hart hickman
SMARTER ENVIRONMENTAL SOLUTIONS

April 6, 2017

Southern Environmental Law Center
601 West Rosemary St
Ste. 220
Chapel Hill, NC 27516

Attn: Mr. Nick Torrey

Re: Response to SELC Comments
Phase II Remedial Investigation Report
Police Department Property
828 Martin Luther King, Jr. Blvd.
Chapel Hill, NC
H&H Job No. TCH-002

Dear Mr. Torrey:

At the request of the Town of Chapel Hill, we have prepared this letter to address comments dated March 13, 2017, from the Southern Environmental Law Center (SELC) on the Phase II Remedial Investigation (RI) Report prepared by Hart & Hickman, PC (H&H) for the Town of Chapel Hill Police Department site. For ease of reference, the SELC comments are provided below followed by our response.

Comment 1:
There is a coal ash cliff over 40 feet high that is eroding coal ash and toxic pollutants down to the public greenway. All of this ash must be removed for the long-term health and safety of the public and the Bolin Creek ecosystem.

Response:
The results of the Phase I and II RI have adequately defined the nature and extent of potential impacts associated with the previous placement of coal combustion products (CCPs) at the site for structural fill. The next step in the process will be the preparation of a Remedial Action Plan (RAP). The RAP will include an evaluation of several remedial alternatives and the selected alternative will be protective of the long-term health and safety of the public and the Bolin Creek ecosystem.

Comment 2:
The coal ash pollution is contaminating soil along the greenway, groundwater, and Bolin Creek:

- Soil: the soil along the greenway contains elevated levels of coal ash pollutants. In the last round of sampling, arsenic of over five times the residential health based soil level was found on the south side of the greenway, contrary to the statement on page 34 of the report that there were no impacts in this location.

Response:
In the sampling conducted on the south side of the Bolin Creek trail as part of the Phase II RI, arsenic was detected at 3.6 mg/kg which is consistent with the arsenic concentrations detected in the site background samples which ranged from 1.4 mg/kg to 2.3 mg/kg. In addition, regional background levels for arsenic reported in the literature are in the range of 1 to 18 mg/kg. The DEQ residential soil screening level is 0.68 mg/kg which is less than the site and regional background levels. In most areas of North Carolina, arsenic is detected in soil samples above the residential soil screening level because it is a common naturally occurring metal. For this reason, DEQ does not require remediation of soil to below background levels. In addition, DEQ screening levels are used to screen soil data to determine if additional assessment needs to be performed and are not typically used as "cleanup" levels or an indicator by themselves of a health concern. As noted in the Phase II Remedial Investigation Report, a health risk evaluation performed by DEQ, which was based upon data collected on both the north and south sides of the Bolin Creek Trail, indicated that the risk of adverse health effects to park visitors and construction workers is below the US EPA and DEQ acceptable levels.

- **Groundwater**: high levels of many coal ash pollutants have been found in the groundwater at the site for years, and this study confirms the groundwater contamination remains significant. The groundwater at the site flows into Bolin Creek.

Response:
The data collected as part of the Phase II RI does confirm that there are groundwater impacts associated with the CCPs and that groundwater flows toward Bolin Creek. However, concentrations of compounds decrease rapidly downgradient and geochemical conditions at the site are such that they generally limit the mobility of metals in groundwater. The furthest downgradient well MW-4A did not contain compound concentrations above background or the North Carolina groundwater standards as part of the Phase II RI.

- **Bolin Creek**: the coal ash site is contaminating Bolin Creek. Manganese levels are two to three times higher downstream from the site than upstream. In addition, elevated levels of manganese, cobalt, and barium were found in the downstream sediments of the creek.

Response:
The results of the Phase II RI indicated that manganese concentrations in Bolin Creek near the site (24 µg/l to 34 µg/l) were slightly higher than those detected in the background sample (up to 11 µg/l). However, the detected concentrations were less than the EPA Region 4 surface water screening value of 93 µg/l (there is no North Carolina surface water standard for manganese). With regard to sediment, the concentrations of metals detected in sediment samples near the site (including manganese, cobalt, and barium) were consistent with the site background sediment samples and/or site background soil samples. As such, we concluded that there is not a significant impact to surface water or sediment in Bolin Creek from the CCPs.

