

STATEMENT FOR THE RECORD OF KENNETH S. KAMLET,
ENVIRONMENTAL ATTORNEY, AT PUBLIC HEARING ON
“VAPORIZATION OF CONTAMINATION FROM SOIL AND
GROUNDWATER INTO INDOOR AIR,” BEFORE THE ASSEMBLY
STANDING COMMITTEE ON ENVIRONMENTAL CONSERVATION,
ENDICOTT, NY, NOVEMBER 15, 2004

My name is Ken Kamlet. I am an environmental attorney based in Greater Binghamton with more than three decades of experience in the environmental public policy arena. (An abbreviated Bio is attached as *Exhibit I*.) I currently serve as Director of Legal Affairs for **Newman Development Group, LLC** (NDG)—a major Southern Tier and Central New York commercial developer. NDG also has offices in Plymouth Meeting, PA and San Francisco, CA, and has active projects in Pennsylvania, New Jersey, California, Washington, and Oregon, in addition to New York State. Many of our projects, including 7 or 8 in Greater Binghamton, are constructed on former “brownfields.” Soil vapor intrusion, the subject of this hearing, has been an issue at several of these sites.

This statement is also submitted on behalf of an environmentally-friendly, innovative technology business that is just getting started in the Syracuse area: **Finally Green Technologies, LLC** (FGT) of Central Square, NY. (A copy of their Mission Statement is attached as *Exhibit II*.) One of the products for which FGT holds a license and patent is a water-based sodium silicate formulation (with strong degreaser properties) called **Finally™** which, when applied to contaminated soils, water or surface contamination, is able to rapidly and safely detoxify and immobilize a variety of organic contaminants. Although “beta” testing of Finally™ is still in its early stages, there is reason for optimism that this innovative technology may be effective in impeding the formation of the kinds of toxic soil vapors that are the focus of today’s hearing.

Executive Summary of Lessons Learned

1. *Vapor intrusion is a widespread concern.* It first emerged as an environmental issue in the early 1980s in Silicon Valley, CA. Today, at least 852 of the nearly 1,500 federal Superfund sites have identified the most common volatile organic compound (VOC)—trichloroethylene (TCE)—as a contaminant of concern.

VOCs and vapor intrusion are also issues at many other sites, including State Superfund and Brownfield sites.

2. *Vapor intrusion as a potential human exposure pathway clearly needs to be considered in the investigation and cleanup of contaminated sites.* This includes the development of guidance and regulations in the implementation of New York State’s new Brownfield Cleanup Program legislation. The Committee’s hearing is, thus, both timely and appropriate.
3. *While protection of public health and the environment must be a foremost concern, other significant interests and implications must also be considered—especially in the context of brownfields redevelopment, where the burden of environmental investigation and cleanup falls primarily on “volunteers” who neither caused nor contributed to the site they are seeking to redevelop.*
4. *For example, uncertain potential health effects of low-level soil vapor contamination (e.g., at brownfield sites) must be weighed against the clear and present threat of deterring volunteers from investing in the cleanup and redevelopment of the site.* Prospective purchasers or redevelopers will be less inclined to invest in a site that requires costly soil or groundwater remediation (or soil vapor management), with the result that more blighted properties will continue to depress the economy and litter the landscape.
5. *Thus, especially in the brownfields context, the “rules” governing the control of vapor intrusion need to be both clear and flexible, with an emphasis on results and exposure potential (i.e., interrupting the vapor intrusion exposure pathway, so that harmful vapors are unable to reach sensitive receptors), rather than on rigid concentration-based limits or complex evaluation procedures.* In other words, the approach should be “performance-based,” rather than relying on inflexible “command-and-control” methodologies or standards.
6. *An emphasis on results and impacts rather than on methodologies or standards will also help promote the Brownfield Law’s directive (ECL, Title 14, § 27-1415.9) that DEC “consider and encourage the use of innovative technologies” that can achieve the health and environmental protection objectives of Title*

14—in this case, to interrupt—by conventional or unconventional means—the vapor intrusion exposure pathway.

7. *A successful brownfields program also requires a high degree of certainty as to what the “rules” are—because no one will invest in a contaminated property if the cost of an acceptable cleanup cannot be estimated in advance. This does not mean that we need rigid, one-size-fits-all rules. It simply means that the rules and procedures need to be clearly articulated in advance and they need to be applied with some consistency. (This is not to say that the same rules or procedures that are applied to Responsible Parties under Superfund must or should be applied to volunteers under the Brownfields Law.)*
8. *The current approach, involving internal draft guidance known only to DOH and subject to unilateral interpretation, application, and adaptation by DOH, is the worst of all possible worlds. Although DEC tends to treat as immutable “law” DOH’s “advice” as to vapor intrusion levels for particular VOCs that raise health effect concerns (i.e., under the Brownfields program, DEC will not sign off on any work plan or results report that has not received written DOH concurrence), even DEC is frequently in the dark as to the technical basis for the inputs provided by DOH.*
9. *Those affected by DOH guidance are entitled to know the basis for that guidance and to see the technical rationale on which that guidance was based. (A Freedom of Information Law request recently filed with DOH to obtain access to the internal documents relied upon by DOH is provided as Exhibit III.)*
10. *Those affected by DOH guidance are entitled to know the rationale for differential treatment of TCE vapor intrusion in Endicott (in the area of the IBM spill) and in Hillcrest.*
11. *Those affected by DOH guidance are entitled to know whether and when federal (OSHA or U.S. EPA) guidance will apply (e.g., in workplace settings) and when DOH guidance will apply—and whether and when guidance based on residential background levels will be used to specify vapor intrusion limits in commercial or industrial buildings.*

12. And, finally, *those affected by DOH guidance are entitled to know when DOH changes its previously applied guidance.* Nothing is more unfair than to be subject to rules that you aren't allowed to read, where the rules are changed by the "umpire" as the game proceeds.

