

FINAL ENGINEER'S CERTIFICATION REPORT

*Former Columbia Ribbon and Carbon Company
Disposal Site*

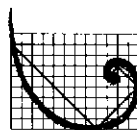
December 1994

Prepared for:

Konica Imaging USA, Inc.
71 Charles Street
Glen Cove, NY

Prepared by:

ERM-NORTHEAST, INC.
175 Froelich Farm Blvd.
Woodbury, NY 11797



ERM

ERM-Northeast's Commitment to Quality

Our Quality Policy

We will fully understand and document our clients' requirements for each assignment.

We will conform to those requirements at all times and satisfy the requirements in the most efficient and cost-effective manner.

Our quality policy and procedures include an absolute commitment to provide superior service and responsiveness to our clients.

Our Quality Goals

To serve you.

To serve you well.

To continually improve that service.

Our Quality Improvement Process

Train each employee.


Establish and implement requirements based on a preventative approach.

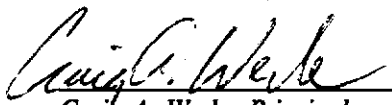
Maintain a standing Quality Improvement Team to ensure continuous improvement.

Empower Corrective Action Teams to analyze, correct and eliminate problems.

Continually strive to improve our client relationships.


John A. DeFilippi, President
Chief Executive Officer


Howard Wiseman, Vice President
Chief Operating Officer


Craig A. Werle, Principal


Brian J. Jacob, Principal

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Appendix A

Correspondence Regarding Project Changes

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1.0 INTRODUCTION

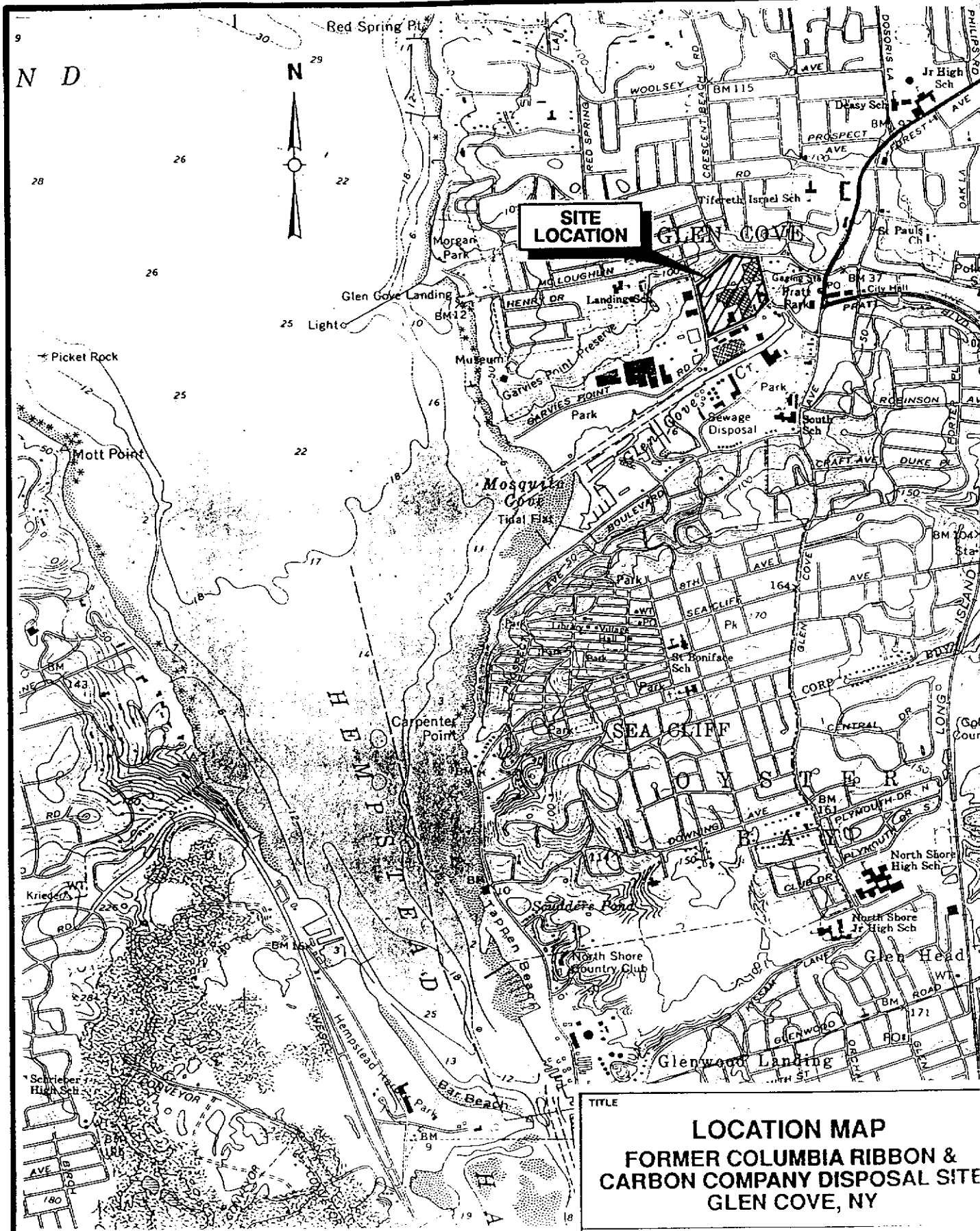
1.1 PURPOSE AND SCOPE

The Final Engineer's Certification Report for the Former Columbia Ribbon and Carbon Company Disposal Site (Site Code No. 1-30-028) was prepared in accordance with the New York State Department of Environmental Conservation (NYSDEC) Order on Consent, Index No. W1-0547-91-07, executed on 12 May 1993. The Order on Consent requires that the Engineer submit a final engineering report together with an Engineer's Certification to the NYSDEC that the construction of the Remedial System for the Former Columbia Ribbon and Carbon Company Disposal Site (Site) was completed in accordance with the approved Remedial Design. Although the changes to the Remediation System did not deviate from the intent or design basis of the approved design, several minor modifications have been made to the individual systems during the construction and implementation of the Remedial Design.

This report serves to summarize and discuss these modifications and their impact, if any, on the remediation of the Site and the implementation of the approved Performance Analysis and Design Modification Plan.

1.2 SITE DESCRIPTION AND HISTORY

The former Columbia Ribbon and Carbon Manufacturing Company Disposal Site (Columbia) is located in the City of Glen Cove, New York, Nassau County. The Site is approximately 1200 feet north of the eastern end of Glen Cove Creek, which empties into Hempstead Harbor. To the north and east of the site, properties are predominantly residential. To the west of the site is an industrial corridor that includes four other inactive hazardous waste disposal sites. Figure 1-1 shows the location of the site.



N D



SITE LOCATION

Scale: 1"=2000'
 Source: USGS, Quadrangle, Sea Cliff, NY

**LOCATION MAP
 FORMER COLUMBIA RIBBON &
 CARBON COMPANY DISPOSAL SITE
 GLEN COVE, NY**

PREPARED FOR
KONICA IMAGING USA, INC.

