



Hillcrest Industries Update: 9/19/12



North side of glass pile with two applications of Posi-Shell (shot-crete like material)



Air pollution control equipment, material conveying and storage equipment for the crushing and screening of slag and colored glass.

What is Hillcrest Industries? The Hillcrest Industries facility located on Favor Street in Attica processes glass fragments (cullet) into reflective road striping beads and abrasive blast media. The facility also collects boiler slag material (hardened residue collected from off-site coal boilers) and processes it into abrasive blast media (sandblasting materials).

What is the source of the odor? A pile containing glass fragments mixed with plastic, paper and metal generated from household recycling that the plant uses to make sandblasting materials and reflective glass beads is the major source of odors. No new material has been added to the pile since mid-July. At first, the odors in the pile were generated by decaying food residue which is adhered to the glass and plastic. As this waste broke down, it created odor problems. As this activity continued, the material began to heat and smolder. The smoke and smoldering created odors due to the paper and plastic within the pile being consumed.

What is the source of the dust? Hillcrest continues to manufacture reflective glass beads using other stock piles of clean glass. Dust is generated when the boiler slag and glass are ground down to smaller sizes. Most of this dust is captured in dust collectors but some is released into the environment. Dust may also be blown off the facility roadways and the slag pile.

What is Hillcrest doing to address community concerns? To reduce particulate emissions (dust) Hillcrest has repaired leaking process equipment, sealed off broken bag filters, ordered replacement filters, applied a dust suppressant to the facility's roadways, washes truck tires before they exit the facility, and covered some of the piles comprised of fine material with Posi-shell. Hillcrest continues to remove the piles of plastic and paper that have been separated from the glass fragments from the property. Hillcrest implemented several measures in an attempt to reduce odors and to decrease the temperature in the interior of the pile. These measures included an air withdrawal and treatment system (not currently in use), a nitrogen/carbon dioxide injection system, and application of an impermeable Posi-shell cover system. Nine injection wells were installed in the pile and nitrogen/carbon dioxide was injected in an attempt to remove oxygen from the pile and reduce the temperatures in the pile. The temperature of the pile at each injection point is being monitored. Following installation of the Posi-shell cover system on

August 31, 2012, injections of nitrogen and later carbon dioxide resumed. Despite these efforts, the temperatures have remained high in two locations and the pile continues to smolder. In one location, the temperature was as high as 750 degrees F but has been as low as 650 degrees F. A second location is in the 500 – 550 degree range. The remaining 6 locations are in the 150 – 225 degree range. Based on the temperatures recorded in the glass, paper and plastic pile and the visual evidence of smoke leaving the pile, we believe that the pile is smoldering as the paper and plastic in the pile are consumed. Hillcrest representatives are currently checking with companies that deal with fire suppression/elimination and are reviewing proposals for implementation in the near future.

What actions has DEC taken? DEC has investigated odor and dust complaints in Attica, and visited the Hillcrest facility on numerous occasions to inspect operations and investigate environmental concerns. In addition, DEC and the U.S. Environmental Protection Agency (USEPA) have conducted air and dust sampling. The New York State and Wyoming County Health Departments have reviewed DEC's sampling results and provided comments which are included in the narrative below. DEC is also in communication with state, county, town, and village officials and area residents concerning Hillcrest, and will continue to provide updates and information as requests are made and as new information becomes available.

EPA Air Sampling

At DEC's request, USEPA sent several representatives to the Hillcrest facility to evaluate the site and conduct air sampling. USEPA placed 10 Summa canisters and five particulate monitors at ten different locations to collect 24 hour samples on Thursday, Sept. 13. The canisters and monitors were collected for analysis on Friday, Sept. 14 and we are awaiting results.

DEC's Community Residential Sampling – Night air sample

A Village resident collected a one-hour ambient air sample for the DEC on August 26th at 9:30 p.m. when the odor was strong. DEC's laboratory analyzed the sample and provided the results for 41 volatile organic compounds (VOCs). Results for some of the contaminants are higher than the day time sampling results that DEC performed, but are still below the Short-term Guideline Concentrations (SGCs). These data are available upon request. Health symptoms associated with odorous chemicals not captured by the sampling may still occur.

DEC's Residential Sampling – Air

DEC collected four one-hour ambient air samples on August 8, 2012 between 12:00 p.m. and 3:00 p.m. in response to community concerns about odors and exposure to volatile air contaminants from the Hillcrest facility. See **Air Sampling Locations** on page 5 for an aerial map of the sampling locations.

Three samples were collected in the odor plume in the neighborhood downwind from the Hillcrest facility, one of which was at the facility property line. A fourth sample was collected at the Attica High School between the gas well and baseball diamond, approximately 20 yards south of the parking lot. DEC's laboratory analyzed all air samples and provided the results for 41 volatile organic compounds (VOCs). These results were compared to DEC's Short-term Guideline Concentrations (SGCs) since the sample collection was a short period of time. SGC's are used by DEC to ensure that short-term exposures do not cause any significant health effects.

In addition to the 41 VOCs targeted by the sample method, our sampling results identified the presence of odorous chemicals of biogenic origin, such as fatty acid esters. As these decay products are not targeted air contaminants we routinely monitor, concentrations cannot be quantified. People differ in their ability to detect these chemicals by smell, but in some cases the odor thresholds can be very low – down to parts per billion (ppb) levels.

