GZA
GeoEnvironmental, Inc.

Engineers and Scientists

April 13, 2001
File No. 31197.7, C

DELIVERY VIA COURIER

Ms. Carolyn J. Casey
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Re: RCRA Corrective Action – Human Exposure Questionnaire (Form 725)
Lightolier Norwich Facility

Dear Ms. Casey:

At the request of Genlyte Thomas Group LLC (GTG), GZA GeoEnvironmental, Inc.(GZA) completed the enclosed RCRA Corrective Action - Current Human Exposure Under Control Environmental Indicator Questionnaire Form (CA725) for the Lightolier Facility in Norwich, Connecticut.

If you have any questions or comments, please do not hesitate to contact the designated facility contact, Mr. Ronald Westgate, via telephone at (508) 679-8131 or via E-mail at rwestgate@genlyte.com.

Very truly yours,
GZA GEOENVIRONMENTAL,INC.

John J. Spirito
Associate Principal

Thomas F. Stark, L.E.P.
Project Reviewer

A Subsidiary of GZA GeoEnvironmental Technologies, Inc.

Enclosures: Form 725 (w/ Attachments A and B and Tables 1 through 9)

cc: R. Holub, Genlyte Thomas Group (1 copy)
R. Westgate, Lightolier/Fall River (1 copy)
S. Deans - Robinson & Cole (1 copy)
M. Crawford-CTDEP (1 copy via Certified Mail)
P. Hill –CTDEP (1 copy via Certified Mail)

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

June 22, 2001

Mr. Ronald Westgate
Lightolier Fall River
631 Airport Road
Fall River, MA 02720

RE: RCRA Corrective Action, Documentation of Environmental Indicator Determination at Lightolier Norwich, CT Facility, CTD000841130

Dear Mr. Westgate:

Thank you for completing and submitting the Documentation of Environmental Indicator Determination checklist ("the checklist"), dated April 13, 2001, for the Lightolier Norwich Facility located on 40 Wisconsin Avenue in Norwich, Connecticut.

As discussed at our June 1, 2001 meeting at the facility, indoor air sampling will continue on a quarterly basis in the same locations as previously sampled with the exception of the roof top sample for background (refer to Attachment 1). Also as in the previous indoor air monitoring, the same analytes should be included and vinyl chloride should be added to the list. This additional monitoring will allow for the collection of data to:
(1) monitor any rebound effects after modifications to the existing sub-slab soil ventilation system;
(2) verify levels of trichloroethene (TCE) and breakdown products in indoor air remain below applicable indoor air screening criteria (refer to Attachment 1);
(3) verify that the volatile organic analytes previously detected in indoor air were related to aerosol spray use, specifically tetrachloroethene (which was detected above screening levels) and 1,1,1-trichloroethane.

In addition, the groundwater data that is currently being collected, should be used to evaluate the risk for construction/excavation workers exposure to contaminated groundwater and trench air during offsite construction/excavation work. This is of particular importance in the area south, south-west of the facility where construction activities appears likely (i.e., for-sale signs on the Gunther property and other construction activity in the industrial park). The Environmental Indicators should continually be re-evaluated where a site investigation continues and new data is being generated.

There is a more likely downgradient source of the TCE, PCE and associated breakdown products, and methyl-tert-butyl-ether contamination detected in the well located on Kenland property (located approximately 2,500 feet south of the Lightolier property) and the private wells on Vergason and Plain Hill Roads.

Despite that fact, with the continued collection of new data regarding the rate and extent of contaminant migration, this pathway and the Environmental Indicators should continually be re-evaluated.

In the interim, EPA agrees with Lightolier's determination that the Environmental Indicator, Current Human Exposure Under Control, has been achieved at the Lightolier Norwich Facility. Thank you for your efforts in achieving the Environmental Indicator and we look forward to your continued efforts to achieve the Migration of Contaminated Groundwater Under Control, Environmental Indicator.

Additional requests for information/clarification are contained in attachments 1 and 2. Please contact me at (617) 918-1368 if you have any questions.

Sincerely,

Carolyn J. Casey
RCRA Facility Manager

cc: R. Holub, GTG
J. Spirito, GZA
P. Hill, CTDEP
S. Deans, Robinson & Cole

enclosure

Attachment 1

Technical Review of the Current Human Exposures Control Environmental Indicator for Lightolier, Norwich, CT

General

For future reference, the indoor air sampling locations shown on Figure 2, Exploration Location Plan, should be identified using the same sample location name and/or sample identification number as the results shown in Table 3. Not all the locations appear on the figure (e.g., Where is the parking lot sample location and is the block-house the same as the roof top sample?). Apparently the maps showing proposed sample locations were not updated after sample identification numbers were assigned when monitoring.

Specific

2.a. Air (Indoors):
page 4
The letter from EPA that is referred to here is applicable to facilities where the OSHA Regulations regarding indoor air concentrations are applicable (e.g., Facilities that are actually using such chemicals in their processes and are following all the applicable OSHA regulations regarding use, including employee notification of such hazard). The use of 1% of the OSHA standards would not apply to breakdown products of the constituents of concern in question.

The CTDEP RSR, Target Indoor Concentrations are appropriate numbers to use for screening levels in addition to the U.S. EPA Region 9 Preliminary Remediation Goals for ambient air. Please refer to the following Web address:
http://www.epa.gov/Region9/waste/sfund/prg/index.html.

The Sub Slab Ventilation System has been given the acronym SVE. This is typically used for Soil Vapor Extraction Systems. SSV System would be more appropriate and would eliminate any misconceptions about the nature of the treatment system (i.e., This is a control and not a remediation system). Although the effectiveness of the SSV system may have been optimized by the excavation of additional soil in two areas, it is our understanding that the initial system design was not altered substantially enough to be considered an effective remediation system or SVE system.

Detailed information about the construction, operation, monitoring and effectiveness (include drawings showing radius of influence of vacuum) of the existing SSV should be provided and/or referenced here. The next quarterly report, or a separate report, should detail the modifications to the existing SSV System, including dates.

Prior to any additional modifications to SSV system operation, a detailed plan of the proposed modifications should be submitted for review and approval prior to implementation.

Any background concentrations should be site specific.

