DOW CHEMICAL U.S.A.

January 6, 1983

LOUISIANA DIVISION
P. O. BOX 150
PLAQUEMINE, LOUISIANA 70764-0150
504 389-8000

Larry Devillier

cc: Arnold Seidule
Joe Granier
Terry Campbell

Introduction:

Attached is the 1982 Environmental Health Survey and the 1982 Area Noise Survey for Poly C. These surveys are being circulated to the Poly C 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 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 during the monitoring for Isopar C exceeded the Exxon Exposure limit.

4. None of the personnel breathing zone samples that were taken during the monitoring for Dowtherm A exceeded the industrial hygiene guideline (IHG).

5. None of the personnel breathing zone samples that were taken during the monitoring for nuisance dusts exceeded the TLV.

Mark D. Ryland

Mark D. Ryland
Plastic Department Industrial Hygiene
Louisiana Division

MDR/ltb
Attachments

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January 3, 1983

Danny Cedatol
Ray Ratcliff
Jerrel Smith
Frank Travis
Charlie Almond

ENVIRONMENTAL HEALTH SURVEY - POLY C

Consequences of Overexposure to Noise

Pr longed 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

Sixty-six (66) 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%.

Job	Number of Samples	Average Potential Exposure	Highest Potential Exposure
O.T.	12	48%	128%
Reaction S.O.T.	16	56%	120%
Outside Lab S.O.T.	15	26%	70%
Inside Lab S.O.T.	4	1%	2%
Control Room O.S.	4	3%	4%
Extra O.S.	4	14%	18%
EDO O.T.	2	19%	37%
EDO S.O.T.	1	17%	17%
EDO O.S.	1	23%	23%
Shift Supervisor	3	9%	14%
Technical	3	6%	12%
Secretary	1	1%	1%

Consequences of Overexposure to Isopar E

Isopar E may cause irritation to the eyes and skin. Prolonged exposure to Isopar E vapors may cause slight central nervous system depression as well as irritation of respiratory passages.

Exposure to Isopar E

The Exxon exposure limit is 480 ppm for 8 hours. Fifteen 8-hour breathing zone samples were taken from 5 job classifications. The highest average concentration was 1.5 parts per million (ppm) detected on the O.T. job.

One sample was taken from the O.T. while loading an isopar E truck. The exposure to isopar E was 4.7 ppm for 69 minutes.

Job Classification	No. of Samples	Average Exposure To Isopar E	Highest Exposure
O.T.	6	5.7 ppm	1.5 ppm
S.O.T. Reaction Area	6	.5 ppm	.3 ppm
O.S. Extra	1	<.1 ppm	<.1 ppm
Shift Supervisor	1	<.4 ppm	<.4 ppm
Technical	1	<.1 ppm	<.1 ppm

Consequences of Overexposure to Dowtherm A

The Dow industrial hygiene guideline is 1 ppm for 8 hours because of the disagreeable odor at higher concentrations.

Five (5) 8-hour breathing zone samples were taken from 3 job classifications. The highest average concentration was .05 ppm detected on the O.T. job.

Job Classification	No. of Samples	Average Exposure To Dowtherm A	Highest Exposure To Dowtherm A
O.T.	2	.05 ppm	<.07 ppm
S.O.T. Reaction Area	2	<.04 ppm	<.04 ppm
Shift Supervisor	1	<.04 ppm	<.04 ppm

Consequences f Overexposure to Nuisance Dust
(Calcium stearate, Irganox 1010, UV531)

Minor irritation is possible to the eyes and skin. In very dusty atmospheres, irritation to the nose and throat may result.

Exposure to Nuisance Dust

The threshold limit value (TLV) for nuisance dust is 10 mg/m^3 for 8 hours. One 8-hour breathing zone sample was run on the O.T. and S.O.T. j b. The O.T. exposure was <1.4 mg/m^3 total dust and the S.O.T. exposure was <1.2 mg/m^3 total dust.

M. D. Ryland

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Building 807

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Attachments

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

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.

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

DO 103060
CONFIDENTIAL

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

CONSEQUENCES OF OVEREXPOSURE

COMPOUND: Karl Fischer Reagent (methanol, pyridine, iodine, sulfur dioxide mixture)

EYES: Severe injury and possible permanent damage unless the eye is washed immediately.

