1 (one) Maps Removed
2 (Two)

Torrington Co.
St. Joe
IND005159223

BACKGROUND DOCUMENT

THE TORRINGTON COMPANY PLANT SITE - SOUTH BEND, INDIANA

May 11, 1984

As a result of overcapacity in its United States, manufacturing operations, The Torrington Company is closing its South Bend, Indiana plant. As part of the closing activities and to prepare the property for sale, the Company is conducting an environmental review to ensure that no adverse environmental effects will be left behind.

Historical Review

The Torrington Company has manufactured metal bearings in a variety of sizes for use in light and heavy machinery in South Bend since the late 1920's. In September of 1983 Torrington decided to close its South Bend operations due to economic conditions. Torrington's three U. S. plants had excess production capacity. Other Torrington plants are located in Tyger River, South Carolina and Shiloh, North Carolina.

As part of industrial operations at the South Bend plant, the Company maintains five ponds. These ponds, ranging in surface area from approximately 1,500 to 15,000 square feet, were used for storm water retention and for collection of clean cooling water from the plant. The ponds were not used as a

disposal site or storage area for hazardous waste. The Stream Pollution Control Board of the State of Indiana has known of the existence of the ponds since at least 1973. Since that time the Company has tested the ponds for conventional pollutants and submitted regular reports to State officials. The Company made every effort to conduct all of its operations in accordance with applicable environmental requirements.

Waste Disposal Activities

As part of the closing activities, the Torrington Company is collecting all used and unused solvents, paints, oils and other waste material and will be shipping the material off site to proper disposal facilities. Some of the material is reclaimable or useable and other material will be disposed of in accordance with all applicable requirements. The Company is presently in the process of collecting, testing and identifying the material in all drums, buckets and other containers. The State and County regulatory agencies have been on site to observe the plant and the collection process. The Company plans to complete the gathering and testing and to have all waste off site within the regulatory time limits that will prevent the site being classified as a storage facility. The Company has and will continue to give the appropriate regulatory officials access to the plant to observe the Company's activities.

All electrical equipment containing PCB's has either been removed from the site or has been left in operating condition as part of the building's electrical system. The company has contracted with an independent contractor to periodically inspect all electrical equipment containing PCB's that is left behind, and to keep all records relating to such equipment as required by the applicable regulations.

Preliminary Technical Evaluation of Plant Site

In order to ensure that no environmentally unsafe condition was left behind and to properly assess the plant site for possible sale, the Company conducted preliminary tests on the waste water ponds. The tests were conducted by an outside laboratory earlier this year. Trace levels of several common cleaning solvents were detected in the pond water. Sediments from the ponds were also tested.

Toxicity tests on the pond sediments showed that no heavy metals, including lead, were present in sufficient quantity to classify the sediment as toxic in accordance with EPA test methods. The toxicity tests indicate that harmful metals are not expected to leach into the ground water. The pond sediments were also tested for phenols and PCB's, and with one exception, phenols and PCB were not detectable in any of the

pond sediments. One sediment sample contained barely detectable levels of PCB's, but the concentration was ten times below the EPA limit that defines PCB contaminated material.

Trace levels of several common solvents were also detected in the pond sediments. One sample contained slightly higher concentrations of 1,1,1 trichloroethane at a level of 70 ppm. Experts consulted by Torrington advised the Company that the solvent would be expected to remain in the pond sediment. In order to ensure that there is no migration of any harmful materials from the plant site, Torrington has commissioned an independent consulting firm to conduct a much more detailed study to completely assess the plant site.

Planned Action

The study committed to by the Torrington Company is designed to assure the Company, the regulatory agencies and the residents of the area that the plant is not having and will not have in the future any harmful environmental effects. The study will examine the pond area and raw material storage areas in detail. The Company intends to work with State, local and Federal officials in the review and implementation of the planned study. The following specific tasks will be undertaken:

1. Available data will be examined to assess the regional geology and hydrogeology. This effort is already under way and will identify the expected direction of ground water flow.