2.b. Surface Soil
page 4
Tables for AOC 3 and AOC 11 are missing for the referenced appendix. Please provide these tables if soil sampling results exist.

2.c. Surface Water
page 5
The EPA Maximum Contaminant Level (MCL), can be used as a conservative screening level for surface water direct contact, incidental ingestion by trespasser/recreator.

2.d. Sediment
page 5
A second brook (unnamed) that runs west to east (located approximately 200 feet south of the Algonquin gas line) should also be discussed here. This brook does appear to have sufficient sediment for sampling although it is not inviting to recreation or trespassing due to the extremely thick tree and scrub growth lining both sides of the brook making access very difficult. Sampling in this stream will be necessary for evaluation of Migration of Contaminated Groundwater Under Control Environmental Indicator and should be conducted at the same time and at the same locations when and where surface water samples are collected.

Sediment is present in Elisha brook but trespasser/recreator exposure is limited due to significant streambed coverage by cobbles and boulders. More importantly, from a **human health prospective** for a trespasser/recreator scenario, reported contaminant levels in surface water are negligible for this type of exposure scenario. VOCs and metals are just at or below the Maximum Contaminant Level, which is considered a conservative screening number for a surface water direct contact, incidental ingestion route; therefore, levels of these constituents would not be expected to accumulate in sediments at levels that would pose a risk for the same exposure scenario.

3. Rationale and References
An appropriately scaled map that clearly identifies all properties with wells within the subject radius of the well survey.

4. Rationale and References
Groundwater and Subsurface Soil
page 9
A plan should be in place to more fully evaluate potential exposures to groundwater and subsurface soils in areas of known or suspected contamination prior to excavation or disturbing soils.

Attachment 2

Technical Review of the
SVE Monitoring Report,
Lightolier Facility, Norwich Connecticut
April 2001

1.0 Introduction

1.10 Summary Opinion, Page 1

The second paragraph states "The available indoor air test results for June 2000, November 2000 and February 2001 indicated, in our opinion, that the observed concentrations of trichloroethene (TCE) in the indoor air do not represent a significant risk to human health under current industrial/commercial use conditions. In addition the low levels of TCE that were detected in June 2000 appear to have been reduced by the SVE system to background concentrations." The summary fails to discuss concentration of other detected constituents such as tetrachloroethene (PCE), 1,1-dichloroethene, cis- and trans-1,2-dichloroethene, and 1,1,1-trichloroethane. PCE was detected in November 2000 at concentrations as much as three orders of magnitude greater than that detected in June 2000 and February 2001. The summary should at least reference section 4.2 that provides an explanation of the other sampling events and additional detected constituents.

1.20 Background
page 2

Although the last paragraph accurately states that "...the measured indoor air concentration of TCE did not exceed a calculated Risk-Based Calculation (RBC) at the $1x10^{-5}$ cancer risk level," it fails to mention that the risk based concentration (RBC) at the $1x10^{-6}$ (7.73 ug/m^3) was exceeded by an order of magnitude in the former buffing room and former degreaser location and that levels similar to the RBC were detected in the former painting area and storage area.

4.20 Indoor Air
page 7

OSHA TVL's are not appropriate for the site. Please refer to the first general comments in Attachment 1.

page 8

The second to last paragraph to this section notes manifests for aerosol containers are contained in Appendix F. MSDS sheets for two of the three material mentioned as VOC contamination in air. Please verify that one of the aerosol contains 1,1,1-trichloroethylene (or methyl chloroform). This is not apparent from the MSDS sheets provided.

5.00 Conclusions/Recommendations

Indoor air sampling would be more appropriately conducted on a quarterly basis for one year (May/June, August and November 2001)

As discussed at our June 1, 2001 meeting at the facility, indoor air sampling will continue on a quarterly basis in the same locations as previously sampled with the exception of the roof top sample for background. A location that is upwind of the facility and beyond all facility influence should be selected. The location should be selected based on site specific meteorological data obtained that day. Also as in the previous indoor air monitoring, the same analytes should be included and vinyl chloride should be added to the list.

This additional monitoring will allow for the collection of data to:

(1) monitor any rebound effects after modifications to the existing sub-slab soil ventilation system;

(2) verify levels of trichloroethene (TCE) and breakdown products in indoor air remain below applicable indoor air screening criteria (refer to Attachment 1);

(3) verify that the volatile organic analytes previously detected in indoor air were related to aerosol spray use, specifically tetrachloroethene (which was detected above screening levels) and 1,1,1-trichloroethane.

Holding times prior to analyses of the air samples should be a short as possible to minimize volatile organic loss.

Please verify that TO14A, the revised version of TO14, is the method that will be used for collection and analysis of samples.

Appendix D

Please provide additional field notes showing TVOC and vacuum pressure monitoring results. Only the November 2000 and February 2001 field notes have been included here.

FORM CA725

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: Lightolier
Facility Address: 40 Wisconsin Ave., Norwich, CT
Facility EPA ID #: CTD ~~000841120~~ 000841130 MRH 6/22/01

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   _X[1]_ If yes - check here and continue with #2 below.

   _____ If no - re-evaluate existing data, or

   _____ if data are not available skip to #6 and enter"IN" (more information needed) status code.

[1] Please be aware that in our preparation of this form and in an attempt to provide the agency with a thorough understanding of the site conditions, we have included information that has been gathered during investigations performed to assess Solid Waste Management Units (SWMU's) and Regulated Units under RCRA, as well as non-RCRA portions of the site which are being investigated under the State site remediation program of the Connecticut DEP. Specifically, in our opinion, the site investigation work performed at the site shows that the VOCs (primarily trichloroethene) and other constituents of concern (COCs) present at the site are not the result of routine or systematic releases from discernible units into which solid wastes had been placed at any time.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Current Human Exposure Under Control
Environmental Indicator (EI) RCRIS code (CA 725)

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993 (GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

Current Human Exposure Under Control
Environmental Indicator (EI) RCRIS code (CA 725)

	Yes	No	?	Rationale / Key Contaminants
Groundwater	X*	____	___	Refer to Tables 1 and 2
Air (indoors) [2]	___	X	___	Refer to Table 3 and reference (a)
Surface Soil (e.g., <2 ft)	___	X	___	See reference (b) below
Surface Water	X*	____	___	See Figure 1 and reference (c) below
Sediment	___	X	___	See reference (d) below
Subsurf. Soil (e.g., >2 ft)	X*	___	___	See reference (e) below
Air (outdoors)	___	X	___	See reference (f) below

*As noted previously, while presentation of all available data on the site is being utilized to respond to this questionnaire, we believe that the available site investigation work shows that VOCs and other detected COCs in groundwater are not attributable to a release from the RCRA regulated units, but are being investigated pursuant to the State site remediation program of the CTDEP.

