETTER January 13, 1978

SUBJECT

Ed, these may be personnel measurements that you should be aware of

We received from you 2 separate sets of samples. One set of 6 filters for hexavalent chrome. The other set consisting of 18 filters to be analyzed for lead, cadmium and antimony. *Paul*

These samples were given Log # 1977-201 and were analyzed by atomic absorption spectrophotometer.

Following are your sample descriptions and results reported in micrograms.

Set #1

Sample #	Sample Date	I.D.	Time (min)	Flow (LPM)	Hexavalent Cr Micrograms
1	10-17-77	Mill operator	330	1.43	<1
2	10-17-77	Strip tank	330	1.48	<1
3	10-20-77	Strip tank	360	1.17	<1
4	10-20-77	Mill operator	360	0.97	<1
5	10-21-77	Strip tank	445	1.31	<1
6	10-24-77	Strip tank	330	1.81	<1

Set #2

Sample & Date	I.D.	Time (min)	Flow (LPM)	Pb μ g	Cd μ g	Sb μ g
1 10-05-77	Water fountain	360	1.62	68.72	<0.2	<7
2 10-05-77	Stairwell	360	1.48	17.82		<7
3 10-06-77	Water fountain	435	1.66	78.91		68
4 10-06-77	Stairwell	435	1.55	10.18		14
5 10-07-77	Weighman	360	1.54	402.73		766.6
7 10-10-77	Water fountain	420	1.60	63.64		82.4
8 10-12-77	Stairwell	290	2.04	17.82		10.8
9 10-12-77	Water Fountain	290	2.74	127.27		125.4
10 10-13-77	Stairwell	310	1.54	5.09		<7
11 10-13-77	Water Fountain	310	1.66	50.91		75.2
12 10-18-77	Stairwell	390	1.38	12.73		<7
13 10-18-77	Water fountain	390	1.59	7.64		7.2
14 10-25-77	Weighman	390	1.54	71.27		14.3
16 10-26-77	Stairwell	420	1.63	25.45		25
17 10-26-77	Water fountain	420	1.26	53.45		53.7
18 10-24-77	Weighman	330	1.59	722.9		<14.3

If any further information is necessary, please refer to Log # 1977-201.

JoAnn Wallbrown
JoAnn Wallbrown

O. Sile Kurtz
O. Sile Kurtz

26192001

jb

cc: P. M. Zakriski
R & D Files

BFG46746

Four - File: P'Two

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE

SEP 01 1977

BFGoodrich

TO	H. Waltemate	FIELD POINT OR DEPT. & BLDG. NO.	DATE YOUR LETTER
FROM	D.P. O'Keefe	FIELD POINT OR DEPT. & BLDG. NO.	DATE THIS LETTER 8/29/77
SUBJECT			

Results of OSHA Parallel Dust Sampling In Compound

The Brecksville lab has analyzed the samples we collected in parallel to the samples OSHA collected on 8/4/77 in our compound plant. Per our request, they analyzed for both lead and cadmium. Results are attached.

Please note that I have corrected the lead results to the 8hr. TWA as OSHA indicated they will do.

The current OSHA standard for lead is 0.2 mg/m³ for 8 hr. TWA. With a method accuracy of 20%, they will issue citations for any value exceeding 0.24 mg/m³.

It will be interesting to see how OSHA's results compare to ours.

DPOK

Dennis P. O'Keefe
DPOK/re

cc: E.B. Katzenmeyer, Jr. - Akron
J.A. Klupar
A.R. Webber
J.W. Goetsch - K.L. Blanton

BK

26193001

BFG46747

RECORDED

TO Donald A. Piel	FIELD POINT OR DEPT. & BLDG. NO. Pedricktown, New Jersey	DATE YOUR LETTER
FROM JoAnn Wallbrown	FIELD POINT OR DEPT. & BLDG. NO.	DATE THIS LETTER
SUBJECT C. E. Titus	Brecksville, Ohio	Aug. 23, 1977

Pb Samples - OSHA Duplicates
Log Number 126
August 19, 1977

Below are listed the results of samples that we received on August 10, 1977. Please note samples number 2 and 4 re: Pb concentration.

