ROBERT J. GNAEDINGER JR.
1 MAY 1980

US EPA RECORDS CENTER REGION 5
466123

FIELD INVESTIGATION REPORT (PRELIMINARY) CONCERNING USE OF CURENE 442 AT IRATHANE, INC., HIBBING, MINNESOTA BY HAZARDOUS WASTE INVESTIGATION SECTION EEI BRANCH OF S&A DIVISION, USEPA-V

1. COMPANY IDENTIFICATION

Irathane, Inc.
Hibbing Industrial Park
(NE Quadrant of Junction of U.S. 169 and MN 37)
Hibbing, Minnesota 55746

2. DATES ON SITE

April 23-24, 1980

3. PARTICIPANTS

3.1 Company

Mr. Randy Studier, Plant Manager (North Building)
Mr. Don Moore (South Building)

3.2 Minnesota Pollution Control Agency

Mr. Tim Musik (Duluth Office)

3.3 USEPA, Region V

Dr. Robert J. Gnaedinger, Jr. (telephone 312-886-6219)
Mr. Dale Bates

4. PURPOSE OF FIELD INVESTIGATION

The primary purpose of this investigation was to obtain samples from the company buildings and environs, as requested by Water and Hazardous Materials Enforcement Branch. This request was for an expedited sampling since the 10-day warrant served on the company was to expire after Friday, April 25, 1980; the request was received on Monday, April 21, 1980 in the afternoon in a memo dated April 21, 1980 from Gardebring (Enforcement Division) to Sanders (S&A Division).

5. SAMPLES OBTAINED (All were taken on Thursday, April 24, 1980)

5.1 From Company Property

Sample 1: Water sample from floor drain at NW corner of lunch room, which is at NW corner of building.

Sample 2: Water from drain line by spin cast equipment.

Sample 3: Scrapings from top of heated vessel containing MOCA by spin cast equipment.

Sample 4: Scrapings from 5 foot fan on north side of building, west end.

Sample 5: Scrapings from south door of the 250°F oven used for MOCA storage.

Sample 6: Water sample from west end of moat beneath screening by the belt curing oven.

Sample 7: Black wet solids from beaneath boards in oakite cleaning room.

Sample 8: Water from sump by receiving door on north side, east end.

Sample 9: Soil from ground beneath 5 foot fan on north side, west end.

Sample 10: Soil from ground at isocyanate neutralizing area behind south building.

Sample 11: Water from a marsh pool SE of the SE corner of the south building.

5.2 From Environs

Sample 12: Water (leachate) sample from pool at the base of the Hibbing Service Area Landfill (west of city) at its junction with the marshy area. Gas bubbles were rising from the black, mucky bottom of the pool.

Sample 13: Water (leachate) sample from pond at the edge of the Old Hibbing Dump (north of city). Pond was static with a rust film on the surface.

6. PHOTOGRAPHS TAKEN (All were taken on Thursday, April 24, 1980)

6.1 On Company Property

Picture 1: Sewer Line Access, NW End of N Bldg.

Pictures 2, 3, 4: At Spin Casting Tank Area, E of Men's Wash and Locker Room.

Picture 5: Inside View of Exhaust Fan at NW End of North Side.

Picture 6: MOCA (Curene 442) Heater, Large, N Wall.

Picture 7: MOCA (Curene 442) Heater, Small, N Wall.

Picture 8: Exterior View of Exhaust Fan at NW End of North Side.

Picture 9: 250°F Oven.

Picture 10, 11: Moat Adjacent to (Snowmobile) Belt Curing Oven.

Picture 12: Oakite Cleaning Area.

Picture 13: Sump E of NE Shipping and Receiving Door.

Pictures 14-17: Pan of North Building, towards E to towards S.

Pictures 18, 19, 20: SE of South Building.

Pictures 21-25: Pan of South Bldg., towards E to towards S.

6.2 In Environs

Pictures 26-29: Hibbing Service Area Landfill.

Pictures 30, 31: Old Hibbing Dump.

7. OBSERVATIONS

In the company of Mr. Randy Studier, we initially toured the building to observe operations and to identify locations from which samples had been requested. Mr. Tim Musik had previously been at the site and assisted in this identification.

Operations at the plant appeared to be very slow. Reportedly, factory staff is down to 8 from a high of 35 people. (A major drop in sales of snowmobiles, for which the company makes driving belts, was reported to be the reason for the low plant activity level).