SKIN: Irritation. May also be absorbed in harmful amounts unless washed from skin and clothing.

INHALATION: Irritation of nose, throat, and lungs.

COMPOUND : HYDROGEN

EXPOSURE GUIDELINE : 1000 PPM

EYES : NON-IRRITATING

SKIN : NON-IRRITATING

INGESTION : EXPOSURE BY THIS ROUTE UNLIKELY DUE TO GASEOUS STATE.

INHALATION :

SHORT TERM EXPOSURE : VERY HIGH CONCENTRATIONS OF HYDROGEN WHICH EXCLUDE OXYGEN WILL CAUSE DIZZINESS, FAINTING AND EVEN DEATH IF THE PERSON IS NOT REMOVED TO FRESH AIR IN A SHORT PERIOD.

LONG TERM EXPOSURE : NON-TOXIC

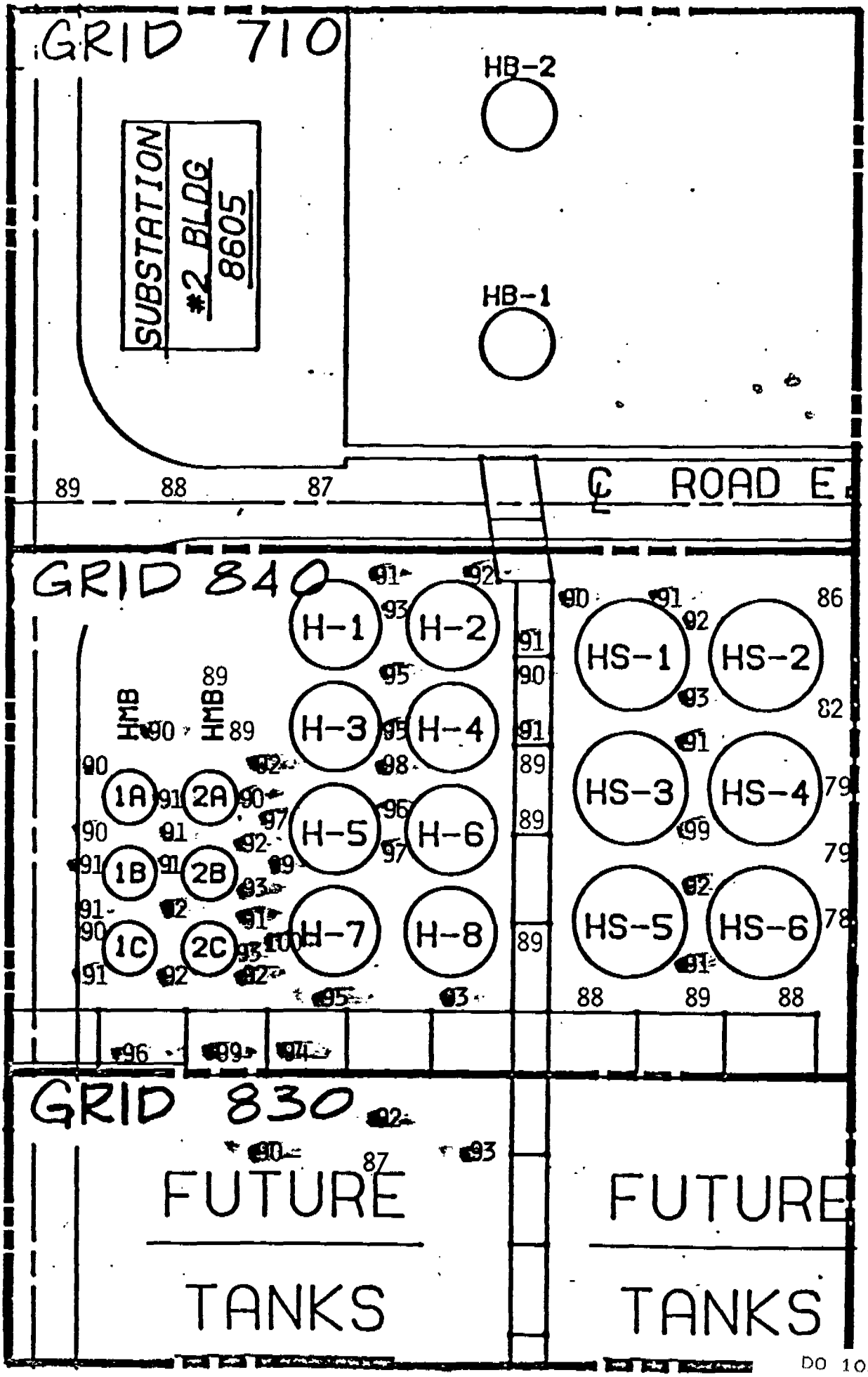
COMMENT : HYDROGEN HAS EXPLOSIVE LIMITS OF 4 TO 75% IN AIR BY VOLUME.