Sample	Avg. Flow Rate l/min.	Total Flow Time min.	Sample Volume Liters	Sample Volume cu meters	Pb Conc. mg/m ³	Cd Conc. mg/m ³	Comments
2	1.29	460	593.4	0.593	0.16	<0.001	6" line
3	1.43	457	653.51	0.654	<0.03	<0.001	9" line
4	1.15	433	497.95	0.498	0.32	<0.001	6" line
5	1.55	431	668.05	0.668	<0.03	0.007	9" line
Blank						θ	θ

I am also attaching copy of list of compounds you originally sent to us.

I would like to compliment you regarding the complete information that was sent to this laboratory -- in connection with sample preparation filter type and expected range of concentration.

Pb RESULTS CORRECTED TO 8 hr TWA

2 .153
3 <.028
4 .289
5 <.027

Charles E. Titus
C. E. Titus

J. A. Wallbrown
JoAnn Wallbrown

bb

Attachment

cc: P. M. Zakriski
D. O'Keefe
R and D Files

26193002

BFG46748

BFGOODRICH
PEDRICKTOWN PLANT

COMPOUND #1 - 6" line

Aristowax 165

COMPOUND #2 - 6" line

Dythal - Dibasic Lead Phthalate
Calcined Clay
Antimony Oxide
Aristowax 165 - Paraffin wax

COMPOUND #3 - 6" line

Dythal - Dibasic Lead Carbonate
Calcined Clay - Aluminum Silicate
Aristowax 165 - Paraffin wax

COMPOUND #4 - 9" line

Abson Resin (820X13) - Acrylonitrile/Butadiene/Styrene Copolymer
Goodrite Resin (230X36)
Thermolite 310 - Organutin - M & T Chemical Inc.
Omyalite 90-T - Calcium Carbonate
Ti-Pure 960 - Titanium Dioxide
Lemon Yellow 610 - Contains Cadmium Sulfide
Orange 640 - Contains Cadmium Sulfide & Cadmium Selenide

Black V-320 - Copper Chrome Black
Calcium Stearate
Kaydol BT-90 - White mineral oil

Sample I.D.

2 - B.E. Hoffmann - 6" line mixing tech
3 - H.M. Spencer - 9" line mixing tech
4 - J.J. Maltman - 6" line weigh tech
5 - R.K. Billings - 9" line weigh tech

26193003

BFG46749

TO	D. P. O'Keefe	FIELD POINT OR DEPT. & BLDG. NO. Pedricktown	DATE YOUR LETTER
FROM	P. M. Zakriski	FIELD POINT OR DEPT. & BLDG. NO. Brecksville R & D Center, D/8506	DATE THIS LETTER November 5, 1981
SUBJECT			

NOV 12 1981

GC/MS Analysis of Carbon Tube Samples from Warehouse Distributor Center, Area 5443

Wayne Meyers requested that we determine which chemicals are interfering with the vinyl chloride analysis from personnel monitorings in the warehouse area (area 5443). The chromatogram submitted by him shows materials eluting before vinyl chloride. When these materials are substantially more abundant than vinyl chloride they severely overlap the vinyl chloride window and interfere with the measurement. We sought to identify these materials.

The gas chromatographic-mass spectroscopic analysis does show the presence of vinyl chloride. However, vinyl chloride is not the dominant substance in the critical region (VCl window) of the chromatogram. There are several hydrocarbons dominating, e.g. butane, butene and hexane. It is very likely that the C₄ hydrocarbons, butane and butene are responsible for the observed interference with the vinyl chloride separation. If this interference continues to be a problem I suggest operating the GC column at a lower temperature to improve the separation of components.

I am enclosing a copy of the mass spectroscopic work for your future use. If there are any questions regarding the mass spectroscopy please contact Ed Harris.



