I.1
11/12/81
159478

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION V
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

March 30, 1982

REPLY TO ATTENTION OF:

Mr. Richard Sinise
Environmental Engineer
Monsanto Chemical Intermediates Co.
Sauget, Illinois 62201

Re: November 12, 1981
Sampling Data

Dear Mr. Sinise:

Per your November 18, 1981, written request, please find attached a copy of partial results of the laboratory analysis from the above-referenced sampling. The remaining laboratory analysis will be transmitted to you when it becomes available.

Yours truly,

Anthony H. Holoska

Anthony H. Holoska, P.E.
Environmental Engineer

cc: Mr. Roger A. Kanerva
Illinois Environmental Protection Agency

Mr. Howard Chinn
Office of Illinois Attorney General

RECEIVED
MAR 31 1982
ILL. E.P.A. – D.L.P.C.
STATE OF ILLINOIS

Hand delivered on above date to ACM

CONCENTRATIONS OF TETRA-THRU OCTACHLORINATED DIBENZO-p-DIOXINS AND DIBENZOFURANS

IN LEACHATE RECEIVED FROM USEPA

SAMPLES COLLECTED 11/12/81

ISU

| ample No. | CDDs/CDFs in Parts-Per-Trillion (limits of detection in parentheses) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | TCDDs | TCDFs | PCDDs | PCDFs | HxCDDs | HxCDFs | HpCDDs | HpCDFS | OCDD | OCDF |
| S-1 | 0(1) | 0(1) | 0(2) | 0(2) | 4.5 | 6.3 | 86 | 74 | 323 | 3[illegible] |
| S-2 | 0(1) | 0(1) | 0(1) | 0(1) | 6.3 | 10 | 181 | 182 | 675 | 10[illegible] |
| WS-3 | 0(1) | 0(1) | 0(2) | 0(2) | 5.8 | 6.3 | 152 | 112 | 2,693 | 5[illegible] |
| WS-4 Field Blank) | 0(1) | 0(1) | 0(2) | 0(2) | 0(3) | 0(3) | 0(4) | 0(4) | 0(6) | 0(6 |
| WS-5 Field Blank) | 0(1) | 0(1) | 0(2) | 0(2) | 0(3) | 0(3) | 0(3) | 0(3) | 0(6) | 0( |