Some Local Brownfield "Case Studies" Raising Vapor Intrusion Issues

A. Former Endicott-Johnson Ranger Paracord Site, Johnson City, NY (Gannett Project)

As part of the remedial investigation work at this Brownfield Cleanup Program (BCP) site, six soil vapor samples were required by DEC to be collected and analyzed from within and near the footprint of the future Gannett Corporation printing press building. Samples were analyzed for VOCs by EPA Method TO-15, which includes chlorinated solvent VOCs. At DEC's request, semi-permanent soil vapor implants were installed in the Geoprobe holes—ostensibly to allow repeat samples to be taken if necessary.

The test results indicated that, although most VOCs were non-detectable or present in trace levels, one sample (located "just outside" the footprint of Gannett's proposed building) contained 130 ug/m³ of one potentially problematic chlorinated solvent, 1,1,1-Trichloroethane (TCA).

NDG's environmental consultant, Haley & Aldrich, Inc. (H&A), determined that, although the field measurement of TCA at soil vapor location VP-1 exceeded U.S. EPA's Indoor BASE Data for Offices (1994-1996) of 2.6 – 11 ug/m³, it did "fall below vapor intrusion thresholds when using an attenuation factor of 10." This level of attenuation (to account for dissipation and dilution prior to getting into a building structure), "has been found in NYSDEC/NYSDOH evaluations of soil vapor intrusion investigations in the Binghamton area to be a reasonably common and prevailing attenuation rate for common slab-on-grade and basement-equipped structures of existing construction." The proposed Gannett building will be a newly constructed slab-on-grade structure.

According to the federal Agency for Toxic Substances and Disease Registry (ATSDR), the likelihood that exposure to TCA levels found near hazardous waste sites would cause significant health effects is "very low."

The design of the manufacturing (printing press) area of the Gannett building also greatly reduces the potential for adverse indoor air quality impacts. Specifically, as pointed out in H&A's Remediation Work Plan (May 2004):

The HVAC system associated with the manufacturing area of the building is specialized for Gannett's printing operations, and includes relatively high air change capacity per hour (in other words, the printing areas of the building are not as "tight" as conventional office structures). Current design parameters indicate that approximately 40,000 cubic feet (cf) of fresh air will be brought into the printing areas during occupied periods via controlled air intakes generally on the building roof or located along upper portions of the new structure. Additional fresh air will be brought into the building via overhead loading doors on an unmeasured but regular basis as the doors are used.

Despite all of the mitigating circumstances—TCA detected in only one sample outside the future building footprint; the EPA data indicating that, with expected attenuation, indoor air levels would not exceed baseline data for offices; ATSDR's assessment of a "very low" potential for significant health effects; and a high air exchange rate in the printing press area of the building—DOH was steadfast in insisting that a sub-slab vapor management system (a depressurization system constructed consistent with EPA's conceptual design for radon mitigation in schools) be installed beneath the Gannett building. The suggestion that repeat sampling (the rationale for using semi-permanent soil vapor implants in the first place), or more intensive sampling, be performed to ensure that the one elevated TCA level was not a fluke associated with an isolated "hot spot" area, was dismissed as unhelpful (because any detection signaled the "potential" for a problem). DOH's one concession, which was appreciated by Gannett and the other cleanup volunteers, was to agree that a full sub-slab depressurization system—i.e., including vertical piping to allow venting of sub-slab vapors above the roof-line—was not required for the manufacturing part of the building (based in its high air-exchange rate), subject to the need for future retrofitting if necessary based on indoor air sampling results. (The printing press portion of the building "will be constructed with a permeable sub-base gravel layer, slightly thickened in some areas where a possible retrofit would penetrate the slab.")

In all respects, DEC deferred to DOH on the need for vapor intrusion mitigation, and on all other potential health effects issues. Although "draft," unpublished guidance

setting forth putative action levels for protection of indoor air quality exists within DOH for two other chlorinated solvents (TCE and PERC), no guidance whatsoever appears to exist for TCA (other than ranges of “baseline” values collected by various agencies for various kinds of structures in selected parts of the country).

While DOH’s desire to take a precautionary approach to potential vapor intrusion issues is understandable—particularly in the aftermath of serious problems with chlorinated solvent vapors in Endicott and Hillcrest (those cases involved a much more toxic VOC, trichloroethylene [TCE])—the lack of written, publicly accessible guidance to inform the decision making process is unfortunate. It makes brownfields planning and decision making uncertain and unpredictable.