2. Five borings and five monitoring wells will be installed on the plant site to determine if soil or ground water problems exist. The areas where spills or leaks could possibly have occurred will be thoroughly tested. Borings will be taken in the areas of solvent and oil storage tanks, and monitoring wells will be installed downgradient of the potential source areas.

3. Soil samples will be recovered and analyzed from each boring location. At each location, soil from at least the surface, fifteen feet (the anticipated water table) and a mid-depth location will be tested. The tests would detect the presence of volitale organic compounds, which include solvents, and PCB's.

4. Ground water samples will be taken and tested from each of the monitoring wells to determine if any harmful concentrations of volatile organic compounds or PCB's are present.

Following completion of the testing program the Company and regulatory agencies will determine if remedial action is

necessary. Torrington Company is committed to ensuring that the site is environmentally secure and will not leave behind a hazardous situation.

BARNES & THORNBURG

600 1ST SOURCE BANK CENTER
100 NORTH MICHIGAN
SOUTH BEND, INDIANA 46601
(219) 233-1171

305 FIRST NATIONAL BANK BUILDING
301 SOUTH MAIN STREET
ELKHART, INDIANA 46516
(219) 293-0681

JOHN M. KYLE III
(317) 261-9284

1313 MERCHANTS BANK BUILDING
11 SOUTH MERIDIAN STREET
INDIANAPOLIS, INDIANA 46204
(317) 638-1313

TWX 810-341-3427 B&T LAW IND
TELECOPIER (317) 261-9433

FEDERAL BAR BUILDING
1815 H STREET, N.W.
WASHINGTON, D.C. 20006
(202) 955-4500

April 26, 1985

Mr. Robert Carter
Water Pollution Control Division
Indiana State Board of Health
1330 W. Michigan Street
Indianapolis, Indiana 46206

Dear Bob:

This is to confirm that on Wednesday, April 24, 1985, I hand-delivered to you an environmental assessment for the Torrington Company's Heavy Bearings facility in South Bend, Indiana. I also informed you that the Land Pollution Control Division had determined that this site was not subject to RCRA or Superfund and therefore was not one of the Land Pollution Control Division's priorities. In light of a shortage of manpower at the Land Pollution Control Division, that Division has determined it does not have sufficient resources to review the Torrington Environmental Assessment. As a result, Jim Hunt of the Land Pollution Control Division indicated that he would forward this matter to the Water Pollution Control Division for its review. Subsequent to our face-to-face meeting on April 24, I spoke with Guinn Doyle, Chief of the Hazardous Waste Management Branch of the Land Pollution Control Division. Mr. Doyle informed me that he would have Mr. Lamm send you a communication requesting that the Water Pollution Control Division review the Torrington plan.

As I also informed you, Torrington is quite anxious to move forward with its remedial action proposal contained in the environmental assessment. We must have a reaction from the State in the very near future so that the remedial action program can be implemented this building season.

I understand the constraints placed upon you and your Division. Nevertheless, Torrington Company and I would greatly appreciate your prompt attention to this matter.

Thank you very much for your cooperation.

Sincerely,

John M. Kyle III

cc: James Holtz
David Lamm
Guinn Doyle
Jim Hunt
Jim Traylor

JMK/cn

TO H. Atkinson

FROM L. Streeter

SUBJECT SD?

MESSAGE I don't know if this needs to go on ERRIS list or not. Greta did some preliminary checking & it doesn't appear to be of any concern - Surface impoundment Close out. ~~Do you~~ & there a file for this to go into.

SIGNED L. Streeter DATE 7/7/85

REPLY

FOLLOW-UP DATE

REMOVE PART 2 AND FORWARD PARTS 1 AND 3. PART 3 WILL BE RETURNED WITH REPLY.

