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Memorandum

Date: 21 August 2018

To: Scott Miller
U.S. Environmental Protection Agency Region 4

From: Steven Poirier, P.E., Geosyntec Consultants

Subject: Response to comments (RTC) on the Cabot Carbon Superfund Site 50% Remedial Design Report.
Gainesville, Florida

The following are responses to comments received from the U.S. Environmental Protection Agency (US EPA) and stakeholders on the Cabot Carbon Superfund Site 50% Remedial Design Report, dated 6 July 2018. These responses pertain specifically to design-related comments received. Other non-design-related comments have been reviewed, are acknowledged, and can be discussed further upon request.

US EPA Comments received in letter format, dated 24 July 2018

US EPA Comment No. 1 - Section 2.9 and Appendix A-4 (Mix Design Test Results): *On the table on the second page of Appendix A-4, it is noted for all samples where groundwater was used to prepare the bentonite slurry mixes that suds formed during slurry mixing and a layer of foam was present on the top of the sample for at least a day. There was no mention of this in the report text. Please include a discussion of the full mix design findings in the 100% Remedial Design. While hydrant water can certainly be used during installation of the barrier wall to avoid this foaming, will the presence of groundwater in the saturated soils that will be mixed with the slurry cause similar foaming in the barrier wall trench? Has Geosyntec completed any testing to date that attempts to model this? Have any negative impacts to the bentonite slurry consistency, permeability, or strength over the longer term due to the foaming been observed?*

Response: Foam was observed frequently in purge water from groundwater investigation and sampling activities performed during the predesign investigation. Groundwater will not be used for mixing the slurry for the trench (it will likely be hydrant water), but some groundwater will be part of the soil-bentonite backfill mix since the soil will be excavated from below water table. Similar foaming of groundwater may occur during construction. The mix design testing procedures are purposed to evaluate the impacts of the contaminated groundwater on the selected mix. The final results and outcomes (i.e., impacts on permeability, etc.) will be available and discussed in the 100% Remedial Design (RD) report. Laboratory test results have shown that temporary foaming did not effect the ability of the soil-bentonite mixtures to achieve the target hydraulic conductivity.

US EPA Comment No. 2 - Section 3.2.2 (Design Assumptions for the Low Permeability Cap System): *Design assumption #4 indicates that it is assumed that post-construction traffic on the cap will be limited to pickup truck-sized vehicles. As it is not clear in the 50% design documents, at what stage will the groundwater treatment system be installed? Will this be prior to completion of the final cover or after the final cover is placed? It is assumed that several vehicles larger than a pickup truck will be required to install the wells and other equipment on the capped area. Please confirm that this will not be an issue with the stability of the cap. Additionally, will there be a constructed driveway onto the upper portion of the cap? If so, Black & Veatch suggests that the location where traffic is expected to cross over the barrier wall be reinforced to ensure that the top of the barrier wall is not damaged.*

Response: The assumption of post-construction vehicle size is due to protection of the geosynthetic cap as well as the extraction system. Larger construction equipment will likely be used to construct the remedy, including placing the soil layers above the geosynthetics. Specifications for protection of the extraction system and geosynthetics during construction are standard practice and will be included with the 100% design. The general sequence of construction is presented on Drawing No. 2 provided in Appendix B of the 50% RD Report. The groundwater extraction system, specifically the extraction and monitoring wells, can be coordinated such that installation occurs prior to placement of cover system geosynthetics. The selected contractor will have input on the specific construction sequence, but will be required to protect their work during construction.

US EPA Comment No. 3 - Section 3.3.4.2 (Water Quality of the Proposed Strom Water Management Pond): *In the third paragraph of this section, an emergency overflow weir is mentioned. Please provide additional information on the location and structure of this device.*

Response: The emergency overflow weir is a component of the pond control structure, as detailed on sheet 12 of 20 on the 50% drawings. The pond control structure receives stormwater from the pond from three separate control devices, including (1) a four-inch perforated bleed down PVC pipe that drains the pond at elevation 172.0 feet NAVD88, (2) a 1-ft wide by 3.5-ft tall water quality weir notch at invert elevation 174.0 feet NAVD88, and (3) the 37-inch wide by 49-inch long top grate "emergency discharge weir" at invert elevation 178.2. The "emergency discharge weir" is set at an appropriate elevation to attenuate stormwater volume in the pond associated with the design storm event and to release stormwater downstream under a more severe storm event condition. Refer to the stormwater calculations located in the Appendices for additional detail.