RECEIVED
MAR 8 - 1982
ILL. E.P.A. - D.L.P.C.
STATE OF ILLINOIS

RIVER ANALYSIS

ANALYSIS RESULTS

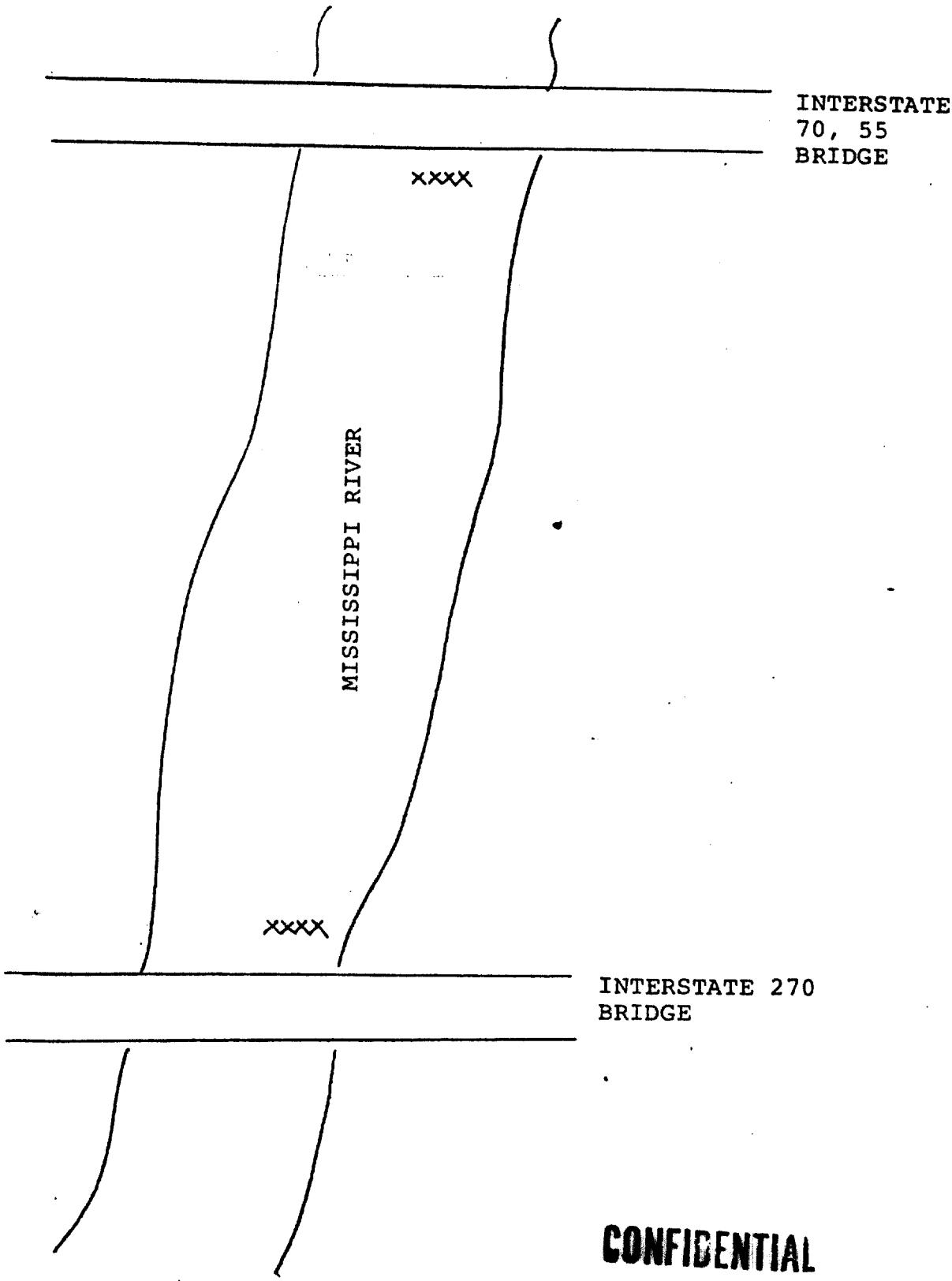
3/10/82

RECEIVED
MAR 31 1982
ILL. E.P.A. — D.L.P.C.
STATE OF ILLINOIS

Hand delivered to PCM on 3/30/82

CONFIDENTIAL

LOCATION OF RIVER ANALYSIS




CONFIDENTIAL

## ANALYSIS OF RIVER WATER SAMPLES FOR CHLORINATED DIBENZO-p-DIOXINS

| Sample | ng Dioxin/liter water, parts per trillion | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | $Cl_1$ | $Cl_2$ | $Cl_3$ | $Cl_4$ | $Cl_5$ | $Cl_6$ | $Cl_7$ | $Cl_8$ |
| Down River #1 | ND | ND | ND | ND | ND | ND | ND | ND |
| Down River #2 | ND | ND | ND | ND | ND | ND | ND | ND |
| Down River #3 | ND | ND | ND | ND | ND | ND | ND | ND |
| Down River #4 | ND | ND | ND | ND | ND | ND | ND | ND |
| Up River #1 | ND | ND | ND | ND | ND | ND | ND | ND |
| Up River #2 | ND | ND | ND | ND | ND | ND | ND | ND |
| Up River #3 | ND | ND | ND | ND | ND | ND | ND | ND |
| Up River #4 | ND | ND | ND | ND | ND | ND | ND | ND |