B. Former Chenango Plaza Shopping Center (FGR Realty) Site, Chenango, NY (Lowe’s Home Improvement Center project)

Following are some excerpts of a case study of a Voluntary Cleanup Program (VCP) project carried out at the former Chenango Plaza Shopping Center in Chenango, New York. Aspects relating particularly to chlorinated solvent contamination are underlined. (Names and places were changed to protect the innocent, but the technical facts and details are true and accurate.) This account was part of an article published in the New York State Bar Association’s Environmental Law Section’s *Journal* (**Kamlet, Kenneth S.**, "Brownfields Regulation in New York State: A Disappointing Report Card," **New York State Bar Association, *The Environmental Lawyer*, Vol. 22, No. 1, Winter 2002, pp. 2-24.**) It is also reprinted on my New York Brownfields website, at: http://www.ny-brownfields.com/BF_Case_Study.htm .

Although many of the author’s criticisms of DEC’s administrative brownfields program (the Voluntary Cleanup Program) have been addressed in whole or in part under the new Brownfield Cleanup Program legislation, concerns relating to the seeming arbitrariness of DOH’s approach to vapor intrusion continue.

The Prospective Purchasers Conduct
Their Due Diligence

In 1995, three successful businessmen (who were also brothers) considered buying an expensive (by local standards) 10-acre piece of developed commercial property (“the Site”) on the outskirts of a medium-sized city in Upstate New York. The three brothers—named Placido, Luciano and Jose—called their real estate business “PLJ Realty, LLC” (hereinafter, PLJ). The Site, known as “Dilapidated Plaza,” contained a deteriorating, partially vacant, 65,000-square foot strip shopping center building. The building was rectangular, with the front of its longer face directed across a large parking lot toward a north-south State Road (SR 666). Along Route 666, which connects to the Interstate about a quarter of a mile to the north and carries commuters to the nearby city to the south, were other shopping centers, used car lots, fast food restaurants, individual stores, offices, banks, and motels.

Behind Dilapidated Plaza to the east was a fast-moving, interstate stream, the Swanee River. To the south, was a creek of more modest and variable dimensions, known as Fortress Creek. Fortress Creek, while usually carrying limited but ample volumes of water into the Swanee River, would go through periodic cycles of raging intensity after heavy rains and snowmelts. Along Quandary Road to the north, and overlooking the Plaza from a ridge, were a handful of single-family homes, the nearest of which approached within 100 to 150 feet of the shopping center building. No playgrounds, nurseries, old age homes, hospitals, elementary schools, or sanitoriums were present within at least a mile-radius in any direction.

The site had been a farm until 1944. Dilapidated Plaza was built in 1962 or 1963 following a period of occupation by a number of homes and small businesses. Agent Orange herbicide and PCB capacitors—or other heavy duty and long-lived industrial toxicants—were never manufactured or disposed of on the site. Unfortunately, as would become apparent, a far more insidious environmental hazard was present: a succession of dry-cleaning stores had occupied a few thousand square feet in the central area of the shopping plaza building between the early 1960s and the late 1990s. Until 1989, when the shopping center was connected to a municipal sanitary sewer, sanitary wastes and other effluents from the center were discharged (with DEC approval under SPDES permits) into three generations of septic systems, including tanks and leachfields, in the eastern part of the site (between the building and the River).

The U.S. Geological Survey, in a 1982 report, identified the direction of groundwater flow at the site as being to the south and east. PLJ’s environmental consultant, Impeccable Environmental Experts, Inc. (“IEE”), confirmed this result in 1998, after extensive monitoring of water table levels, showing that the flow gradient was to the southeast, toward the confluence of Fortress Creek and the Swanee River.

PLJ wasn’t exactly sure what it would do with Dilapidated Plaza, which was not in the best condition and had a number of vacancies, but since it owned another shopping center nearby, it figured it could more easily manage the Plaza than its current absentee owners, Deadwood Realty Corp. If PLJ could keep the Plaza fairly well-tenanted, the investment hopefully would hold its own. And, who knew, perhaps the real estate would be worth enough in the future to allow PLJ to resell it and make a modest profit.

So, PLJ entered into a Purchase and Sale Agreement with Deadwood in mid-1995, contingent on the results of various environmental and geotechnical investigations. PLJ retained IEE to perform an Environmental Site Assessment. A Phase I ESA was completed in February 1996. This Report flagged as a Recognized Environmental Condition the presence of Ralph's Cleaners, which currently used and stored the common dry-cleaning solvent, perchloroethene ("PERC"), also known as tetrachloroethene or tetrachloroethylene, at the site. It noted that other dry cleaners/laundries had previously occupied the site, that Dilapidated Plaza had formerly held a SPDES permit to discharge waste to an on-site septic system, and that dry cleaning solvents may have been discharged to the septic system.

Included as an attachment to the Phase I report was a September 1995 letter from a groundwater management specialist on the staff of the local Old County Health Department. The letter indicated that the surrounding area had been served by public water utilities dating back several decades, but that there were still some commercial, institutional and industrial facilities that maintained dual water supply systems. In such cases, while potable water usually came from the municipal system, on-site wells might supply process or air conditioning water. The letter commented, citing the 1982 USGS study, that "the site lies within the calculated cone of depression formed by the North Forty Municipal well, the closest active public water supply"—located about 1,100 feet to the southwest of the Site (south of Fortress Creek). The letter described the site as being within the boundaries of a Sole-Source Aquifer (meaning that development might be subject to review by U.S. EPA if federal dollars were involved—which they weren't), within the limits of "a NYSDEC-designated primary aquifer," and as being subject to strict regulation of chemical storage practices under the town of North Fork's aquifer protection ordinance.