US EPA Comment No. 4 - Appendix B, Sheet 11 of 20 (Surface Water Management Plan Drawing): *The pipe and structure that provides inflow to the storm water pond indicates that the invert elevation of the pipe entering the pond is at 167.3 feet above mean sea level (amsl) and has a rim elevation of 173.0 feet amsl. Additionally, the invert elevations of the inlets along NE 1st Boulevard are 168.8 feet amsl and 168.0 feet amsl. The bottom of the constructed storm water pond, however, is shown on Sheet 9 as 173 feet amsl. Please provide further detail on how the* *storm water will flow into the pond as it is not clear how a 48-inch pipe with an invert elevation of 167.3 feet amsl will enter the storm water pond. As shown, it appears that storm water will back up in the inlet manholes to within 1.5 feet of the manhole rim before the pond begins to fill from the pipe.*

Response: The inlet structure to the pond is intended to be a bubble-up structure, similar to the existing pond, where stormwater will flow up into the pond. The associated inflow pipe will therefore be surcharged, as is the existing condition of the inflow pipe to the existing stormwater pond. An additional detail regarding the proposed bubble up structure will be included in the 100% RD Report Drawings. Note that the vertical coordinate datum is the North American Vertical Datum of 1988 (NAVD88), which exists at a slightly different elevation than mean sea level (MSL).

US EPA Comment No. 5 - Appendix B, Sheet 12 of 20 (Surface Water Management Details): *Please explain what the details shown in Detail 2 represent. The information shown does not seem to match up to what is shown on the other drawings. For instance, there are no 30-inch pipes shown on Sheet 11 that would match the first detail and there are no inlet or outlet pipes with an invert elevation of 172.0 feet amsl that match the pipe shown on the second detail.*

Response: Detail 2 on Sheet 12 of the 50% RD Report Drawings represents the pond control structure, which will control and temporarily detain the stormwater within the pond. The 30-inch pipe represents the discharge pipe from the pond control structure. Drawing No. 11 will be updated in the 100% RD Report Drawings to reflect a 30-inch pipe consistent with Detail 2 and the stormwater calculations Appendix.

US EPA Comment No. 6 - General: *We have reviewed the submitted RD with respect to expanding the footprint of the barrier wall to encompass the remainder of the western lagoon. The barrier wall footprint as shown on the design drawings will enclose the two borings in the western lagoon where significant groundwater contamination was observed, namely SB-1/WS-1 and SB-2/WS-2. The RD report also indicates that approximately the top 9 feet of soils beneath the planned storm water pond will be excavated during construction of the pond. According to the conceptual site model (CSM) developed for the Cabot portion of the site, the potential for residual pine tar non-aqueous phase liquid (NAPL) is generally limited to the top 10 feet of soils in the former lagoon footprint so most of the potential remaining source soils will be excavated and disposed of appropriately during pond construction. No NAPL was observed in borings SB-1/WS-1 and SB-2/WS-2. In addition to the mitigating effect of the soil removal, the groundwater extraction and treatment system proposed downgradient of the barrier wall should sufficiently address any remaining groundwater contamination in the Upper Hawthorn that remains beyond the extent of the barrier wall. It is EPA's position that the alignment of the barrier wall as proposed by Geosyntec is sufficiently protective.*

Response: Acknowledged.

Gainesville Regional Utility (GRU) Comments received in Microsoft Word document, dated 23 July 2018.

GRU Comment No. 1 - *This plan provides information regarding the remedial option selected to address contamination in the HG from the former Cabot lagoons. It specifically addresses the containment cell and low-permeability cap, the associated groundwater extraction system, and relocation of the stormwater pond that is necessitated by the containment remedial alternative. Cabot should make clear how this plan (Hawthorn remedy) will be integrated into the larger plan that will address treatment of sources outside the vertical barrier wall, long-term monitoring of downgradient water quality, surficial aquifer remediation optimization, etc.*

Response: Acknowledged, but not applicable to the 100% RD. However, the 100% RD report will include an Operations, Maintenance and Monitoring Plan, which will specify groundwater quality sampling locations, consisting of both existing and proposed monitoring wells. Groundwater quality data from these locations after the proposed remedy has been installed, together with prior data, including those collected during the Surficial Aquifer Remedy Optimization investigation, will be used to determine if any additional actions are needed.

GRU Comment No. 2 - *During the monthly EPA/Cabot/Koppers conference call held on July 20, 2018, Cabot mentioned that future groundwater monitoring locations would be discussed at a meeting between Cabot and their contractors sometime the week of July 23. GRU and FDEP have had some discussions on the topic. GRU would like to be involved in the discussion and we are confident FDEP would as well.*

Response: Discussions and determinations on monitoring locations will be presented within the Operations, Maintenance and Monitoring Plan that will be included in the 100% RD.