_____ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

X If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

____ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

(For the location of groundwater monitoring wells and soil gas survey points referenced below, refer to the attached Figures 2 and 3)

a. Air (Indoors): As described in GZA's April 2001 "Sub-slab Soil Vapor Extraction (SVE) Monitoring Report (April 2001 SVE Monitoring Report)", a

copy of which is provided in Attachment A, indoor air levels of target VOCs are below screening criteria set by EPA Guidance (provided by Ms. Carolyn Casey for another CT facility). EPA guidance recommends "using 1% of OSHA levels as the screening level to determine achievement of environmental indicators" but requires that "long-term remediation must achieve standards reflective of the risk assessment protocol ... which will provide protection under current and any reasonable foreseeable future use of the facility". As discussed in the April 2001 SVE Monitoring Report, with the operation of the sub-slab SVE system and the discontinued use of a brake cleaner that was applied using aerosol spray bottles (less than 6 bottles per year) on the forklifts at the facility, indoor ambient air VOC concentrations have been reduced to background concentrations (see February 2001 data in Table 3). These concentrations are at least 1,000 times lower than OSHA standards. Concerning potential long term exposures, as discussed in GZA's July 3, 2000 Supplemental Work Plan and GZA's April 2001 SVE Monitoring Report, VOC concentrations in indoor air in June 2000 were below calculated risk based criteria for protection of facility workers. Remedial actions have been taken, with the September 2000 installation of the SVE system beneath a portion of the facility, to achieve protection of human health under reasonably foreseeable future use of the facility and to remove VOCs from unsaturated zone soil beneath a portion of the facility to the extent feasible. Indoor air monitoring has been performed on three occasions, June 6, 2000, November 16, 2000, and February 12, 2001. Table 3 summarizes and compares the data from the three sampling rounds to CTDEP RSRs, OSHA (TLVs set by the American Conference of Governmental Industrial Hygienists) and Background concentrations reported in the literature.

b. **Surface Soil:** As summarized in Table 4 and presented in more detail for each portion of the facility and each COC in the tables in Attachment B, no surface soils (<2 foot depths and not beneath building) have been identified with constituents of concern (COCs) above background and residential or I/C DECs. Sampling locations are shown on Figure 2. As described in GZA's "Parts 1, 2 and 3 - RCRA Container Storage Closure Plan", dated March 22, 2001, which was previously submitted to the EPA, arsenic was detected in surface soils outside of the building footprint at concentrations that exceeded the residential and I/C DECs of 10 mg/l, but at levels concluded to be representative of background conditions (less than 24 mg/l. The results of pre-SWP testing of soil samples are presented in Table 5. This earlier testing of soils, including surface and subsurface soil samples, did not identify constituents, metals or VOCs, at concentrations that exceed CTDEP direct

exposure criteria.

c. **Surface Water:** The most recent (September 1998) EPA Method 8260 and 6010 test results, which are summarized in Table 6, showed that with one exception, VOC and metals concentrations in the adjacent surface water body, Elisha Brook, downstream of the site (sampling location BR-D) were below drinking water standards. The exception was TCE. TCE was present at a concentration of 8 ug/l which just exceeds the drinking water MCL of 5 ug/l. The historical upstream (BR-U) and downstream Brook water quality data, which is summarized in Tables 7 and 8, respectively, showed TCE only in the downstream samples (BR-D). In addition, the data showed approximately a three fold decline in levels since 1987. As shown in Table 8, the only other constituent identified in the pre-1998 monitoring of the Brook above MCLs or CTDEP GA/GAA GPCs was cadmium, which was only detected at the GPC concentration in 1988. The Brook, as stated above, receives its' water from the Industrial Park. It does not serve as a source for a surface drinking water supply reservoir. Therefore, the drinking water MCL is not applicable to this Brook.

d. **Sediment:** The adjacent surface water body, Elisha Brook, is a shallow (generally a few inches deep) brook that does not have any visible sediment layer. The sections of the Brook adjacent to the site are the headwaters, receiving surface water drainage from the industrial park properties and streets and groundwater flow from the underlying aquifer. The Brook flows over the rocky till soils that lie over the shallow surface of the bedrock. There are no abutting residential areas. The location of the Brook, off the east side of the site, is shown on Figures 1 and 2.

e. **Subsurface Soils**: As summarized in Table 4 and presented in more detail for each portion of the facility and each COC in the tables in Attachment B, with three exceptions, subsurface soils (> 2 feet or beneath the building footprint) have not been identified with COCs at concentrations that exceed I/C DECs and background conditions. The exceptions include:

    1- the detection of arsenic at a concentration of 30 mg/kg in one soil sample, GP2001-74, collected during the SWP Investigation from beneath the former plating area, not the former RCRA storage area, concrete floor. As described in GZA's "Parts 1, 2 and 3 - RCRA Container Storage Closure Plan", dated March 22, 2001, this

concentration of arsenic was above the upper background concentration of approximately 25 mg/kg that was estimated for the site. Arsenic was detected in 29 other soil samples, as discussed in the RCRA Plan, but at concentrations consistent with the site derived background concentration for arsenic and therefore, are not judged attributable to releases of COCs;

2- the detection of TCE in soil sample GP2001-56 at concentrations above residential but below I/C DECs; and

3- the detection of TPH at concentrations above residential but below I/C DECs at GP-2001-99.

