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PLAINTIFF'S EXHIBIT

UPRC-169

**PHASE I
ENVIRONMENTAL RISK ASSESSMENT
OF
PPG PROPERTY
CORPUS CHRISTI, TEXAS**

**Prepared For
CHAMPLIN REFINING COMPANY**

For PILKO & ASSOCIATES, INC.

Robert J. Schuttler

John W. Buchanan

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(1044.4000)**

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A.

INTRODUCTION

Pilko & Associates, Inc. conducted a Pre-acquisition Environmental Risk Assessment of the former PPG plant site and research and development facilities at Corpus Christi, Texas. The facility includes 127 acres of property with some buildings and other structures including a dock currently being used by Champlin.

The object of this study was to identify significant environmental liabilities or potential issues that could require major expenditures for resolution. No attempt was made to determine if the property was suitable for any intended use such as construction or other purpose. No attempt was made to assess the dock itself, whether structurally, or from the point of view of permits and conformance with applicable regulations. As this dock is in current use by Champlin, Pilko & Associates, Inc, made the assumption that such analysis would be done by Champlin.

The buildings onsite are primarily offices and research facilities. From their apparent age, we presume that they contain asbestos insulation and building products. Pilko & Associates made no attempt to evaluate the amount of asbestos materials present, and made no attempt to evaluate removal/disposal costs. Since the Champlin refinery is a neighbor to the site and routinely uses a local asbestos removal contractor, Pilko & Associates recommends that Champlin

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contract with this contractor for an asbestos survey, or directly ask the contractor for a removal bid.

Further, this review did not include a review of the offsite brine production facilities and did not include a review of the brine pipeline.

The scope of this review included a site inspection on June 21, 1988; discussions with the Champlin Manager of Environmental Affairs, Phil Vrazel, review of documents in Austin and locally by Mr. Vrazel, and the review of selected aerial photographs spanning the period 1948 to 1987. A chain of title review was not performed as the site has been under a single owner, PPG, since the 1930s.

During the onsite inspection, discussions were held with John McArty and Roger Lopez, PPG employees who act as the site caretakers. Although polite, these discussions revealed little about the former site use other than general, publicly available information. Mr. McArty told us that he had not been given permission by his management to provide Champlin or Pilko & Associates, Inc. with any information. Any requests were to be directed to PPG headquarters in Pittsburgh, PA. Mr McArty was very courteous however, and did give a complete outdoor site tour to Robert J. Schuttler and John W. Buchanan of Pilko & Associates. No sampling or analysis was performed as part of this investigation, although this is recommended as a Phase II site study.

B.

SUMMARY AND RECOMMENDATIONS

The initial study revealed the potential for the presence of a wide variety of organic and inorganic contaminants in the soil and groundwater. Although Pilko & Associates saw no visual evidence of active contamination, the aerial photographs, document review, and discussions with PPG plant personnel have disclosed the presence of closed disposal areas. Further, the processes involved at the site can lead to groundwater contamination. Therefore, Pilko & Associates, Inc. believes that further investigation is necessary, and we recommend the following:

- o Install 6 monitoring wells utilizing PVC screen and riser pipe.
- o Collect 4 soil samples in the ship channel.
- o Drill 9 soil borings to approximately 15 feet and sample at five foot intervals.
- o Drill two soil borings with sampling at 5 feet only.

At each location, only the first sample (5 foot) will be analyzed. Samples at 10 and 15 feet will be collected and preserved. If, during drilling, the supervising hydrogeologist observes visual or

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olfactory evidence of contamination at the 10 or 15 foot level, those samples will also be analyzed. On analysis of the 5 foot sample, if contamination is encountered the 10 and 15 foot samples from that location will also be analyzed.

Analyses proposed by area or sample includes:

- o Caustic/Chlorine Area: 4 samples

Drinking Water Standard Metals (DWSM), PCBs, and
Base

Neutrals and Acid Extractables (BN/AE) o Pilot Plant
Area: 3 samples

DWSM, PCBs, BN/AE

- o Slaker Sand Disposal Area: 3 samples

DWSM, PCBs, BN/AE

- o Transformer Areas: 2 samples

PCBs

o Offshore: 4 samples

DWSM, Volatiles, BN/AE, and Total Petroleum
Hydrocarbons (TPH)

o Groundwater wells: 6 locations

Volatiles, BN/AE, pH, Salinity, Specific Conductance,
TPH

A budgetary analysis for the above work follows:

Laboratory Cost	\$21,000
Soil Borings/ Well Installation	9,000
Offshore Sampling	3,000
Other Direct Expenses	2,000

Pilko & Associates Field Supervision,
Results Interpretation, and Report
Preparation

14,000

Total	<u>\$49,000</u>
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This should be considered a budgetary analysis only. If Champlin
proposes to proceed with this field work, Pilko & Associates will

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prepare a letter proposal outlining the work to be performed and its projected cost.