Comment 3:
There is also a serious discrepancy in the report. The report claims the coal ash is separated from the groundwater. For example, figure 5 of the report shows a thin layer of ash at monitoring well MW-1 that is some 20 feet above the groundwater. However, the original well drilling log for MW-1 shows that the coal ash extends down ten feet *below* the water table, and that the layer of coal ash is 31 feet thick. *See* 2013 Well Construction Record, attached. This directly contradicts what is shown in the current report (fig. 5 is attached for reference). The Town must determine the true depth of the coal ash relative to the groundwater in order to understand the risks from ongoing pollution in this location.

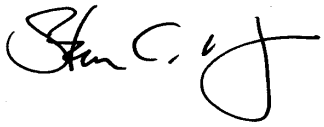
Response:
The 2013 Well Construction Record is prepared by a driller and is not a geologist's or engineer's boring log. Although the driller's Well Construction Record is generally considered accurate with regard to well construction details (which is the purpose of the record), the log of the soil and rock materials encountered is generally not considered accurate for use in environmental investigations, particularly where the work is overseen by a geologist or engineer, as is the case with the Phase I and II RI activities. The depth to and thickness of the CCPs at the site, including boring MW-1, was estimated from Table 5 of the March 25, 2014 Falcon Engineering Environmental Site Characterization Report, which is attached to this letter, and borings advanced by H&H as part of the Phase II RI. The closest boring to MW-1 is GP-1 which contained CCPs at depths of 9-12 ft (3 ft thick) (see Table 5). Other borings in the vicinity of MW-1 include GP-2, GP-3, and GP-5 which contained CCPs at depths ranging from 5-30 ft, 10-16 ft, and 4-8 ft, respectively (see Table 5). As indicated in Table 5 attached, the thickness of CCPs in the borings which encountered CCPs in the elevated portions of the site ranged from 3 to 25 ft with an

approximate average of 8 ft. Therefore, the depth and thickness of CCPs reported in the driller's Well Construction Record for MW-1 is not consistent with the data provided by Falcon Engineering's geologists and engineers, which we consider to be more reliable and accurate. Depth to water in MW-1 is approximately 35 ft below ground surface and the deepest that CCPs were reported by Falcon Engineering is 30 ft, with most CCPs present at depths less than 16 ft below ground surface. Therefore, as noted in our Phase II RI Report, we conclude that CCPs are not present below the water table.

We appreciate your interest in this project.

Very truly yours,

Hart & Hickman, PC



Steven C. Hart, PG
Principal Hydrogeologist

cc: Lance Norris – Town of Chapel Hill
Wendy Simmons – Town of Chapel Hill
Amy Axon- NC DEQ

TABLE 5 | SUMMARY OF GEOPROBE COLLECTED DATA

Geoprobe Location ID	Final Boring Depth (ft bgs)	Depths Ash Present (ft bgs)	Soil Sampling Depth (ft bgs)	Notes
GP-1	14	9 - 12	8 - 12	Refusal at 14 ft bgs into weathered rock
GP-2	35	5 - 30	26 - 28	Refusal at 35 ft bgs
GP-3	17	10 - 16	10 - 12	Refusal at 17 ft bgs due to possible landfill debris
GP-4	20	3 - 16	10 - 12	Into native soils at 17 ft bgs
GP-5-A	8	4 - 8	No Samples	Refusal from wood debris at 8 ft bgs
GP-5	12	4 - 8	Sampled 4 - 6	Refusal at 12 ft bgs
GP-6	26	11 - 23	9 - 11	Into native soils at 24 ft bgs
GP-7	20	3 - 14	10 - 12	Into native soils at 16 ft bgs
GP-8	17	5 - 15	11 - 15	Into native soils at 16 ft bgs
GP-9	8	-	No Samples	Into native soils at 4 ft bgs / No ash observed
GP-10	8	-	No Samples	Into native soils at 1 ft bgs / No ash observed
GP-11	9	3 - 9	4 - 6	Refusal at 9 ft bgs
GP-12	12	2 - 10	2 - 4	Into native soils at 11 ft bgs