Samples GP2001-56, GP2001-74 and GP2001-99 were collected from beneath the building's concrete floor, not at locations beneath former RCRA storage areas. Therefore, soils that exceeded the CTDEP Residential DEC were limited to areas below the floor slab. As the arsenic conditions detected in soil samples from beyond the building footprint are attributed to background, no soil samples were identified with COCs above residential or I/C DEC in areas beyond the building limits. The results of pre-SWP testing of soil samples are presented in Table 5. This earlier testing of soils, including surface and subsurface soil samples, did not identify constituents, metals or VOCs, at concentrations that exceed CTDEP direct exposure criteria. Soil sampling locations are shown on Figure 2.

f. Air (outdoors): There are no existing industrial operations at the facility. The facility is used as a warehouse and a portion is used for training of casino employees. The existing facility warehouse and training activities do not include activities which involve a discharge of VOCs to the atmosphere outside of the building. The recently installed SVE system is being operated with a granular activated carbon unit treating the soil gas prior to discharge to the atmospere. As described in GZA's April 2001 SVE Monitoring Report, the February 2001 results of monitoring of outdoor air conditions (i.e. parking lot) is believed to reflect background air quality conditions.

Footnotes:

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately

protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater	No	No	No	Yes	No	No	No
~~Air(indoors)~~							
~~Soil (surface, e.g., <2 ft)~~							
Surface Water	No	No	No	Yes	Yes	Yes	No
~~Sediment~~							
Soil(subsurface e.g., >2 ft)	No	No	No	Yes	No	No	No
~~Air (outdoors)~~							

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated") as identified in #2 above.
2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

_____ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made,

preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

__X__ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

_____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

Rationale and Reference(s): There are no residents, day care, or agricultural (food) uses on the site. Therefore, there are no exposures for these pathways. The property is currently used primarily as a warehouse with a portion of the facility also used for training of casino workers. The site is not fenced. However, as reviewed above, there is no known or suspected exposed surface soil with COCs above DECs and background conditions. As reviewed above, laboratory testing of soils, has only identified COCs in soil above DECs and background in some soil samples from beneath the building footprint.

Concerning worker exposure to groundwater, the affected on-site groundwater is beneath the building and at depths (typically greater than 15 feet) within adjacent paved and landscaped areas. There is no on or adjacent (less than 2,000 feet) off-site drinking water use of groundwater. Identified private drinking water supply wells are located over approximately 2,000 feet from the site. All private drinking water supply wells are located on the opposite side of Elisha Brook from the site. Sampling and analysis of groundwater samples from the private water supply wells in September and October of 2000, did not identify constituents which emanate from the site. In addition, as shown in Table 9, the detected constituents in the private drinking water supply wells were all below CT GA and GAA area standards.

One industrial well has been identified at the Kendland Co., Inc. facility over approximately 2,500 feet from the site and on the other side of Elisha Brook. According to Mr. Steve Becker of Kendland, the well is used for non-drinking water purposes, primarily providing water to a heat transfer pump that is used for heating and cooling the facility.

The only constituent that was identified in the sample from the Kendland facility above a drinking water standard was TCE. TCE was detected at a concentration of 9.7 ug/l. the drinking water standard is 5 ug/l. The Kendland facility reportedly utilizes bottled water for drinking water purposes due to the detection of VOCs in the supply well years ago.

Current Human Exposure Under Control
Environmental Indicator (EI) RCRIS code (CA 725)

The CTDEP has indicated that they are aware of the groundwater conditions at the Kendland facility.

Therefore, there are no worker, trespasser, or recreation potential human exposures to groundwater. The only identified potential exposure scenarios applicable to the Site are construction workers to groundwater, surface water, and subsurface soil and trespassers and recreators to the surface water in Elisha Brook.

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

__X__ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

Groundwater and Subsurface Soil: Most potential construction work (e.g. utility repair/installation, construction of footings for building additions) is likely to occur within the upper 4 feet of the subsurface. Affected groundwater is present at depths of

between 5 and 20 feet below ground surface (average of greater than 10 feet) and is primarily present within the bedrock that underlies the thin glacial till soil that exists at the site. The affected soil is present beneath the concrete floor slab. Therefore, in our opinion, exposure of construction workers to COCs in the affected groundwater and subsurface soil can not be reasonably expected to be significant; there is a very low potential for human exposure to this groundwater and soil. If encountered, the short duration of exposure to the groundwater and soil with the observed levels of VOCs and metals is not considered to be significant. Limited health and safety precautions (e.g., wearing of gloves and controls on dust ingestion) in the handling of affected soil would address exposure issues to workers who might be involved with utility work in the areas beneath the floor slab. We note that under the CTDEP Transfer Act Program the presence of these COCS will result in an ELUR being placed to provide notice to construction workers.

Surface Water: Only one constituent, TCE, was detected in the most recent (1998) monitoring of the Brook at a concentration of 8 ug/l which is above the drinking water standard (MCL) of 5 ug/l. The surface water does not serve as a source of drinking water and is present within an industrial park. Therefore, the application of drinking water MCLs to the Brook is not appropriate. Due to the nature of the Brook (generally less than a few inches deep adjacent to site), it is highly unlikely that a person would ingest either a significant "dose" of this water or be exposed on more than an infrequent basis. Long term (many years) routine ingestion of water that contains TCE at this concentration is the basis for the MCL. The shallow Brook is not deep enough to swim in. It is generally difficult to access, being present at the base of a steep slope. There are no residences adjacent to this section of the Brook and TCE, a volatile constituent, is expected to volatilize from the water rapidly or be diluted to below the MCL. Trespasser, construction worker and recreator exposure to this water is not believed to represent a significant exposure.

4 If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

_____ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human

Current Human Exposure Under Control
Environmental Indicator (EI) RCRIS code (CA 725)

Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

_____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and
Reference(s):_____

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

_X_ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Lightolier facility, EPA ID # CTD000841120 , located at 40 Wisconsin Ave. in Norwich, Connecticut under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

____ NO - "Current Human Exposures" are NOT "Under Control."

____ IN - More information is needed to make a determination.

Completed by (signature) Carolyn J. Casey Date 6/22/01
(print) CAROLYN J. CASEY
(title) RCRA FACILITY MANAGER

Current Human Exposure Under Control
Environmental Indicator (EI) RCRIS code (CA 725)

Supervisor (signature) _____ Date 6/22/01
(print) Matthew R. Hoagland
(title) Section Chief
(EPA Region or State) Reg. I

Locations where References may be found:

GZA's Dec. 1997 "1995 Site Investigation Proposed Exploration and Testing Report"
GZA's October 1998 "Supplemental Site Characterization Report"
GZA's July 2000 "Supplemental Work Plan for Site Characterization"
GZA's September 20 and 25, 2000 and November 3, 2000 letters, Private Well Test Results
GZA's March 2001 "RCRA Parts 1,2 and 3 Closure Plan"
GZA's April 2001 "Sub-Slab Soil Vapor Extraction Monitoring Report" (See Attachment A to this Questionnaire)

These reports are also on file with the CTDEP and copies of these Reports have been submitted to the EPA.

