



August 29, 2013

**Fact Sheet # 2**

**Nova-Kem Chemical Fire**  
16161 6<sup>th</sup> Street, Seward, IL 61077  
Winnebago County

**Background**

On Sunday, June 2, 2013, Nova-Kem's chemical manufacturing and repackaging plant in Seward, Illinois experienced an explosion and fire. The main processing building and an adjacent building were consumed in the fire. Since that time, demolition of the buildings and cleanup of residual chemicals have occurred.

Illinois Environmental Protection Agency (Illinois EPA) and the Illinois Office of the Attorney General (Illinois OAG) entered a court order in the Winnebago County Circuit Court that requires Nova-Kem to cease operations, disclose all chemicals present, investigate how the explosion occurred, and develop a plan to address residual contamination evident on-site and at off-site properties.

**What has been happening at the Nova-Kem facility to clean up the fire and explosion debris?**

Over the last eight weeks, Nova-Kem's contractor Trans-Environmental Ltd. has been reclaiming chemical containers from the partially-burned building, re-packing them and shipping them off-site for re-use or disposal. In addition, the contractors have been systematically dismantling the main building and storage building that burned. All chemical residues apparent on the ground or concrete floor have been collected and disposed of as well.

**Are any chemicals left on-site?**

Yes, chemicals are still being stored in the Specialty Products Building, which was not involved in the fire. Certain mixing processes that occur in this building are different from the main production building that burned.

**Does Illinois EPA have the results of the environmental samples that were collected on private properties on June 26 – 27, 2013?**

Yes. Illinois EPA's laboratory completed the analysis of 45 samples that included surface soil, vegetation, wipe samples and water samples. The samples were analyzed for a family of chemicals called polycyclic aromatic hydrocarbons (PAHs) that occur when any material is incompletely burned. PAHs are present in small amounts throughout our environment due to diesel smoke, run-off from driveway sealers, roof shingles or from burn barrel smoke or other sources.

Samples were also analyzed for the presence of chlorides which might indicate emissions from the chemical plant fire. A few other specific parameters were also evaluated: pH (the degree of acidity of the sample), metals and silicon.



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**What do the results show?**

**In residential soils** – the results from samples collected on eight properties show low levels of chlorides and PAHs in soils, which represent either normal background levels or an additional source of PAHs next to a driveway or roadway. Naturally-occurring metals were found at expected levels.

**In surface water samples** – nothing of note was found except a higher chloride level in a pool that may have been concentrated from well water being added over time (as water evaporates, the chlorides and other salts and minerals in groundwater become more concentrated).

**In vegetation samples –**

Some lower pH numbers were observed in strawberries, rhubarb and some tree leaves, and that was found to be normal for those plants.

No PAH concentrations were evident in any of the plant samples.

Chlorides varied for different plant species, and they were within normal ranges for those types of plants or trees. Chlorides are an essential nutrient for plants, so unless they would show up at a very high level, the chlorides would not be evidence of deposition from the chemical fire. Only two vegetation samples of hay, two and one half miles from the fire showed levels of chlorides higher than in other vegetation samples. Illinois EPA is asking Nova-Kem to evaluate more properties in the direction of the heavier smoke beyond 2.5 miles from the fire to the southeast and to the south/southwest.

**Did the samples collected by Nova-Kem's consultant reveal similar findings?**

Yes. For the most part, the analytical results received from Nova-Kem's consultant Trans-Environmental Ltd. confirmed the results that were seen in the Illinois EPA's laboratory analysis. Trans-Environmental also collected samples from private wells. Those results were within normal values for all constituents analyzed: chlorides, metals, pH and PAHs.

Corn leaves were tested from a field at the east end of the Nova-Kem site. Plant stress was observed in that area near the place that chemicals were transferred to different containers for shipment off-site. The corn that was tested showed a slightly high level of chlorides – 5500 parts per million – and a lower pH, which is indicative of chemical stress.

**What is the status of the site work?**

As of August 15, 2013, the burned structures have been completely demolished and all of the building materials hauled away. Chemicals have been transferred off-site for either re-use or disposal at an appropriate facility. Chemical residue has been scraped up from the floor of the building, tested and packaged for disposal.

**What are the next steps?**

Illinois EPA is reviewing a report from Trans-Environmental Ltd. about the work that has been done and will confer with the Illinois OAG regarding next steps. Further on-site environmental sampling will be done to confirm that all chemical hazards are removed from the site. Some additional off-site sampling will also be required to determine whether any threat is apparent to human health or the environment.

**Will Nova-Kem be allowed to resume operations at this facility? Would special precautions need to be in place?**

The Root Cause Analysis report, which Nova-Kem contracted to be done, is under review by Illinois EPA and the Illinois OAG. The agencies want to fully understand why the accident happened and how it can be prevented from re-occurring in future production – of either hexachlorodisilane, the main product line – or in other production undertaken at the facility. It is probable that more precautions will need to be in place and more on-site monitoring will be required of the main manufacturing process, which includes a high-pressure reaction. Illinois EPA and the Illinois OAG will know more after review and consultation of the Root Cause Analysis.

**What processes could occur now, since the main building was destroyed?**

The Illinois EPA and the Illinois OAG have approved, after careful consideration of the technical aspects of the process, manufacturing of a product, yttrium lanthanum nitrate solution, between August 29, 2013 and the end of November, 2013. All of the product is to be shipped off-site by the end of December, 2013. Chemicals that were stored in that building but are not needed for this manufacturing process will be removed or safely segregated in bays within the Specialty Products Building. Other precautions will be in place during this operation:

- The local fire department will evaluate safety measures at the site;
- Nova-Kem will install a fire alarm;
- Operators must be present during the entire production process; and
- Illinois EPA will periodically inspect and monitor the process.

The manufacturing of this product uses a low-heat process that does not include a pressure reaction and less reactive chemicals than does the manufacturing of hexachlorodisilane.

**Will the Illinois EPA hold a public meeting to brief citizens on the site activities and answer questions?**

Yes. Illinois EPA technical staff and Office of Community Relations staff will be on hand to explain environmental sampling results, listen to citizen concerns and answer questions. Please see the information regarding a public meeting below.

***Illinois EPA will hold a Public Availability Session  
In Seward, Illinois***

***on Wednesday, September 11, 2013  
at the  
Seward School Center gymnasium  
2970 Tracey Street in Seward  
from 6:30 p.m. to 8:30 p.m.***

**For more information, you may contact:**

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## Map of the Potentially Affected Area

