PPG INDUSTRIES

# INTER-OFFICE CORRESPONDENCE

Date: April 13, 1977

From: P. Cappas

To: Wilfrido Torres

Location: Laboratory

Subject: Vinyl Chloride Study - Monthly Report

Areas and personnel monitoring program for VCM determination in the atmosphere, at the VCM plant and in other areas at PPG Caribe Plant, during March 1977.

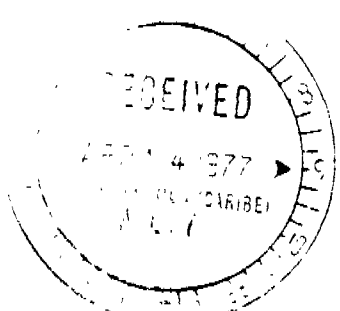
TABLE I

PERSONNEL MONITORING - TWA SAMPLES

| Name | Job No. | Date | Starting Time | Sample Duration (min) | Results (ppm) |
|---|---|---|---|---|---|
| H. Meléndez | 1 | 3-1-77 | 08:40 | 20 | 0.1 |
| C. González | 5 | 3-2-77 | 08:45 | 375 | 1.3 |
| E. Santiago | 2 | 3-4-77 | 16:00 | 360 | 0.1 |
| C. Torres | 3 | 3-7-77 | 08:40 | 380 | ∠0.1 |
| H. Meléndez | 2 | 3-7-77 | 08:30 | 390 | 0.1 |
| J. Zayas | 5 | 3-11-77 | 09:15 | 360 | 1.6 |
| Josué López | Maint. | 3-15-77 | 09:25 | 335 | 1.5 |
| A. Alvarez | 5 | 3-16-77 | 08:35 | 405 | ∠0.1 |
| J. Gracia | Maint. | 3-16-77 | 08:15 | 405 | 0.1 |
| C. Tossas | 3A | 3-16-77 | 08:25 | 385 | 0.1 |
| S. Cuevas | 4 | 3-18-77 | 16:30 | 330 | 0.1 |
| G. Maldonado | Super. | 3-21-77 | 08:00 | 420 | ∠0.1 |
| J. Albelo | Maint. | 3-24-77 | 08:25 | 425 | 0.3 |
| J. Silva | Maint. | 3-24-77 | 08:25 | 425 | 0.2 |
| A. Rodríguez | Maint. | 3-28-77 | 08:30 | 420 | 0.2 |
| J. Pacheco | 5 | 3-28-77 | 08:50 | 340 | 0.4 |

Comments:

A total of 16 TWA samples were taken. Based on this total the average concentration was 0.4 ppm VCM. Three of this total were overexposure (1.0 ppm VCM - maximum ppm VCM exposure for TWA samples). The highest concentration obtained was 1.6 ppm VCM (3-11-77). The man monitored was J. Zayas. He was working in Job #5 (VCM Storage Area) doing his routinary work around the area.

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The Average Concentration of TWA Samples for Each Job Was:

| Jobs | No. of Samples Taken | Average - ppm VCM |
|---|---|---|
| 1 | 1 | 0.1 |
| 2 | 2 | 0.1 |
| 3 | 1 | <0.1 |
| 3A | 1 | 0.1 |
| 4 | 1 | 0.1 |
| 5 | 4 | 0.8 |
| Supervisor | 1 | <0.1 |
| Maintenance | 5 | 0.5 |

## TABLE II

### VCM Personnel Monitoring (15 min sample) Short Sample Program

The short sample program include a sampling during a period of (15 min) suspected high vinyl chloride concentrations. Maximum exposure for 15 min. samples = 5.0 ppm VCM.

