MCL 143
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PROGRESS REPORT

TECHNICAL SERVICES DEPARTMENT

SQ 10916

JOB NO:-	27/7139/2392
REPORT:-	No. 3 (Final)
DATE:-	30.12.70

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TITLE: Environmental contamination by P.C.B. (Atmospheric)

PROBLEM: To report on sampling of plant atmospheres for P.C.B. contamination.

PERSONNEL: R. Thomas (A.C. Nethercott)

SUMMARY: The remaining areas were sampled, repeat samples were taken in earlier areas. The results obtained are tabulated. These results have shown in general, higher P.C.B. content. Values range from practically nil to 5.1 mg P.C.B./m^3 of air.

FUTURE WORK

This depends on the recommendations made in this report.

R. Thomas
R. THOMAS
TECHNICAL SERVICES DEPT.

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RESULTS

Results from Report No. 2 have been included.

Area	P.C.B. mg/m^3 air
Drumming	0.38, 0.5, 0.3, 0.5, 0.4, 0.6, 0.5, 0.4
Chlorination (Ground floor)	0.59, 0.13, 0.61, 0.4
Santolube 900	0.23, 0.2, 0.7, 0.2, 0.4, 2.5, 0.5, 0.1
4N.D.P.A.	0.2, 0.3, 0.94, Practically nil, 0.4, 0.3
Aroclor control room	0.28, 5.1, 1.3, 0.6, 0.8
Chlorination (First floor)	0.12, 0.19, 0.12
Airblowing room	0.39, 0.14, 0.54, 0.44
Changing Room	0.8, 0.3, 0.17, 0.21, 0.15
Ejector room	0.2, 0.2, 1.2, 0.2, 0.64, 0.71, 1.32, 0.24
Plant Office	0.21, Prac. Nil, 0.1, 0.3
Special Products Lab.	0.11, 0.12, 0.24 Prac. Nil. 0.21

Discussions of Results

Further samples were taken at the Aroclor plant and the Santolube 900 plant.

Some, on the Aroclor Plant, were taken during a plant shut down, in order to get a base level of atmospheric analysis.

Some high results were obtained and on applying statistical analysis most of them were shown to be 'outliers'. It is doubtful whether these results can be left out even though they are statistically 'out' so for the sake of completeness they are left in but are marked up accordingly.

The Santolube 900 plant gave consistent results which on average were below the bottom maximum allowable concentration. These results are considered satisfactory.

The Aroclor drumming area gave consistent readings which averaged out at just below the bottom maximum allowable concentration. This again can be considered as satisfactory.

The plant office air was sampled and the P.C.B. content was found to be well below the limit allowed.

Air from the Special Products laboratory in the Analytical building was sampled and here again the P.C.B. content was found to be well below the limit allowed.

The Special Products Laboratory was well ventilated and supplied with treated air. Results obtained using this ventilation system were significantly lower than those obtained when not using it.

On the basis of the results obtained on the samples taken all areas except the ejector room can be considered as satisfactory.

To cover all process changes and catch unexpected and unusual emissions would involve much more extensive sampling. It is considered that the samples taken at this time are representative of plant conditions.

The areas of most 'personnel residence time' such as the drumming area, the plant office, the control room and the Santolube 900 working area all gave values of P.C.B. content that are considered satisfactory.

The 4NDPA area was not excessively sampled as the areas there are essentially out of doors and as would be expected 'out of doors' areas are well ventilated and give low results.

The storage tankage area was not sampled as this was 'out of doors' and under normal conditions very low results would be obtained.

RECOMMENDATIONS

1. That these determinations be repeated on a regular basis to be decided so that trends can be studied and controls set.

2. That the apparatus be assembled in a permanent portable form for use when required.

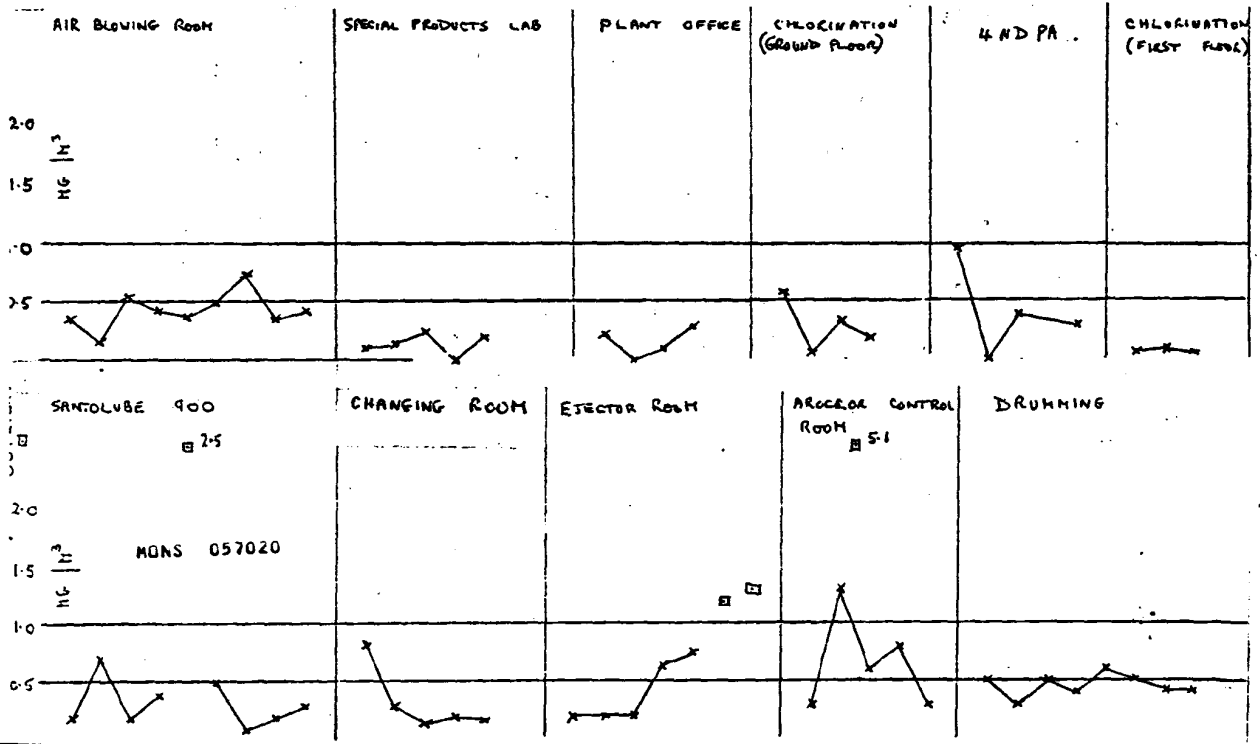
3. That any future modifications or recommendations be incorporated in the apparatus.

4. That all storage vessels containing finished product Aroclor be held at as low a temperature as is possible for subsequent handling.

5. That all storage vessels containing finished product Aroclor be fitted with nitrogen fed conservation vents.

That emission of Aroclor from venting systems on storage vessels be cut to the very minimum by the use of some suitably designed vent gas cooling/condensing system.

RT/EM
31.12.70


AIR BLOWING ROOM
SPECIAL PRODUCTS LAB
PLANT OFFICE
CHLORINATION (GROUND FLOOR)
4 N D PA .
CHLORINATION (FIRST FLOOR)
2·0
1·5
1·0
·5
SANTOLUBE 900
2·5
MONS 057020
CHANGING ROOM
EJECTOR ROOM
AROCLOR CONTROL ROOM
5·1
DRUMMING
2·0
1·5
1·0
0·5