Contact telephone and e-mail numbers

(name) Ronald Westgate
(phone#) (508) 679-8131
(e-mail) rwestgate@genlyte.com

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

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TABLES

TABLE 1

COMPARISON OF DETECTED CONSTITUENT CONCENTRATIONS IN GROUNDWATER TO CTDEP GPC AND RV CRITERIA

Lightolier Facility - Norwich, Connecticut

Method	Compound	Unit	GA / GAA GPC (mg/l)	RES VC (mg/l)	MW-1 5/12/98 Result	MW-1 5/12/98 D-Limit	MW-2 05/13/1998 Result	MW-2 05/13/1998 D-Limit	MW-3 Shallow 5/12/98 Result	MW-3 Shallow 5/12/98 D-Limit	MW-3 Deep 5/12/98 Result	MW-3 Deep 5/12/98 D-Limit	MW-4 Deep 5/19/98 Result	MW-4 Deep 5/19/98 D-Limit	MW-4 Shallow 5/19/98 Result	MW-4 Shallow 5/19/98 D-Limit	MW-5 6/11/98 Result	MW-5 6/11/98 D-Limit	MW-6 6/10/98 Result	MW-6 6/10/98 D-Limit
EPA 8260	1,1-Dichloroethene	mg/L (ppm)	0.007	0.001	ND	0.001	0.0082	0.001	ND	0.001	ND	0.001	0.0027	0.001	0.0012	0.001	ND	0.001	ND	0.001
EPA 8260	cis-1,2-Dichloroethene	mg/L (ppm)	0.07	NE	ND	0.001	0.002	0.001	0.0027	0.001	ND	0.001	0.052	0.001	0.042	0.001	ND	0.001	0.0026	0.001
EPA 8260	Chloroform	mg/L (ppm)	0.006	0.287	ND	0.001	0.0014	0.001	ND	0.001	ND	0.001	0.0084	0.001	0.0063	0.001	ND	0.001	0.0011	0.001
EPA 8260	1,1,1-Trichloroethane	mg/L (ppm)	0.2	20.4	ND	0.001	0.12	0.001	ND	0.001	ND	0.001	0.012	0.001	0.0088	0.001	ND	0.001	ND	0.001
EPA 8260	Trichloroethene	mg/L (ppm)	0.005	0.219	ND	0.001	4	0.001	0.022	0.001	0.0015	0.001	5.9	0.001	3.2	0.001	0.0017	0.001	0.11	0.001
EPA 8260	1,2-Dichloropropane	mg/L (ppm)	0.005	0.014	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
EPA 8260	Tetrachloroethene	mg/L (ppm)	0.005	1.5	ND	0.001	0.0025	0.001	ND	0.001	ND	0.001	0.0014	0.001	0.0013	0.001	ND	0.001	ND	0.001
EPA 8260	Ethylbenzene	mg/L (ppm)	0.7	50	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
EPA 8260	m&p-Xylene	mg/L (ppm)	No standard	No standard	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
EPA 8260	o-Xylene	mg/L (ppm)	No standard	No standard	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
EPA 6010	Chromium	mg/L (ppm)	0.05	NE	ND	0.007	0.1	0.007	ND	0.007	ND	0.007	0.016	0.007	ND	0.007	ND	0.009	0.046	0.009
EPA 6010	Copper	mg/L (ppm)	1.3	NE	0.023	0.012	0.036	0.012	ND	0.012	ND	0.012	ND	0.012	ND	0.012	ND	0.032	0.17	0.032
EPA 6010	Nickel	mg/L (ppm)	0.1	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	0.033	0.109	0.033
EPA 7060A	Arsenic	mg/L (ppm)	0.05	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	0.005	0.008	0.005
EPA 7421A	Lead	mg/L (ppm)	0.015	NE	ND	0.003	ND	0.003	ND	0.003	ND	0.003	0.006	0.003	ND	0.003	0.007	0.003	0.014	0.003
EPA 7761	Silver	mg/L (ppm)	0.036	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	0.007	ND	0.007
EPA 9010	Cyanide	mg/L (ppm)	0.2	NE	ND	0.01	0.22	0.01	ND	0.01	ND	0.01	ND	0.01	0.06	0.01	ND	0.01	ND	0.01