Paul M. Zakriski
Corporate Environmental Service

jb

cc: R. E. Harris
R. P. Lattimer/J. B. Pausch
~~R. S. Blake/E. D. Katzenmeyer, Jr.~~
R & D Files

Log # 173-81

26194001

BFG46750

4 Nov 81

TO: P.M. ZAKRISKI

FROM: R.E. HARRIS

SUBJ: GCMS of Organics in Pedricktown Air
(MS 2138)

MS 2138A = Log 173 Sample 389, North

MS 2138B = Log 173 Sample 390, South

A portion of the carbon from the front section of each tube was analyzed by GCMS. The organics were thermally desorbed by use of a CDS pyrolyzer apparatus:

Interface = 125°C

Flashing = 250°C for 20. seconds

GC column = SP1000, 50°/2', 15°/min to 190°C

In sample 389 the carbon was "sticky" and hard to handle. In sample 390 the carbon looked dry and was easier to handle (to transfer to the pyrolysis tube) but water was indeed present.

All compounds identified in 389 are labeled on the chromatogram.

Only compounds in the vicinity of VCM are labeled in the chromatogram for sample 390.

26194002

BFG46751

R.E. Harris

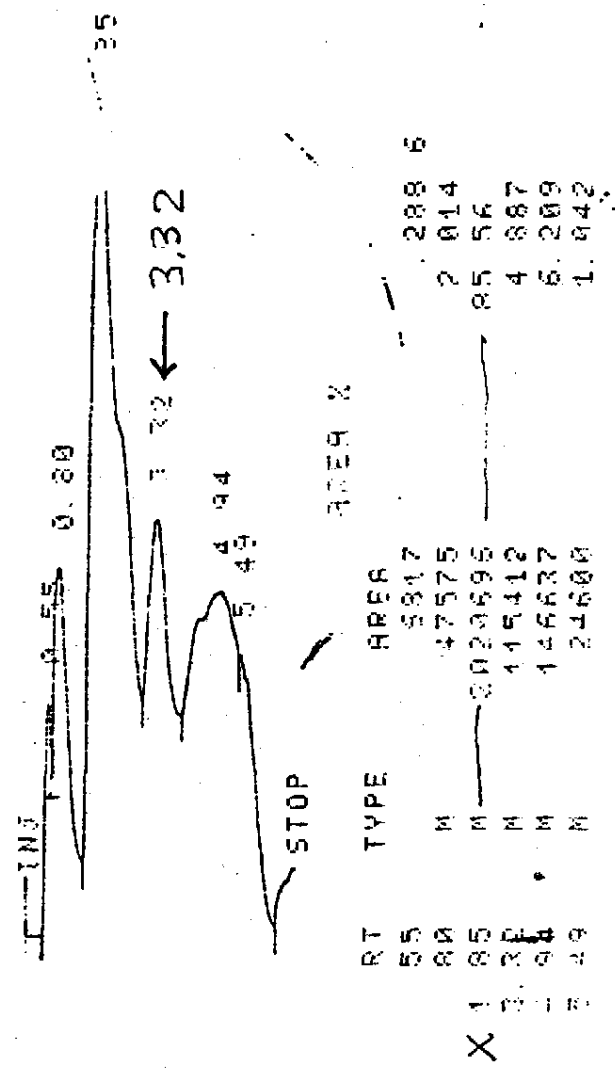
THIS IS A SAMPLE FROM
THE "NORTH"

- 1.85- UNKNOWN -
- 3.32 VINYL -

Pedricktown chromatogram

Log 173

Propak



REJECT OFF

STOP 10
ATTN 100

16 0300H
100 OFF
1000M 30

26194003

BFG46752

The BFGoodrich Research & Development Center
Mass Spectroscopy-Gas Chromatography
Department 8510

MS2138 A, B

REQUEST FOR INSTRUMENTAL INVESTIGATION - Order No. _____

Requested by: Zakowski

Dept. 8506

Date 8-19-81

Project Redaction 8810

Manager Luffa-Zakowski

Sample No. A 389 390

Proposed Structure:

Look for VCL and hydrocarbons

(same kind of a problem as trichloro 1976-A

warehouse samples)

other cmpds in

ie VCM ret time window

Soluble In

Boiling Point

Melting Point

Stabilized

yes ☐ no ☐

Preparations

Flasher

Information Desired:

Look for VCL & other hydrocarbons.