C.

SITE ASSESSMENT

The PPG facility is approximately 127 acres of land with some buildings and a ship and barge dock. The site has 2300 acres of ship channel frontage. The facility includes at least three areas used for waste storage and/or disposal.

The original operation of the site by PPG dates back to the 1930s. PPG shut down production in 1976 or 1977 and shut down the research facility in 1983. The facility originally manufactured soda ash, chlorine, and caustic soda. Later, the facility also manufactured chromium compounds. The chromium facility was sold to American Chrome & Chemicals, Inc. which continues to operate that portion of the facility. This operation is immediately west of the PPG facility. A portion of the American Chrome & Chemicals site, the boiler house, is south of a portion of the PPG site.

In the soda ash process the Company roasted oyster shells and limestone with coke to form carbon dioxide which was reacted with the brine to form soda ash. One of the wastes from this process, the slaker sand, occupies a large portion of the PPG site. This unreacted limestone and oyster shell presents no apparent environmental exposure.

The chlorine/caustic plant was of the old graphite cell design, and

was not converted to dimensionally stable anodes. Although Pilko & Associates, Inc. was not given any information on the processing technology by PPG, we are aware of several potential environmental exposures presented by this process. These are the potential for the use of mercury in the rectifier circuits, the probable use of PCB transformers and capacitors, the use of asbestos in forming the cell diaphragms, the incidental generation of heavy chlorinated organics in the cells, and the use of lead as a conductor/structural component in the cell maintenance. We were informed by the current PPG plant caretakers that waste from the operation of the now closed processes were disposed of on the property of the adjacent American Chrome & Chemicals property. Effluents from the process entered a flume which discharges to a pond on the American Chrome & Chemicals Property. This pond discharges to the ship channel. Sanitary waste from the existing PPG facility continues to discharge to this flume after treatment in one of two septic systems.

A significant question is the liability, if any, which the new owner of the PPG site would have for the old disposal areas and ponds on the American Chrome & Chemical property.

During demolition, the asbestos removed was sent for disposal to the TECO landfill in Robbstown, Texas. At this time, American Chrome & Chemicals is addressing significant chrome contamination under its site and in the ship channel. This chrome contamination apparently has not extended to the present PPG property, however, with the

possible exception of the ship channel. We are not aware of any work being performed to check for the presence of chlorinated organics, mercury, lead, or PCBs.

Another area of the facility that is an unknown is an area used for process development. The development activities at this facility were not limited to the onsite processes, but included the use of such widely diverse chemicals as sodium azide and ethylene dichloride. The research facility employed approximately 120 to 150 people, and Pilko & Associates speculates that development activity could have involved any materials important to the developing PPG product lines. What chemicals may remain, if any, are not known at this time.

During the plant visit, Pilko & Associates noted the presence of an oil leak/spill which apparently was traveling under the American Chrome & Chemical property, and was discharging to the ship channel slightly ^{west} east of the dock area. The source of the oil is unknown, and its extent under the former PPG plant site is unknown. A temporary removal action was underway at the time of the plant visit, presumably by contractors for American Chrome & Chemical.

Other issues include the presence of PCB transformers onsite and on adjacent property. Two PCB transformers are present near the research facility, and the door to an equipment room of American Chrome & Chemical adjacent to the facility was labeled with a PCB warning label.

There are three areas which Texas considers waste areas. These are a drum storage area, a stormwater pond, and the slaker sand area. All of these areas were closed before RCRA, and all of them should be monitored.

The site is located adjacent to the Corpus Christi Ship Channel which provides water access to Nueces Bay and the Intercoastal Waterway. Topographically the site is flat to gently rolling with the majority of the site at elevations of 20 to 25 feet. Stormwater runs off to the ship channel by way of one of four stormwater outfalls, and by sheet runoff.

Geologically the site area is in the Gulf Coast Plain and near surface sediments were laid down as channel and delta deposits of the Nueces River. A thin transitional depositional environment created rapid variations in the lithologic composition of the sediments both vertically and laterally.

In the site area, groundwater occurs in both water table and confined (artesian) conditions. The near surface water bearing horizons are in water table conditions and may receive some tidal effects. Further definition of the site specific groundwater condition cannot be provided without further investigation involving the emplacement of soil borings and wells.