ERM-Northeast
 Environmental Resources Management

SCALE	FIGURE
Noted	1
DATE:	

146621

The site is defined as an area in which Columbia disposed of wastes from the production of blue printing inks, carbon paper, and typing ribbon in open pits behind their manufacturing buildings for an undetermined period of time prior to 1979. Apparently, wastes from 55-gallon drums were dumped into the open pits. The drums were then crushed and added to the pits before burial. Aerial photographs taken between 1950 and 1960 indicate the location of two or three of the disposal pits. Additionally, wastes were reportedly pumped through a two inch galvanized pipe from the Columbia plant directly into the pits. The hazardous and industrial wastes disposed of in the area include, but were not necessarily limited to, toluene, ethylbenzene, xylenes, and other residues from the formation of printing inks.

In 1979, Powers Chemco, Inc., (Chemco) purchased a parcel of land from Columbia which included the disposal area for use as a parking area. Chemco, a manufacturer of photographic equipment and supplies, was unaware that the parcel was heavily contaminated with hazardous and industrial wastes. At no time did Chemco dispose of any wastes at the site.

In 1983, Chemco discovered the subsurface contamination while excavating in the area for the purpose of site improvements. To determine the nature and extent of the contamination, Chemco hired Fred C. Hart Associates (FCHA) to perform an investigation. The investigation was conducted during the period 20 November 1983 to 3 February 1984 and resulted in a report entitled, Investigation and Hydrogeologic Assessment of the Former Columbia Ribbon and Carbon Company Waste Disposal Site, dated April 1984. The report concluded that the site contained grossly contaminated soils, drums, waste sludges, rags, filters and other debris.

Based upon the conclusions of the April 1984 report, Chemco presented to the NYSDEC an interim remedial plan for the removal and disposal of the buried wastes and heavily contaminated soils at the site. The NYSDEC approved the

plan and entered into a voluntary Order of Consent with Chemco on 8 June 1984 to implement the removal action.

Excavations at the site began on 19 June 1984 and continued through August 1984. Fifteen (15) overlapping trenches were excavated. The extent of the excavations were determined by visual observation of heavily contaminated soils and wastes. A total of 4,645 tons of contaminated soils and drums were transported off-site under manifests to the Fondessy Enterprises landfill in Oregon, Ohio. The average depth of the excavations was five feet. The excavations did not extend into saturated soils.

The results of the removal action were summarized in a FCHA report dated 28 September 1984 entitled, Engineer's Certification Report: Removal of Drums and Contaminated Soils from the Former Columbia Ribbon and Carbon Company Site. After reviewing additional information submitted in support of the report, the NYSDEC accepted the certification in April 1985.

A second field investigation was carried out during early 1986 to more carefully assess the potential for contaminant migration from the site and define the vertical and horizontal extent of ground water contamination. The work was carried out under a second Order of Consent with the NYSDEC dated 16 January 1986. A November 1986 report prepared by FCHA and entitled, Supplemental Hydrogeologic Investigation of the Former Columbia Ribbon and Carbon Company Waste Disposal Site, concluded that the contaminants were confined in the shallow sand and gravel unit on the site and were concentrated in the immediate area of former disposal.

The initial and supplemental investigations were used along with information from the removal action as the basis for defining the nature and extent of the contamination at the site.

A RI/FS Work Plan was prepared to examine alternatives for remediating the site. The RI/FS Work Plan called for the installation of two additional ground water wells, one to replace a damaged well and one for use in a pump test to gather information on the yield and other characteristics of the sand and gravel unit. Additionally, the work plan identified a series of remedial alternatives to be evaluated in the feasibility study.

The agreement to implement the RI/FS Work Plan was incorporated into a third Order on Consent signed 4 April 1988. The work was performed over the summer of 1988 and the first draft of the RI/FS Report was submitted in September 1988. A second draft, incorporating NYSDEC comments, was submitted in March 1990. Further NYSDEC comments, including a request to add another remedial alternative for evaluation, resulted in a third RI/FS Report being submitted on 1 February 1991. The 1 February 1991, RI/FS Report provided the basis for a Record of Decision (ROD) which was issued by the NYSDEC in March 1991.

The time period during which various drafts of the RI/FS reports were being prepared the name of owner of the property, Powers Chemco, Inc., was changed to Chemco Technologies, Inc. Chemco Technologies, Inc. was purchased by Konica and subsequently renamed Konica Imaging USA, Inc. Konica Imaging USA, Inc. still uses the former disposal area for a parking lot.

The ROD provided the major elements for the selected remedy at the Site and outlined the requirements of the Work Plan that was submitted on 22 August 1991. The Work Plan identified two main components that were required to be conducted in order to evaluate the described remedial options. These components included the construction of a pilot scale ground water and vapor extraction remedial program and additional Site data acquisition. The efforts of the Work Plan including the pilot study and additional data acquisition were conducted at the Site during April, May and June of 1992 and the subsequent report titled, Pilot Study and Additional Data Acquisition Report, was

submitted to the NYSDEC in August 1992. This report recommended a remedial program for the site and provided cost estimates for design, construction and O&M phases of the remediation program. The pilot study report was approved by the NYSDEC confirming selection of the final remedy for the Site on 2 March 1993.

1.3 *REMEDIAL DESIGN DESCRIPTION*

Supporting data acquired during the pilot study was documented and was used as a design basis for the remediation system. This data was used to present the capability of the proposed ground water treatment system for handling influent concentrations at the proposed system flow rates. Based on this data, it was determined that additional studies were not required.

Upon acceptance by the NYSDEC of the final remedy proposed for remediation of the site, the design phase was initiated and subsequently a Draft Remedial Design Report, dated 29 March 1993, was submitted to NYSDEC.

The Draft Remedial Design Report was submitted along with the preliminary design drawings and technical specifications. The design drawings consisted of a well location layout for a network of 60 wells including the vapor extraction wells, passive air inlet wells and ground water recovery wells. The design drawings also included the process and instrumentation diagrams describing in detail all ground water recovery and treatment systems equipment and interconnections and also all vapor extraction and treatment systems. The technical specifications included submission of all Division 1 sections describing the General Requirements of the remediation construction. The preliminary design submission also included all Division 2 and Equipment specifications for the Submersible Well Pumps, Catalytic Oxidizer, Vapor Extraction System, Low Profile Air Strippers and Basket Strainer Systems.

The Draft Remedial Design Report addressed all the requirements contained in the Draft Order of Consent, on an item by item basis. The Draft Remedial Design Report also addressed in detail: 1) the construction and operation of any structures; 2) the collection, destruction, treatment and/or disposal of hazardous wastes and substances as described in the ROD and of any other materials contaminated thereby; and 3) the collection, destruction, treatment and/or disposal of ground water, leachate, and emissions. A detailed description was provided for each piece of recovery equipment including: 1) the ground water recovery and treatment system: submersible well pumps, iron sequestering system, static mixers, basket strainers, air strippers and wet well transfer pump; and 2) the soil vapor extraction and treatment system: vapor extraction blower, moisture separator, condensation transfer pump and catalytic oxidation treatment unit.