NOTE: ND - Not detected

Detection Limit 1ppt

CONFIDENTIAL

SPLIT SAMPLES

EPA VISIT

NOVEMBER 12, 1981

ANALYSIS RESULTS

3/10/82

RECEIVED
MAR 31 1982
ILL. E.P.A. – D.L.P.C.
STATE OF ILLINOIS

CONFIDENTIAL

Hand delivered on above 3/30/82 to ACM

6. 0 0

## SAMPLE KEYS

| | |
|---|---|
| MO-1, MO-3, MO-5 | Water Samples |
| MO-2, MO-4, MO-6 | Soil Samples |

CONFIDENTIAL

CONFIDENTIAL

## ANALYTICAL RESULTS FOR ORGANIC COMPOUNDS DETECTED

| Analyte | SAMPLE ID MO-1 (ppm) | MO-2 (ppm) | MO-3 (ppm) | MO-4 (ppm) | MO-5 (ppm) | MO-6 (ppm) |
|---|---|---|---|---|---|---|
| Base/neutral extractables | | | | | | |
| 1,4-dichlorobenzene | .030 | .2 | ND | .4 | ND | .6 |
| 1,2-dichlorobenzene | .020 | ND | ND | ND | ND | ND |
| Bis-(2-ethyl hexyl)-phthalate | ND | .4 | ND | .3 | ND | .4 |
| Acid extractables | | | | | | |
| 2-chlorophenol | .340 | ND | .100 | .2 | ND | ND |
| Phenol | .130 | ND | ND | .3 | ND | .3 |
| 2,4-dichlorophenol | .100 | ND | ND | ND | ND | ND |
| Volatiles | | | | | | |
| Chlorobenzene | .160 | NA[c] | .030 | NA | ND | NA |

CONFIDENTIAL

## NON PRIORITY ANALYTICAL RESULTS FOR ORGANIC COMPOUNDS DETECTED

| | SAMPLE ID | | | | | |
|---|---|---|---|---|---|---|
| | MO-1 (ppm) | MO-2 (ppm) | MO-3 (ppm) | MO-4 (ppm) | MO-5 (ppm) | MO-6 (ppm) |
| Non-Volatiles | | | | | | |
| Aniline | .060 | ND | .040 | ND | .025 | ND |
| Chloroanilines | 8.0 | ND | 4.0 | ND | .600 | ND |
| Dichloroanilines | .100 | ND | .040 | ND | ND | .2 |
| Chloronitrobenzenes | 3.000 | ND | .080 | ND | ND | ND |
| Dichlorophenol (Not 2,4) | .060 | ND | .050 | ND | ND | ND |
| Chlorophenols (Not 2-) | .500 | ND | .300 | .67 | .015 | .3 |
| Dichlorocyclohexane | ND | .2 | [a]ND | .2 | ND | ND |
| Dichlorinated Organic (M.W. 220)[b] | .570 | ND | .160 | ND | ND | ND |
| 2,4-D | .332 | ND[A] | .100 | ND[A] | ND | ND[A] |
| Phenol (Total) | .903 | <0.5 | 3.890 | <0.5 | .091 | <0.5 |

ppm - Parts per million

[a]ND - Compound not detected (0.01 ppm water; 0.1 ppm soil)

ND[A] - Compound not detected (0.03 ppm soil)

[c]ND - Non-applicable

b - Compounds could not be identified further

## ANALYTICAL RESULTS FOR PCB

CONFIDENTIAL

| | SAMPLE ID | | | | | |
|---|---|---|---|---|---|---|
| | MO-1 (ppm) | MO-2 (ppm) | MO-3 (ppm) | MO-4 (ppm) | MO-5 (ppm) | MO-6 (ppm) |
| PCB | ND[b] | .014 | ND | .034 | .008 | .192 |

[b]ND - Non-detected ( $<$ .0015 ppm)