Based on the results of the Phase I ESA, PLJ asked IEE to conduct a limited Phase II study. Six of seven attempted probe holes were successfully advanced to groundwater. Five (P-1, and P-4 through P-7, at groundwater depths of approximately 12 feet below grade) were placed within the area of former leach fields. The sixth (P-2, at groundwater depth of about 17 feet below grade) was placed behind the building unit occupied by Ralph's Dry Cleaners. High part-per-billion concentrations of PERC were found in the probe holes behind the Dry Cleaners (356 ug/l at P-2) and in the leachfield immediately downgradient of the Dry Cleaners (49.9 ug/l at P-1). Low- (1 to 3.1 ug/l) or undetectable levels of PERC were found in the other probe holes.

When these results were submitted to Sam Suave of DEC (local field office) on March 8, 1996, he suggested that PLJ consider entering into the Voluntary Cleanup Program, which "would eliminate exposure to potential future open-ended cleanup costs, set pre-determined cleanup objectives and give assurance to financial institutions regarding their own lack of liability." Since PLJ would be considered a non-PRP (given its prospective purchaser status), it would be responsible only for remediating on-site contamination to pre-determined levels and eliminating sources of onsite contamination that could cause offsite impacts.

*

*

*

The "Phase II" Period--DEC is Not Finished with its Phase I Demands

After another year-and-a-half of data collection by IEE, PLJ unveiled plans to demolish the existing Dilapidated Plaza building and construct a new big-box Bright and Shiny Hardware Store at the Site. Ken Cavalier was again brought into the process to secure needed Town of North Forks approvals. Site sketches and engineering plans were developed to portray the new and improved shopping center and meetings and public hearings were scheduled (including SEQRA review—involving a long-form EAF and negative declaration), beginning in October 2000, before the Town of North Forks, which was delighted that a prestigious national retailer was interested in locating there. Town officials and members of the community welcomed the revitalization of Dilapidated Plaza, which would yield not only much-needed tax revenues and jobs, but would boost business for surrounding retailers and would stimulate the rejuvenation of the whole North Forks/Route 666 commercial zone. Final site plan approval by the North Forks Planning Board came on December 11, 2000.

As the Dilapidated Plaza site was poised to enter "Phase II" under the VCA, IEE and DEC were still bogged down in a labyrinth of questionable "Phase I" monitoring and research.

While the new development project was pending before the Town of North Forks, IEE was instructed by PLJ, as soon as the last tenant had vacated the Dilapidated Plaza building, to move forward (with DEC approval and oversight) with removing any remaining accessible remnants of the septic system and leach field. Most of these components were previously identified, but could not be removed until all tenants had vacated because of utility lines that could not be disconnected. In addition to the previously excavated Septic Tanks ##1, 2, and 3, two additional metal septic tanks (##4, and 5), discovered in a 1996 magnetometer survey, were removed from the site. (Contaminated soils associated with Septic Tank #3 had also been previously excavated and properly disposed of offsite.) An additional "tank" #6 (actually a grease trap installed in the sewer line to intercept heavy grease loads from any restaurant tenants) was found and removed during demolition of the Dilapidated Plaza building.

In October 2000, IEE submitted a Remedial Action Plan (RAP) to DEC on behalf of PLJ to address the steps to be taken pursuant to "Phase II" of the VCA. (The "Phase II" work plan consisted of two straightforward requirements: (1) demolish the dry cleaning store, appropriately drain and dispose of the in-building solvent tank and recycling system, and their contents; and (2) remove and appropriately dispose of, after sampling and testing, any underground septic tanks, underground storage tanks, and associated piping, and their contents, prior to demolition or other earthmoving or construction likely to disturb them.)

The RAP set forth the procedures to be used to complete the removal of identified source areas. Because of the planned excavation of all contamination source areas, the

demolition of the shopping plaza building (and associated utility lines), and the construction of a new, large-footprint retail building, it was proposed to remove and dismantle the existing SVE and groundwater wells. Since the objective of “Phase II” was to complete the removal of identified source areas, no engineering controls were proposed. Although it is difficult to imagine how, with all of the source areas removed and the entire Site capped beneath impervious layers of pavement or concrete, any additional remedial action might be needed or further monitoring required, IEE nevertheless proposed (in response to DEC prodding) to install new groundwater monitoring wells to replace those abandoned prior to site redevelopment. (IEE proposed to specify the locations and depths of these wells at a later time, after test results were available for post-excavation subsurface soil quality samples.) IEE even agreed to entertain the need for post-development remedial action based on the contaminant levels remaining in the subsurface and the final location and elevation of the new building.

Although the initiation of “Phase II” source removal should have been viewed as superseding any previously initiated palliatives (source reduction and monitoring) under “Phase I,” DEC (and DOH) weren’t about to allow their cleanup volunteer to escape their grasp quite so easily. After all, PLJ wasn’t some recalcitrant polluter that would be a lot of trouble to take on, it was an innocent volunteer with deep pockets that had always shown a willingness to cooperate and had readily agreed to almost anything DEC asked for. This was certainly no time to be letting PLJ off the hook.

