DOW CHEMICAL U.S.A.

LOUISIANA DIVISION
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January 6, 1983

Al Baker

cc: Arnold Seidule
Joe Granier
Terry Campbell

Introduction:

Attached is the 1982 Environmental Health Survey and the 1982 Area Noise Survey for Poly A. These surveys are being circulated to the Poly A plant personnel for training in:

1. The consequences of overexposure to chemical and physical agents in the plant.

2. The results of the employee exposure measurements made in 1982.

3. The control measures available to minimize employee exposures.

Conclusions:

1. Due to the large number of high noise areas in the plant:

   a. The hearing conservation program should be continued to prevent possible overexposure to noise.
   b. Engineering controls should continue to be investigated to reduce the number of high noise sources.

2. None of the job classifications that were monitored for noise exposure had an average noise dose greater than the permissible noise dose.

3. None of the personnel breathing zone samples that were taken from the catalyst mix job had Isopar C concentrations above the Exxon Exposure Limit.

4. None of the personnel breathing zone samples that were taken from the millwrights lap-room job had Isopar M concentrations above the Exxon Exposure Limit.

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5. There was no SiO_2 detected in the personnel breathing zone samples of O.T.'s mixing superfloss. However, due to the mann r in which the superfloss is handled:

   a. The dust mask should continue to be worn while performing this job to prevent possible overexposure to SiO_2.
   b. Alternate methods of handling the superfloss should be considered to further reduce the possibility of overexposure to SiO_2.

Mark D. Ryland

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Plastic Department Industrial Hygiene
Louisiana Division

MDR/ltb
Attachments

December 28, 1982

R. Guillot
D. LeBlanc
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ENVIRONMENTAL HEALTH SURVEY - POLY A

Consequences of Overexposure to Noise

Prolonged and repeated exposures to noise levels above 90 decibels may cause severe damage to the nerves in the inner ear. When this happens, hearing is first reduced in the high frequency range and will eventually be reduced in the normal speech range.

Preventing Hearing Loss

Ear plugs and ear muffs are two types of hearing protection available to you. Both types reduce noise exposure significantly to prevent hearing loss. Keep in mind as with all protective equipment, hearing protection is useful only if it is worn and worn properly.

It is mandatory that ear protection be worn in any areas that have noise levels exceeding 90 decibels. "Ear Protection Required" signs are posted in these areas. Also the area noise surveys conducted this year are at the end of this report showing these areas.

REMEMBER: Hearing loss caused from prolonged exposure to noise above 90 decibels is gradual and usually permanent. Don't lose your hearing, use the ear protection.

Potential Exposure to Noise

Nineteen (19) tests were made for personal noise exposure using an audio dosimeter. The audio dosimeter integrates the noise levels over time to give a percentage of allowable noise exposure. For example, 90 db for 8 hours would equal 100%.

POLY A

Job	Number of Samples	Average Potential Exposure
Catalyst Mixer	1	17%
O.T. Extrusion	3	48%
S.O.T. Extrusion	6	86%
S.O.T. Compressor	2	56%
S.O.T. Train 5 Compressor	2	56%
S.O.T. Transfer Board	1	15%
O.S. Compressor	3	48%
Shift Supervisor	1	19%

Consequences of overexposure t Isopar C

The Exxon exposure limit is 400 parts per million (ppm). Isopar C is irritating to the eyes and skin. Prolonged contact with skin may results in the extraction of natural oils. Inhalation of high vapor concentrations may have results ranging from mild depression to convulsions and loss of consciousness.

Exposure to Isopar C while mixing catalyst

Eight (8) four hour breathing zone samples were taken from the catalyst mix job. The average exposure to Isopar C was .6 ppm and the highest concentration detected was 1.5 ppm.

Consequences of Overexposure to Isopar M

The Exxon exposure limit for Isopar M is 300 ppm. This chemical is irritating to the eyes and skin. Also, prolonged or repeated exposures of the vapor may cause slight anesthesia and irritation o the respiratory passages.

