

JHB

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

8EHQ-0680-0345

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DATE: SEP 16 1980

SUBJECT: Status Report* 8EHQ-0680-0345

Approved *RJ [Signature]*

[Signature]
FROM: Frank D. Kover, Chief
Chemical Hazard Identification Branch

Revision
Needed

TO: Joseph J. Merenda, Director
Assessment Division

Submission Description

*This is the information
in the Status Report
received from SCM*

The SCM Corporation (Glidden Coatings and Resins Division) has reported the results from a water sample analysis from a pump-out well at a plant site in Charlotte, North Carolina. According to the submission, the plant's previous owner (Celanese Corporation prior to 1977), had constructed this well in order to collect seepage from an underground release of approximately 50,000 gallons of vinyl acetate. The submitter reports that this underground contamination, which had occurred in 1975, allegedly resulted after a hydrochloric acid spill corroded a transfer line connecting underground storage tanks of vinyl acetate. SCM also reports that Celanese indicated that this spill had been reported to local and state authorities and the EPA in 1975.

In addition, the SCM Corporation states that it (SCM) was cited in early 1979 by the local utility district for low pH effluents (pH not specified) from this plant site. As the problem was traced to the vinyl acetate spill pump-out well, Celanese was reported to have been notified of its continued responsibility for the vinyl acetate spill.

The SCM Corporation reports that a tentative agreement for remedying the low pH problem has been reached with the Celanese Corporation. The actions to be taken, which include continuous operation of the spill pump-out well and the addition of caustic, are designed to lower the effluent pH, decontaminate the soil, and confine the contaminated zone to the central area of the plant site. These actions would thereby prevent the possible spread of contaminated groundwater off site. The submitter also states that, in addition to the maintenance of pH records, the pump-out well and plant perimeter groundwater monitoring wells

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will be analyzed on a monthly basis for organic contaminants and the results forwarded to the North Carolina Department of Natural and Economic Resources. The results of the first chemical analysis of water from the pump-out well, provided by SCM in its submission, indicated the presence of 10 volatile organics and 13 heavy metals (see Table I. below). However, the submitter has raised questions concerning the validity of the sampling technique used (i.e., the water sample was apparently withdrawn from the pump-out well which had not been in operation for 9 months, and there was evidence of corrosion of the well's galvanized steel casing). The submitter believes that because this sampling technique did not allow for an adequate purge of the well contents, the heavy metal content detected may have been due to sedimentary corrosion products and not actual pump-out well discharge. The submitter states that the detected organics and metals currently appear on the EPA's list of 129 priority pollutants and that some of the detected substances are in excess of current Clean Water Standards.

TABLE I. Results of Water Sample Analyses
for Priority Pollutants

<u>ORGANICS</u>	<u>PARTS PER BILLION (ppb)</u>
benzene	7680
1,1-dichloroethane	23
1,2-trans-dichloroethylene	2295
ethylbenzene	24
methylene chloride	570
dichlorodifluoromethane	50
tetrachloroethylene	25
toluene	5200
trichloroethylene	50
vinyl chloride	130
 <u>METALS (and other pollutants)</u>	 <u>PARTS PER MILLION (ppm)</u>
Antimony	0.16
Arsenic	0.023
Beryllium	<0.01*
Cadmium	0.018
Chromium	1.90
Copper	1.28
Lead	0.45
Mercury	<0.001
Nickel	2.76
Selenium	<0.01*
Silver	<0.02*
Thallium	<0.1*
Zinc	82.5
Total Cyanide	2.65**
Total Phenol	0.10†

* Higher detection limit due to interferences.

** Distillate highly colored; cyanide level measured on original sample using ion-specific electrode.

† Interference suspected.

Submission Evaluation

Of obvious concern would be the potential for human, animal, and/or plant-exposure to water containing organic and heavy metal pollutants, especially any found to be in excess of existing standards. With regard to the low (acid) pH detected in the effluents, there is a concern for potential harmful effects on aquatic and plant life.