Two carbon tubes in Harmonics freezer

389 = NORTH = MS2138A

390 SOUTH MS2138B

MS2138L = blank - programmed fast after 5 min

BFG46753

26194004

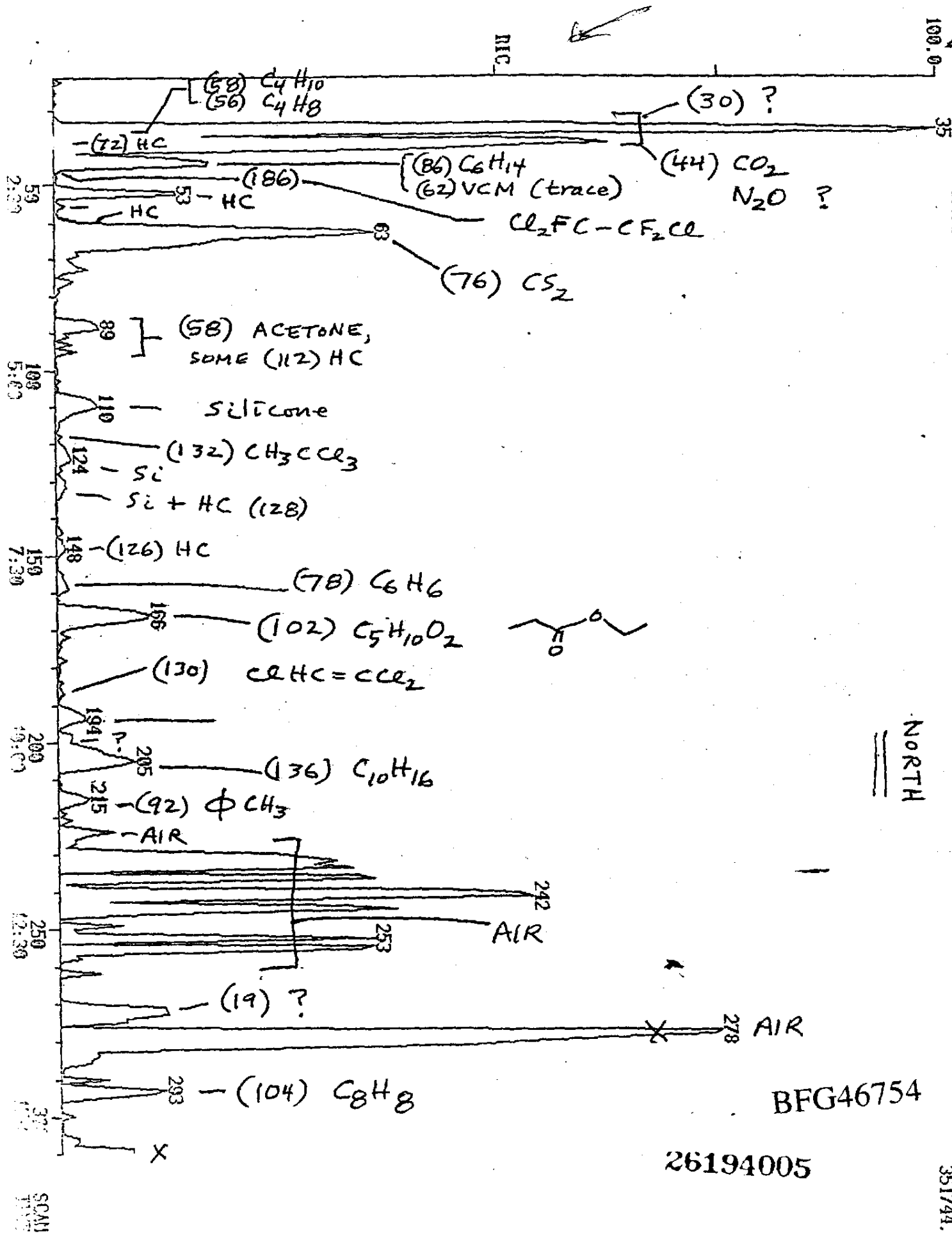
FILE: 10/06/81 11:11:00
 SAMPLE: 21.310 LABEL: N 0.4.0 QUANT: A 0.1.0 BASE: U 20. 3
 ENHANCED (S 400 2N 01)

NORTH

BFG46754

26194005

351744.