Isopar M should be used under the hood in the lap room. Also rubber gloves should be worn to prevent gross contact with the skin.

Millwright Exposure to Isopar M

Two (2) four hour breathing zone samples were taken from the millwrights using Isopar M in the lap room. The average exposure was 4.8 ppm and the highest concentration detected was 7.2 ppm.

Consequences of Overexposure to Superfloss (SiO_2)

The Threshold Limit Value (TLV) for SiO_2 is .1 mg/m^3 respirable dust and .3 mg/m^3 non-respirable dust. Long term or repeated exposure to high concentrations of SiO_2 may cause pulmonary disease. A dust mask should be worn whenever handling Superfloss to prevent overexposure.

Potential Exposure to Superfloss (SiO_2)

One (1) eight hour breathing zone sample was taken from the extrusion O.T. on a day when Superfloss was being mixed. The potential exposure ws $<.1$ mg/m^3 respirable dust and .2 mg/m^3 non-respirable dust. Also R&D analysis of sample filter detected no SiO_2.

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Attachments - Area Noise Surveys
- Consequences of Overexposure Data Sheets

ltb

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PLEASE HAVE EACH SHIFT EMPLOYEE SIGN AND DATE THIS SHEET FOR VERIFICATION

EACH EMPLOYEE HAS READ THIS MATERIAL:

NAME	DATE	NAME	DATE

PLEASE RETURN THIS COMPLETED FORM TO MARK RYLAND - BUILDING 807

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CONSEUQENCES OF OVEREXPOSURE

COMPOUND: CARBON MONOXIDE

EYES: NO EFFECT

SKIN: NO EFFECT

INHAL: CARBON MONOXIDE REACTS WITH THE HEMOGLOBIN IN THE BLOOD TO PRODUCE CARBOXY HEMOGLOBIN. WHEN THIS OCCURS, THE HEMOGLOBIN IS UNAVAILABLE TO TRANSPORT OXYGEN FROM THE LUNGS TO THE REMAINDER OF THE BODY. PROGRESSIVE SYMPTOMS OF OVEREXPOSURE INCLUDE HEADACHE, DILATION OF BLOOD VESSELS NEAR THE SKIN, THROBBING IN TEMPLES, SEVERE HEADACHE, WEAKNESS, DIZZINESS, DIMMED VISION, NAUSEA, VOMITING, COLLAPSE, INCREASED RESPIRATION AND PULSE, COMA, CONVULSIONS, WEAK PULSE, SLOW RESPIRATION, RESPIRATORY FAILURE AND (ULTIMATELY) DEATH. CARBON MONOXIDE HAS NO IRRITATING PROPERTIES AND, THEREFORE, OVEREXPOSURE IS NOT OBVIOUS. THIS HAS RESULTED IN MANY FATALITIES.

IHG: 50 PPM

CONSEQUENCES OF OVEREXPOSURE

COMPOUND: ETHYLENE

OTHER NAMES: ETHENE

EXPOSURE LIMIT: 1000 PPM (OSHA)
1000 PPM (Dow, 3-74)

ODOR: SWEET

EYES: CONTACT WITH THE LIQUID MAY CAUSE FROST BITE.
VAPOR CONTACT IS NON-IRRITATING.

INGESTION: UNLIKELY TO BE SWALLOWED IN TOXIC AMOUNTS.

INHALATION: (VAPOR)

SHORT TERM: DIZZINESS, INCOORDINATION AND CONDITIONS WHICH MIGHT LEAD TO AN UNSAFE WORK SITUATION.

LONG TERM: NOT KNOWN TO HAVE LONG TERM EFFECTS.

BY: E. E. BOSCHE'
REVISED: 12-13-77

REVIEWING PHYSICIAN
DATE: 12/14/77

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COMPOUND: PROPYLENE

EYES: GAS -- NO RESPONSE.
LIQUID -- MAY CAUSE FROSTBITE.

SKIN: GAS -- NO RESPONSE.
LIQUID -- MAY CAUSE FROSTBITE.