Two-and-a-half months later (December 12, 2000), DEC responded to the proposed RAP. IEE’s plan did not go far enough. PLJ would need to install the portion of a new SVE [Soil Vapor Extraction] system that would reside in the source area, beneath the new building prior to construction—so that if excavation did not obtain the proposed soil cleanup objectives, an SVE system could be operated to remove the remaining contamination. An SVE system would also be necessary “in the event that a possible source area was not identified and that [it] could result in an unacceptable impact to indoor air quality.” (There was no explanation of how any unidentified source area could remain with the old building removed and the subsurface soils and former leachfields thoroughly screened by earthmoving equipment. Nor was it explained how an SVE system, if it could not be required under the VCA in “Phase I,” could be imposed during “Phase II,” with even fewer traces of remaining VOCs. Or why indoor air quality was suddenly a concern, despite previous assurances to the contrary, and despite the removal of source areas.)

In the design of the SVE system, although DEC required a soil gas vapor barrier beneath the concrete floor slab only in areas of known PERC contamination, PLJ and the management of Bright and Shiny decided to extend such a barrier beneath the slab of the entire massive Bright and Shiny building. (Any hope that DEC or DOH would find this reassuring, causing them to moderate their insistence on extended stack gas monitoring, was misplaced.)

IEE tried again. A new Remedial Action Work Plan was submitted in January 2001. This Plan included updated monitoring results. It showed continued declines in

groundwater concentrations and dramatic reductions in SVE stack emissions (even before building demolition). The RAP proposed to excavate and remove soils from below the building and the remaining septic structures to the point that soil cleanup objectives (1.4 mg/kg for PERC—as set forth in DEC TAGM # 4046) were achieved. If soil cleanup objectives were not met in the area of the new building footprint, new SVE piping would be installed in the area(s) of elevated concentrations. New monitoring wells would be installed at locations to be based on the extent and location of soil contamination.

After another two-and-a-half months (and barely in time to avoid scuttling the new development project and real estate deal), DEC on March 26, 2001 approved the Remedial Action Work Plan of January 2001, subject to various conditions. (These included DEC’s insistence on installing SVE piping at all locations where the new building would rest over soils contaminated by the former dry clean process, and the need to perform a full Target Compound Analyte List analysis on one soil sample and one downgradient groundwater sample obtained from the area of highest contamination.)

IEE submitted an updated Remedial Action Plan in April 2001 (quantifying the relatively small extent of soil contamination within the building footprint that might exceed DEC regulatory limits). An updated Remedial Action Report was submitted on June 18, 2001, followed in August by the installation of new groundwater monitoring wells.

In the meantime, the real estate deal was concluded between PLJ and Bright and Shiny Hardware, with ownership passing to the latter. (An Escrow Agreement entered into on March 27, 2001 established a \$165,000 Environmental Escrow Fund to ensure Bright and Shiny that any remaining cleanup work would be done and that an assignable liability release would be issued by DEC.)

On September 10th, DEC issued a letter stating that the Remedial Action Report submitted 3 months earlier could not be approved “without first determining if a complete soil vapor extraction (SVE) system is needed at this site.” It also indicated that the separate letter report from IEE on post-development monitoring well installations and sampling, including frequency of sampling events, “must be submitted prior to receiving final [RAP] approval.” By this time, the new retail store was fully constructed and would shortly open for business. An electric-powered continuous SVE system with two fan-driven SVE vents (SVE-East and SVE-West) had been installed—from beneath the building slab and venting from the building roof. These new SVE units—which were also equipped with wind-driven turbines—replaced the pre-demolition (non-electric-powered) wind-driven SVE extraction wells.

IEE submitted another Remedial Action Report on October 25, 2001. This Report took issue with DEC’s insistence (at the urging of DOH) that SVE stack emissions, having already been shown to easily meet DEC Air Guide limits, continue to be measured at quarterly intervals for at least a year, with no indication of how much PERC in the stack emissions would be considered too much and no finite duration to the

continuation of such monitoring. Also, IEE was concerned that DOH might unjustifiably seek to apply to SVE stack emission levels its 1999 DOH “guidelines for PERC in air.”

That guideline states: “NYSDOH recommends that the average air level in a residential community not exceed 0.1 milligrams of PERC per cubic meter of air (0.1 mg/m³), considering continuous lifetime exposure and sensitive people.” It is not applicable or relevant to the Delapidated Plaza situation for several reasons. In the first place, the inside of a commercial building should not be judged by a guideline designed for a “residential community.” In the second place, PERC levels in the stacks of an SVE system, which was designed to extract PERC from subsurface soils and groundwater, have no public health significance (as long as DEC stack emission limits are not exceeded) other than that the more PERC that shows up in the stacks, the less is left behind in the ground. (A cleanup volunteer should not be penalized because it is employing a pollution control device that works.) In the third place, no one is likely to come in contact with concentrated stack emissions on the roof of a commercial building, 25 feet off the ground. In the fourth place, even if the PERC levels measured in the SVE stacks were actually found inside the commercial building, the workers likely to inhale it would have far lower exposure levels over far shorter periods of time than the populations addressed by the DOH guideline. And, in the fifth place, an indoor air standard for the protection of workers has been set by the Federal government (OSHA). That standard—689 milligrams per cubic meter of air (689 mg/m³), or 100 parts per million—is considerably less stringent than the DOH residential guideline.