Additionally, the Draft Remedial Design Report included a Draft Health and Safety Plan incorporating the requirements of 29 CFR 1910 to provide health and safety during the construction and operation phase of the remediation. A general overview of the Quality Assurance and Quality Control Procedures program was implemented to ensure that contractors met the quality standards set by the approved remedial design was also part of the Draft Remedial Design report preliminary design phase.

During the preliminary design, verification of existing field conditions was conducted. Storm drain outlet evaluations were checked and contact with the City of Glen Cove Department of Public Works was made to verify available connection points and to ensure allowable discharge concentrations were met.

Additional equipment studies were also conducted during the design phase of remediation. A pump bench test was arranged in order to predict the effective speed range verses the discharge rate of the proposed submersible pumps' performance. The bench test utilized a variable speed drive controller to simulate the proposed pump control design. This allowed system curves to be

produced which represented the performance of the pumps during various conditions and in turn allowed a more effective design to be provided.

The New York State Air Guide-1 maximum potential annual and short term impacts for air emissions were calculated utilizing actual data and the shallow tray air modeler computer model along with the discharge rate for all applicable contaminants. Based on these analyses, the substantive requirements for air permit application, along with the appropriate calculations and tabulation sheet, were provided to the NYSDEC.

The final design phase of remediation commenced immediately upon receiving the NYSDEC response letter to the Draft Remedial Design package submitted by ERM. The final design was submitted in May 1993 and consisted of the final Remedial Design Report along with the final design drawings and specifications and a Draft Performance Analysis and Design Modification Plan (PADMP).

Final versions of the technical specifications including all equipment specifications, electrical specifications and appropriate Division 2, 3, 4, 5, 6, 7, 13 and 15 specifications were provided. The final Health and Safety Plan was also submitted and was incorporated into Section 01517 of the technical specifications.

The Remedial Design Report final design submission also addressed the Citizen's Participation Plan. The plan allowed for copies of the Pilot Report and subsequent correspondence and documents to be placed in the document repository in the Glen Cove Public Library. It also provided for assistance to the NYSDEC in a Public Availability Session to address questions by members of the community. A discussion of the Remediation Project Design and the proposed Construction activities was conducted during a subsequent public session.

The Performance Analysis and Design Modification Plan was prepared during final design in accordance with the NYSDEC Order on Consent and described how to monitor and evaluate the effectiveness of the remediation and make changes, if needed, to improve the ability of the selected remedy to achieve the remedial goals. The plan identified the performance criteria and the methods which could be used to determine if the remediation was effective in meeting these criteria. Additionally, the plan identified the options that would be employed to modify the operations of the system to improve its effectiveness toward achieving the performance criteria.

The effectiveness monitoring methods involved specific procedures for assessing each operating component of the remedial system including the ground water recovery system, the soil vapor recovery system, the ground water treatment system and the vapor treatment system.

The final remedial design was approved by the NYSDEC and the design package went out to bid in October 1993. The project was awarded to Bensin Contracting, Inc. on 29 October 1993 and a Notice of Commence Work was issued to the contractor on 23 November 1993. Construction of the remedial system proceeded through 1994. A letter of substantial completion was issued to the contractor corresponding to the NYSDEC's final site visit and facility inspection conducted on 30 September 1994, at which time the remedial system was in place and capable of full operation.

2.0 *FINAL REMEDIATION SYSTEM*

2.1 *SUMMARY*

The objectives of the remedial design as described in the ROD and the Pilot Study Report are summarized in general as follows:

- treatment of ground water such that, to the extent technically feasible, the concentration of contaminants is reduced to within promulgated standards;
- ensure that remedial activities do not increase the potential for the migration of contaminated ground water by damaging the naturally occurring confining unit; and
- treat soil to prevent the recontamination of ground water by the leaching of chemicals out of the soil mass.

The results of the pilot study indicated that soil vapor extraction (SVE), in conjunction with dewatering would be effective in meeting these objectives. The study revealed the importance of lowering the water table for SVE to be most effective. With the water table lowered, it was found that high concentrations of VOCs (mostly toluene) could be removed and that high recovery rates could be maintained. It was also found that extracting from one vapor extraction well affected a large area, indicating that a combined ground water and vapor extraction system would be feasible and effective. The pilot study showed that this combination of ground water and vapor extraction systems presented an aggressive approach to remediating the Site. By adding the SVE component to the system, contaminant removal rates increase significantly.

Ground Water Recovery System

The ground water recovery system is comprised of thirty (30) wellpoints located so as to completely dewater the area of concern. Each wellpoint is

expected to yield between 0.25 and 1.0 gallon per minute (gpm) for a total sustained design pumping rate of approximately 14 gpm from all thirty (30) wells. This will enable dewatering the area of concern and maintain a depressed water table.

Each wellpoint has been fitted with a submersible pump that is controlled by manually set speed controllers, located in the treatment building, and level switches in the well casing. The speed controllers are required due to the predicted low yield of the wellpoints and will help to maintain minimal pumping rates without unnecessary cycling.

Recovered ground water from each of the thirty (30) recovery wells flows to a common recovery header and enters the facility for treatment prior to being discharged to the City of Glen Cove's storm water collection system.

Recovered Ground Water Treatment System

Upon entering the treatment facility the ground water is dosed with an iron sequestering agent (polyphosphate solution) prior to entering the air stripping phase of treatment to help prevent iron precipitation within the treatment system. The recovered ground water is then treated by two low profile air strippers configured for operation in series or parallel mode to remove VOC's. The air strippers are low profile tray aeration type air strippers, which do not contain plastic packing and were selected in order to minimize the required maintenance typically associated with iron/manganese fouling. The off-gas from the air strippers is piped to the conveyed to the catalytic oxidizer unit for treatment prior to release to the atmosphere or may be discharged to the atmosphere prior to the catalytic oxidizer.

Soil Vapor Recovery

The soil vapor extraction system consists of 12 extraction wells and 18 passive air injection wells. Each extraction well line includes a throttling valve located in the treatment building to control the extraction rates from each well. A header pipe conveys the air flow through a moisture separator and then out to an explosion proof 10 horsepower SVE blower assembly located in a fenced area adjacent to the treatment building. The condensate that accumulates in the moisture separator is automatically pumped to the ground water treatment system upstream of the two strippers. A fresh air inlet provides dilution air to reduce, to safe levels, the % LEL of the raw soil vapor being transferred to the catalytic oxidizer. A soil vapor flow rate of 20 CFM is estimated for each well. Therefore, the total design soil vapor extraction rate is 240 cfm.

Vapor Treatment

Treatment of the extracted soil vapor and the off-gas from the ground water treatment system is accomplished by a catalytic oxidizer. The catalytic vapor treatment module includes a 7 1/2 hp booster blower and separate control panel. Propane is used as supplemental fuel to ensure continuous destruction of VOCs. The unit is trailer mounted and located along with the propane cylinders within the fenced area adjacent to the treatment building. The catalytic oxidizer is capable of treating up to 1,000 cfm including dilution air. The treated vapor will meet the discharge limits for chemicals of concern in accordance with 6 NYCRR Part 212 and Air Guide-1.