REFERENCES : I.H. DATA SHEET, CHEMICAL DICTIONARY

WRITTEN BY : P.E. HENSON DATE : AUGUST 11, 1978

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

POLY C AREA NOISE LEVELS IN dB(A)



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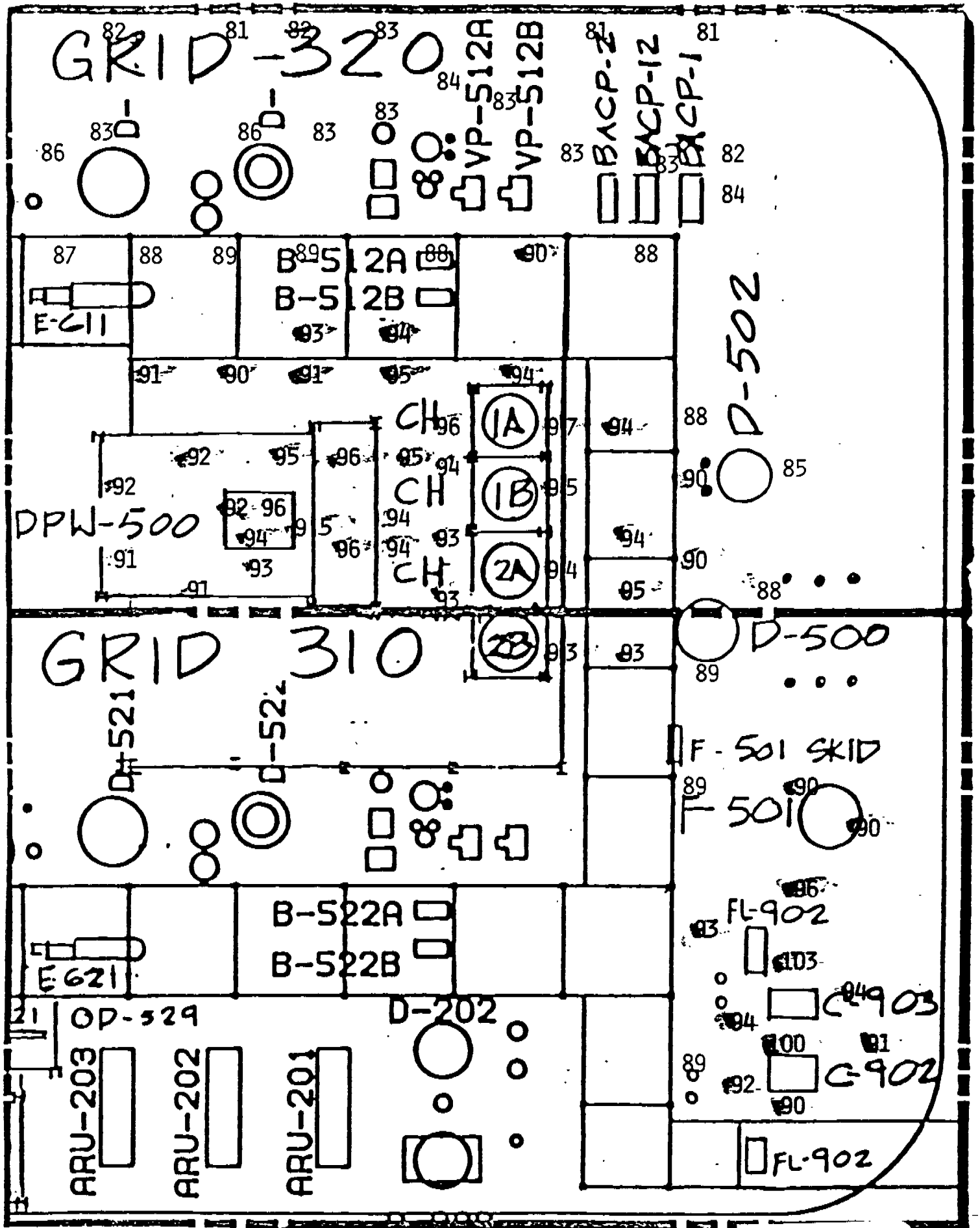
POLY C AREA NOISE LEVELS IN db(A)