| Name | Job No. | Date | Starting time | Sample Duration (min) | Results ppm VCM |
|---|---|---|---|---|---|
| C. González | 5 | 3-2-77 | 09:30 | 15 | 2.9 |
| C. González | 5 | 3-5-77 | 08:55 | " | 18.1 |
| J. Zayas | 5 | 3-11-77 | 13:45 | " | 0.7 |
| P. Delgado | Loader | 3-13-77 | 15:45 | " | 26.9 |
| R. Rivera | Loader | 3-13-77 | 15:45 | " | 18.1 |
| P. Delgado | Loader | 3-13-77 | 16:00 | " | 12.4 |
| R. Rivera | Loader | 3-13-77 | 16:00 | " | 21.1 |
| A. Alvarez | 5 | 3-15-77 | 09:30 | 15 | 262.5 |
| R. De Jesús | 2 | 3-16-77 | 08:25 | 15 | 4.4 |
| E. Sinigaglia | Maint. | 3-17-77 | 09:20 | 15 | 0.1 |
| A. Irizarry | Maint. | 3-17-77 | 09:20 | 15 | 0.3 |
| E. Rivera | 5 | 3-17-77 | 10:00 | 15 | 1.0 |
| C. González | 5 | 3-24-77 | 08:15 | 15 | 0.3 |
| H. Meléndez | 5 | 3-25-77 | 08:25 | 15 | 2.7 |
| H. Meléndez | 5 | 3-25-77 | 09:15 | 15 | <0.01 |
| H. Meléndez | 5 | 3-25-77 | 09:35 | 15 | 0.4 |
| J. Pacheco | 5 | 3-28-77 | 09:05 | 15 | 1.4 |
| H. Meléndez | 5 | 3-30-77 | 08:50 | 15 | 1.5 |
| A. Dávila | Lab. | 3-30-77 | 08:00 | 10 | N.F. |

Table II (continued)

Comments:

A total of 19 (15 min) samples were taken. Based on this total the average concentration was 19.7 ppm VCN. Six of this total were over-exposure. The highest concentration obtained was 262.5 ppm VCM (3-15-77). The man monitored was A. Alvarez. He was working in Job #5 (VCM Storage Area) taking readings around the Refrigeration Unit. At this time, maintenance people were repairing a pump in this unit. The VCM supervisor was notified of the result obtained on sample taken to A. Alvarez immediately after the analysis.

Note:

Most of the samples (15 min sample) taken during March 1977 were taken to people working in Job #5 (VCM Storage Area). The VCM personnel sampling was more intensive in this job because of the high VCM concentration obtained during the last month. Month by month results show that this area (Area 5 - VCM Storage) is the focus of most of the high VCM concentrations.

The Average Concentration (15 min. samples) for Each Job Was:

| Jobs | No. of Samples Taken | Average (ppm VCM) |
|---|---|---|
| 2 | 1 | 4.4 |
| 5 | 11 | 26.5 |
| Loaders | 4 | 19.6 |
| Laboratory | 1 | N.F. |
| Maintenance | 2 | 0.2 |

TABLE III

AREAS VCM MONITORING

| Area Name | Date | Starting Time | Sample Duration (min) | Results (ppm VCM) |
|---|---|---|---|---|
| Area 1 Between P-403 AB | 3-1-77 | 08:40 hrs. | 425 | < 0.1 |
| Area 5 Near Bullet A valves | 3-4-77 | 09:00 hrs. | 400 | <0.1 |
| Area 5 Refrigeration Unit | 3-14-77 | 09:15 hr.s | 360 | 0.22 |

Table III (continued)

Comments:

The average concentration based in 3 samples taken in the area monitoring program was 0.1 ppm VCM.

S.S.P.R. VCM Monitoring

The S.S.P.R. was monitored on 3-13-77. Some of the personnel from the loading department were monitored while disconnecting the VCM vapor and liquid line (see Table II for the results obtained on samples taken to the loaders). The ship was also checked several times for VCM vapor in the atmosphere with the OVA (Organic Vapor Analyzer). Complete reports about these subjects were distributed.

Off-Site VCM Monitoring Program - Sampling Date 2-24-77

Every month samples for VCM determination are being taken at different points outside of PPG complex. This sampling is conducted by the Omni Research Laboratory personnel. Six different points were selected according to the wind direction. The points selected and the results obtained were as follow:

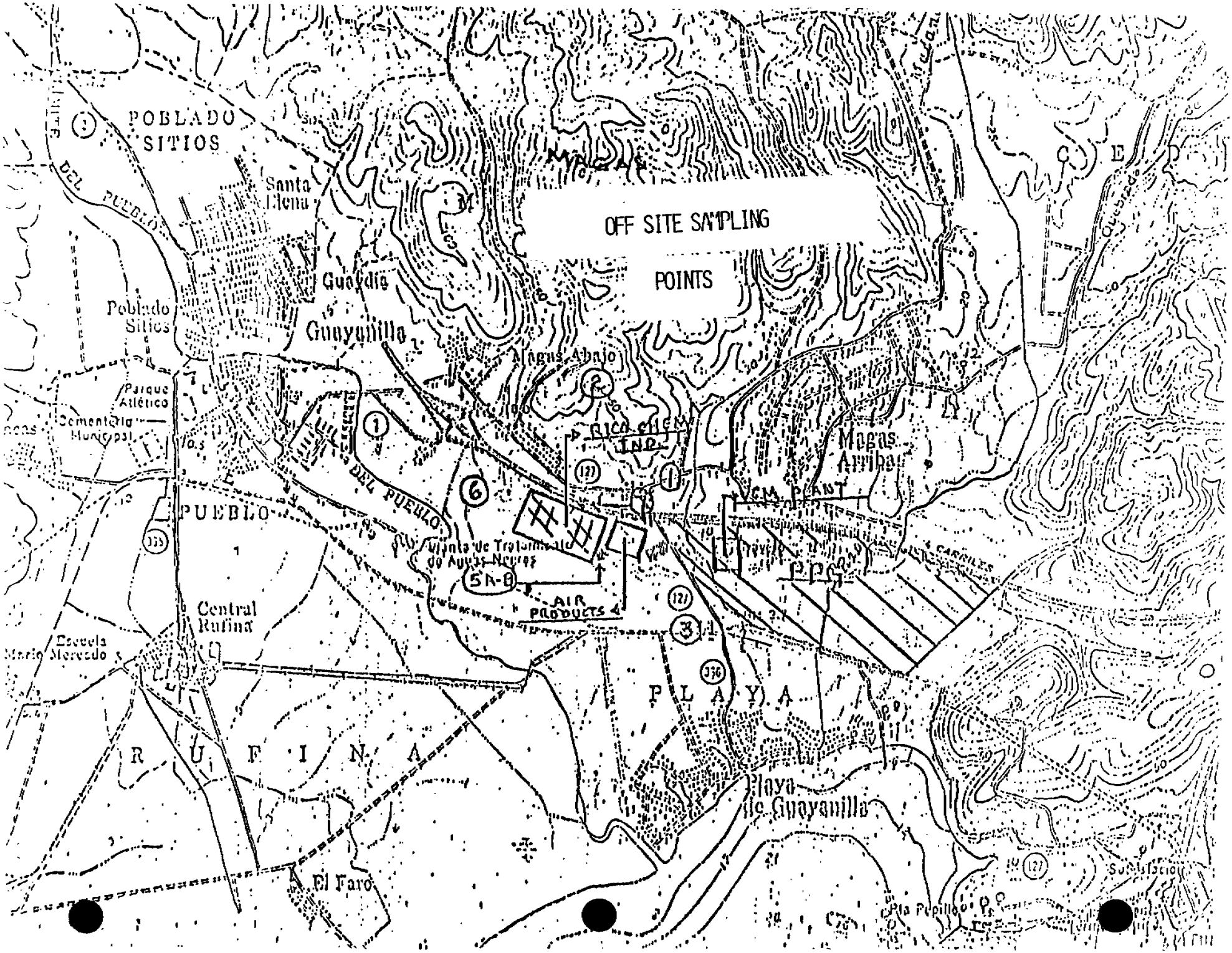
| Site | Results (ppb VCM) |
|---|---|
| 1A - North-West (1000 ft. of VCM Plant) | <0.71 |
| 2A - North-West (2000 ft. of VCM Plant) | <0.71 |
| 3A - South-West (1000 ft. of VCM Plant) | <0.71 |
| 5A - West (1000 ft. of VCM Plant) morning sample | <0.71 |
| 5B - West (1000 ft. of VCM Plant) Afternoon sample | <0.71 |
| 6A - West (2000 ft. of VCM Plant) | <0.71 |
| 7A - Front of Rico Chemical Industries Offices | <0.71 |

Attached to this report you will find the following:

1. VCM Plant Job Areas Map
2. VCM Storage Area Map
3. Off-Site Sampling Point Map

Pedro Cappas

/ngg
Attachments
cc: D.R. Ferguson
K.R. Mesloh
K. Ezelle
M. Juves
J. Torres
J.I. Thompson
K.W. Richardson
Dr. Pérez Roig
José Soto