On November 15, 2001, DEC issued its response to the October 2001 RAP, requesting that the RAP be resubmitted for approval after IEE addressed yet another set of comments. Comments included: the need to articulate the rationale (already provided previously) “of why treatment of the emissions are [sic] not necessary” (response: because they were shown to be far below DEC Air Guide-1 limits, which define when emission treatment is required); and a requirement that the report be certified by a registered professional engineer (see previous discussion of this subject). The letter also reiterated the insistence by the regional DOH representative, Robinson Crusader (no doubt, responding to directives from Albany), that the SVE system “must be operated and monitored for a minimum of one year, with emissions from each system sampled at least monthly, a record [maintained] documenting any interruptions of the electric powered fan, and documentation that the building has remained under positive pressure as designed for the duration of the monitoring period.” (An October 25, 2001 letter from Bright and Shiny’s electro-mechanical engineers had explained that, at all times the building is occupied, 15,600 cubic feet per minute [CFM] of outdoor air is pumped into the building through rooftop units. Two exhaust fans remove 1,200 CFM from the building, leaving 14,400 CFM of positive pressure.)

In the meantime, new groundwater monitoring results showed no target VOC compounds at detectable concentrations in any of the samples from the four downgradient monitoring wells, with the exception of new MW-2—located directly downgradient of the former source area beneath the former Dry Cleaners. (It contained PERC at 33 ug/l.)

Everyone on the PLJ team felt like they had fallen through the looking glass. Not only was DEC totally disregarding the letter and intent of the 1996 VCA, but it was generally taking two or three months (rather than the 30 days specified in the Agreement) to respond to submittals, and it was withholding approvals because of unexplained and inconsistent demands by DOH which was not even a party to the original Agreement.

Moreover, at this point—six-and-a-half years after entering into the VCA—PLJ no longer even owned the property but it had a large sum of money sitting in an escrow account that couldn't be accessed until DEC issued a liability release.

* * *

Selected footnotes:

Technical and Administrative Guidance Memorandum #4046 (Jan 24, 1994) provides a procedure for determining soil cleanup levels “at individual Federal Superfund, State Superfund, 1986 EQBA Title 3 and Responsible Party (RP) sites, when the Director of the [Division of Hazardous Waste Remediation] determines that cleanup of a site to predisposal conditions is not possible or feasible.” Not only is the Dilapidated Plaza site not among the above-listed types of sites to which TAGM #4046 purports to apply, but the soil cleanup levels it specifies [e.g., 1.4 mg/kg as the recommended soil cleanup objective for PERC] are derived by predicting how much contamination will leave the contaminated soil as leachate and eventually reach and disperse into groundwater. With an impervious shopping center sitting atop any remaining hot spots of contaminated soil, there is no longer any opportunity for contaminants to leach from soil into groundwater—except where they are in direct contact.

New York State Department of Health, Bureau of Toxic Substance Assessment. 1999 (rev.). “Tetrachloroethene (PERC) in Indoor and Outdoor Air” (Info for Consumers). Available on the DOH website.

The DOH guideline assumed “continuous lifetime exposure and sensitive people.” Retail workers are unlikely to be exposed 24 hours a day, 7 days a week, over a 70-year lifetime. See Gary Gartano, “Factors Influencing Tetrachloroethylene Concentrations in Residences above Dry-Cleaning Establishments,” *Archives of Environmental Health*, Jan. 2000, p. 18 of 22. Eight hours a day, 5 days a week, over a 10-year employment cycle would be a more realistic exposure scenario. Retail workers are also less likely to include the most sensitive human receptors—infants, children, pregnant women, the very old, and those with serious illnesses. Also, a large, well-ventilated commercial building, built on grade (with no basement or crawl space to collect vapors), and containing a soil gas vapor barrier, is less likely to accumulate high levels of PERC than a relatively small house or apartment which is less well ventilated and lacks a vapor barrier.

C. Former Midler City Industrial Park Site, Syracuse, NY

This 21.59-acre site is located along the east side of South Midler Avenue in eastern Syracuse, just south of I-690. The site is being cleaned up and redeveloped as an open-air commercial shopping center under the new Brownfield Cleanup Program (BCP) by Pioneer Midler Avenue, LLC [PMA] (a cooperative venture between two commercial developers, The Pioneer Companies and Newman Development Group, LLC).

The project is in a very early stage. A BCP application has been accepted as complete and a proposed Remedial Investigation Work Plan has been submitted and

informally reviewed. The formal execution of a Brownfield Cleanup Agreement (BCA) must await the completion of a just-initiated public comment period.

Potential vapor intrusion issues surfaced in a pre-BCA investigation carried out in July 2004 by PMA's environmental engineers, C&S Engineers, Inc. "Volatile organic vapors" were encountered in one of three exploratory trenches excavated in the construction and demolition debris area (C&D area) in the eastern portion of the site. According to C&S's letter report, "this material registered 275 ppm on the field ionization detector during a head space evaluation." A sample was sent to the lab for an analysis of VOCs via EPA method 8260. The report concluded: "The level of tetrachloroethene [PERC] detected (160 ug/kg) is lower than the State recommended soil cleanup objective of 1,400 ug/kg (TAGM 4046) for this compound."

As part of the Remedial Investigation, DEC and DOH indicated that they wanted 2-3 sub-slab soil vapor points in the buildings, preferably on the east end in the vicinity of the proposed borings. Given the shallow water table at the site, DEC suggested the use of "passive monitors." C&S will conduct a number of soil borings in the C&D area, collecting continuous soil cores down to the confining clay layer. "The samples will be screened for VOCs and the samples will be logged. The VOC screening will be open air monitoring with a PID instrument. If contamination is noted (staining, visible evidence of free product, or PID reading 5 ppm or higher above background on the PID instrument), drilling will be stopped and the NYSDEC representative will be contacted." What will then be required by DEC (and DOH) in such an eventuality is unclear.