GRU Comment No. 3 - GRU has requested that Cabot model the impact to groundwater flow of the Cabot and Koppers barrier walls (i.e. particle track modeling to define path lines and travel times) so the locations monitoring wells can be optimized.

Response: Acknowledged, but not applicable to the 100% RD.

GRU Comment No. 4 - *Cabot and Geosyntec should coordinate with the St. John's River Water Management District and the City of Gainesville regarding details of the stormwater management system – in particular the level of treatment required before discharge from the pond and how the system will operate in conjunction with weirs that may be, or may be replaced, in the City's discharge pipe.*

Response: The project team has had calls and a site meeting with representatives from SJRWMPD and Gainesville and has additional calls planned regarding the stormwater management system during preparation of the 100% RD.

GRU Comment No. 5 - Section 2.7 – Site Stratigraphy, Bullet #3: *The UHG Clay is absent at some locations in the area of the proposed containment cell. This may influence groundwater extraction (less recovery from the Surficial aquifer and more from the Upper Hawthorn?).*

Response: Pumping will occur in the Surficial Aquifer (SA) and Upper Hawthorn Group (UHG) to address the potential discontinuity of the UHG Clay. Over time, the SA is expected to pump dry and heads in the UHG are expected to drop below the base of the SA/UHG Clay.

GRU Comment No. 6 - Section 2.7 – Site Stratigraphy, Bullet #5: *Has the vertical and horizontal permeability of the MHG Clay been documented in the area within the footprint of the proposed VBW? The MHG clay that was penetrated by some of the Cabot VBW borings appears to be coarser – and to contain more sandy layers – than the MHG clay observed at the Koppers Site. How might these sandy lenses affect performance of the remedy and how would that performance be monitored?*

Response: Cabot appreciates the observations about the composition of the middle clay at the Site. The hydraulic conductivity of the middle clay was not tested during the pre-design investigation. However, based on the material observed during the drilling program, the Cabot team does not expect sand content or layers in the middle clay layer (referenced in your comment as the "MHG clay") to impact the design for several reasons:

- The hydraulic conductivity of a soil is generally insensitive to the percentage of fine-grained material when the fines content (i.e., mass fraction passing the No. 200 sieve) is greater than about 15%. An example of this is shown in the figure below from Benson and Trast (1995)[1]. Samples of the middle clay from the pre-design testing had 58% to 98% fines.
- Historical data indicate that middle clay has an average thickness of about 15 feet and a horizontal hydraulic conductivity of 0.0029 ft/day to 0.0033 ft/day (1.2×10^{-6} cm/s) for soil samples collected at boring SB12-65-70 at depths of 65.3 ft and 68.4 ft, respectively (SRI/FFS Report, Gradient 2017). The vertical hydraulic conductivity of the middle clay is likely lower. Therefore, based on experience with vertical barrier wall design and construction, the middle clay layer is a suitable unit with a low hydraulic conductivity.
- Pumping within the VBW is included as a component of the remedy to limit groundwater migration through the middle clay, both horizontally and vertically.

[1] Benson, C. and Trast, J (1995). Hydraulic Conductivity of Thirteen Clays. Clays and Clay Minerology, Vol. 43, No. 6.

