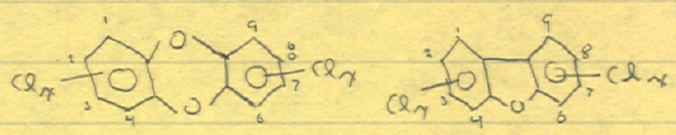
AA-24 1.1.2
No Date

RRC / PSL Tier 2 Dioxin Study

Objectives: Detect Dioxin migration off site!

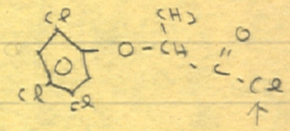
PCDD polychlorinated dibenzo-p-dioxins 75 isomers

PCDF " dibenzofurans 135 isomers



precursors phenoxy herbicides 2,4,5-TP

silvex 2-(2,4,5-Trichlorophenoxy)propionic acid



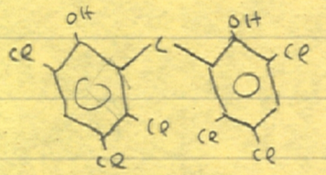
OH in 245 T

2,4-D 24 Dichlorophenoxyacetic acid

MCPA 4-chloro-2-methyl phenoxy acetic acid

2,4,5-Trichlorophenoxyacetic acid

Hexachlorophene



Chlorophenols eg pentachlorophenol + creosote

PCBs eg aroclor, clophen, phenoclor

Diphenyl ether herbicides

Photochemical rxns

Thermal rxns eg incomplete combustion of PCBs

* Young 1983 $t_{1/2}$ TCDD in soil ≈ 10-12 yrs

analytical levels / isomers

Site history - in South Wash, N of Pasco, 1°/y agriculture

1956 → 1971 municipal wastes / Open burning

1972 → present " " no " burried

1974 → present sewage lagoon(s)

1972 → 1974 haz. wastes lic thru 1981 ←

Maps 1-5

Table 6 show some of the materials rec'd & quantities during 1972-1974 operations & where buried - shallow

USEPA SF
1439630

Site history cont

rain ≤ evap by 32"/yr

Groundwater elevations fig 4 & 3

Flow SW

dates?

Wells all water taken from upper 20 ft' water table

control numbering varies chart to chart

previous work looked for sewage contam.!

Fig 7 shows analysis results on site water

? G.W flow direct. ? dumping locals

break through?

Conceptual Work Plan

3 ~~1~~. Confirm Groundwater Flow direction

~~4~~ ~~2~~. Determine possible seasonal variations

irrigation effects

collect &

~~4~~ ~~3~~. Review all documentation on site aireal photos

possible offsite contam

espec well #s, locales, types,

including irrigation wells

5 ~~4~~. Estimate possible transport rates, paths,

& annual migration

~~3A~~ ~~5~~. Explain the conflicting E&E vs JUB

data - resample?

6 ~~6~~. Develope sampling plan - what compds conc. for LLD

GW only with some surface soil

no new wells? depth profiling?

~~12~~ ~~7~~. Confirm ident, quant. & disposal areas of materials

taken to RRC did all deliv stop in 74?

6A ~~8~~. Sampling plan dependent on flow data direction

check

~~2A~~ ~~8~~. Check for possible soil & GW loading of

pesticides / herbicides / fungicides / fertilizers

from irrigation

call SMO dioxin isomer scan

EPTox

purpose
dioxin affinity

resample
draw down

precipitation

open bottom vs
sealed wells

On site in summer ~~fall~~

partition coef

outside input
pesto
fort
harb.

irrig wells

movement of water
direction

Task approach

(1) objective/ dioxin migration offsite

site history
use on site
how much
past history

(2) Conceptual work plan
broad terms
major task summarize existing data
10-12 down-grad wells
no perched aquifer
up gradient
EM surveys
Geophysics

6 tasks

(3) Schedule
data gap fill in
site visit
all waste hauler info

(4) Misc
farmers concerns
15 min each

suspected area of evil
wells anchore
migration routes
commodities there w/ dioxin
240
Creosote
PCP etc

≈ $300 dioxin
+ 400 all tetra

Site preceeds RCRA

Wind erosion of 24D & MCPA soil piles

140,000 drums Bleed 4000 drums + PCP

2 mil plastic sheeting under drums none on top
catches water = corrosion

Soil cover 2 ft

Rhone Poulenc 2-4D waste

1972 588 drums
1973 4492 drums
} to RRC

72-73

Rhodia 24D Tar 2011 drum

MCPA Bleed 2965

leaking drums & no bungs when buried other 435

~~1975~~ Dec 1974 ~~Rasco Sa~~ RRC letter land

Pasco landfill got

Barium sludge ≡ chloro-alkali wastes from
Weyerhausers " " plant longview

There were fires on site at least in 78 & 79

aerial photos?

groundwater movement ~1 ft/day in gravel less in sand

most work to data covers sewage lagoons only

go to DOE check all 6 Bd

TCDD
TCDF
Hexa
PCP
245T
24D (?)
245 TCP
PCB

Keith Childress
$32.37

Site history

	PSL	PSL	RRC
1956	municipal waste and open burning		
57			
58			
59			
1960			
61			
62			
63			
64			
65			
66			
67			
68			
69			
1970			
71			
72	no open burning	regional haz. waste site	haz wastes accepted
73			
74	sewage Lagoon		
75			DOE permit issued 21 March 73
76			5 sub sites JUB
77			14 " DOE
78			
79			
1980			
81			
82			
83			
84			