

Georgia Department of Natural Resources

Environmental Protection Division

2 Martin Luther King, Jr. Dr., S.E., Suite 1054 East, Atlanta, Georgia 30334

Richard E. Dunn, Director

Land Protection Branch

Phone: 404/657-8600 FAX: 404/657-0807

August 23, 2016

Carpenter Technology Corporation
c/o Mr. Sean McGowan
Manager, Environmental Affairs
P.O. Box 14662
Reading, Pennsylvania 19612-4662

VIA FIRST CLASS MAIL AND EMAIL

Re: EPD Comments on VRP Semiannual Reports 2, 3, and 4
General Time Corporation, HSI Site Number 10355
Athens, Georgia; Clarke County

Dear Mr. McGowan:

The Georgia Environmental Protection Division (EPD) is in receipt of Voluntary Remediation Program (VRP) semiannual reports 2, 3, and 4 from Carpenter Technology Corporation (Carpenter) for the General Time facility, HSI site number 10355. These documents were submitted pursuant to the Georgia Voluntary Remediation Program Act (the Act). Our comments are provided below.

- 1) The historical analytical data table presented in Appendix C of VRP Semiannual Report 3 included no data more recent than 2011. The table should be included in and updated in every VRP semiannual report. The table should be as comprehensive as possible, including all analytes, all sampled wells, and all historical sampling events from the present back to at least the year 2000. EPD previously requested comprehensive historical analytical data in Comment 5 of our February 8, 2013, Supplemental Comments to Notice of Incomplete VRP Application, and, prior to the site's acceptance into the VRP program, in Comment 14 of our November 1, 2011, comment letter on three semiannual reports. Failure to provide the historical analytical data tables as requested may necessitate a meeting to discuss the issue.
- 2) Due to the areal extent of groundwater contamination on site, along with an associated need to track plume migration and remedial progress, EPD believes that an annual groundwater monitoring program is insufficient. Accordingly:
 - a. As stated in Comment 4 of our April 16, 2014, Supplemental Comments On Revised VRP Application, and in Comment 1 of our May 7, 2015, Comments on VRP Semiannual Report 1, a semiannual monitoring program on site, of both groundwater and surface water, is required and should be implemented immediately.
 - b. Sampling points for the semiannual monitoring program should include select wells and at least two surface-water locations. One of the surface-water sampling locations should be downgradient of and as close as possible to the MW-11 well cluster.
 - c. EPD would like to be present during the next monitoring event so as to observe surface-water sampling. Please contact us prior to that time so we can arrange for a representative to be on site.
- 3) EPD remains concerned that the groundwater-surface water transitional zone, the riparian zone, and surface water in the vicinity of the MW-11 well cluster may have been impacted by TCE

concentrations in groundwater. The MW-11 wells are located in a possible wetland, which heightens EPD concerns regarding the dissolved TCE plume in that area. Accordingly, as we previously requested in our May 7, 2015, comment letter, please propose an ecological assessment for that portion of the site, including sediment sampling. For the site to eventually be delisted under the VRP, the ecological assessment and any associated remediation must be conducted within the time frame allotted for completion of all VRP activities.