Vol. 43, No. 6, 1995 Hydraulic conductivity of thirteen compacted clays 679

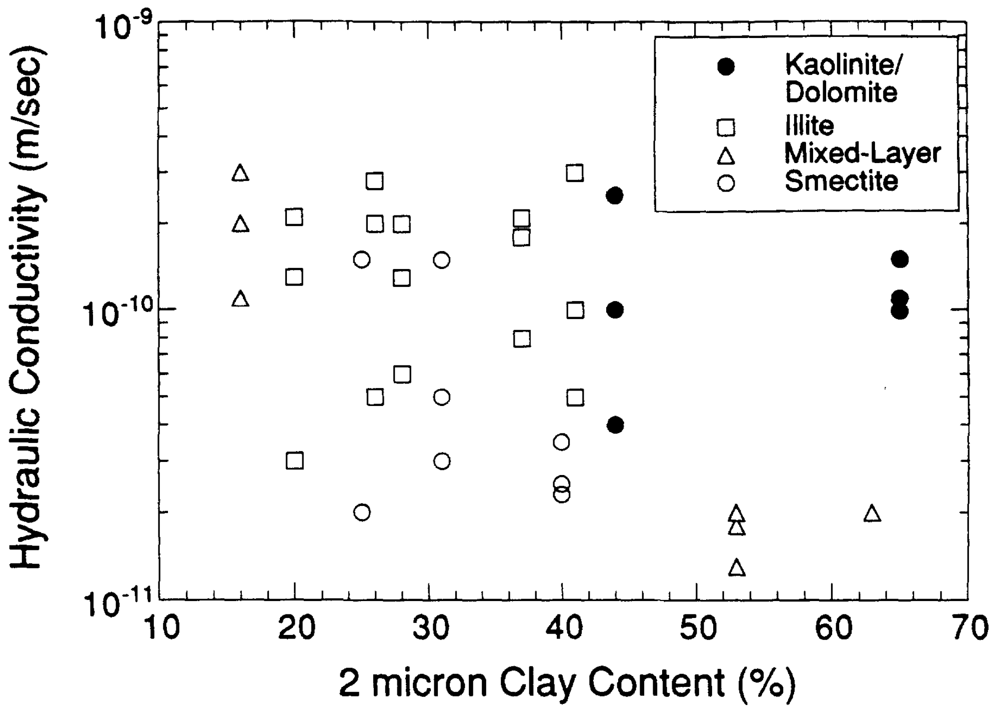

Figure 8. Hydraulic conductivity vs. 2 μm clay content.

GRU Comment No. 7 - **Section 3.1.3; Paragraph #2**: *We are not sure what this sentence means: "Because of the high plasticity fine-grained content, the minimum embedment depth will be 3 feet into the Middle Clay layer as presented on Drawings No. 5 through 7 in Appendix B."*

Response: This sentence will be reworded in the 100% Design Report for clarity ("Because of the high plasticity fine-grained content" will be deleted).

GRU Comment No. 8: *Recall that one of the main goals of the containment remedy is to provide physical containment of the contaminant source areas and concentrated portions of the groundwater contaminant plume. Sample WS-1, located in the center of the western-most Cabot Lagoon, exhibited second-highest concentration of 3&4 methylphenol of all samples reported to date from the Cabot Site. The WS-1 location is near the area that exhibited the very worst odor problem during EPA's initial round of sampling with very strong odors being observed several hundred feet away the day after EPA collected samples in the area.*

The existing data indicate that the western barrier wall should be moved to the west - to include more area around WS-1 because the WS-1 sample location appears to fall on – or very near – the proposed barrier wall and that location is clearly within the high-concentration part of the plume.

GRU suggests that Cabot fully characterize the extent of the contamination identified at the WS-1 location so the extent of any change to the barrier wall alignment or other remedial activities that could be conducted can be properly evaluated. GRU understands that the area west of WS-1 is within the footprint of the proposed stormwater pond.

Response: The western boundary of the slurry wall, as proposed in the 50% RD report, is clearly aligned to the west of samples WS-1 and WS-2 such that the slurry wall footprint in the western lagoon will contain the contaminated groundwater detected at the two locations. There is no further need to delineate the western extent of contamination in this area given that no visual evidence of contamination was observed at borings VBW-02 and VBW-03, which were advanced along the proposed edge of the slurry wall (*i.e.*, to the west of WS-1 and WS-2) during the PDI. The findings for the two VBW borings were shared with USEPA and stakeholders during the PDI and it was agreed that no step out borings or additional delineation efforts were needed in the western lagoon.

As presented in the 50% RD report, the vadose zone soils to the west of the slurry wall footprint will be excavated prior to the construction of the stormwater pond. To the extent that residual tar and impacted soils are encountered, they will be removed during the excavation effort.

Overall, the combination of the proposed slurry wall footprint, which is expected to contain any residual source material and impacted groundwater in the western lagoon, and the proposed excavation of vadose zone soils to the west of the slurry wall ensures that the proposed remedial approach is protective in this area and meets the remedial action objectives. This conclusion is consistent with USEPA's conclusion (comment 6 above) "that the alignment of the barrier wall as proposed by Geosyntec is sufficiently protective."

GRU Comment No. 9: *If it is determined that the barrier wall cannot be moved west, then Cabot should, after fully delineating the contamination documented by WS-1, propose a remedy for that contamination. Any remedy west of WS-1 (extraction wells for instance) would be within the footprint of the stormwater pond. Alternatively, Cabot could excavate all soil exhibiting visual evidence of contamination or especially strong odors – even if they extend beyond the intended extent of the proposed stormwater pond. We understand that contaminated material excavated from the site will be deposited inside the containment cell and capped.*

Response: The western boundary of the slurry wall, as proposed in the 50% RD report, is aligned to the west of sample locations WS-1 and WS-2 such that the slurry wall footprint in the western lagoon will contain these two locations. There is no further need to delineate the western extent of contamination in this area given that no visual evidence of contamination was observed at borings VBW-02 and VBW-03, which were advanced along the proposed edge of the slurry wall (i.e., to the west of WS-1 and WS-2) during the PDI. The findings for the two VBW borings were shared with USEPA and stakeholders during the PDI and it was agreed that no step out borings or additional delineation efforts would be performed in the western lagoon.