INGESTION: WOULD NOT EXPECT EXPOSURE BY THIS ROUTE.

INHALATION: HEALTH HAZARDS ARE ANESTHESIA AND DISPLACEMENT OF OXYGEN LEADING TO ASPHYXIATION.

IHG: NONE ESTABLISHED.

ACGIH TLV BOOKLET CLASSIFIES PROPYLENE AS A SIMPLE ASPHYXIANT. MAINTAIN AT LEAST 18% OXYGEN (BY VOLUME) IN ATMOSPHERE; 2-11% PROPYLENE IN AIR IS THE EXPLOSIVE RANGE.

ODOR: THRESHOLD AT 70 PPM.

REFERENCES: PATTY, VOLUME II, 1963; ACGIH TLV BOOKLET (PAGE 6), 1979; INDUSTRIAL HYGIENE DATA SHEET, 1959.

AUTHOR: W. E. LEDFORD

CHECKED BY: C. E. HALPHEN, INDUSTRIAL HYGIENE
J. E. BETSO, TOXICOLOGY
M. F. CURRIER, MEDICAL

ISSUE DATE: 5/5/80

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MATERIAL:	ISOBUTANE
SYNONYMS:	2-METHYL PROPANE OR TRIMETHYLMETHANE
EYE:	SLIGHTLY IRRITATING IF SPRAYED INTO THE EYES
SKIN:	NO EFFECT
INHALATION:	BRIEF EXPOSURE TO VERY HIGH CONCENTRATIONS MAY CAUSE DROWSINESS AND UNCONSCIOUSNESS DUE TO LACK OF OXYGEN; MAY CAUSE MALFUNCTIONS OF THE HEART
INDUSTRIAL HYGIENE GUIDE:	600 PPM (1429 MG/M^3)
ODOR THRESHOLD:	~5000 PPM
REFERENCE:	IHG DOCUMENTATION
AUTHOR/DATE:	C. L. BALDWIN/NOVEMBER 13, 1978
REVIEWING PHYSICIAN:	J. L. GAMBLE

COMPOUND: POLYETHYLENE (DUST OR PELLETS)

EXPOSURE GUIDELINE: 10 MG/M^3 - TO AVOID IRRITATION TO NOSE AND THROAT IN DUSTY ATMOSPHERES.

EYES: MINOR IRRITATION POSSIBLE FROM MECHANICAL ABRASION.

SKIN: MINOR IRRITATION POSSIBLE FROM MECHANICAL ABRASION.

INGESTION: NON-TOXIC

INHALATION: CONSIDERED A NUISANCE DUST (BIOLOGICALLY INACTIVE)

SHORT TERM EXPOSURE: MAY CAUSE IRRITATION TO THE NOSE AND THROAT IN VERY DUSTY ATMOSPHERES.

LONG TERM EXPOSURE: MAY RESULT IN SOME DEPOSITION OF THE DUST IN THE LUNGS.

REFERENCES: I.H. DATA SHEET, M.S.D. SHEET.

WRITTEN BY: P.E. HENSON DATE: AUGUST 11, 1978
REVIEWED BY: N. MURRAY /E.H.WAUGH M.D. DATE: AUGUST 30,1978

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FORM [illegible]

CONSEQUENCES OF OVEREXPOSURE

COMPOUND:	MINERAL OIL
FORM AT ROOM TEMPERATURE:	LIQUID
EYE:	MINOR IRRITATION
SKIN:	NO EFFECT
INHALATION:	POSSIBLE IRRITATION OF UPPER RESPIRATORY SYSTEM. NO KNOWN EFFECT FOR INDUSTRIAL EXPOSURES LESS THAN 15 MG/M^3.