- 4) EPD notes that although Semiannual Report 2 specified map coordinates for the MW-11 well cluster, additional information we requested in our May 7, 2015, comment letter was not provided. At a minimum, please provide the margin of error associated with the GPS unit.
- 5) Based upon outputs from the Johnson & Ettinger model, EPD agrees that the risk of harmful TCE vapor intrusion into buildings downgradient of the former General Time facility is minimal. We note that the non-carcinogenic results of our model run differed from the non-carcinogenic results presented in Attachment C of Semiannual Report 2, even though our non-carcinogenic data inputs were identical to those presented in Attachment C. Additionally, EPD replaced the specified Target Risk for Carcinogens of 1×10^{-6} with 1×10^{-5} , which is the carcinogenic risk factor specified in the HSRA Rules. EPD calculated the indoor exposure, risk-based carcinogenic groundwater concentration for TCE as being 2.73×10^4 ug/L, and the indoor exposure, risk-based non-carcinogenic groundwater concentration for TCE as being 7.98×10^3 ug/L. Historical groundwater TCE concentrations downgradient of the General Time property have been considerably less than the final indoor exposure risk concentration of 7.98×10^3 ug/L.
- 6) As stated in Comment 6b of our April 16, 2014, Supplemental Comments letter, no vapor intrusion evaluation of the former General Time manufacturing building will be necessary as long as the building remains unoccupied. However, if the building is not evaluated for potential vapor intrusion, a covenant restricting future use of the building will be required prior to removing the site from the VRP and HSI.
- 7) Regarding the proposed groundwater risk reduction standard (RRS) values provided in Table 2 of VRP Semiannual Report 2, please resubmit those values and provide accompanying calculations in VRP Semiannual Report 5, which is due on October 16, 2016. Refer to Comments 1, 2, and 3 in EPD's April 16, 2014, Supplemental Comments letter. The EPD Risk Assessment Unit will not review proposed RRS values unless calculations are submitted concurrently.
- 8) No reduction in the number of laboratory analytes, nor any other changes to the groundwater-monitoring program, should be instituted without prior approval from EPD. Accordingly, after reviewing historical analytical data, EPD recommends that groundwater be laboratory-analyzed semiannually for the following volatile organic compounds: 1,1-DCA, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, methylene chloride 1,1,2-TCA, TCE, and vinyl chloride (changes from the September 2015 sampling event include the addition of 1,1-DCE).
- 9) The low flow sampling forms in Appendix B of VRP Semiannual Report 3 indicate that the following wells were improperly purged prior to sampling: MW-2I, MW-2D, MW3I, MW-6I, MW-9I, MW-9D, RW-3, and RW-4. In each of those wells, the pump intake was positioned above the top of the well screen, at a point relatively high up in the water column. When using the low-flow purging method, the pump intake must be positioned at or near the midpoint of the screened interval. Otherwise, stagnant well water, instead of formation water, may be drawn into the pump intake. In relatively deep wells, where the desired pumping depth is below the

peristaltic pump limit of suction, use of an alternate pump, such as an electric submersible pump or a bladder pump, will be necessary if the low-flow purging method is to be used.

EPD notes that when using the low-flow purging method prior to groundwater sampling, also known as the low-flow/low-volume, tubing-in-screened-interval, or micro-purge method, a traditional multi-volume purge is not required. A groundwater sample may be obtained from a well after the groundwater chemical parameter stabilization criteria are met. When using the low-flow method, the pump intake should be placed at the approximate midpoint of the well screen, and water-column drawdown should be kept to a minimum (preferably less than 0.1 meter). The pumping rate should be kept slow, usually less than 0.5 liter per minute, to ensure that groundwater is being drawn through the well screen instead of from the top of the water column. The pumping rate and amount of drawdown should be recorded on the groundwater sampling field log at regular intervals.

Please ensure that each well is properly purged prior to sampling, in accordance with USEPA Region 4 groundwater sampling operating procedures (OPs), "Procedure SESDPROC-301-R3, Groundwater Sampling," effective March 6, 2013. Otherwise, laboratory analytical results may be disallowed by EPD. The OPs can be accessed on the Internet at <https://www.epa.gov/quality/quality-system-and-technical-procedures-sesd-field-branches>.

- 10) The low-flow sampling forms for MW-11S, MW-11I, and MW-11D were incomplete. All groundwater-sampling field logs, when sampling is conducted with a bailer, should include, at a minimum, the type of bailer used, the depth to water, height of the initial water column in the well, depths to top and bottom of the screened interval, total volume purged, stabilization parameters, and time of groundwater sampling.
- 11) Please locate the former General Time property correctly on site location maps. In Semiannual Reports 3 and 4, the site is incorrectly depicted as being about 1,100 feet east of the former General Time property on Figure 1.

Carpenter Technology Corporation must address these comments to EPD's satisfaction in order to demonstrate compliance with the provisions, purposes, standards, and policies of the Act. EPD may, at its sole discretion, review and comment on documents submitted by Carpenter Technology Corporation. However, failure of EPD to respond to a submittal within any timeframe does not relieve Carpenter Technology Corporation from complying with the provisions, purposes, standards, and policies of the Act.

If you have any questions, please contact Allan Nix of the Response and Remediation Program at (404)657-8600.

Sincerely,



David Brownlee
Unit Coordinator
Response and Remediation Program

c: Mark Miesfeldt, Haley & Aldrich (via email)