MASS SPECTRUM
10/06/81 11:11:00 + 2.09
SAMPLE:
#43 TO #44 SUMMED

DATA: 10/06/81 11:11:00 + 2.09
ENHANCED (S 400 2N 0T)

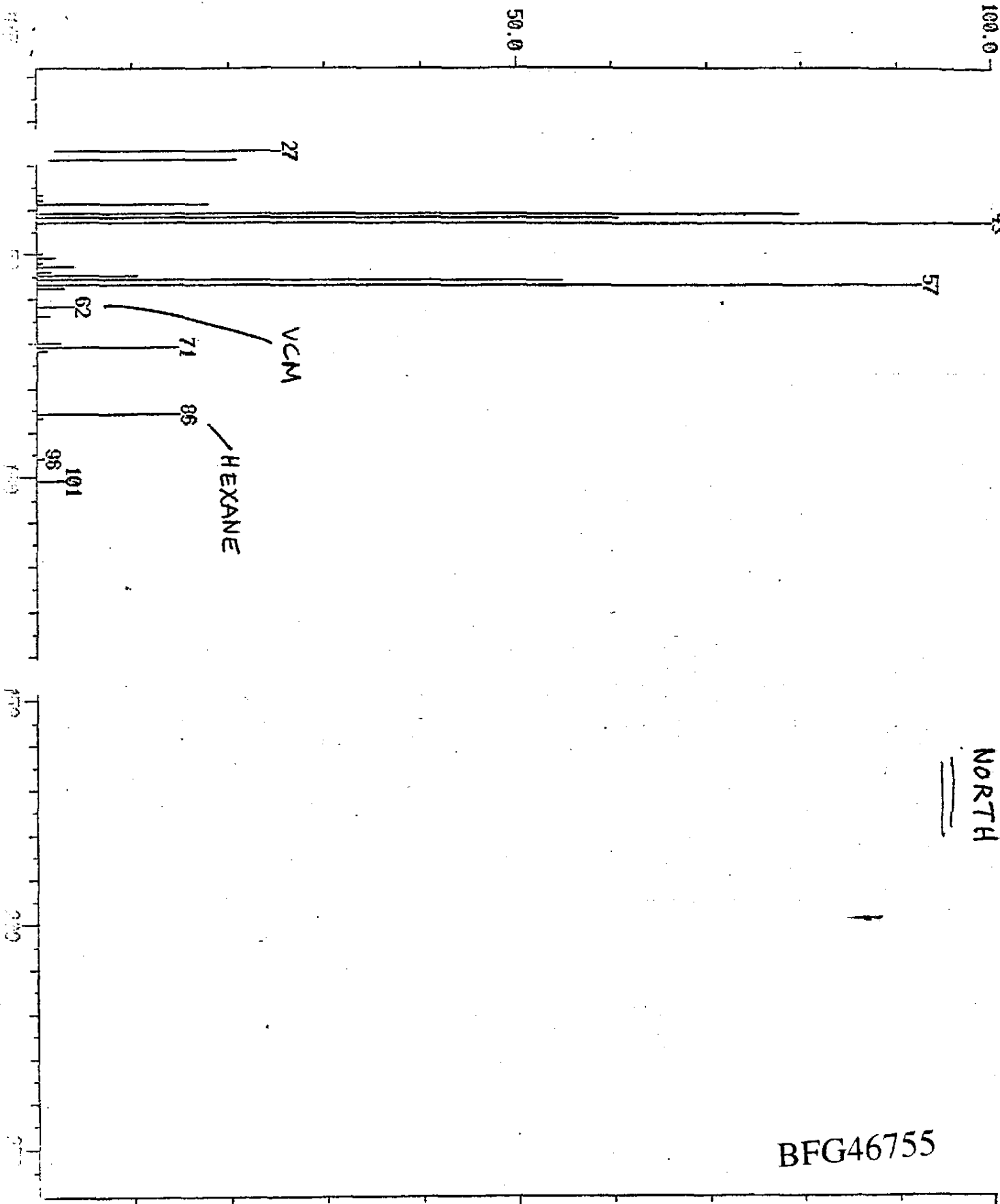
FILE: 103808.