Method	Compound	Unit	GA / GAA GPC (mg/l)	RES VC (mg/l)	MW-7 6/11/98 Result	MW-7 6/11/98 D-Limit	MW-8 06/10/1998 Result	MW-8 06/10/1998 D-Limit	MW-8 (DUP) 6/10/98 Result	MW-8 (DUP) 6/10/98 D-Limit	MW-9 6/10/98 Result	MW-9 6/10/98 D-Limit	MW-E1 Shallow 05/13/1998 Result	MW-E1 Shallow 05/13/1998 D-Limit	MW-E1 Deep 05/13/1998 Result	MW-E1 Deep 05/13/1998 D-Limit	MW-E2 Shallow 05/13/1998 Result	MW-E2 Shallow 05/13/1998 D-Limit	MW-E2 Deep 05/13/1998 Result	MW-E2 Deep 05/13/1998 D-Limit	Tap Water 5/19/98 Result	Tap Water 5/19/98 D-Limit
EPA 8260	1,1-Dichloroethene	mg/L (ppm)	0.007	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	-	-
EPA 8260	cis-1,2-Dichloroethene	mg/L (ppm)	0.007	NE	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	-	-
EPA 8260	Chloroform	mg/L (ppm)	0.006	0.287	ND	0.001	0.0027	0.001	ND	0.001	0.0023	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	-	-
EPA 8260	1,1,1-Trichloroethane	mg/L (ppm)	0.2	20.4	ND	0.001	0.001	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	-	-
EPA 8260	Trichloroethene	mg/L (ppm)	0.005	0.219	0.05	0.001	0.026	0.001	0.035	0.001	0.0054	0.001	ND	0.001	ND	0.001	ND	0.001	0.0016	0.001	-	-
EPA 8260	1,2-Dichloropropane	mg/L (ppm)	0.005	0.014	ND	0.001	ND	0.001	ND	0.001	0.0029	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	-	-
EPA 8260	Tetrachloroethene	mg/L (ppm)	0.005	1.5	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	-	-
EPA 8260	Ethylbenzene	mg/L (ppm)	0.7	50	ND	0.001	ND	0.001	ND	0.001	0.0036	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	-	-
EPA 8260	m&p-Xylene	mg/L (ppm)	No standard	No standard	ND	0.001	ND	0.001	ND	0.001	0.0041	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	-	-
EPA 8260	o-Xylene	mg/L (ppm)	No standard	No standard	ND	0.001	ND	0.001	ND	0.001	0.0013	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	-	-
EPA 6010	Chromium	mg/L (ppm)	0.05	NE	ND	0.009	ND	0.009	ND	0.009	ND	0.009	ND	0.009	ND	0.007	ND	0.007	ND	0.007	-	-
EPA 6010	Copper	mg/L (ppm)	1.3	NE	ND	0.032	ND	0.032	ND	0.032	ND	0.032	ND	0.032	ND	0.012	ND	0.012	ND	0.012	0.12	0.012
EPA 6010	Nickel	mg/L (ppm)	0.1	NE	ND	0.033	ND	0.033	ND	0.033	0.454	0.033	ND	0.033	NA	NA	NA	NA	NA	NA	NA	NA
EPA 7060A	Arsenic	mg/L (ppm)	0.05	NE	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	NA	NA	NA	NA	NA	NA	NA	NA
EPA 7421	Lead	mg/L (ppm)	0.015	NE	0.008	0.003	0.007	0.003	0.008	0.003	0.008	0.003	ND	0.003	ND	0.003	ND	0.003	0.005	0.003	0.065	0.003
EPA 7761	Silver	mg/L (ppm)	0.036	NE	0.031	0.007	ND	0.007	ND	0.007	ND	0.007	ND	0.007	NA	NA	NA	NA	NA	NA	NA	NA
EPA 9010	Cyanide	mg/L (ppm)	0.2	NE	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	0.03	0.01	0.04	0.01	0.03	0.01	-	-

Notes:

1. RES means residential.
2. VC means volatilization criteria.
3. GPC means groundwater protection criteria.
4. NE means none established by DEP.
5. ND means not detectable above the analytical detection limit.
6. Indicates compound was not analyzed.
7. Refer to the appendix for a summary of all analytical results.
8. NA means not analyzed.
9. "-" Means not tested.

Indicates exceedance of GA / GAA Groundwater Protection Criteria.

Indicates exceedance of Residential Volatilization Criteria.

Indicates exceedance of both GA / GAA Groundwater Protection Criteria and Residential Volatilization Criteria.

TABLE 2

COMPARISON OF DETECTED CONSTITUENT CONCENTRATIONS IN GROUNDWATER
TO CTDEP SWPC & I/CV CRITERIA

Lightolier Facility - Norwich, Connecticut

			SWPC	I/C VC	MW-1 5/12/98		MW-2 05/13/1998		MW-3 Shallow 5/12/98		MW-3 Deep 5/12/98		MW-4 Deep 5/19/98		MW-4 Shallow 5/19/98		MW-5 6/11/98		MW-6 6/10/98	
Method	Compound	Unit	(mg/l)	(mg/l)	Result	D-Limit	Result	D-Limit	Result	D-Limit	Result	D-Limit	Result	D-Limit	Result	D-Limit	Result	D-Limit	Result	D-Limit
EPA 8260	1,1-Dichloroethene	mg/L (ppm)	0.096	0.006	ND	0.001	0.0052	0.001	ND	0.001	ND	0.001	0.0027	0.001	0.0012	0.001	ND	0.001	ND	0.001
EPA 8260	cis-1,2-Dichloroethene	mg/L (ppm)	NE	NE	ND	0.001	0.002	0.001	0.0027	0.001	ND	0.001	0.052	0.001	0.042	0.001	ND	0.001	0.0026	0.001
EPA 8260	Chloroform	mg/L (ppm)	14.1	0.71	ND	0.001	0.0014	0.001	ND	0.001	ND	0.001	0.0084	0.001	0.0063	0.001	ND	0.001	0.0011	0.001
EPA 8260	1,1,1-Trichloroethane	mg/L (ppm)	62	50	ND	0.001	0.12	0.001	ND	0.001	ND	0.001	0.012	0.001	0.0088	0.001	ND	0.001	ND	0.001
EPA 8260	Trichloroethene	mg/L (ppm)	2.34	0.54	ND	0.001	4	0.001	0.022	0.001	0.0015	0.001	5.9	0.001	3.2	0.001	0.0017	0.001	0.11	0.001
EPA 8260	1,2-Dichloropropane	mg/L (ppm)	NE	0.06	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
EPA 8260	Tetrachloroethene	mg/L (ppm)	0.088	3.82	ND	0.001	0.0025	0.001	ND	0.001	ND	0.001	0.0014	0.001	0.0013	0.001	ND	0.001	ND	0.001
EPA 8260	Ethylbenzene	mg/L (ppm)	580	50	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
EPA 8260	m&p-Xylene	mg/L (ppm)	No standard	No standard	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
EPA 8260	o-Xylene	mg/L (ppm)	No standard	No standard	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
EPA 6010	Chromium	mg/L (ppm)	NE	NE	ND	0.007	0.1	0.007	ND	0.007	ND	0.007	0.016	0.007	ND	0.007	ND	0.009	0.046	0.009
EPA 6010	Copper	mg/L (ppm)	0.048	NE	0.023	0.012	0.036	0.012	ND	0.012	ND	0.012	ND	0.012	ND	0.012	ND	0.032	0.17	0.032
EPA 6010	Nickel	mg/L (ppm)	0.88	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	0.033	0.109	0.033
EPA 7060A	Arsenic	mg/L (ppm)	0.004	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	0.005	0.008	0.005
EPA 7421A	Lead	mg/L (ppm)	0.013	NE	ND	0.003	ND	0.003	ND	0.003	ND	0.003	0.006	0.003	ND	0.003	0.007	0.003	0.014	0.003
EPA 7761	Silver	mg/L (ppm)	0.012	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	0.007	ND	0.007
EPA 9010	Cyanide	mg/L (ppm)	0.052	NE	ND	0.01	0.22	0.01	ND	0.01	ND	0.01	ND	0.01	0.06	0.01	ND	0.01	ND	0.01