OFF SITE SAMPLING
POINTS
POBLADO
SITIOS
Santa Elena
Guaydia
Guayanilla
Poblado Sitios
Parque Atlético
Cementerio Municipal
Magas Abajo
Magas Arriba
PUEBLO
Central Rufina
Escuela Mario Mercado
R U F I N A
P L A Y A
Playa de Guayanilla
El Faro
AIR PRODUCTS
VCM PLANT
SA-8
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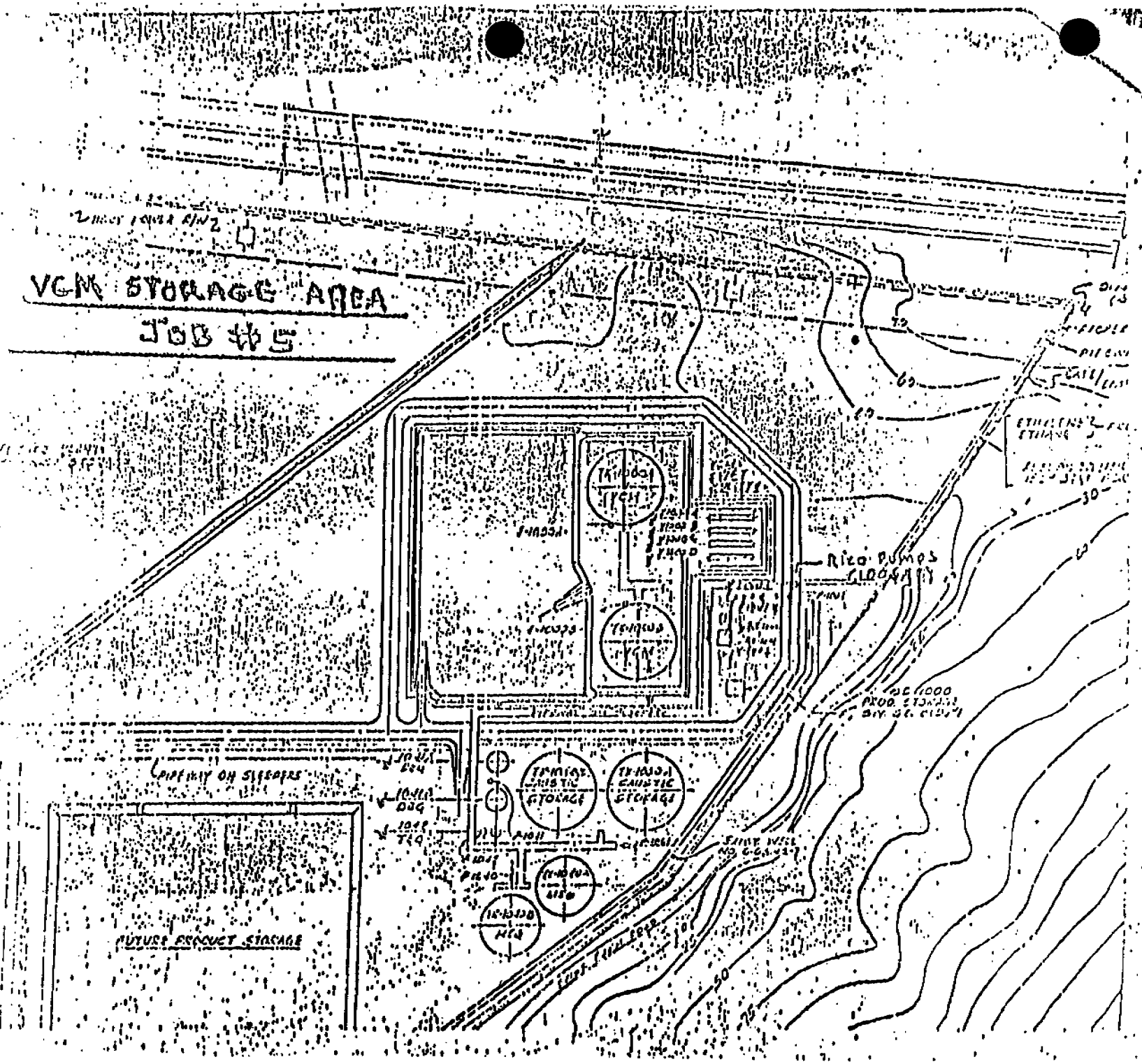