CONFIDENTIAL

## ANALYTICAL RESULTS FOR TETRACHLORODIBENZO-P-DIOXIN - PPT

| Analyte | Parts Per Trillion SAMPLE ID | | | | | |
|---|---|---|---|---|---|---|
| | MO-1 | MO-2 | MO-3 | MO-4 | MO-5 | MO-6 |
| 1,3,6,8-TCDD | ND[A] | Not Analyzed | ND[B] | Not Analyzed | 7 | Not Analyzed |
| 2,3,7,8-TCDD | ND[A] | Not Analyzed | ND[B] | Not Analyzed | ND[C] | Not Analyzed |

ND[A] - Not detected (< 1 ppt)

ND[B] - Not Detected (< 2 ppt)

ND[C] - Not Detected (< 4 ppt)

## ORGANICS NOT FOUND

| Compound | Compound |
|---|---|
| 2-Nitrophenol | Hexachloroethane |
| 2,4-Dimethylphenol | Bis (2-chlorisopropyl) ether |
| 2,4,6-Trichlorophenol | Hexachlorobutadiene |
| 4,6-Dinitro-o-cresol | 1,2,4-Trichlorobenzene |
| 2,4-Dinitrophenol | Naphthalene |
| p-Chloro-m-cresol | Bis (2-chloroethyl) ether |
| Pentachlorophenol | Hexachlorocyclopentadiene |
| 4-Nitrophenol | Nitrobenzene |
| Chloromethane | Bis (2-chloroethoxy) methane |
| Dichlorodifluoromethane | 2-Chloronaphthalene |
| Bromomethane | Acenaphthylene |
| Vinyl Chloride | Acenaphthene |
| Chloroethane | Isophorone |
| 1,1-Dichloroethylene | Fluorene |
| 1,1-Dichloroethane | 2,6-Dinitrotoluene |
| Trans-1,2-dichloroethylene | 1,2-Diphenylhydrazine |
| Chloroform | 2,4-Dinitrotoluene |
| 1,2-Dichloroethane | N-nitrosodiphenylamine |
| 1,1.1-Trichloroethane | Hexachlorobenzene |
| Carbon tetrachloride | 4-Bromophenyl phenyl ether |
| Bromodichloromethane | Phenanthrene/anthracene |
| Bis (chloromethyl) ether | Dimethyl phthalate |
| 1,2-Dichloropropane | Fluoranthene |
| Trans-1,3-dichloropropene | Pyrene |
| Trichloroethylene | Benzidine |
| Dibromochloromethane | Chrysene |
| Bis-1,3-dichloropropene | Benz(a)anthracene |
| 1,1,2-Trichloroethane | Benzo(b)fluoranthene |
| Benzene | Benzo(k)fluoranthene |
| 2-Chloroethyl vinyl ether | Benzo(a)pyrene |
| Bromoform | Indeno(1,2,3-cd)pyrene |
| Tetrachloroethylene | Dibenzo(a,h)anthracene |
| 1,1,2,2-Tetrachloroethane | Benzo(g,h,i)perylene |
| Ethylbenzene | N-nitrosodimethylamine |
| Acrolein | N-nitrosodi-n-propylamine |
| Acrylonitrile | 4-Chlorophenyl phenyl ether |
| 1,3-Dichlorobenzene | 3,3'-Dichlorobenzidine |
| Diethyl Phthalate | Di-n-octyl phthalate |
| Di-N-Butyl Phthalate | Butylbenzyl phthalate |
| Methylene Chloride | Phthalic Acid |
| Trichlorofluoromethane | Cresol |
| Toluene | Phenyl Phenol |
| Bi-Phenol | Cadrolactam |
| Chlorobenzoic Acid | |