DOH, several years ago, developed a Fact Sheet on "Tetrachloroethene (PERC) in Indoor and Outdoor Air," which is available on the DOH website at: http://www.health.state.ny.us/nysdoh/enviro/btsa/fs_perc.htm. It references the DOH "guideline" for PERC, a widely used dry-cleaning solvent, of 100 ug/m³. This is an average level that DOH recommends should not be exceeded in "a residential community," considering "continuous lifetime exposure and sensitive people." It will be interesting to see whether DOH attempts to apply this guideline to the Midler Avenue brownfield project, which is neither residential nor anywhere near a residential area.

Exhibit I

Brief Bio of Kenneth S. Kamlet

Synopsis: Ken is an environmental and land use lawyer and trained biochemical scientist who relocated to the Binghamton area 6-1/2 years ago to work for Newman Development Group after 25 years in the Washington, D.C. area.

- *Current Position:* Director of Legal Affairs, Newman Development Group, LLC—a pre-eminent shopping center developer in the Southern Tier of New York. A number of NDG's successful projects in the Binghamton area are located on former industrial sites (brownfields)
- *Current Volunteer Positions:* Founding Chairman, Broome County EMC's Brownfields Committee; Member and Chair, The Broome Chamber, Small Business Council Legislative Committee and Member, Government Affairs Committee (recipient of 2003 Small Business Advocate award); Member, Broome County Bar Association Corporate Counsel Committee; Member, New York State Bar Association, Environmental Law Section. Co-Chair, Developers' Group, Co-Chair, Legislative and Policy Committee, New York State Chapter, National Brownfield Association; Member, Management Team, Broome County (U.S. EPA) Brownfields Pilot Program; Member, B.C. Plan (Greater Binghamton Sustainable Economic Development Plan) Steering Committee. Maintains New York Brownfields website at: <http://www.ny-brownfields.com>
- *Relevant Prior Background:* (1) Helped develop the State of Maryland's statewide brownfields program as a member of the Governor's "Voluntary Cleanup [Brownfields] Program Task Force"; (2) Charter Member of the Baltimore [Maryland] Brownfields Industrial Redevelopment Council; (3) directed the Pollution & Toxic Substances program of the country's largest membership-based environmental advocacy group, the National Wildlife Federation (1973-1985); (4) chaired two National Academy of Sciences' studies on contaminated marine sediments; (5) was a member of the ASTM Drafting Task Force that developed widely accepted Phase I environmental site assessment standards; (6) provided inputs to Congress that contributed to enactment of Federal Superfund and RCRA (hazardous waste) legislation; and (7) for 12 years (1985-1997) as an environmental consultant and (later) as a private practice attorney, helped business clients solve hazardous waste, brownfield, and other environmental problems.
- *Academic Background:* (1) Undergraduate degree in Biology from CCNY (1966); (b) Ph.D-level graduate degree in the Biochemical Sciences from Yale University (1970); and (c) Law Degree (J.D.) from the University of Pennsylvania Law School (1973).
- *Bar Memberships:* Member of the Bars of the District of Columbia, Maryland, and New York (and of numerous Federal courts, including the U.S. Supreme Court).
- *Publications:* Numerous brownfields publications.

Exhibit II

Mission Statement of Finally Green Technologies, LLC™

Finally Green Technologies LLC (FGT) is a technology company that is located in Central Square, New York. FGT's responsibility is to take new technologies and bring them to market. FGT currently holds the license and patents for three technologies.

The first technology is a "green" chemical that is being manufactured at the company facility in Central Square, New York. This product is called "**Finally™**".

Finally™ is a water-based sodium silicate product which when applied to contaminated soils, water or surface contamination, can provide detoxification results faster and quicker than traditional environmental methods used today, thus reducing labor costs. Finally™ has the ability to perform in temperatures ranging from 40 degrees to 110 degrees.

This water based silicate formula penetrates through the contaminant and starts an endothermic, exothermic reaction. Finally™, with its unique blending technique, provides an encapsulation process where surfactants break down the hydrocarbon chain, and a curing process dries out the liquid phases and renders the hydrocarbons inert and immobile.

The second technology is the **Natural Analog Process**. The Natural Analog process operates by reducing the permeability of waste and its surrounding host materials. This process prevents the entry of ground water flow through the waste, effectively isolating the waste and stopping contaminant migration. The process artificially stimulates a subsurface sealing action which duplicates that which occurs locally in nature, and it does so using "environmentally safe" components.

The third technology is a steel technology called **Steelpac Systems**. The Steelpac System is a cold-rolled formed steel product. Steelpac is the first complete, snap together light gauge, high precision, steel truss and framing system. The structural system is shipped in a pack, assembled on site without tools. The patented system removes the connector from the construction equation and is engineered for full load bearing capacity without weldments, screws or bolts.

Our mission at Finally Green Technologies is to work closely with professionals within the environmental industry so that they will be able to have the latest, greatest technologies at their finger tips.