SIGNED

DATE

TO GPD

FROM J Strecker

SUBJECT Torrington - Attached

MESSAGE See attached. We may need to discuss the directive given to Co. by Mr. Hunt. Even though we aren't approving voluntary cleanup schemes that doesn't mean it's a good idea to refer them to Carter for some implied release just because WPC will grant informal approval & we won't. This could cause more problems than help.

SIGNED DATE 5/13/85

REPLY Jacqueline Strecker

FOLLOW-UP DATE

REMOVE PART 2 AND FORWARD PARTS 1 AND 3. PART 3 WILL BE RETURNED WITH REPLY.

SIGNED DATE

& THORNBURG
HANTS BANK BUILDING
1 MERIDIAN STREET
OLIS, INDIANA 46204

Mr. David Lamm
Land Pollution Control Division
5500 West Bradbury Avenue
Indianapolis, Indiana 46241

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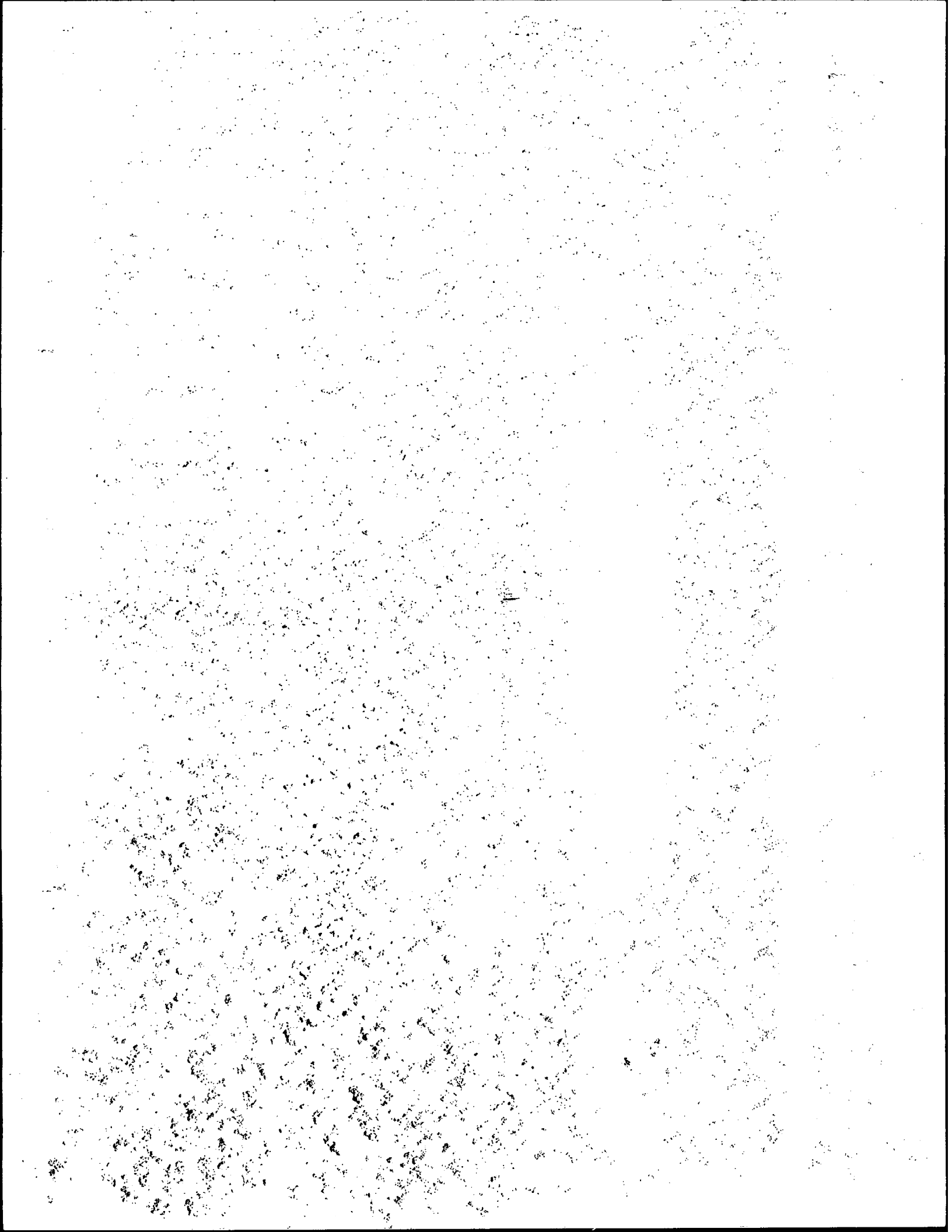
As I also informed you, Torrington is quite anxious to move forward with its remedial action proposal contained in the environmental assessment. We must have a reaction from the State in the very near future so that the remedial action program can be implemented this building season.