CONTROL STANDARD: 5 MG/M^3

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GES/GJR, 1976

HEAT

Consequences of Exposure

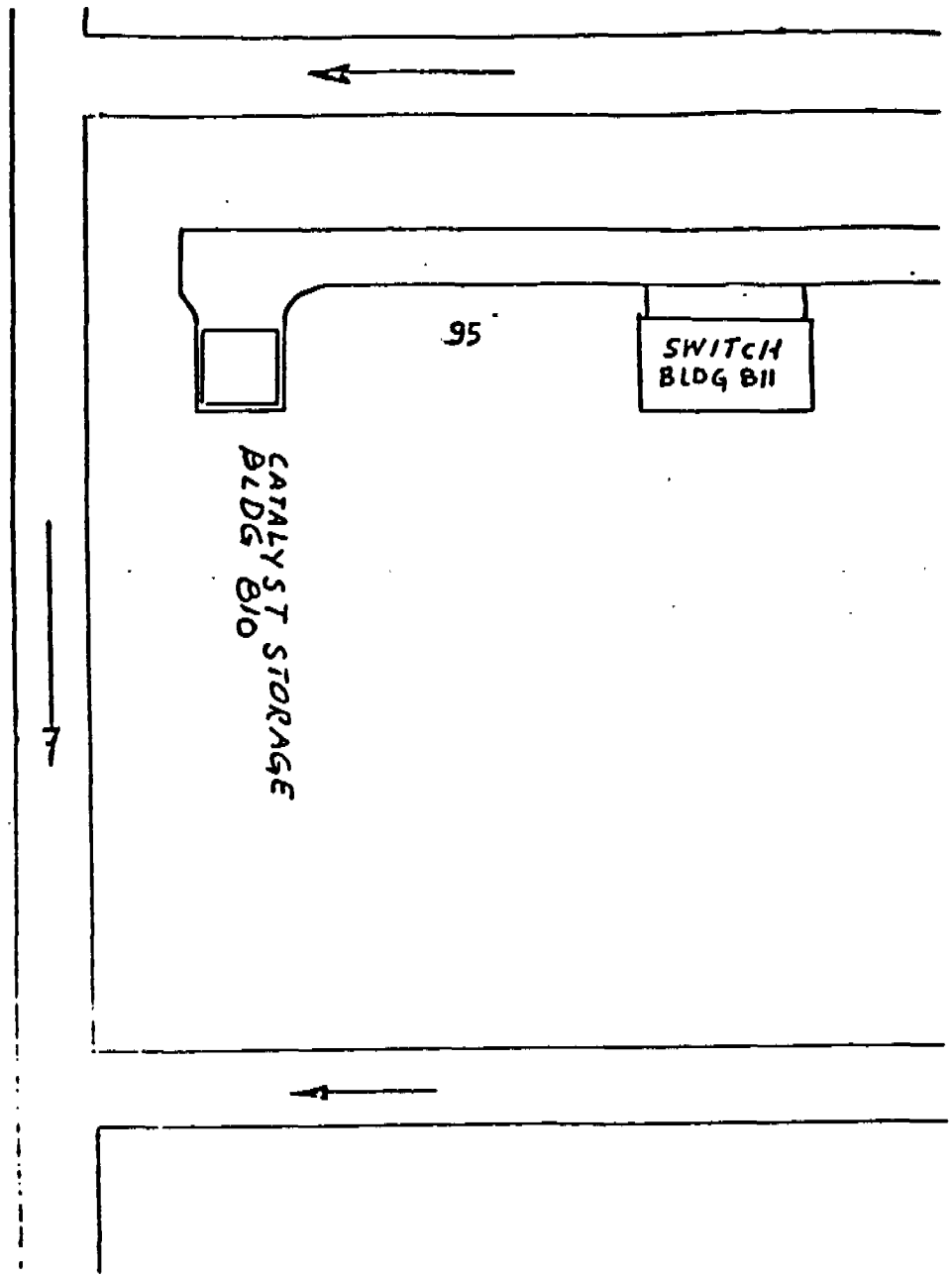
Excessive sweating can lead to a salt imbalance in the body which can result in heat exhaustion.

Repeated or prolonged overexposure can cause failure of the sweat regulating mechanism (which cools the body) which can result in heat stroke (high fever and unconsciousness, with possible death if not reversed immediately).