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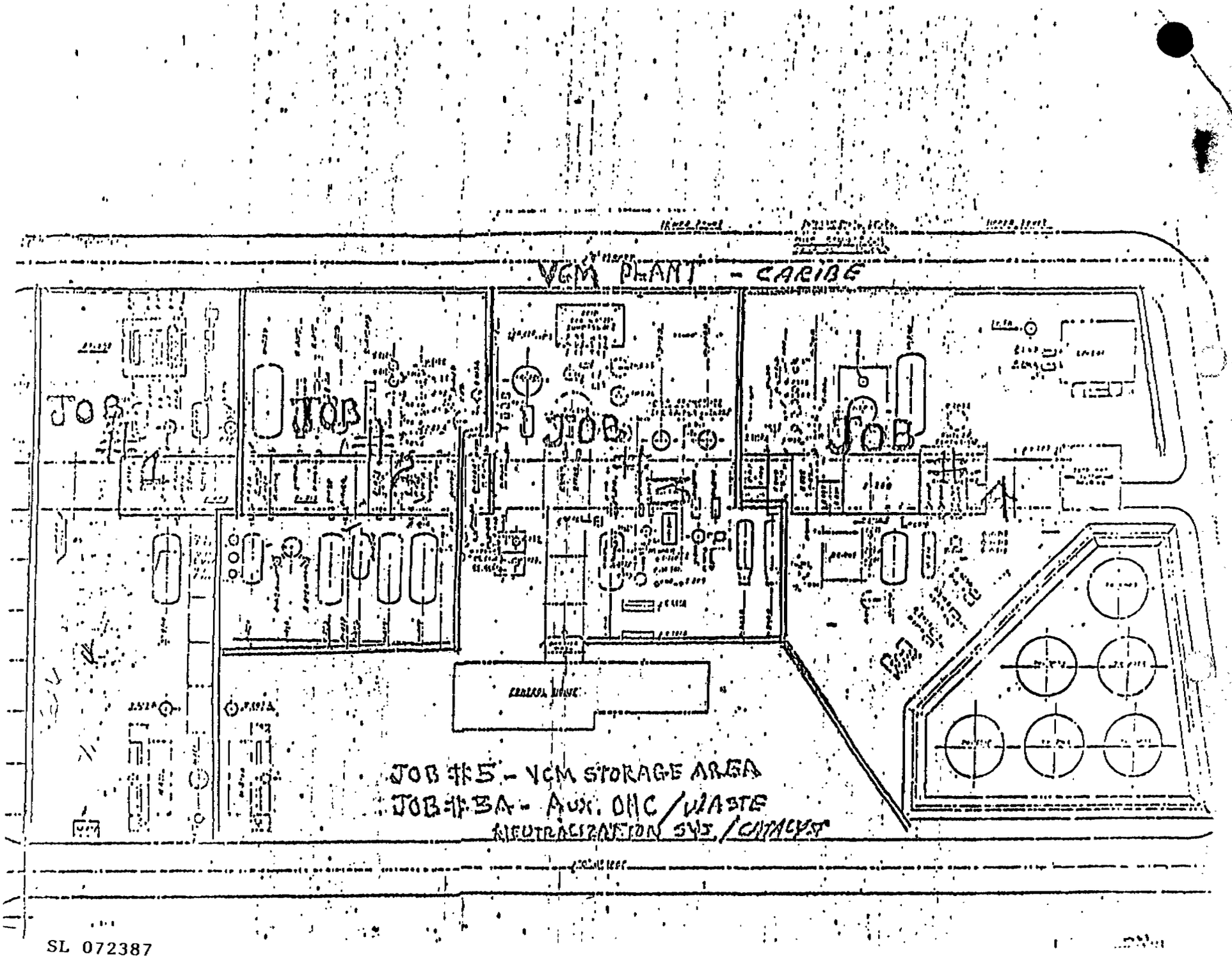
VCM PLANT - CARIBE
JOB
JOB
JOB
JOB
JOB #5 - VCM STORAGE AREA
JOB #3A - AUX. DHC / WASTE
NEUTRALIZATION SYS. / CATALYST

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