I understand the constraints placed upon you and your Division. Nevertheless, Torrington Company and I would greatly appreciate your prompt attention to this matter.

Inter-Office Correspondence
Jim Taylor to Jim Hunt
Dave Berry
4/2/85



5-2-85

Torrington Company

Mfd. metal bearings for use in light and heavy machinery in S.B. since late 1920s. As a result of overcapacity, Torrington Co. decided to close SB. operation.

Industrial site includes five ponds ranging in surface area from ± 1,500 - 15,000 sq ft. They were used for storm water retention and for collection of clean cooling water from the plant.

5-2-85 Jim Hunt - 10:00A - 10:20A

Plan was picked-up by Co. and sent to Bob Carter.

Jim Hunt discussed this with JWS previously, but probably did not mention a name.

JWS indicated that we could not engage in a voluntary review of a clean-up action without a consent decree.

The two things that I might recommend

1) Obtain copy of 3/85 Assessment
2) Send a clarification letter to the atty. specifying that the absence of review at this point does not preclude potential future action.

2/27/84 COMPL. EMPLOYEE RE: "DUMPING ALL KINDS OF STUFF" IN LAGOONS

3/8/84 DAVE BERREY, ROY HARBERT, SITE INSP.

4/16/84 NO VISIBLE EVIDENCE OF LAGOON CONTAMINATION

4/9/84 PATRICK BAUER, W STATE REP. / CONCERN

4/24/84 RESPONSE FROM Dr. BlanKenbaKer

5/10/84 POND SEDIMENT (PASSED EP. TOX. TEST)
70 PPM - 1, 1, 1 TCA (POND #4)

5/11/84 BACKGROUND DOCUMENT
1. ASSESS REG'L. HYDROLOGY & HYDROGEOLOGY
2. (5) BORINGS + 6) MONITORING WELLS WILL be installed
3. SOIL SAMPLES FROM each boring
4. G.W. SAMPLES

4/2/85

CanonieEngineers

JUN 25 9 51 AM '84

Canonie Engineers, Inc.
1408 N. Tremont Road
Chesterton, Indiana 46304

Phone: 219-926-8651

CE 83-182

June 20, 1984

Mr. James M. Hunt
Chief Facility Inspection Section
Hazardous Waste Management Branch
Division of Land Pollution Control
Indiana State Board of Health
1330 West Michigan Street
Indianapolis, Indiana 46206

Transmittal
Work Plan
Environmental Assessment
Torrington Company
Bantam Bearing Division
South Bend, Indiana

Dear Mr. Hunt:

We are submitting a work plan describing the proposed scope of work for the referenced environmental assessment. This work plan is being submitted in response to your letter to the Torrington Company of June 6, 1984. We have presented the details related to the proposed program and have responsed to the items set forth in your letter.

Based upon issues discussed at our May 11, 1984, meeting and discussions between Mr. Dave Berry, Mr. Larry Studebaker, and myself on June 18, 1984, we have adjusted the location of one of the proposed detection wells at the facility.

