

COLUMBIA COUNTY  
ENVIRONMENTAL MANAGEMENT COUNCIL

401 State Street County Office Building  
Hudson, NY 12534

To: Columbia County Board of Supervisors  
From: Edwin R. Simonsen, Chairman for the CCEMC  
Date: June 24, 2013  
Subject: Memorandum on Hazardous Substance Processing

There have been few, if any, man-made environmental incidents in Columbia County equaling the TCI fire in Ghent measured by the potential for creating immediate hazards to responders, residents, agriculture, and the larger environment. The purpose of this memorandum is to recommend strategies that Columbia County and municipalities could adopt to avert the recurrence of such an event. A description of the August 1, 2012 fire, which is based upon a report dated January 2, 2013 by Mr. Randi Shadic, Deputy Chief Inspector of the Inspections Branch of the NYS Office of Fire Prevention and Control, may be found in Appendix A.

Evidence contained in a report from the Office of Fire Prevention and Control dated February 29, 2012 regarding a previous fire on January 26, 2012 at the TCI site suggests that the presence of onsite sodium may have been involved in that incident. Additionally, records show<sup>1</sup> that local fire and law enforcement officials were notified of the presence of onsite sodium at or around that time. The discovery of this information did not appear to preclude TCI from disclosing and requesting approval from the Town of Ghent for the de-chlorination processing of PCBs.

The following observations taken from available reports including those by Deputy Chief Randi Shadic, constitute an overview of site operations and conditions and events leading up to and including the August 1, 2012 fire and its aftermath.

1. No Town of Ghent Planning Board or County Planning Board review had been sought by TCI regarding the addition of the PCB reduction process by the plant operator/owner as a change of use. Therefore, no permits were granted by the Ghent Planning Board or any other agency for the installation or operation of a de-chlorination process unit.
2. It appears that no thorough system of oversight was in place to monitor the activities within the plant. No effective oversight was provided by any level of government.
3. Numerous Ghent residents, and residents from surrounding communities who volunteer to fight fires, were exposed to danger due to negligence.

4. Records that would have permitted a more thorough assessment of the potential for health and safety hazards created by such a fire were claimed to be lost or destroyed.
5. The many building parts and contents including the PCBs were incinerated and lofted into the atmosphere.
6. The presence of sixteen 55 gallon drums of sodium may indicate the volume of PCBs that were entering the plant for de-chlorination.
7. No permanently installed appropriate fire suppression system, or chemical or smoke detection systems were present in the structure.
8. The NYS Office of Fire Prevention and Control report on the fire states that Power Substation Services (PSS) was a sub-contractor working for TCI and processing transformer oil containing PCB's ostensibly in excess of the maximum 50 ppm which TCI was permitted to process.
9. The operation by the plant operators showed disregard for the safety of plant workers, the community, and the environment.

Given the complexities of man-made hazardous events such as the TCI fire and potential dangers to the community from operations such as the processing of toxic substances, the following recommendations, to be undertaken at town and county levels, are strongly advised.

Recommendations:

1. Any proposed project which would produce or handle toxic or potentially toxic substances should be subjected to a rigorous SEQRA process. Detailed plans showing all processes and operations along with their approved methodologies should be reviewed by an independent environmental consulting firm and the results of the analysis reported to the reviewing board. Plans should also include the identification of safe handling and storage practices of all appurtenant chemicals used at the site. Towns abutting this use should be designated as interested parties. Regardless of location there should be a referral to the County Departments of Health, Safety, and the County Planning Board.
2. Conditions of approval should include provisions for unannounced inspection of the facility by a qualified and or licensed chemical engineer. Assuming a local oversight plan, persons providing this service should be required to have the requisite education, license or experience to adequately assess those substances and procedures being used/carried out at the site. These should be augmented by NYSDEC and USEPA inspections.
3. The cost of each inspection would be the responsibility of the plant operators in perpetuity. An escrow account funded by the business operator/owner to fund inspections should be created.
4. Costs borne by local fire and rescue squads/ companies to equip themselves and train to address accidents at the site should be paid for by applicant/plant operator.
5. Comprehensive, detailed records should be retained by the municipality and contain all board reviews and conditions of approval or rejection.