Control Standard

DIHG 79 Wet Bulb-Globe Temperature - to determine when specific work practices and schedules are needed to avoid heat stress.

POLY A AREA NOISE LEVELS IN DECIBELS



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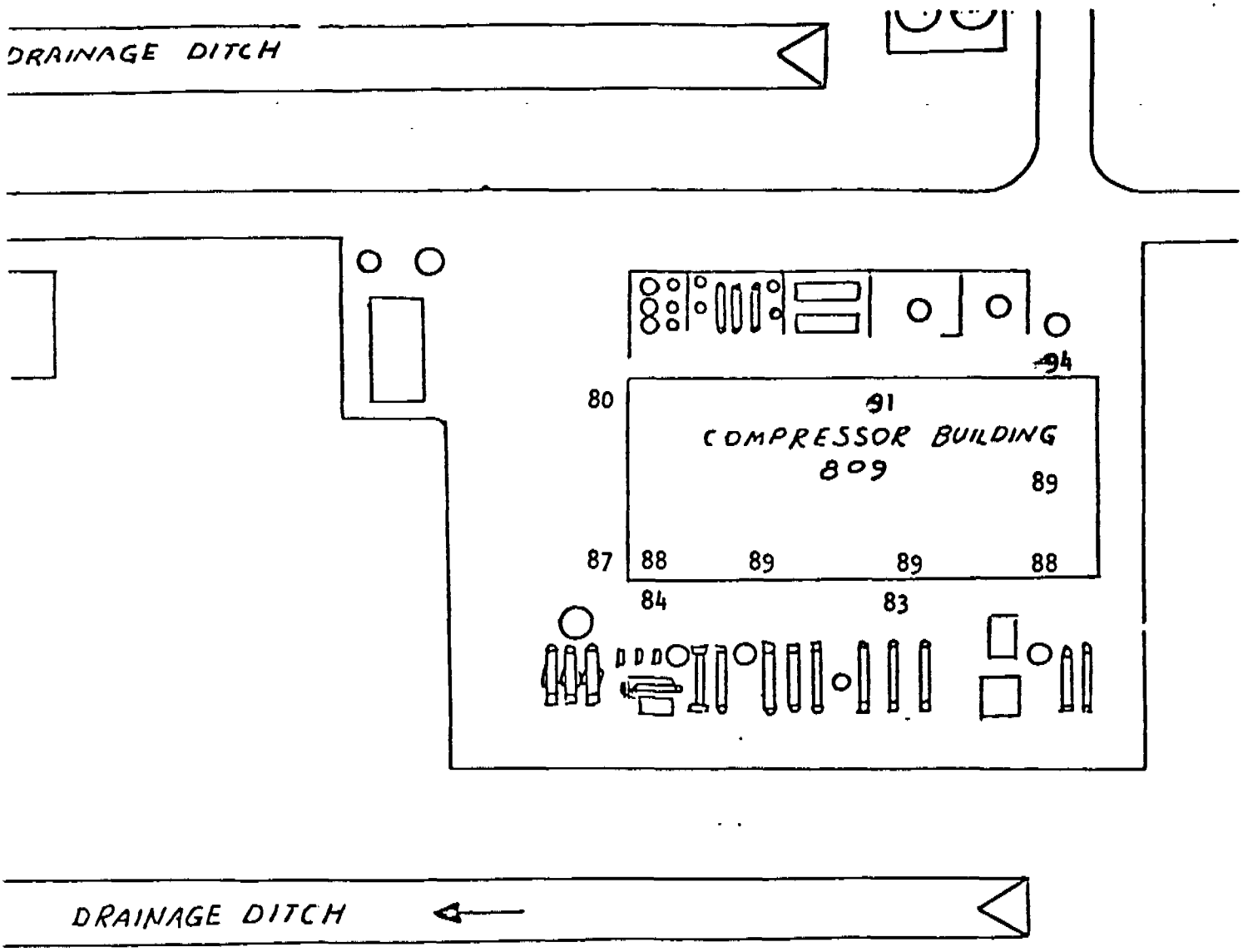
POLY A AREA NOISE LEVELS IN DECIBELS