The submitter attributes the heavy metal content of the analyzed water sample to a corrosive attack on the galvanized steel well casing. This would not, however, readily account for the detected chromium, lead, nickel, selenium, silver, thallium, and cyanide. It is also difficult to conceive the conditions whereby hydrochloric acid would react with vinyl acetate to yield benzene, 1,1-dichloroethane, methylene chloride, ethylbenzene, dichlorodifluoromethane, tetrachloroethylene, toluene, trichloroethylene, and 1,2-trans-dichloroethylene. The presence of these chemicals suggests another source of contamination.

Current Production and Use

Based on the nature of this submission, a review of the current production and uses of the subject chemicals is not necessary at this time.

Comments/Recommendations

The Chemical Hazard Identification Branch (CHIB/AD) has transmitted a copy of this submission to the EPA Region IV Office in Atlanta, Georgia for appropriate follow-up actions.

- a) The Agency should transmit a copy of this status report to the Region IV Office for inclusion in its files on this reported groundwater contamination.
- b) The Agency should also transmit copies of the submission and status report to OWWM for further EPA actions if warranted.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

8EHQ-0982-0457

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DATE: OCT 5 1982

SUBJECT: Status Report* 8EHQ-0982-0457

Approved *JM* 10/6/82

Revision
Needed _____

FROM: Justine L. Welch *JLW* Team Leader
Chemical Selection and Profiles Team/CHIB

TO: Frank D. Kover, Chief
Chemical Hazard Identification Branch/AD

Submission Description

The General Electric Company reported preliminary analytical results from a study of groundwater flow and quality at the company's capacitor manufacturing facility in Ft. Edward, New York. According to General Electric, a groundwater sample taken from a well near the southern boundary of the facility was found to contain 2500 ppb (parts per billion) trichloroethylene, 4000 ppb trans-1,2-dichloroethylene, and 60 ppb 1,1,1-trichloroethane; a water sample taken from another well at the facility was reported to contain 220 ppb trichloroethylene.

In addition, the General Electric Company reported that the New York State Department of Health had recently sampled about twenty (20) domestic water supply wells near the Ft. Edward facility and that three (3) wells near the plant's southern boundary were found to contain certain volatile synthetic organic chemicals in excess of New York State Department of Health guidelines. General Electric reported that in addition to the chemicals mentioned above, vinyl chloride was detected by the State.

It should also be noted that the summarized supporting data provided by General Electric indicate that trichlorobenzene, di-2-ethylhexyl phthalate (DEHP), and polychlorinated biphenyls (PCBs) were also detected in water samples taken by the company from certain wells at its Ft. Edward facility.

Submission Evaluation

One of the most obvious concerns with regard to this type of contamination would be the potential for human, animal, and/or plant exposure to water containing toxic levels of chemical pollutants. At sufficient doses and lengths of exposure, the chemical substances cited in the present submission are known to cause adverse mammalian and/or environmental effects.

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Current Production and Use

Due to the nature of this TSCA Section 8(e) submission, a review of the production/importation ranges and use(s) of the subject chemicals does not appear to be necessary at this time.

Comments/Recommendations

The General Electric Company stated that its groundwater study is continuing and that the results will be reviewed with the appropriate New York State authorities.

- a) Immediately upon receipt of the General Electric Company TSCA Section 8(e) submission, the Chemical Hazard Identification Branch (CHIB/AD/EPA) transmitted copies of the notice to EPA's Region II Office, the Office of Water (OW/EPA), the Office of Solid Waste and Emergency Response (OSWER/EPA), the "Solvents Workgroup" of EPA's Toxic Substances Priorities Committee (TSPC) and the PCB Team in the Chemical Control Division (CCD/OTS/OTS/EPA) for any warranted and appropriate followup attention.
- b) The Chemical Hazard Identification Branch will provide copies of this status report to the previously mentioned EPA Offices/Workgroups/Teams and to the Office of Toxics Integration (OTI/OTS/EPA) and the Industry Assistance Office (IAO/OTS/EPA) for appropriate distribution.