NORTH

BFG46755

26194006

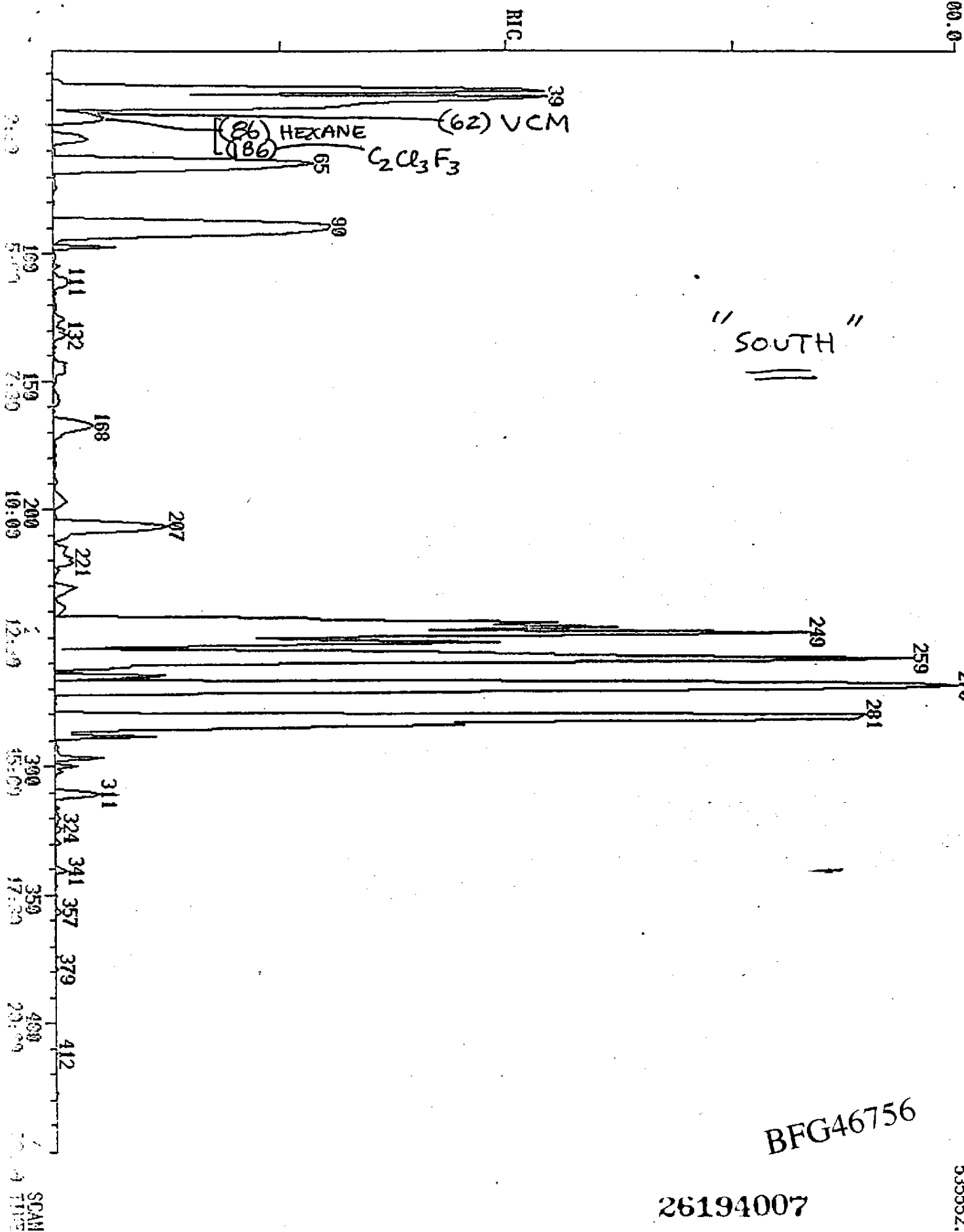
20032.
100.



10/06/81 13:22:00
SAMPLE: 21. 450 LABEL: N 20. 4.0 QUAN: A 0. 1.0 BASE: U 20. 3
RANGE: C
ENHANCED (S 400 2N 0T)

535552.

"SOUTH"



26194007

BFG46756

MASS SPECTRUM
10/06/81 13:22:00 + 2:12
SAMPLE:
#44 TO #45 SUMMED

DATA: MS213883 #44
ENHANCED (S 40B 2N 0T)

BASE 11/E: 07
RIC: 23456.