2.2 *DESCRIPTION OF CHANGES*

All changes conducted on this project are considered to be minor in that the original design processes including ground water recovery and treatment and soil vapor extraction and treatment remain the same as originally approved within the Remedial Design Report submitted in May 1993 and approved by

the NYSDEC, the objectives of the ROD, and the objectives and intent of the PADMP. It should be noted that any minor changes that were conducted either enhanced the proposed remedial system process or added additional flexibility and control of the system allowing improved administration and execution of the PADMP.

Any changes made during construction (e.g., modifications to piping or electrical conduit runs) have been shown on the Record Drawings.

A brief description of the most apparent physical changes are provided herein. The original memoranda describing these changes in detail which were distributed during the construction phase are provided in Appendix A.

2.2.1 *Recovery Pump Models*

The thirty (30) ground water recovery pump models were revised from Grundfos Model Redi-Flo2 to Model Redi-Flo4.

The Redi-Flo4 pumps provide the same required recovery and discharge characteristics as the Redi-Flo2 but offer a greater wear resistance during continuous operation. This benefit is expected to reduce maintenance time and costs during the operation of the facility. As a result of the pump model revision, the well riser schedule was revised from sch. 80 to sch. 40 in order to accommodate the larger pump diameter.

2.2.2 *Catalytic Oxidizer Manufacturer*

The catalytic oxidizer designated VTM-501 originally proposed for this project was specified to be as manufactured by Global Technologies, Inc. An alternate manufacturer, Thermtch, Inc., was found to be equal or better than the originally proposed equipment and was utilized as a substitute.

2.2.3 *Electrical Yard Junction Box Upgrade*

The field electrical junction boxes J1-J17 originally proposed for this project were upgraded during construction from buried boxes to flush with grade handholes. This revision was made to comply with NEC-National Electric Code requirements and also to provide a more practical and accessible access to the boxes.

2.2.4 *Upgrade of Existing Site Drainage System*

Two site drainage problems were discovered during construction of this project:

- Storm water flooding could be expected around the new treatment building facility due to the debilitation of the existing pond area drain system.
- The three existing storm drain basins located directly in the remediation area were constructed of 8 ft. diameter perforated rings.

In order to remediate the area, the site must be properly and continuously dewatered to allow effective vapor extraction. Therefore, two new drainage basins and associated interconnecting piping were installed. Additionally, the three existing perforated rings were filled in place while smaller solid precast concrete basins were placed inside the old rings. This allowed the existing grade slopes and drain piping to be utilized.

2.2.5 *Variable Speed Drive Modifications*

During construction, the original variable speed drive manufacturer "Toshiba" declined to supply the drives and necessary associated equipment. To avoid potential difficulties in operating the ground water recovery pumps through common variable speed drive controllers and in light of Toshiba's decision to

abandon the project, "Furnas" was selected as a substitute and individual drives were provided for each recovery pump.

The control system was thus modified to incorporate the individual drives and provide the ancillary equipment modifications as necessary.

2.2.6 *Relocation of Treatment Facilities Building*

In order to make additional parking spaces available in the north parking lot, the treatment facility building was constructed 20 feet north of its originally proposed position. As a result, the building was constructed within the existing grass area adjacent to the existing pond.

2.2.7 *Relocation of Wells*

Several of the wells required for remediation were repositioned in order to accommodate pre-existing field conditions encountered at the Site. The pre-existing conditions included large tree limbs, roots and overhead utility power lines.

2.2.8 *Well Development Process*

The remediation wells were developed prior to the completion of the treatment facility and the development water was introduced back to the source after a settling period. This was done in order to provide process flow necessary for facility startup and to prevent large quantities of potentially contaminated water from being stored at the Site for an extended period of time.

2.2.9 *Miscellaneous Items*

Several additional minor changes were conducted during the construction phase of the remedial program including:

- Lighting protection and individual transient protection was installed at the Plant; and
- Additional electrical receptacles were provided within the oxidizer yard in order to aid operation and maintenance tasks.

ENGINEER'S CERTIFICATION

There have been no "process" changes made to the remedial design and the recovery and extraction rates, treatment methods and proposed contaminant destruction efficiencies are consistent with those approved within the Remedial Design Report.

ERM-Northeast hereby certifies that the construction of the Remedial Program for the Former Columbia Ribbon and Carbon Company Disposal Site (Powers Chemco) has been completed in accordance with the approved Remedial Design.



Brian P. Morrissey

Brian P. Morrissey, P.E.
Project Manager

Appendix A

Correspondence Regarding Project Changes

Memorandum

To: Carl Bensin, Bensin Contracting

cc: Charley Nehrig, Konica
Mike Fabrizzi, Fairfield Associates

From: Bill Fisher, ERM-Northeast

Date: 1 December 1993

Subject: Former Columbia Ribbon & Carbon Co.- Disposal Site
Regarding Change Order No. 1
Well Pump Upgrade
Catalytic Oxidizer Substitution

The thirty (30) ground water recovery wells designated as WRW-301 through WRW-330 for this project are currently specified to be fitted with Grundfos Redi-Flo2 submersible pumps, each with 50-foot of teflon motor lead. In order to reduce future maintenance on the pumps the proposed pump models will be changed to Grundfos Redi-Flo4. The revision will help prevent excessive wear on the pump seals from occurring and reduce potential pump repair and replacement costs. Also, the standard motor lead type THHN is available with the Redi-Flo4 pump and shall be provided in lieu of the teflon lead supplied as a standard with the Redi-Flo2 pumps. The manufacturer of the Redi Flo4 pumps recommends the inclusion of additional pump motor protection in the form of ambient compensation heaters or individual fuses for each pump leg. They prefer the latter and expect this cost not to exceed \$100.

In addition to the above, please include a separate cost to add two (2) additional ground water recovery pumps which would be stocked on-site and used as spares. In order to accommodate the Redi Flo pumps, the riser pipe schedule for each well will be revised to be Schedule 40 in lieu of the schedule 80 originally specified.

The catalytic oxidizer designated as VTM-501 originally proposed for this project was specified to be as manufactured by Global Technologies, Inc. An alternate equipment manufacturer has been found to be equal or better than the originally proposed equipment and may be permitted as a substitute.

Please provide us with a cost quotation (to be the basis for a change order) to furnish and install the equipment described. The modifications to the pumps are summarized below:

<u>Spec Section</u>	<u>Pumps</u>	<u>Original Model</u>	<u>New Model</u>
11216	P-301 to P-330	Grundfos Redi-Flo2 2,300-23,000 RPM 208 VAC, 3 pH, 50-foot Teflon Leads	Grundfos Redi-Flo4 208 VAC, 3 pH 50-foot THHN Leads

Memorandum

ERM-EnviroClean-Northeast

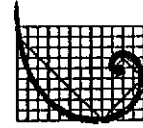
175 Froehlich Farm Blvd.
Woodbury, NY 11797
(516) 921-9393
(516) 921-5637 (Fax)

To: Carl Bensin (Bensin Contracting)

From: Bill Fisher (ERM)

Date: December 21, 1993

Subject: Former Columbia Ribbon & Carbon Co. Disposal Site
(Powers Chemco)
Relocation of Wells From Below Overhead Power Lines



ERM

Currently Well Nos. WRW-307 and AIW-709 are proposed to be installed within the 10ft. drill rig mast limit we had discussed previously. In order to avoid the necessity of acquiring a short masted rig to perform the required work, it has been determined that these wells may be relocated slightly, i.e. approximately 10 ft., to accommodate your standard drill rig. The above referenced wells may be shifted laterally to the West to meet the minimum drill rig clearance requirement. If AIW-709 is relocated off of the parking island, the stick-up gooseneck required at the head of the well will need to be piped laterally below grade back over to the parking island area so that it does not inhibit future parking space access.