A small area in the NW corner of the factory area itself was being walled in with carpentered walls; this area will enclose both the large bucket and the small bucket MOCA (Curene 442) pre-melt units. Presumably the enclosure was being made for safety reasons. Stains on the inside of the north wall adjacent to these units (wall is cinder block construction) were not thick enough to sample by scraping.

In the area by the spin cast unit, where large heaters for MOCA and pre-polymer were located, the concrete floor was covered with fresh, untrodden cardboard. This was true of several other areas, which were obviously prone to spills, including a white, polyurethane product line in operation to the west of the shipping/receiving door. The operator at this latter line wore no gloves; he did have an air filter mask hanging about his neck.

Mr. Studier opened the end doors of the 250°F oven and showed us the stacked, empty MOCA pails that are normally used to hold molten MOCA. The pails all contained residues at the bottom. The walls, ceiling and end doors of this large (about 7 feet by 7 feet cross-section) oven did not appear to be heavily or even lightly coated; rather, they were discolored somewhat but barely coated. We scraped some small amount of material from the inside surface of one of the two doors closing off the end. The presumed operating condition in which pails of molten MOCA at 250°F are present in this huge oven with easy worker access at the end doors is clearly a potentially hazardous situation. (As yet, I have no data on the vapor pressure of molten MOCA.) It is possible that the inside surfaces of the doors had been cleaned of condensed material.

The 5 foot fan on the north wall at the west end was heavily coated with a fibrous, greasy, brown/black material; there was a considerably thinner coating on the fan at the east end. We sampled material from the louvers outside the blades on the fan at the west end.

The company occupying the east end of the north building is Valeri Bond Lug Company. It is involved with the re-capping of huge rubber tires used on equipment operating in the iron ore mining industry. Beyond the building to the east is a large leveled and gravelled area at a lower elevation. Beyond this area to the east lies a marshy wooded area; this area is probably 200+ feet away from the north Irathane Building.

We examined two outside standpipes located near the west wall which connect the factory on the north and the warehouse on the south. The one on the north was 4-inches diameter and was connected to the sanitary sewer; the one on the south was 3-1/2 inch diameter, was plastic pipe, and apparently was connected to a line running from the Oakite cleaning room to the sanitary sewer. This latter standpipe had a bend which prevented obtaining a sample from the line with our equipment. As a consequence, we sampled beneath the wooden grill which constituted the floor in the Oakite cleaning room. The material sampled was a black semi-solid overlaying a black aqueous layer.

At the south plant, we examined a full sized manhole in the parking area west of the building. This sewer was found to be a sanitary sewer leading from the south plant to the city sewers. A pile of material with a crust covered the bottom of the manhole; initially this prevented

our observing any liquid phase. Probing with a rod from the surface broke the crust and exposed the water flow, as use of sanitary facilities inside the building took place.

Barrels were located outside the SE corner of the south building as well as E of the smaller structure which lay east of the south building. The first set of barrels were reportedly a group of empty isocyanate barrels which had not yet been treated with water; this water treatment was used to destroy the residual isocyanate. Don Moore of Irathane suggests that the amine resulting from the hydrolysis with water will itself react with additional isocyanate so that we should not expect to find much amine in the soil sample we took in this area.

The barrels to the east were reportedly those amassed during the winter and not yet disposed of. Some contained materials yet to be recovered, i.e., batches which failed by under-polymerization. The south building prepares pre-polymers which are then molded and cured at the north building.

Mr. Moore reported that no organic solvents were discarded into the sanitary sewer, nor do they do any solvent refining. They send their waste solvents to Worum Chemical in the Twin Cities. (Dale Bates mentioned that Jones Chemical in Minneapolis also handles a lot of waste chemicals.)

Mr. Moore seemed surprised to see that a pile of gray spongy material had been dumped at the edge of the marsh; he said it was ground rubber, and that such dumping was forbidden. We did not further characterize the exposed fill around the buildings with respect to its waste chemical content.

We left Irathane, Inc. property at 3:29 p.m., Thursday, April 24, 1980 and proceeded to the landfill and then the dump sites.

Nota Bene: The sample numbers described herein are not the same as those assigned to the samples submitted to CRL because of the deletion of two samples at the request of Mr. J. Pankanin prior to transfer to CRL.

Robert J. Gnaedinger
1 May 1980