With the exception of one chemical (1,1,1-trichloroethane or 1,1,1-TCA), levels of VOCs detected in the four samples are very low, mostly less than one part per billion, and similar to what's found in typical urban background air. In general, these results do not show a consistent pattern of higher concentrations near the Hillcrest facility and decreasing concentrations moving away from the facility as would be expected if the facility was the main source of these VOCs. For many of the analyzed chemicals, results from the four samples were roughly the same and for several others, results from the two sites between Hillcrest and the school were higher than the Hillcrest and school results. None of the four samples showed any results above DEC's SGC. Two samples had somewhat higher results than typical background for 1,1,1-TCA, but there was not a consistent pattern observed that would suggest a likely 1,1,1-TCA source. Sample analysis is available upon request.

Uncertainties and Limitations

There is a lot of uncertainty with the collection of short-term, one hour samples. Air levels of these chemicals can change quickly, so a single one-hour sample only provides a “snap-shot” of one point in time, and levels could be much different at other times. When DEC conducts these types of air sample collections, they are considered for screening purposes for short-term exposures only. Results from single one-hour samples cannot be used to characterize long-term exposures. Because of the sensitivity of the sampling equipment nearby sources such as lawn mowing, cigarette smoking, residential storage of gasoline will also influence the air sample results. On the day that the samples were taken, the Attica high school appeared to have recently applied asphalt sealer on the school's parking lots and roadways. Asphalt odor was evident while standing in the vicinity of the pavement. Releases of volatile and semi-volatile organic compounds are very common from the application of asphalt sealers and could have influenced these sample results, although high levels of potential asphalt-related compounds were not observed.

Conclusion

In conclusion, the VOC results are generally low and below DEC's SGCs. A clear pattern suggesting emissions of solvent VOCs from the Hillcrest facility, affecting air quality in the adjacent community, was not observed. Air contaminants that are odorous at very low concentrations were observed in the analysis but are not reported in the results because their concentrations cannot be estimated with this method. Overall, the results do not indicate a health concern in the community from increased exposure to industrial solvent chemicals assessed with this sampling method. Nevertheless, acute health symptoms such as headache, nausea and cough could still be expected among residents experiencing persistent strong odors from chemicals not captured in these sampling results.

DEC's Residential Sampling – Dust

DEC collected five dust samples from four residential properties in response to resident's concerns about health risks from exposure to dust releases from the facility. Dust samples were collected July 10-17, 2012. See **Dust Sampling Locations** on page 6 for an aerial map of the sampling locations. Eleven samples were collected on site of the facility at specific release points and from raw material and finished product. Matching the types of particles found on the residential properties with the types found onsite of the facility could provide DEC staff with an understanding of which release points need to be better controlled. The samples were submitted to DEC's Microscopy Lab for analysis. The lab determined the composition of the residential dust samples and the size of the particles to evaluate whether the dust could be from operations at the Hillcrest facility.

The microscopy lab found particles in all five of the residential dust samples with similar characteristics as the particles of glass fragments from the facility. The samples collected from the facility contained particles which ranged in size from fine particulate matter (particles 2.5 microns or less in size) to much larger sizes, well above 100 microns with most particles very large in size. By comparison, the width of human hair is 40 to 120 microns, where a micron is one millionth of a meter. Similarly the particles in the residential dust samples which were distinguished as either glass fragments, glass beads or slag fragments were also mostly very large in size, generally 10 microns and larger, but also contained smaller particles in the 2.5 to 10 micron range. The particles found in the residential samples attributable to facility releases appear to be from crushed clear glass that feeds the bead furnace and fines from the glass bead furnace cyclone. In addition to the glass spheres and fractured glass, some slag product was identified. Results of the analysis are available upon request.

Conclusion

The residential samples consisted primarily of large particle fragments from the Hillcrest facility. The facility release points for most of the particles found in the residential samples will be controlled through repair of leaking equipment, repairing and/or installing additional air pollution control devices and application of dust suppressant to the raw material piles and to the onsite roadways. DEC will continue to monitor the operations of this facility to ensure our particulate air pollution mitigation strategies are successful.

Enforcement Action

On June 20, 2012 DEC issued a Notice of Violation (NOV) to Hillcrest Industries. This NOV cited the facility for several violations including:

- Failure to obtain coverage under the Division of Water Multi-Sector General Storm Water Permit
- Excessive nuisance odors from the property that are adversely impacting the local community
- Operating a solid waste management facility without a permit
- Placing fill within 100 feet of a regulated wetland

On July 27, 2012, the Department issued a second NOV to Hillcrest Industries for excessive particulate emissions from the clear glass grinding, the grit (slag and colored glass) grinding, and glass bead furnace #1 processes. DEC's first priority has been to address the pile. DEC will proceed with an enforcement action against Hillcrest Industries once the pile has been

satisfactorily addressed. DEC officials have met with Hillcrest representatives to discuss agency and community concerns and are continuing to work with Hillcrest to address concerns identified.

Who to Contact

Comments and questions are always welcome and should be directed as follows:

Project Related Questions:

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Air Sampling Locations



Dust Sampling Locations



Site Location