Please note that Well Nos. AIW-703, WRW-309, VRW-208, WRW-324 and VRW-212 are close to the minimum drill rig mast limit. You are required to get specific field approval prior to relocating one of these wells. Changes to these wells should only occur if warranted by the overhead power lines and the limits of the drill rig. Any changes in final well location should be minimized as much as possible.

Any changes made and the final locations of all wells must be documented and incorporated into the final survey and must be represented accurately on the final as-built drawings as required by the Contract Documents.

cc: C. Nehrig (Konica)

a:\konica\misc\wellrelo.mem

175 Froehlich Farm Blvd.
Woodbury, NY 11797
(516) 921-9393
(516) 921-5637 (Fax)

Memorandum

To: Carl Bensin, Bensin Contracting
652 Union Ave.
Holtsville, NY 11742

cc: Charley Nehrig, Konica
Mike Fabrizio, Fairfield Associates

From: Bill Fisher, ERM-Northeast

Date: 21 December 1993

Subject: Former Columbia Ribbon & Carbon Co. Disposal Site
Regarding Change Order No. 2
Electrical Junction Box Upgrade



New electrical junction boxes are proposed for this Project which are designated as J1 - J17, as shown on Contract Drawing No. E-6 and as specified in Section 16050 page 2.

Currently the Project has been bid to reflect buried waterproof boxes to be used for these junctions. As you are aware the remediation area is to be covered by asphalt and as a result the junction boxes to be located in this area need to be set at grade and they must also be fitted with watertight handholes as required by the NEC-National Electric Code. In order to meet the NEC requirement, the proposed junction boxes J1 - J17 excluding J1, J6 & J7 (which will not be located under the new asphalt area) are required to be upgraded.

Please provide us with a cost quotation (to be the basis for a change order) to furnish and install the equipment described.

Please note that modifications should not affect the requirements in any other way except as already described.

Please advise your electrical vendor of these modifications as soon as possible.

Please forward your estimate for the modifications described above to ERM at your earliest convenience. Please do not hesitate to contact me or Brian Morrissey with any comments or questions.

Memorandum

file
ERM-Northeast

175 Froehlich Farm Blvd.
Woodbury, NY 11797
(516) 921-4300
(516) 921-5679 (Fax)

To: Carl Bensin
Bensin Contracting, Inc.
652 Union Avenue
Holtsville, New York 11742

From: Bill Fisher (ERM)

Date: February 25, 1994

Subject: Former Columbia Ribbon & Carbon Co. Disposal Site (Powers Chemco)
Relocation of Wells From Below Overhead Power Lines



Please note that this memorandum is written in light of the previous memorandum dated 21 December 1993 regarding this subject.

Several of the wells required for remediation of the Project Site are being repositioned in order to accommodate pre-existing field conditions encountered at the Site during the well installation phase of Construction such as; large tree limbs and roots and overhead utility power lines. These wells have been highlighted in green on the attached Plan No.1.

The repositioning of these wells will be minimized as much as possible and will help reduce potential damage to existing trees and drilling equipment and eliminate the need to drill under or near the powerlines.

The wells being repositioned include:

- Two (2) vapor recovery wells; VRW-208 VRW-212
- Six (6) dewatering wells; WRW-301 WRW-309
 WRW-307 WRW-324
 WRW-308 WRW-327
- Two (2) passive air injection wells; AIW-701 AIW-709

The distances the well positions are being moved are insignificant relative to the remediation area and as such will have no impact on the overall remediation of the site.

Any changes made and the final locations of all wells must be documented and incorporated into the final survey and must be represented accurately on the final as-built drawings as required by the Contract Documents.

cc: C. Nehrig (Konica)
D. Evans (NYSDEC)

konica\misc\wellrel2.mem

2 March 1994

Charlie Nehrig
Konica Imaging USA
71 Charles Street
Glen Cove, NY 11542



**Re: Former Columbia Ribbon and Carbon Company Disposal Site
Ground Water and Vapor Recovery and Treatment Systems
Potential Relocation of Proposed Treatment Facilities Building**

Dear Charlie:

As per your direction, work is being initiated to revise the current location of the treatment building for this project. Our understanding of the reasons for the relocation are described below.

Initially it was indicated to ERM that the proposed building relocation was to make available additional parking spaces that would otherwise be eliminated by the current proposed building position. It has since been conveyed by you that truck traffic would be interrupted by the current building position by limiting the turning ability of trailers that are approximately 50 feet long. As a response to these concerns, ERM has evaluated the limitations that would be imposed on potential truck traffic and has found that a 50 foot minimum turning radius is required by the trailers. As such, the trailers would not be inhibited by the presence of the suggested treatment building's currently proposed location. The attached drawing depicts this. By relocating the building, a maximum of (7) seven parking spaces could be gained. It is our understanding that Konica still wishes to proceed with the building relocation. In light of the above, the following items of concern must be addressed and approved.

The attached drawing also shows the new proposed position of the treatment facility as described by you, during our site visit on 1 March 1994. If the new location is acceptable to Konica, we will forward a full scale drawing to the Contractor so they may schedule a new stakeout. This stakeout should also have Konica's final approval prior to making any changes to the existing Contract.

Upon the final approval, ERM will make any required changes to the Contract Documents and will initiate scheduling of the work with the Contractor. There will be redesign time and additional costs associated with this task.



Memorandum

ERM-Northeast
175 Froehlich Farm Blvd.
Woodbury, NY 11797
(516) 921-4300
(516) 921-5679 (Fax)

To: Charles Nehrig (Konica)

From: Bill Fisher (ERM)

Date: March 11, 1994

Subject: Former Columbia Ribbon & Carbon Co. Disposal Site (Powers Chemco)
Site Drainage

Although the adverse weather conditions encountered during the winter have subsided, flooding at the site continues to challenge the construction phase of work. The entire area is sloped toward the pond which overfills to accommodate heavier rains and gradually drains back to the on site storm drain sewers through existing drain lines. The ground offers little infiltration due to the tight soil geology.



During construction tasks such as building excavation and pipe trenching, dewatering pumps are required to pump flood water to the existing storm drain system. Worse flooding can now be expected due to the debilitation of the existing pond area drain system.

In light of the above, alternatives were discussed during the 5 April 1994 bi-monthly meeting which would help reduce the potential of excessive flooding.