*Cyanide

Detection Limits: 0.01 ppm Water
0.1 ppm Soil

Table
*Cyanide 0.004 ppm Water
0.29 ppm Soil

RECEIVED
MAR 31 1992
ILL. E.P.A. - D.L.P.C.
STATE OF ILLINOIS

CONFIDENTIAL

## ANALYTICAL RESULTS FOR TOTAL METALS

CONFIDENTIAL

| Analyte | SAMPLE ID MO-1 (ppm) | MO-2 (ppm) | MO-3 (ppm) | MO-4 (ppm) | MO-5 (ppm) | MO-6 (ppm) |
|---|---|---|---|---|---|---|
| Arsenic | .020 | 5.3 | .025 | 9.6 | .065 | 8.2 |
| Mercury | <.0008 | < .1 | .0014 | < .2 | .001 | < .2 |
| Selenium | <.004 | < .7 | <.004 | < .8 | <.004 | < .8 |
| Thallium | <.100 | <17. | <.100 | <19. | <.100 | < 20 |
| Antimony | <.297 | <25.3 | <.297 | <28.2 | <.297 | <29.1 |
| Beryllium | .008 | .412 | .005 | .489 | .008 | 1.08 |
| Cadmium | .006 | .747 | .007 | 1.04 | .008 | 2.49 |
| Chromium | .086 | 10.7 | .075 | 10.40 | .070 | 28.70 |
| Copper | .073 | 7.17 | .092 | 7.89 | .080 | 25.50 |
| Lead | <.130 | < 11.06 | < .130 | < 12.36 | < .130 | < 12.74 |
| Nickel | .155 | 17.4 | .124 | 18.60 | .144 | 33.80 |
| Silver | <.110 | < 9.36 | < .110 | < 10.46 | < .110 | < 10.78 |
| Zinc | .216 | 29.50 | .216 | 36.30 | .062 | 69.40 |

RECEIVED
MAR 31 1992
ILL. E.P.A. – D.L.P.C.
STATE OF ILLINOIS

CONFIDENTIAL

## ANALYTICAL RESULTS FOR METALS

| Analyte | SAMPLE ID MO-1 (ppm) | MO-2 (ppm) | MO-3 (ppm) | MO-4 (ppm) | MO-5 (ppm) | MO-6 (ppm) |
|---|---|---|---|---|---|---|
| Aluminum | 26.8 | 3,870. | 30.5 | 4,380. | 3.22 | 13,900. |
| Barium | 0.50 | 75.4 | 0.5 | 130. | 0.36 | 7.79 |
| Boron | 18 | 53.0 | 13.6 | 28.7 | 19.1 | 30.3 |
| Bismuth | <0.17 | <14.5 | <0.17 | <16.2 | <0.17 | <16.7 |
| Calcium | 368. | 3,660. | 257. | 4,010. | 257. | 6,590. |
| Cobalt | .030 | 4.7 | 0.019 | 4.8 | 0.031 | 9.45 |
| Iron | 25.5 | 5,870 | 30.8 | 8,660 | 27.4 | 12,600 |
| Lithium | 0.82 | 28 | 0.65 | 31.4 | 0.56 | <29.4 |
| Magnesium | 43.2 | 1,780 | 48.2 | 2,090 | 39.8 | 4,080 |
| Manganese | 6.27 | 79.7 | 2.1 | 119. | 8.82 | 273 |
| Molybdenum | 0.53 | 10.6 | 0.403 | 12.5 | 0.439 | 22.4 |
| Phosphorus | 0.90 | 154. | 0.907 | 270. | 2.06 | 366. |
| Potassium | 14.2 | 248. | 9.82 | 268. | 11.4 | 2110. |
| Silicon | 0.293 | 78.4 | 0.874 | 78.6 | 0.484 | 19.4 |
| Sodium | 40.4 | 1840. | 41.8 | 1270. | 44.2 | 4720. |
| Strontium | 1.45 | 15.5 | 0.901 | 23.2 | 1.21 | 30.7 |
| Tin | <0.57 | <48.5 | <0.57 | <54.2 | 1.40 | <55.9 |
| Titanium | 0.49 | 246. | 0.467 | 308. | 0.069 | 572. |
| Vanadium | 0.18 | 14.4 | 0.138 | 17 | 0.170 | 4[illegible].9 |