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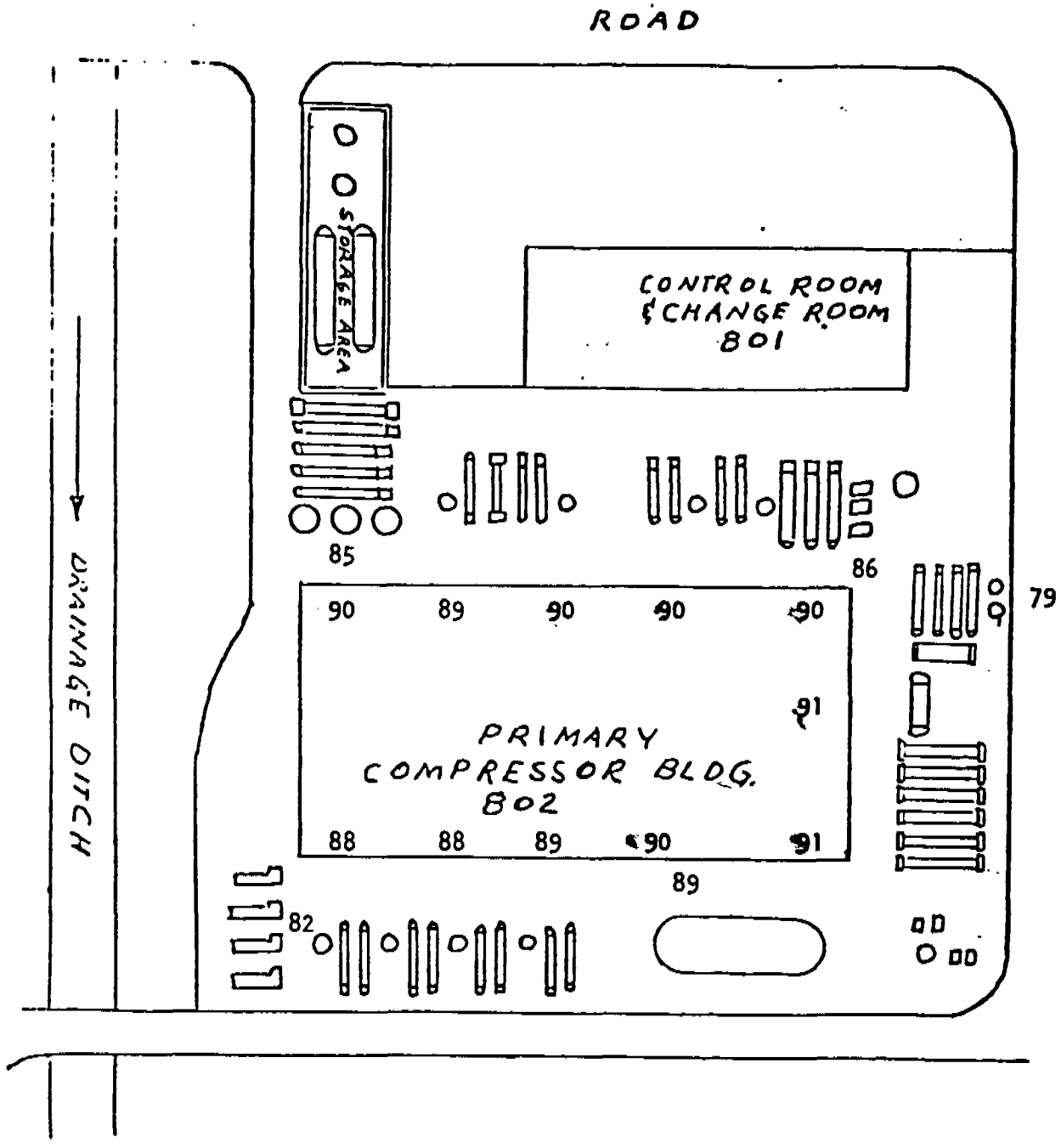