Bensin Contracting (Bensin) has since provided additional spot elevation information which indicates that the area is essentially sloped toward the pond with an additional low point near the former horseshoe pit. According to the survey information, this point is high enough to drain to the existing storm system if piped accordingly. Bensin has proposed installing two (2) new storm drains and connecting piping in these areas of the site (former pond & horseshoe). See attached quote.

In addition to the above, it is proposed that the final elevation of the proposed incinerator yard be lowered to facilitate the need for less backfill and a smoother transition into the existing asphalt parking area. Also, the construction of a retaining wall near the proposed treatment facility's north and east sides would help preserve part of the storm water storage capacity of the former pond area and thus require less fill.

We feel that the addition of the extra drains and retaining wall as a minimum would help reduce the potential of flooding. If the enhanced storm water drainage system proves to be insufficient, an additional or upgraded drain line may need to be installed between the existing storm drain near WRW-324 and the storm drain located in the truck ramp adjacent to the existing Konica building facility.

If the above meets with your approval, Bensin could begin this additional work immediately taking advantage of the existing open trench work. Please contact me with your response or any questions as soon as possible so that we may expedite this task. We can formalize the change order paperwork at a later date and treat the work as a field directive.

konica\misc\drain.mem



ERM-Northeast

175 Froehlich Farm Blvd.
Woodbury, NY 11797
(516) 921-4300
(516) 921-5679 (Fax)

Memorandum

To: Charles Nehrig (Konica)
From: Bill Fisher (ERM)
Date: March 12, 1994
Subject: Former Columbia Ribbon & Carbon Co. Disposal Site (Powers Chemco)
Electric Junction Box Credit

As a result of Change Order No.2, the electrical junction boxes were upgraded to surface handhole type boxes as a requirement of the National Electric Code (NEC). See Change Order No.2 for details.

Various electrical junction boxes are currently proposed to be located near the individual electrical control boxes which are required at each recovery well. Because of the Change Order these boxes (electrical junction boxes and electrical control boxes) are now identical in size and construction. Bensin Contracting (Bensin) has noted that several boxes may be eliminated by combining the conduit and any other components into a common box. This is acceptable as long as the NEC classifications at the hazardous areas remains appropriate.

The extra electrical junction boxes would be returned to the manufacturer for a credit. The exact number and location of the boxes to be combined will be determined in the near future.

konica\misc\electbox.mem



ERM-Northeast

175 Froehlich Farm Blvd.
Woodbury, NY 11797
(516) 921-4300
(516) 921-5679 (Fax)

Memorandum

To: Charles Nehrig (Konica)
From: Bill Fisher (ERM)
Date: April 20, 1994
Subject: Former Columbia Ribbon & Carbon Co. Disposal Site (Powers Chemco)
Site Drainage Memo No.2

In reference to the previous site drainage memorandum dated 11 April 1994 regarding the installation of two (2) additional storm drains and associated piping at the project site. Through recent probing it has come to light that the three (3) existing storm drain basins located directly in the remediation area are constructed of 8ft. diameter perforated concrete rings.



In order to remediate the area, the site must be properly and continuously dewatered to allow effective vapor extraction. It was previously believed that the existing basins were constructed of solid concrete rings and that all the captured runoff drained offsite through overflow lines located in the catch basins. On the contrary, the existing storm drain basins currently permit and promote stormwater runoff to infiltrate the area making it difficult for the remediation dewatering tasks.

As a result, the existing storm drains will be replaced with solid precast concrete drainage rings in addition to the installation of two (2) new basins and interconnecting piping, to carry and runoff away from the remediation area.

Since the existing drainage basins are excessive in size and are currently penetrating the contaminated soil area, they will be abandoned in place by filling with approved backfill and removing the roadway surface drain covers.

The Contractors quote, dated 20 April 1994, for replacing the existing basins and adding the new basins and piping is attached.

konica\misc\drain2.mem

Memorandum

ERM-Northeast

175 Froehlich Farm Blvd.
Woodbury, NY 11797
(516) 921-4300
(516) 921-5679 (Fax)

To: Carl Bensin (Bensin)

From: Bill Fisher (ERM)

Date: April 28, 1994

Subject: Former Columbia Ribbon & Carbon Co. Disposal Site (Powers Chemco)
Additional Electrical Outlets

At the request of Konica Imaging USA, Inc. (Konica), allowances should be made at this time to install additional below grade electrical conduit through the proposed incinerator yard area. The conduit is required in order to provide power to an additional duplex exterior surface electrical outlet near the pond area. This electrical outlet will be used by Konica during operation of the proposed treatment facility.



Also, as an added element, Konica wishes to add electrical convenience outlets into each of the exterior control panels for the catalytic oxidizer and the vapor extraction systems. This change is being made in order to prevent extension cords and other equipment from needing to be run through the door on the east wall of the facility causing a potential hazard during future operation and maintenance tasks.

Contact has been initiated with the individual equipment manufactures regarding altering their control panels accordingly. The manufacturers have indicated that since the panels have already been constructed or are near completion it would be best if they supplied a separate explosion proof duplex box attached to the side of their panel. A separate power feed would need to be brought to the new outlets which may also need to be explosion proof. The manufactures have acknowledged that this method is better than altering the control panel internals at this time. The Class 1, Div. 1 requirement is ultimately the decision of the Nassau County Fire Marshal but to be safe, and to continue the construction without disturbance, Class 1, Div. 1 equipment and appurtenances should be utilized at this point. If it is found that these changes are not feasible by you or by the equipment manufactures, it may be possible to locate the additional outlets on the exterior of the proposed facility's east wall.

These changes should be brought to the attention of the Nassau County Fire Marshal by your office during the current ongoing permit review. If these changes are found to be unacceptable by the Nassau County Fire Marshal, the conduit can be abandoned in place at that time. If the changes are approved, the applicable wire should be pulled and connected to the distribution panel proposed in the treatment facility and connected to the appropriate duplex electrical outlet proposed to be located adjacent to the pond and also to the duplex outlets proposed to be added to the equipment control panels.

All the necessary equipment and appurtenances shall be provided and installed by your company accordingly. Please provide a total cost to perform the above described work along with any changes to the current construction schedule if applicable.

cc: Charles Nehrig (Konica)
John Scully (PCS)

konica\misc\eleoutlet.mem



Memorandum

ERM-Northeast

175 Froehlich Farm Blvd.
Woodbury, NY 11797
(516) 921-4300
(516) 921-5679 (Fax)

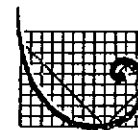
To: Charles Nehrig (Konica)

From: Bill Fisher (ERM)

Date: May 9, 1994

Subject: Former Columbia Ribbon & Carbon Co. Disposal Site (Powers Chemco)
Variable Speed Drive Ancillary Equipment Modifications

It has come to the attention of ERM and subsequently confirmed through correspondence with Toshiba International Corp. (Toshiba) that additional measures should be taken to ensure the proper operation of the variable speed drive controller and ground water pump system proposed for this Project.



ERM

The dilemma was initially recognized during the recent start-up of a similarly configured system at a remedial site in New Jersey where there was difficulty meeting the desired operating performance requirements of the ground water recovery system.