We trust that the information presented in this document is suitable for review and approval by the Indiana State Board of Health. If you have any questions, please do not hesitate to contact me at 219-926-8651.

Very truly yours,

Timothy J. Harrington

TJH/db

Enclosures

cc: Mr. John Rothhaar, Barnes & Thornburg
Mr. Jim Holtz, Torrington Company
Mr. Charles McNerney, Torrington Company

WORK PLAN
ENVIRONMENTAL ASSESSMENT
TORRINGTON COMPANY
BANTAM BEARING DIVISION
SOUTH BEND, INDIANA

1.0 INTRODUCTION

The Environmental Assessment for Torrington's Bantam Bearing Division in South Bend, Indiana, is proposed to detect the ground water, surface water, and soil conditions at the facility in summer, 1984. The detection activities are centered around the two underground raw product storage areas and the storm water and cooling water ponds on the south end of the plant, Figure 1. The goal of the environmental assessment is to determine the environmental conditions at the time of the shutdown of the plant and to thereby ensure that no unsafe environmental conditions have resulted due to Torrington's operation.

1.1 Background

In January, 1984, a preliminary analysis was performed on the sediments from the ponds, the pond waters, and ground water from the two production wells at the facility. The results of this program were reported by EIS Environmental Engineers, Inc., of South Bend, Indiana. The sediments from the ponds were analyzed for EP toxicity using method 1310, SW-846 "Test Methods for Evaluating Solid Waste/Physical Chemical Methods". No EP toxic metals were leached from the pond sediments. The sediments from the ponds were also analyzed for volatile organics. Trichloroethane was found in the bottom sediments of pond No. 4 at a concentration of 70 parts per million (ppm). Methylene chloride and dichloroethane were also detected at levels from 0.56 to 2.8 ppm. The water samples from the ponds indicated that methylene chloride, dichloroethane, trichloroethane, and tetrachloroethylene

were present in concentrations of less than 30 parts per billion (ppb). The water samples collected from the two production wells at the facility indicated levels of tetrachloroethylene of 2.6 and 3.1 ppb. Both of these reported detection levels are below the normal 10 ppb detection limits for tetrachloroethylene in a standard gas chromatograph scan. There is no indication that the low levels reported for some of the volatile organics were actually confirmed by mass spectography. The pond sediments were also analyzed for PCBs using a 2 ppm detection limit. The sediment from pond No. 4 had a reported concentration of 5 ppm PCB.

2.0 FIELD PROGRAM

The Environmental Assessment includes an investigation and assessment of soil, surface water, and ground water at the facility. The assessment includes a planned program for sampling the soil, surface water and ground water using a sampling and analytical protocol that controls the quality of the samples obtained for analysis. The protocol for the soil and ground water sampling, respectively, are presented in Appendix A and B.

The proposed soil sampling program includes the following three areas.

1. Soil samples from boreholes near the underground storage tanks. The proposed boring locations are shown on Figure 1 by S-1, S-2, S-3, and S-4. Soil samples will be recovered from near the top elevation of the underground tank or the ground surface, whichever is lowest, and from other depths down to the ground water table. A minimum of three soil samples will be recovered from each of the proposed borings. Soil samples from the boreholes will be selected for PCB analysis based on their physical appearance and for volatile organics analysis based on organic vapor analysis using a Century Portable Organic Vapor Analyzer. A minimum of two samples from each boring will be submitted for both PCB and priority pollutant volatile organics analysis.

2. Sediments from each of the five ponds will be taken and analyzed for PCBs and volatile organics. The samples will be taken using 1-1/2 inch diameter brass tubes for volatile organics analysis and

bulk sampling and compositing for the PCB analysis. The brass tube for the volatile organics analysis will be recovered at the inlet to the pond.