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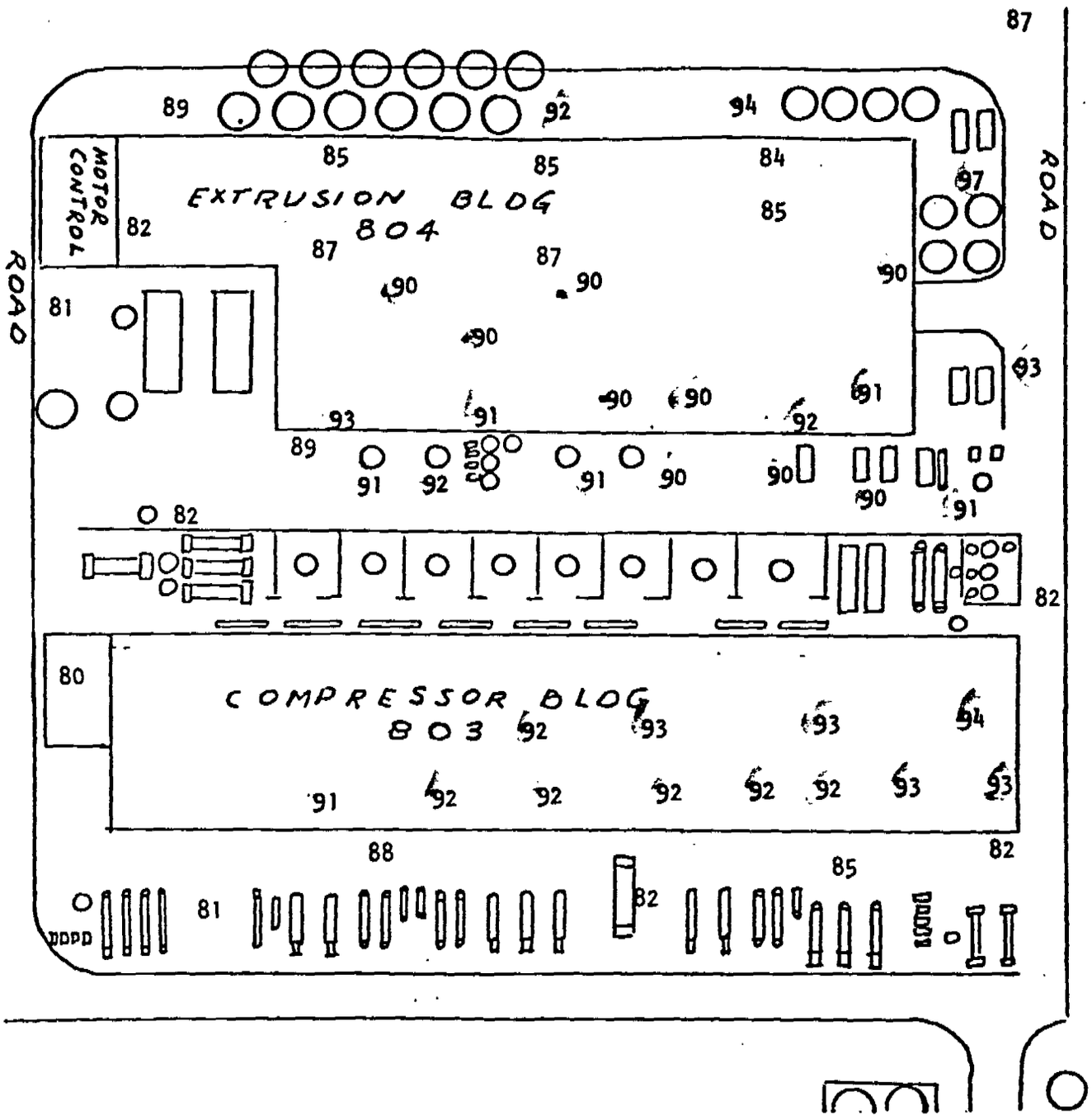
POLY A AREA NOISE LEVELS IN DECIBELS



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