Steps may be employed during the construction phase in order to avoid possible operating difficulties at our Site including substituting unshielded power cable connecting to the ground water pumps with shielded cable and also ensuring that proper construction methods are utilized. This will eliminate interference (noise) from other motor leads and potential materials in the conduit. The buried conduits have subsequently been sized and installed accordingly to accommodate the installation of the shielded cable. In addition, installing long lead filters between the variable speed drives and the pumps will prevent high impulses or surges at the motor terminals from damaging the motor insulation and will also help prevent nuisance tripping of the variable speed drives.

The additional equipment mentioned above was not previously required by Toshiba. This equipment, including the shielded cable and long lead filters was only currently recommended in light of recent start-up experience from a similar project.

A revised variable speed drive specification and the associated installation requirements have been forwarded to Bensin Contracting so that they may provide a formal quote to conduct the requested work. Toshiba has already provided an approximate cost per unit for the long lead filters of \$2,000 a piece. A total of five (5) long lead filters is recommended to maintain the flexibility necessary to properly remediate the intended area. It is estimated that the shielded cable will cost approximately \$4,000. The total cost range of the change is estimated to be between \$14,000 and \$18,000 and will be finalized upon receipt of Bensin Contracting's formal quote.

A copy of the revised specification and other applicable correspondence has been attached for your reference.

cc: Carl Bensin (Konica)
konica\misc\vsd.mem



ERM-Northeast

175 Froehlich Farm Blvd.
Woodbury, NY 11797
(516) 921-4300
(516) 921-5679 (Fax)

11 March 1994

Mr. Ronald Bischoff
Toshiba International Corporation
Industrial Division
13131 West Little York Road
Houston, Texas 77041



Re: Former Columbia Ribbon & Carbon Co. Disposal Site (Powers
Chemco)
Ground Water Recovery and Treatment Systems
Model VT130G2+2160 Inverters

Dear Mr. Bischoff:

ERM-Northeast (ERM) is the design engineering firm for several remediation projects which propose to use various Toshiba equipment. In conjunction with the recent letter to you dated 10 March 1994 from Scott Ranger of our office, there are various concerns that must be addressed regarding your equipment proposed for the above referenced project.

The inverters and ancillary equipment for this project have been specified and will be purchased based on past correspondence and assistance from your company, particularly from guidance and technical assistance during a conference call between Mr. Kurt LeDoux, the installing electrical contractor and myself on 1 March 1994, and via a letter written to Mr. LeDoux dated 28 February 1994 from Fairfield Associates.

At this specific site, there are 30 ground water recovery wells. A single drive will feed a well pump distribution panel, which in turn, feeds 4 to 8 well pump motors. Each well pump motor will be fed through a standard motor starter with overload protection. During normal operation, the individual well pumps will start and stop randomly in response to water level in a given well. The drives will be located in the process building in an air conditioned control panel. The recovery well pump motors will be approximately 80 to 400 feet from the process building. The motor leads will be three single conductor, non shielded, #12 type THWN. It is intended to run multiple motor leads in PVC conduit.



Mr. Ronald Bischoff
11 March 1994
Page 2

ERM has specified five (5) Model VT130G2+2160 inverters. The power to the inverters is 208/2/60. Each inverter will serve up to eight (8) motors. Each motor is 1.5 HP 200/3/60. The FLA (Full Load Amps) of each motor at 60 Hz is 6.1 amps. The starting current at the expected operating frequency of 40 Hz is 29.1 amps.



It is the intention to size the inverters for 7 pumps running and the 8th pump starting.

The above referenced correspondence was initiated by ERM to reinforce past correspondence with Mr. LeDoux during the design conception. Mr. LeDoux reiterated during our recent conference call that the proposed Toshiba inverters were acceptable for this application without any adjustment to the current design configuration. Mr. LeDoux agreed to provide written confirmation of our conversation, verifying the applicability of your equipment for our requirements.

To date, ERM has not received any response, and it has come to our attention that Mr. LeDoux is no longer with your company. We find it distressing that we have not yet been contacted by a replacement representative from your company regarding these concerns.

In light of the above and because of the magnitude of our project, it is essential that your firm provide to ERM a letter stating that the proposed Toshiba equipment will meet our requirements and perform in accordance with the design intent of the project. In the letter, you should also indicate the name of the new Toshiba representative who will be available to answer questions and offer technical assistance for our applications.

Mr. Ronald Bischoff
11 March 1994
Page 3

Your response is required immediately, considering this project is currently under construction. If this is not possible, ERM will be forced to eliminate the Toshiba equipment from this project.

If you have any questions, please contact me immediately.

Very truly yours,



William Fisher
Project Engineer



Brian P. Morrissey, P.E.
Project Manager

WF:btm

51500504.544



Memorandum

To: File

From: Bill Fisher (ERM)

Date: 3 June 1994

Subject: Former Columbia Ribbon & Carbon Co. Disposal Site
(Powers Chemco)
Recovery Well Development Alternatives



ERM

At this time, ERM is in the process of determining the most appropriate method and schedule for storing, treating and disposing of the development water that will be produced from the remediation wells. We believe that at least a portion of the wells should be developed prior to the completion of the treatment facility in order to provide process flow necessary for facility start-up. The process flow is necessary to operate the variable speed drives, adjust level sensors and flow meters and operate the ground water treatment system.

In order to better evaluate the well development requirements, a well development test was conducted on Thursday, 26 May. The results of the test have been used to help describe the parameters that may be expected during the final development of the wells.

During the test, nine (9) ground water wells were tested at the project site. It was not possible to develop the wells completely, due to time and water storage constraints. The wells were tested to help predict the potential yield and recovery rates that may be anticipated during actual development.

The specific wells tested were WRW-324 and WRW-330 on the southeastern perimeter; WRW-302, WRW-303, WRW-304 and WRW-305 on the northwestern corner; and WRW-311, WRW-312 and WRW-313 in the center of the remediation area. Table "A" describing the tested well responses is attached, along with a site plan showing the relative locations of all wells.

The results of the well test indicate that development rates may be anticipated in a relatively wide flow range from < 1 to 15 gpm and that nominal solids removal and substantial turbidity reduction will need to be conducted. Several non-producing wells will require the introduction of fresh water to enable surging of these wells. The volume of development water to be produced by each well is anticipated to be 250-300 gallons.

It was also evident during the well test, particularly with the more centrally located wells, WRW-311, 312 and 313, that the dewatering of one well affected the recovery of another. It is expected that, as several wells are dewatered during

Memorandum (Continued)

the development process, the adjacent wells may be at least partially dewatered causing their development to be impaired.

Well development alternatives currently being considered for this project include:

- providing large on-site water tank(s) and storing the water indefinitely; or
- pending approval by NYSDEC, introducing the water back to its source.

On-site storage would require at least 5,000-30,000 gallons of tankage, which would remain on-site until the treatment facility is in full operation. The development water could then be slowly pumped into the operating facility while mixing with additional water coming from the functional wells. This alternative would require that potentially large quantities of development water be stored safely on-site for up to 8 to 12 weeks. It may also cause the site to be partially or completely dewatered inhibiting or restricting the development of the remaining wells until the ground water can recover.