3. Four or five locations will be selected for near surface soil sampling from approximately the ground surface to a depth of three or four feet. The locations of these samples will be chosen in the field to correspond to those areas where apparent oil staining of the surface soils is noted. A minimum of six samples is expected for this activity.

The soil samples from the borings will be recovered using a standard 1.5-inch diameter split-spoon with brass liner tubes. The tubes and split-spoon sampler will be cleaned prior to each individual sampling event using the procedure set forth in Appendix A. The brass tubes will be removed from the sampling spoon immediately upon removal from the borehole and will be capped and sealed to prevent the loss of volatile compounds. A Century Organic Vapor Analyzer will be utilized at each borehole location to determine the presence of volatile organics. The composite samples of pond sediments will be recovered from six locations around each pond and mixed in a disposable tin pan to create a uniform sample. The brass tubed samples from the ponds will be treated the same as the boring samples. The near surface soils will be sampled by using either a hand operated sampling tube device with Teflon liners or by a hand excavation and soil compositing.

Surface water samples will be recovered from each of the five ponds. Two samples will be taken from each pond, one for volatile organics analysis, the other for PCB analysis. Samples will not be taken during or immediately after heavy rainfall. The procedures for collecting the water samples are described in Appendix B.

The aquifer beneath the facility is subdivided into an upper and lower zone by a clay layer at approximately 60 feet. Ground water samples will be taken from the five proposed detection wells in the upper zone (see Figure 1 for proposed depths) and from the two production wells at the facility. Presently, it is anticipated that a single monitoring zone will be established at each proposed well location. If a light hydrocarbon phase is present in the soil above the water table, temporary access will be provided to obtain a sample for analysis.

Wells W-1 and W-3 will extend down to the dividing clay layer. These wells will be depth integrating wells screened at the bottom of the boring with a gravel pack extending up to the ground water surface. Wells at locations W-2, W-4, and W-5 will be shallower wells extending to a maximum depth of 35 feet. These wells will monitor and detect in the upper zone of the aquifer, and will be able to detect the presence of any substance entering directly from the ponds into the ground water system. These wells will be gravel packed from the ground water surface to the bottom of the borehole.

All five wells will be installed by the cable tool method using an eight-inch diameter casing. The wells will be constructed of 5-inch diameter PVC Johnson monitoring pipe and with threaded joints. The screen will be a five-foot section of machine slotted PVC. The monitoring zone will be gravel packed to match the screen and formation characteristics. The eight-inch casing will then be withdrawn and a cement bentonite grout will be placed from the water table to the ground surface with a protective steel locking cap installed over the well casing.

The five new detection wells and the two production wells at the facility will be sampled and analyzed for PCBs and volatile organics. The sampling protocol is presented in Appendix B. If the upgradient ground water

quality is essential to the assessment of conditions at the facility, samples will be recovered from an upgradient production well located on the adjoining property.

The analysis of the water and soil samples will be performed by Gulf Coast Laboratories of Park Forest South, Illinois, U.S. EPA Region 5's primary subcontractor for PCB analysis. The volatile organics will be analyzed using method 624 with a detection limit of approximately 10 ppb for the listed materials. The PCB analysis will be performed using a hexane-acetone extraction on the soil samples with a detection limit of 5 ppm. The PCB analysis for water will be by methylene chloride extraction with a detection limit of 0.1 ppb. The analysis will be run on a gas chromatograph with electron capture detection.

3.0 ASSESSMENT REPORT

An Environmental Assessment report will be prepared using both the data collected during the field program and data available from the regional literature. The report will include the following information.

1. A discussion of the regional hydrogeology at the facility.

2. A compilation of the site data collected during the field program, including soil cross sections and plans.

3. A discussion of the chemical analysis results.

4. An assessment of the raw data, including conclusions and recommendations to ensure that no unsafe environmental condition exists at the facility.