			SWPC	I/C VC	MW-7 6/11/98		MW-8 06/10/1998		MW-8 (DUP) 6/10/98		MW-9 6/10/98		MW-E1 Shallow 05/13/1998		MW-E1 Deep 05/13/1998		MW-E2 Shallow 05/13/1998		MW-E2 Deep 05/13/1998		Key Well (SWPC) Averages
Method	Compound	Unit	(mg/l)	(mg/l)	Result	D-Limit	Result	D-Limit	Result	D-Limit	Result	D-Limit	Result	D-Limit	Result	D-Limit	Result	D-Limit	Result	D-Limit	Result
EPA 8260	1,1-Dichloroethene	mg/L (ppm)	0.096	0.006	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	-
EPA 8260	cis-1,2-Dichloroethene	mg/L (ppm)	NE	NE	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	-
EPA 8260	Chloroform	mg/L (ppm)	14.1	0.71	ND	0.001	0.0027	0.001	ND	0.001	0.0023	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	-
EPA 8260	1,1,1-Trichloroethane	mg/L (ppm)	62	50	ND	0.001	0.001	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	-
EPA 8260	Trichloroethene	mg/L (ppm)	2.34	0.54	0.05	0.001	0.026	0.001	0.035	0.001	0.0054	0.001	ND	0.001	ND	0.001	ND	0.001	0.0016	0.001	1.3
EPA 8260	1,2-Dichloropropane	mg/L (ppm)	NE	0.06	ND	0.001	ND	0.001	ND	0.001	0.0029	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	-
EPA 8260	Tetrachloroethene	mg/L (ppm)	0.088	3.82	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	-
EPA 8260	Ethylbenzene	mg/L (ppm)	580	50	ND	0.001	ND	0.001	ND	0.001	0.0036	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	-
EPA 8260	m&p-Xylene	mg/L (ppm)	No standard	No standard	ND	0.001	ND	0.001	ND	0.001	0.0041	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	-
EPA 8260	o-Xylene	mg/L (ppm)	No standard	No standard	ND	0.001	ND	0.001	ND	0.001	0.0013	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	-
EPA 6010	Chromium	mg/L (ppm)	NE	NE	ND	0.009	ND	0.009	ND	0.009	ND	0.009	ND	0.009	ND	0.007	ND	0.007	ND	0.007	-
EPA 6010	Copper	mg/L (ppm)	0.048	NE	ND	0.032	ND	0.032	ND	0.032	ND	0.032	ND	0.032	ND	0.012	ND	0.012	ND	0.012	0.032
EPA 6010	Nickel	mg/L (ppm)	0.88	NE	ND	0.033	ND	0.033	ND	0.033	0.454	0.033	ND	0.033	NA	NA	NA	NA	NA	NA	-
EPA 7060A	Arsenic	mg/L (ppm)	0.004	NE	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	NA	NA	NA	NA	NA	NA	0.004
EPA 7421A	Lead	mg/L (ppm)	0.013	NE	0.008	0.003	0.007	0.003	0.008	0.003	0.008	0.003	ND	0.003	ND	0.003	ND	0.003	0.005	0.003	0.003
EPA 7761	Silver	mg/L (ppm)	0.012	NE	0.031	0.007	ND	0.007	ND	0.007	ND	0.007	ND	0.007	NA	NA	NA	NA	NA	NA	0.01
EPA 9010	Cyanide	mg/L (ppm)	0.052	NE	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	0.03	0.01	0.04	0.01	0.03	0.01	0.009

Notes:

1. I/C means industrial/commercial.
2. VC means volatilization criteria.
3. SWPC means surface water protection criteria.
4. NE means none established by DEP.
5. ND means not detectable above the analytical detection limit.
6. Indicates compound was not analyzed.
7. NA means not analyzed.
8. Refer to the appendix for a summary of all analytical results.
9. "-" Means not tested.
10. Values are average of compound concentrations that exceeded SWPC at one or more wells for wells MW-3S, 3D, 4S, 4D, 5, 6, & 7.

Indicates exceedance of Surface Water Protection Criteria.

Indicates exceedance of Industerial /Commercial Volatilization Criteria.

Indicates exceedance of both Surface Water Protection Criteria and Industrial / Commercial Volatilization Criteria.

TABLE 3
Summary of Indoor Air Monitoring
(June 2000, November 2000, and February 2001)

Lightolier Facility
Norwich, CT

1,1-Dichloroethene

Date	Former Painting Department		Former Buffing Room		Former Degreaser/Still		Storage Area		Training School (downstairs)		Training School (upstairs)		Roof Top		Parking Lot		RSR's[1]		TLV's (TWA 2000) [2]		Background [3]	
	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)
June 2000	<0.037	<0.15	<0.036	<0.14	<0.036	<0.14	<0.037	<0.15	<0.037	<0.15	<0.038	<0.15	<0.037	<0.15	NA	NA	0.02	0.0818	5,000	20,000	1.61	6.5
November 2000	<0.072	<0.29	<0.034	<0.14	<0.036	<0.14	<0.036	<0.14	<0.038	<0.15	<0.036	<0.14	<0.034	<0.14	NA	NA	0.02	0.0818	5,000	20,000	1.61	6.5
February 2001	<0.030	<0.12	<0.030	<0.12	<0.031	<0.12	<0.032	<0.13	<0.032	<0.13	<0.032	<0.13	<0.032	<0.13	<0.029	<0.12	0.02	0.0818	5,000	20,000	1.61	6.5