Introducing the development water back to its source could be conducted in a batch process, developing a well 200-300 gallons at a time into a 500 gallon baffled tank. The batch tank would need to be provided with a weir system allowing only clean settled water to pass into the adjoining chamber. The process would allow an optional filtering system to remove the fine particles prior to flowing back to the specific well being developed, if necessary. This process would help maintain the ground water level, allowing adjacent wells to be developed without waiting for natural ground water recharge. It would allow concurrent well development if desired. It would allow significant quantities of water to be used to develop the wells without the need of tens of thousands of gallons of on-site long term water storage. It would provide for allowing the developed wells to be fitted with their submersible pumps prior to the treatment facility being operable which would expedite the facility start-up and shake down. All the water would not be capable of being introduced back into its respective well; as such, an on-site storage system would still need to be provided at some reduced capacity.

It is not anticipated that the introduction of development water back into the same well would affect the current hydrogeology of the remediation area. In light of this and considering that this process alternative would be both efficient and expeditious, ERM feels it would be the most appropriate method of development, if so desired by the contractor.

FACSIMILE COVER PAGE

To DAN EVANS

Company NYSDEC - BUREAU OF CONSTRUCTION Services

Fax Number (518) 457-7743

From BILL FISHER

Work Order Number 515-005

Date 6-3-94 FRIDAY

Number of Pages 4 + COVER



ERM

DAN,


Attached is the wet development memo.
Please comment ASAP so that we may
schedule accordingly.

If you have any questions or concerns
please call


Thanks Bill

If you have any difficulty with this transmission, please call (516) 921-4300

175 Froehlich Farm Boulevard - Woodbury, New York 11797

 Date: 6.7.94
Time: _____
Name: Dan Evans
Subject: Konica - Well Development

W.O. NO.: 515-005
Company: NYSOEL
Telephone: 518-457-9280

 Notes - Did you receive development memo? he did will respond soon.

6/7/94 11:15 Dan called back - its O.K. to introduce development water back to well

- He may want to be @ mtg 6/14 - confirm @ end of week!

 Action Items

Action Items	Who	Date

Message Received By: _____ 

Follow-Up: YES _____ NO _____

Copies To: File Copy _____
2 _____
3 _____
4 _____

By Whom: _____

Date: _____

Notes: _____

TOSHIBA

TOSHIBA INTERNATIONAL CORPORATION
INDUSTRIAL DIVISION
13191 WEST LITTLE YORK ROAD
HOUSTON, TX 77041
(713) 466-0277

(800) 231-4412
TELEX: 762-078
FAX: (713) 466-8773


To: ERM
Attention: Bill Fischer
From: Mark A. Laber
Fax: (516) 921-5637

June 27, 1994

Dear Mr. Fischer

I regret to inform you that Toshiba International Corporation will not be able to supply the inverters or long lead filters for the Eagle Control Application we have been speaking of recently.

Sincerely,


Mark A. Laber
Inverter Applications Engineer

July 8, 1994

Bill Fisher
ERM Northeast
175 Froelich Farm Blvd
Woodbury, New York 11797
Subject: VFD Application with Grundfos Pumps

Dear Bill:

I have discussed the application of the Furnas Micro 5000 VFD with the Grundfos Submersible pump with Fred Buckholtz, Regional Furnas Drive Specialist. Based on the installation parameters set forth at our meeting at Eagle Controls on July 7th, Fred stated that Furnas can guarantee that the Drives can perform the function required without problems. The only reservation Fred has is that we cannot certify that the motor can be operated above 60 hertz without having a motor shutdown on current overload. The ability to run over 60 hertz is a function of the overall sizing of the motor and the impeller characteristics.

The installations parameters are as follows:


One VFD per motor, Furnas Part # 77NCD221

Cable to motor shall be spliceless, #12 and shielded

A lightning arrester and surge capacitor shall be installed at the incoming service

If you have any further questions you can contact me by phone number 516-244-0725 or FAX number 516-244-0676

Very Truly Yours,


Ronald R. Johnson
Sr. Sales Engineer
Furnas Electric New York Office

CC: Tom Esnes, Eagle Control Corp

ERM-Northeast

175 Froehlich Farm Blvd.
Woodbury, NY 11797
(516) 921-4300
(516) 921-5679 (Fax)

12 July 1994

Mr. Ronald Bischoff
Inverter Marketing Manager
Toshiba International Corporation
Industrial Division
13131 West Little York Road
Houston, TX 77041



Re: Power Inverters
Former Columbia Ribbon and Carbon Company Disposal Site
Glen Cove, New York

Dear Mr. Bischoff:

ERM-Northeast (ERM) has received Mark Laber's correspondence dated 27 June 1994 stating that Toshiba International Corp. (Toshiba) will not supply the power inverters or long lead filters for the remediation project located in Glen Cove, New York. ERM personnel and our electrical designer, Fairfield Associates, have worked with several Toshiba representatives last year during the design phase of the project to select the appropriate Toshiba equipment for our application. After completion of the design, a conference call was held on 1 March 1994, with representatives of ERM, Toshiba and the electrical contractor, Eagle Control. During that conversation, your applications engineer stated that system would operate as designed. The conduit layout drawings were forwarded to Toshiba at that time. Subsequently, after further information requests were initiated by ERM, your firm indicated in several conversations and eventually in the letter from Paul Lenig dated 2 June 1994 that the design should be modified to include shielded cable, and in some cases, long lead filters.

From the initiation of the construction phase, ERM has been in frequent contact with Toshiba engineers in order to fully apprise Toshiba of the installation procedures and project progress. Toshiba's recommended changes were implemented as directed. Based upon telephone conversations and correspondence with Toshiba, ERM was led to believe that by incorporating these modifications, Toshiba's equipment would operate as specified and required for the project. When ERM made repeated requests for shop drawings, Toshiba became non-responsive.

Mr. Ronald Bischoff
12 July 1994
Page 2

With construction now approximately 60% complete, Toshiba has informed us it is abandoning the project. This action will cause significant delays to the construction schedule and will lead to postponement of the remedial system start-up. Our client, Konica Imaging, U.S.A. (Konica), is under a Consent Order with the New York State Department of Environmental Conservation (NYSDEC) to implement site remediation. NYSDEC may levy fines against Konica due to this delay.



Toshiba has now caused major problems on two (2) successive ERM projects. The Purex project in Millville, New Jersey is still experiencing start-up problems with the operation of the well pumps driven by the power inverters. Toshiba's failure to both stand behind their products and provide accurate information and technical assistance is both unacceptable and unprofessional. ERM-Northeast has been left with no alternative but to no longer specify Toshiba equipment, and we will recommend that all ERM affiliates also refrain from specifying Toshiba equipment. Additionally, if financial repercussions are experienced by Konica or ERM due to the project delays caused by Toshiba, we will be forced to seek compensation.

Very truly yours,

A handwritten signature in cursive script that reads "Brian P. Morrissey".

Brian P. Morrissey, P.E.
Project Manager

BPM:btm

cc: C. Nehrig, Konica
D. EVANS, NYSDEC