Exhibit III

Freedom of Information Law Request to DOH



New York Office: 3101 Shippers Road, Vestal, NY 13850 P.O. Box 678 Vestal, NY 13851-0678 Phone: 607.777.0135 Fax: 607.777.9464	Pennsylvania Office: Plymouth Greene Office Campus-Unit E-2 1000 Germantown Pike Plymouth Meeting, PA 19062 Phone: 610.277.0300 Fax: 610.277.0328	California Office: 2255 Van Ness Avenue-Suite #102 San Francisco, CA 94109 Phone: 415.923.0880 Fax: 415.923.0680
--	---	---

November 2, 2004

Records Access Office
New York State Department of Health
Corning Tower Room 2348
Albany, NY 12237-0044

VIA FAX: 518-486-9144

Re: Freedom of Information Law (FOIL) Request for Access to
DOH Guidance on Vapor Intrusion

To Whom It May Concern:

Pursuant to the New York State Freedom of Information Law, as amended (FOIL), this is to respectfully request copies of all NYS Department of Health (DOH) records kept, held, filed, produced or reproduced by, with, or for the department in any physical form—but especially paper documents produced by the Department—that set forth and/or explain the derivation, development and/or application of guidelines or guidance defining “safe” or “unsafe” levels in indoor air of chlorinated solvents (such as trichloroethylene and tetrachloroethene) and other VOCs. I am interested in particular in documents that bear on how VOC levels in soil or groundwater, or in soil vapors, are related to presumed levels in indoor air, and in how any DOH guidance differentiates between vapor intrusion into residences (which may be occupied by both adults and children 24 hours a day, 7 days a week for a lifetime) and commercial and industrial buildings (which are occupied both less intensively and for much shorter durations, and which may be exclusively frequented by adults). I am also interested in any written explanations or justifications for the use of different vapor intrusion guidance at the IBM Endicott and the Hillcrest “sites,” which are within a few miles of one another. I am requesting all such records, whether in draft or final form, that affect the public because they are being utilized and applied in the design of investigation and/or remediation requirements under the BCP.

Among the specific documents I would like to obtain copies of is the following:

- October 31, 2003 letter from Nancy Kim, Director of the DOH Division of Environmental Health Assessment to Dale Desnoyers, Director of the DEC Division of Environmental Remediation (setting forth the basis for the 5 ug/m³ health guideline for TCE in indoor air)

I already have in hand copies of the following documents obtained from the DOH website (which, are, therefore, outside the scope of this request):

- Tetrachloroethene (PERC) in Indoor and Outdoor Air
(http://www.health.state.ny.us/nysdoh/environ/btsa/fs_perc.htm)

- “Ventilation system minimizes exposure in buildings affected by soil gas,” DOH Center for Environmental Health (April 2003)

This FOIL request comes at this time because of the Assembly ENCON Committee’s plan to hold a field hearing in Endicott on November 15th on “Vaporization of contamination from soil and groundwater into indoor air.” I plan to attend (and possibly testify at) this public hearing.

As the former Chair and founder of the Broome County Environmental Management Council’s Brownfields Committee, as Co-Chair of the Legislative and Policy Committee of the National Brownfield Association’s New York State Chapter (and as a member of the Chapter’s Executive Team), and as the creator and administrator of a New York Brownfields website (www.ny-brownfields.com), I have a strong interest in State policies governing the regulation and management of Volatile Organic Compounds (VOCs) in soil and groundwater (including associated vapor intrusion) under DEC’s Brownfield Cleanup Program (BCP). In addition, my firm, Newman Development Group, LLC, has been directly involved in the cleanup and redevelopment of 7 or 8 brownfield sites in the Greater Binghamton area—including the former Endicott Johnson Ranger Paracord site in Johnson City, a portion of which will be developed by the Gannett Corporation as a \$50 million regional printing press facility. (A sub-slab soil vapor management system is being required for the Gannett facility based on a soil vapor measurement for TCA of 130 ug/m³ at a single sampling point.) (We were also involved in the cleanup and redevelopment of the former Chenango Plaza site under DEC’s Voluntary Cleanup Program. A vapor barrier and a soil vapor extraction system were required for that project because of PERC-contaminated soils.)

Finally, I have been assisting a Syracuse-based entrepreneur in commercializing an environmentally-friendly innovative technology, which may be effective in suppressing the volatilization of subsurface chlorinated solvents (and other VOCs). From this standpoint, it is important that Soil Cleanup Objectives that are developed to address vapor intrusion preserve the flexibility to allow the use of alternative means of accomplishing the desired end-result—i.e., that they be performance-based, rather than specifying absolute numeric thresholds on a “command-and-control” basis.

This FOIL request is based on the fact that the DEC Division of Environmental Remediation website refers users interested in vapor intrusion guidance to a U.S. EPA website, and the DOH website contains no readily-retrievable information on the subject (other than site-specific information on ongoing health-effects studies related to the IBM Endicott Spill). If environmental cleanups under the BCP will continue to be governed by DOH health guidance where VOCs are present and the potential for vapor intrusion exists, both the regulated community (property owners, developers, prospective purchasers) and the public deserve to know what the guidance is, how it was developed, and how it will be applied.

If you have any questions, or require any clarifications, concerning this request, please do not hesitate to contact me. My telephone number is 607-770-0155, ext. 229; fax is 607-770-3482; and e-mail is kkamlet@hotmail.com. Thank you for your assistance.

Sincerely,

Kenneth S. Kamlet
Director of Legal Affairs