DO 103065
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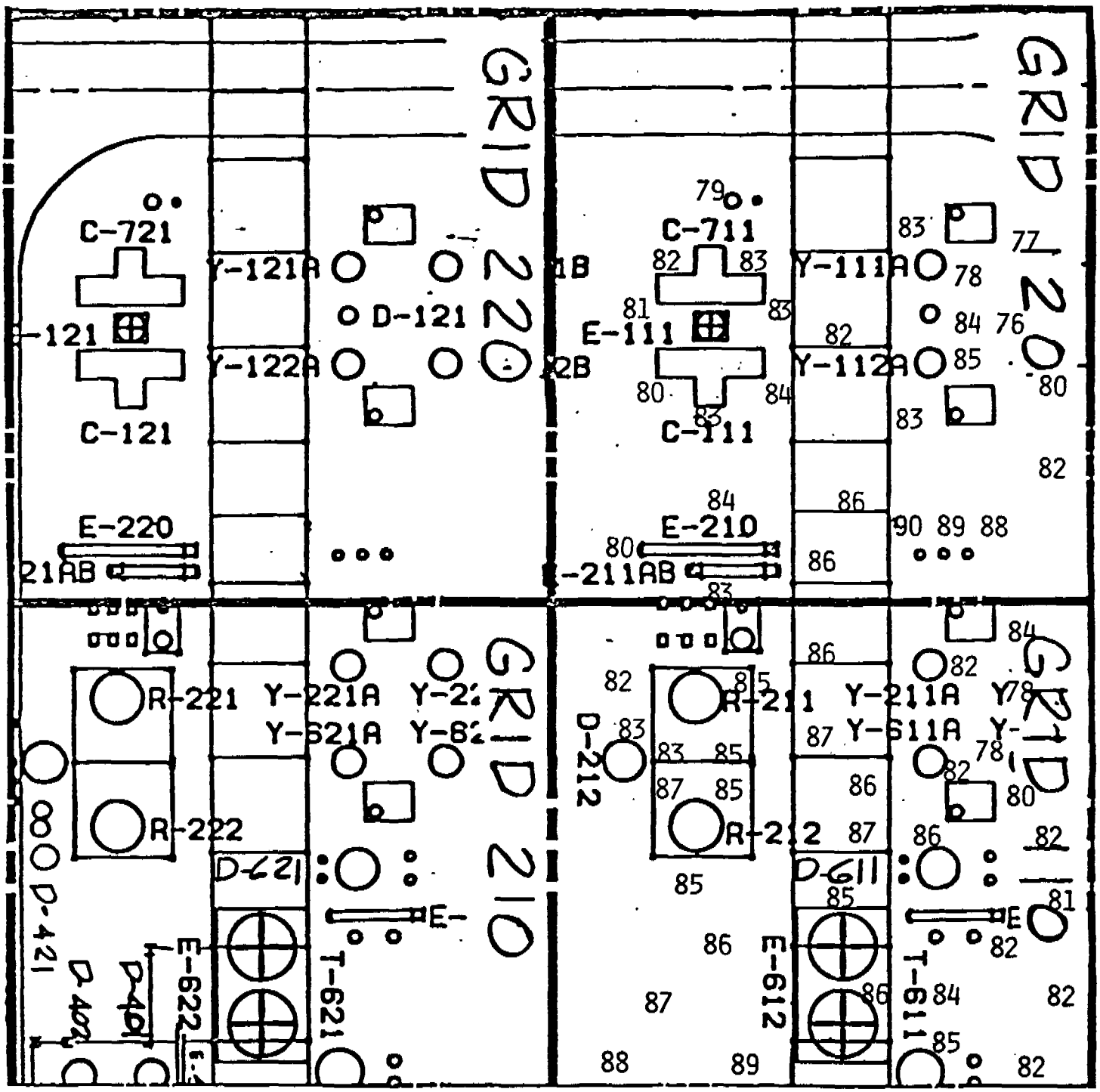
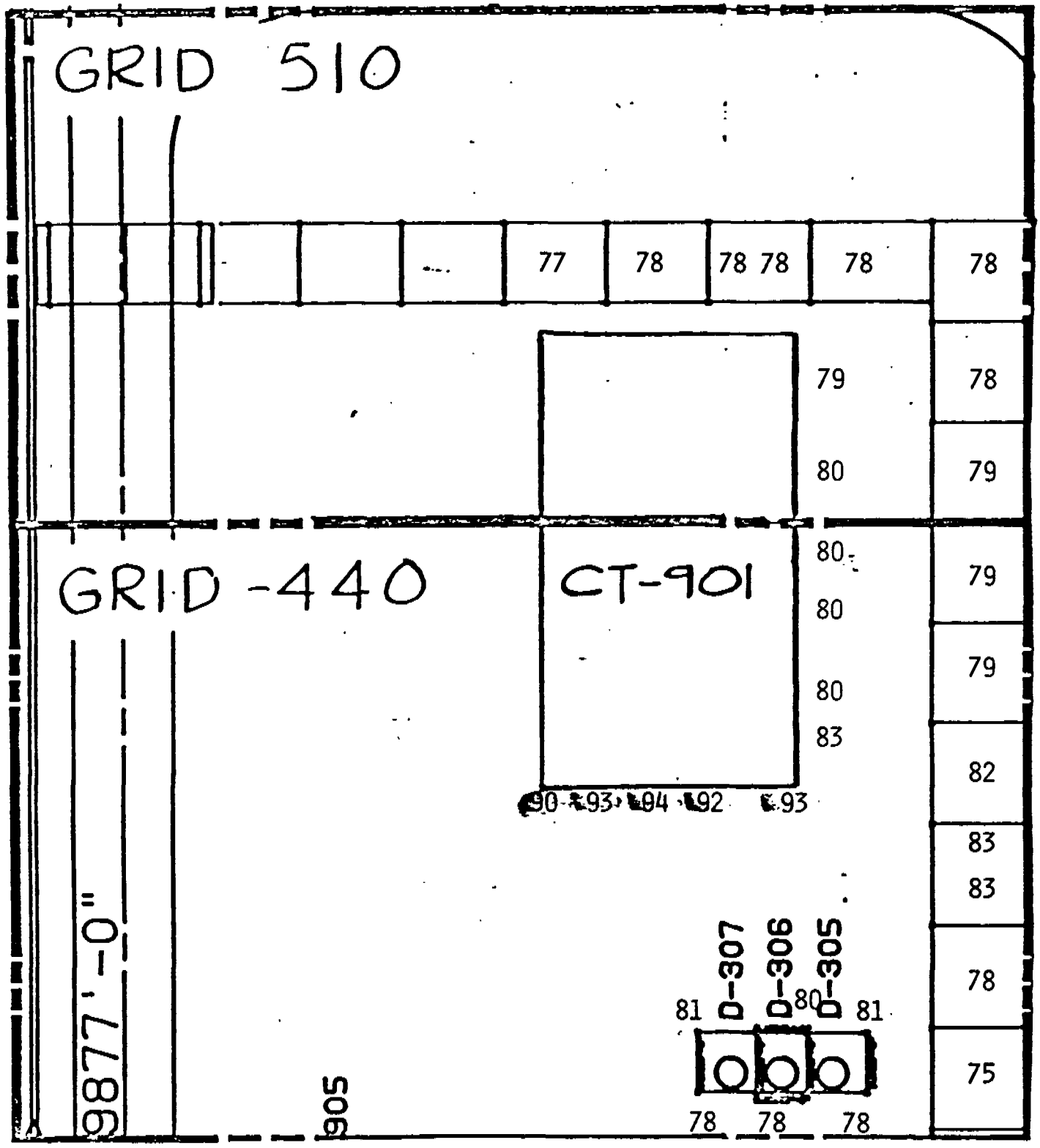
POLY C AREA NOISE LEVELS IN db(A)



POLY C AREA NOISE LEVELS IN db(A)



DO 103067
CONFIDENTIAL

POLY C AREA NOISE LEVELS IN db(A)