APPENDIX A
SOIL SAMPLING PROTOCOL

Introduction

This protocol provides guidance and procedures for the collection, preparation, and control of soil samples collected at the Torrington Plant. The procedures outlined herein are intended as a guide for the field sampling team; however, the site conditions may necessitate modifying the protocol in order to expedite the field sampling operations. All deviations from the procedures outlined herein will be noted on the field logs and included in accompanying reports.

The purpose of this sampling protocol is to outline the methodology for recovering a representative soil sample for chemical analysis. The protocol includes a listing of the equipment to be used in the program, the cleaning procedures for the equipment, the soil sampling procedures, and the sample control procedures.

Equipment

1. Cable-tool well rig;
2. Standard 1-1/2 inch diameter split-spoon sampler;
3. Precleaned, brass sample tubes with caps;
4. Reagent grade hexane;
5. Scrub brushes;
6. Spatulas;
7. Squeeze bottles;
8. Distilled water;
9. Surgical gloves;
10. Precleaned standard glass sampling bottles.

Equipment Cleaning

Prior to sampling at a location, all tools and equipment surfaces which will be placed in contact with the sampled soil or water will be cleaned to remove soil from the previous operation. Cleaning will be conducted in the following manner:

A. All interior and exterior sampling equipment surfaces will be cleaned with water to remove any soil from the previous sampling.

B. The sampling equipment that will come in direct contact with the soil sample will be flushed, washed, or wiped with reagent grade hexane. Care will be taken to recover all excess solvent used in the cleaning phase in a drip pan at each test location. Health and safety requirements appropriate for the use of solvents will be practiced. This cleaning procedure will apply to both sampling equipment that is reused and sampling equipment or devices that are used only one time.

C. All surfaces that are hexane rinsed will be final rinsed with distilled water.

Soil Sampling

At each sampling location, a clean, decontaminated, 1-1/2 inch brass sampler tube will be pushed either manually or as a liner inside the split-spoon sampler. The sampler will then be quickly extracted and capped and sealed, followed by a thorough rinse of the outside of the sampling tube using fresh water. The sample will then be logged, noting sample location and depth, labeled, and finally packed in ice. Any odors, sheen,

oily appearance, or other unusual appearance will also be noted on the test pit or boring log. The amount of sampled material obtained and the depth of the sampling will be left to the discretion of the engineer, geologist, or technician controlling the sampling.

A Century Flame Ionization Organic Vapor Analyzer will also be used at each sampling location to monitor organic vapors. The results will be used to select sample locations and will be recorded on the test pit log.

To prevent migration of fluids from one level to another, borings will be backfilled with grout following completion of sampling activities.

Sample Control

The sample bottles or tubes containing the soils will be labeled with the date, laboratory ID, sampler's initials, and sample location and depth. The chain-of-custody form indicating the requested analysis will be completed by the sampler and, if PCB or volatile organics analysis is required, the sample packed in ice. At the end of the day the collected samples will be placed in a shuttle for delivery to the laboratory.

APPENDIX B
GROUND WATER SAMPLING PROTOCOL

Protocol Intent

This Ground Water Sampling Protocol provides a uniform procedure for obtaining samples of water from ground water detection wells at the Torrington Plant. The protocol also provides a mechanism for obtaining field replicate, and trip blank samples to be used in evaluating field and laboratory techniques. Sections of this protocol may be modified to accommodate existing field conditions at the discretion of the field sampling team.

This protocol does not provide for replicate or fortified samples required for in-house validation of accuracy or precision by the testing laboratory. Standard quality assurance practices should be followed by the laboratory and calculated values of accuracy and precision reported with the ground water analytical results.

Equipment Cleaning

Sample bottles, bottle caps, and septums will be thoroughly washed with detergent, rinsed extensively with tap water, and then rinsed again with high purity deionized water. After washing and rinsing, sample bottles and components will be dried at a temperature of 105°C for a period of one hour. Sample bottles, bottle caps, and septums will be protected from all forms of solvent contact between the time of drying and actual usage at the sample site.