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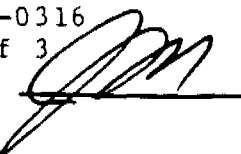
DATE: Revised (May 28, 1980)

SUBJECT: Status Report* 8EHQ-0979-0306
8EHQ-1179-0316

8EHQ-0979-0306

8EHQ-1179-0316

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Approved 

Revision
Needed

FROM:  Frank D. Kover, Chief
Chemical Hazard Identification Branch

TO: Joseph J. Merenda, Director
Assessment Division, OTE

Submission Descriptions

Submissions 8EHQ-0979-0306 and 8EHQ-1179-0316 (received from the Exxon Corporation and the Exxon Company, U.S.A., respectively) present summaries of preliminary results from ongoing mouse dermal carcinogenicity assays of experimental coal-derived fuel oils. Both submitters state that the preliminary results indicate that the tested substances (listed below) have caused tumors in mice "within time periods which indicate high carcinogenic potency."

In providing these preliminary results under section 8(e) both submitters report that although the findings are "qualitatively consistent with the known carcinogenic potential of high-boiling coal-derived materials", they have not been able to establish that the published scientific literature contains specific data on these particular fractions.

8EHQ-0979-0306

1. Experimental pyrolysis fuel oil fraction derived from East Texas lignite (untreated; from test gasification).
2. Experimental pyrolysis fuel oil fraction derived from Arkansas lignite (untreated; from test pyrolysis).
3. Illinois bituminous coal-derived heavy fuel oil (from direct liquefaction tests).
4. Wyoming sub-bituminous coal-derived distillate fuel oil (from direct liquefaction tests).

8EHQ-1179-0316

5. Experimental pyrolysis fuel oil fraction from East Texas lignite (hydrotreated; from test gasification).

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Submission Evaluation

In the absence of submitted chemical analyses, it could be presumed that all of the tested coal-derived fractions contain polynuclear aromatic hydrocarbons and triterpanes. Triterpanes, which are structurally similar to important human steroid hormones (e.g. pregnanes), may also exhibit certain biological activities.

Of the samples tested, the untreated pyrolysis fuel oil fraction derived from East Texas lignite (sample 1. above) appears to be the most potent oncogen. The other samples, although less potent, do exhibit oncogenic activities in these ongoing studies.

Current Production and Use

A search of the master inventory file has shown that these experimental coal-derived fuel oils are not listed on the initial TSCA Inventory. There are relatively few entries on the TSCA Inventory which are "coal-specific" and those that are listed, are non-specific with regard to the geographical source of the coal.

It is assumed that these experimental coal-derived fractions are intended for use as feedstocks for subsequent distillation and treatment in a refining plant. The end-uses of the resulting refinery products (i.e. synthetic natural gas, gasoline, solvents, etc.) are expected to be similar to those for petroleum oil products.

Comments/Recommendations

Status reports have been prepared for a number of section 8(e) submissions received on synthetic and petroleum fuels: 8EHQ-0029, 0030, 0044, 0082, 0083, 0117, 0148, 0212, 0215, 0216, 0217, 0238, 0240, 0247, 0252, 0253, 0297, and 0301. (These numbers represent the last four digits of the Document Control Officer assigned numbers.)

- a) Both submitters report that the studies are continuing and that the Agency will be advised of the outcome. However, at this time, the submitters should be requested to provide full copies of the reported interim results including test protocols and any available pathology data from these ongoing mouse dermal carcinogenicity studies. In addition, the submitters should be requested to provide the CAS numbers (if known) and any available data from chemical analyses of these coal-derived fractions.

- b) The submitters should also be requested to describe any actions taken by their companies, in light of this toxicity information, to reduce or eliminate exposure to these chemicals and/or to warn workers and purchasers of this new toxicity information.
- c) Copies of these submissions and status report should be transmitted to DOE, OSHA, NIOSH, OWWM, and ORD.
- d) CHIB will review the additional data requested, revise this Status Report as appropriate, and recommend further followup assessment if warranted.