cis-1,2-Dichloroethene

Date	Former Painting Department		Former Buffing Room		Former Degreaser/Still		Storage Area		Training School (downstairs)		Training School (upstairs)		Roof Top		Parking Lot		RSR's[1]		TLV's (TWA 2000) [2]		Background [3]	
	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)
June 2000	<0.037	<0.15	<0.036	<0.14	**0.14**	**0.57**	<0.037	<0.15	<0.037	<0.15	<0.038	<0.15	<0.037	<0.15	NA	NA	NC	NC	200,000	790,000	--	--
November 2000	**0.65**	**2.6**	<0.034	<0.14	**0.27**	**1.1**	**0.20**	**0.80**	<0.038	<0.15	<0.036	<0.14	<0.034	<0.14	NA	NA	NC	NC	200,000	790,000	--	--
February 2001	<0.030	<0.12	<0.030	<0.12	<0.031	<0.12	<0.032	<0.13	<0.032	<0.13	<0.032	<0.13	<0.028	<0.11	<0.029	<0.12	NC	NC	200,000	790,000	--	--

trans-1,2-Dichloroethene

Date	Former Painting Department		Former Buffing Room		Former Degreaser/Still		Storage Area		Training School (downstairs)		Training School (upstairs)		Roof Top		Parking Lot		RSR's[1]		TLV's (TWA 2000) [2]		Background [3]	
	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)
June 2000	<0.037	<0.15	<0.036	<0.14	<0.036	<0.14	<0.037	<0.15	<0.037	<0.15	<0.038	<0.15	<0.037	<0.15	NA	NA	NC	NC	200,000	790,000	--	--
November 2000	<0.072	<0.29	<0.034	<0.14	<0.036	<0.14	<0.036	<0.14	<0.038	<0.15	<0.036	<0.14	<0.034	<0.14	NA	NA	NC	NC	200,000	790,000	--	--
February 2001	<0.15	<0.61	<0.15	<0.61	<0.16	<0.62	<0.16	<0.64	<0.16	<0.65	<0.16	<0.65	<0.14	<0.56	<0.14	<0.58	NC	NC	200,000	790,000	--	--

1,1,1-Trichloroethane

Date	Former Painting Department		Former Buffing Room		Former Degreaser/Still		Storage Area		Training School (downstairs)		Training School (upstairs)		Roof Top		Parking Lot		RSR's[1]		TLV's (TWA 2000) [2]		Background [3]	
	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)
June 2000	**0.14**	**0.75**	**1.0**	**5.6**	**0.52**	**2.9**	**0.085**	**0.47**	**0.058**	**0.32**	**0.062**	**0.35**	**0.058**	**0.32**	NA	NA	273	1460	350,000	1,900,000	5.41	30
November 2000	**0.55**	**3.0**	**0.18**	**0.99**	**0.26**	**1.4**	**0.24**	**1.3**	**0.10**	**0.58**	**0.12**	**0.64**	**0.077**	**0.43**	NA	NA	273	1460	350,000	1,900,000	5.41	30
February 2001	**0.073**	**0.4**	**0.13**	**0.73**	**0.11**	**0.62**	**0.068**	**0.38**	**0.067**	**0.37**	**0.11**	**0.64**	**0.054**	**0.3**	**0.049**	**0.27**	273	1460	350,000	1,900,000	5.41	30

Click Here to Go to Table 4

TABLE 3
Summary of Indoor Air Monitoring
(June 2000, November 2000, and February 2001)

Lightolier Facility
Norwich, CT

Tetrachloroethene

Date	Former Painting Department		Former Buffing Room		Former Degreaser/Still		Storage Area		Training School (downstairs)		Training School (upstairs)		Roof Top		Parking Lot		RSR's[1]		TLV's (TWA 2000)[2]		Background[3]	
	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)
June 2000	0.083	0.57	0.7	4.9	0.048	0.33	<0.037	<0.26	0.34	2.4	0.052	0.36	0.22	1.5	NA	NA	1.6	11	25,000	175,000	1.6	11
November 2000	32	220	2.2	15	17	120	10	71	7.0	48	4.9	34	3.4	24	NA	NA	1.6	11	25,000	175,000	1.6	11
February 2001	0.038	0.26	<0.030	<0.21	<0.031	<0.21	<0.032	<0.22	0.057	0.39	<0.032	<0.22	<0.028	<0.19	<0.029	<0.20	1.6	11	25,000	175,000	1.6	11

Trichloroethene

Date	Former Painting Department		Former Buffing Room		Former Degreaser/Still		Storage Area		Training School (downstairs)		Training School (upstairs)		Roof Top		Parking Lot		RSR's[1]		TLV's (TWA 2000)[2]		Background[3]	
	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)	(ppbv)	(uG/m^3)
June 2000	1.1	6.0	11	59	5.5	30	1.1	6.2	0.14	0.79	0.20	1.1	0.16	0.87	NA	NA	0.92	5	50,000	270,000	0.92	5
November 2000	2.7	15	0.38	2.1	0.77	4.2	0.30	1.6	0.12	0.69	0.12	0.67	0.033	0.18	NA	NA	0.92	5	50,000	270,000	0.92	5
February 2001	0.29	1.6	0.39	2.2	0.22	1.2	0.055	0.3	0.18	0.96	0.083	0.45	<0.028	<0.15	0.031	0.17	0.92	5	50,000	270,000	0.92	5

Notes:

1. RSR's - State of Connecticut Regulation of Department of Environmental Protection concerning Remediation Standard regarding Industrial/Commercial Target Indoor Air Concentrations **(Not a site specific risk based criteria).**
2. TLV's - Threshold Limit Values for Chemical Substances and Physical Agents, 2000 by the American Conference of Governmental Industrial Hygenienists.
3. Background Values for Indoor Air as provided in MADEP "Background Documentation of MCP Numerical Standards", April 1994 and MADEP/BWSC/NERO "Indoor Air Contaminants Comparison Table.

NA = Not Analyzed

Indicates an individual compound exceeded the CTDEP Industrial/Commerical Target Indoor Air Concentrations.

Indicates an individual compound exceeded 1% of the TVL's ("OSHA"), the screening criteria set by EPA Guidance for Site Stabilization.