6. If a project is approved by the community's designated reviewing board, monthly reports should be required to be made by the owner/plant operator to the town board or its designee and should be available to the for the public to read, These reports would itemize and describe in detail and quantify all materials entering and leaving the plant. This would include all materials in trailers or other mobile devices. Copies would be forwarded to the local Fire Company and Town Board. The project operators shall also maintain off site material records which are held by an independent party.
7. Consideration should follow a risk analysis to determine benefits and potential detriments of a proposal which deals with hazardous substances. Communities may wish to exclude or deem incompatible some uses. Short of prohibiting a given use, the community should establish a "Zone of Vulnerability" which delineates minimum separation distances to schools, nursing homes, hospitals, or heavily populated areas.
8. The plant operators/owners shall not be permitted to sub-lease or sub-contract any portion or use of the site to any other entity without review and approval granting a special use permit .
9. Proper permits should be obtained and maintained with NYSDEC, USEPA, and OSHA.
10. A chain of custody for all chemicals and toxic substances entering and leaving the premises should be available to authorities upon request.

## Appendix A

On August 1, 2012 a fire occurred at the TCI facility in the Town of Ghent, NY in the Falls Industrial Park just off State Route 9H. This event received broad coverage by local and regional news agencies. In addition an advisory was issued for all residents within a one mile radius of the fire establishing an exclusionary zone. What follows represents a gleaning of information from the two fire reports, Town of Ghent PB & TB meetings, and data provided at the forum at the West Ghent Fire House August 16, 2012.

The West Ghent fire company responded within minutes of the call and aggressively tried to bring the fire, under control within the larger building. This effort involved numerous entries into the structure. Other fire companies also responded and participated. There were electrical transformers and transformer oils located in part, within the main building some of which contained an undetermined amount of poly chlorinated bi-phenyls(PCBs) and two large trailers. Large quantities of the oils stored at this site were reported to have been incinerated. A 20,000 gallon tank purportedly filled with mineral oil pierced the building roof and landed in the vicinity<sup>2</sup>. After numerous “massive explosions” first line fire fighters were warned by a TCI employee that there was sodium metal within one or more of the structures<sup>3</sup>. Since water was being used to control the fire and since water produces an explosive reaction (one of which is flammable hydrogen) when in contact with metallic sodium, the firefighters withdrew. The fire incinerated many of the adjacent buildings and their contents<sup>4</sup>. The ash, smoke, and soot from the fire reportedly traveled over or landed on a very large area including parts of Berkshire and Rensselaer County. Tests for PCBs in the air, water and ash conducted by NYSDEC and USEPA proved negative.

The initial location and cause of the fire was theorized to be within one of the trailers, most probably in or near the vicinity of the “mixer chest”. The heating element of this device had been replaced and the unit was re-started on the afternoon of August 1<sup>5</sup>. Apparently the “mixer chest” played a critical role in the de-chlorination of the PCBs which occurred at the TCI facility. The diagram provided in the NYOSFP&C report shows how the PCB containing transformer oil would be pumped through pipes into a heating device in the trailer where the temperature was raised. From there it flowed to the mixer chest. This is where it apparently came in contact and was mixed with molten (heated) sodium. More than likely this would be the environment where the chlorine was stripped from the PCB molecules. The products of the reaction would have then passed to latter stages where the materials containing sodium and chlorine would have been separated from the remainder of the oil. This oil would then have had the presence of chlorine greatly reduced or removed rendering a product that no longer contained PCBs. No chlorine, no PCBs. The presence of nitrogen cylinders may indicate that nitrogen gas may have been used in the process as well.

## References-

1. Page 7, “Office of Fire Prevention and Control” February 29, 2012. Randi Shadic
2. Page 3, ‘Office of Fire Prevention and Control” January 2, 2013. Randi Shadic
3. Page 1, Ibid

4. Page 6 & 7 , Ibid

5. Page 10 & 11, Ibid

Distribution

Kenneth J. Flood, Commissioner of Planning, Tourism, & Economic Development