Prior to purging or sampling each well, all equipment surfaces which will be placed in the well or may come in contact with the ground water will be

cleaned to prevent the introduction of spurious materials. Cleaning will be accomplished either by flushing, washing, or wiping equipment components with reagent grade Hexane and then thoroughly rinsing with fresh deionized water, or alternatively steam cleaning all components that come in contact with the ground water. Care will be exercised to assure that normally wetted interior surfaces of pumps, bailers, hoses, tubes, or other components are properly cleaned. Health and safety requirements appropriate for the use of Hexane will be enforced.

Stainless steel wire, or cable, which can be properly cleaned after repeated usage, will be used for lowering and raising equipment in the wells. In the event that absorbent materials (i.e. rope or cord) are placed in the wells, they will be stored in dust tight containers until usage and the used portion will be discarded after completion of sampling at each well. Similarly, disposable surgical-type gloves will be worn while sampling and discarded after each well sample is completed.

All equipment components and critical openings (i.e. bailer slots, pump valves, etc.) will be visually inspected to assure they are free of soil particles or other solid material which may become dislodged during purging or sampling operations.

All equipment utilized in the actual augering or coring of a new well, as well as all casings which are withdrawn and reutilized, will be steam or pressurized hot water cleaned and flushed prior to commencement of work on a new well.

Well Purging and Sampling

Immediately prior to purging each well, the depth from top of well casing to top of water surface will be determined to the nearest 0.1 foot and

recorded as a portion of the well sample data. The top of well casing elevation will be determined to the nearest 0.1 foot by conventional survey methods.

Jetting methods will not be used for purging the monitor wells. The preferred method for purging and sampling of the monitoring wells is with a submersible type pump providing a uniform rate of discharge. Pumps causing aeration or agitation of the water are not to be used for sampling purposes. Teflon tubing will be used for intake/discharge lines as required for pump operation. The pump intake or suction end will be lowered to the well bottom and then raised one foot before starting the pump. In small diameter, low purging volume monitor wells, purging and sampling can be effected with a bailer constructed of stainless steel, glass, or Teflon-coated materials.

Initially, monitoring wells will be purged by removing a quantity of ground water equal to 3-4 times the volume of the well casing. If a well is evacuated during the purging operation, the well will be allowed to recharge for a period not exceeding 24 hours before sampling. An evacuated well which has not recovered sufficiently after 24 hours of recharge time to allow sampling to proceed will be deleted from the sampling sequence.

Purging methods, volumes, times, and any other pertinent information will be recorded and reported by the sampling team. Purged water will be disposed of at the site.

The ground water samples for volatile organics analysis will be placed in glass bottles fitted with caps having Teflon-faced silicon seals. The sample bottles will be 40 ml or larger in size. The ground water samples for PCBs will be one-liter samples with tin foil seals on the caps. Information to be shown on the bottle label will include:

1. Name of sampling group;
2. General site name, identification, or location;
3. Sampling date;
4. Sample identification.

Immediately prior to obtaining each ground water sample, the sample bottles and caps will be thoroughly rinsed two or more times with the final well purge water. Water samples for volatile organics analysis will totally fill the sample bottle in such a manner as to prevent air bubbles from passing through the sample and eliminating the entrapment of any air in the bottle. The sample bottles will be capped immediately after filling, inverted, and tapped to test for air bubbles. If any bubbles are observed, the sample will be discarded and a fresh sample obtained from the monitor well. Samples will be placed in an ice chest or similar container capable of maintaining a temperature between 5°C to 15°C (40°F to 60°F) for transporting to the laboratory. Unavoidable vacuum bubbles, which may form during storage as a result of sample contraction from cooling, shall not disqualify the analysis of a sample from inclusion in the final report. Air bubbles in the one-liter PCB water samples are not considered critical to the sample integrity.

In addition to the ground water sample set, a minimum of five percent (5%) of the sample bottles will contain city water as trip blanks.