As presented in the 50% RD report, most vadose zone soils to the west of the slurry wall footprint will be excavated during construction of the stormwater pond. To the extent that residual tar and impacted soils are encountered, they will be removed during the excavation effort. If mobile NAPL is encountered during the excavation, an attempt will be made to extend the excavation to delineate and remove mobile NAPL. However, based on prior investigations conducted in the western lagoon, including at borings WS-1, WS-2, VBW-02, VBW-03, and EPA boring CCS05, no visual observations of mobile NAPL have been reported.

Overall, the combination of the proposed slurry wall footprint, which is expected to contain residual source material and impacted groundwater in the western lagoon, and the proposed excavation of vadose zone soils to the west of the slurry wall make the proposed remedial action protective in this area and meets the remedial action objectives. This conclusion is consistent with USEPA's position "that the alignment of the barrier wall as proposed by Geosyntec is sufficiently protective" presented in USEPA Comment No. 6 above.

GRU Comment No. 10 - Section 3.1.3, page 14-GRU believes the "mix-in-place (aka continuous trenching) method of VBW construction –will allow better control of the soil-bentonite mix and placement of the slurry than the traditional “trench and backfill” method of construction.

Response: Multiple established VBW construction methods are available. Installation methods will be selected by the contractor.

GRU Comment No. 11 - Section 3.2.2 – Bullet #4: *The document states “Post-construction traffic will be limited to pickup truck-sized vehicles”. GRU believes the cap should be designed, constructed, and maintained such that it can accommodate vehicles required for maintenance of the groundwater extraction wells without damaging the protective cover.*

Response: Vehicle use on the cap, such as for maintenance of wells, will be discussed in the Operations, Maintenance and Monitoring (OM&M) Plan that will be included with the 100% Design Report. See also response to US EPA Comment No. 2 above.

GRU Comment No. 12 - Section 3.1.3, p. 23: *It would be helpful to calculate the number of pore volumes of groundwater that would be removed annually by the extraction wells from the SA and the UHG within the VBW enclosure to allow preliminary estimates of the time frame for concentration reductions within the VBW enclosure.*

Response: A pore-flushing model is not recommended for predicting clean-up times at sites with NAPL. Also, the pore-volume flushing calculation proposed by GRU assumes that pore volumes removed by pumping will be replaced by groundwater flowing into the contained area. Flow of groundwater into the contained area that will cause flushing is not expected due to construction of the VBW and cap.

GRU Comment No. 13 - Section 4.3.2, p. 25: *The capture calculations for the extraction wells downgradient of the VBW enclosure do not appear to account for the presence of the VBW. How would the VBW located to the south affect the west-east capture width?*

Response: The VBW represents a partial no-flow boundary south of extraction wells which will increase capture. Hence, the calculations present a conservative (i.e., smaller than what is anticipated) estimate of capture. This is noted in calculation package C-5.

GRU Comment No. 14 - p. 26, Section 4.3.4, 4th line: *Should the reference to Drawing 3 actually be to Drawing 13?*

Response: Monitoring wells to be preserved and abandoned are shown on Drawing No. 3 and No. 13.

GRU Comment No. 15 - p. 26: *The following two questions may be more appropriately asked at the 95% design stage but GRU wants to be sure these items are addressed in the final design – so we are asking them now.*

a) How many additional new monitoring wells will be installed within the VBW enclosure to monitor groundwater elevations and groundwater quality?

b) How will the performance of the groundwater extraction system downgradient of the VBW enclosure be monitored? Perhaps by additional monitoring wells and transducers at the margins of the expected capture zone and wells downgradient to monitor water quality?

Response (to a and b): The OM&M is still being developed and will be provided with the 100% RD. The OM&M will include monitoring requirements. The Cabot team is currently considering additional monitoring wells within and outside of the VBW.

GRU Comment No. 16 - Appendix C-5, Section2.4, pg. 10 of 12: *Is it reasonable to believe that 3 wells pumping at 0.5 gpm-each will establish a 450 ft wide barrier in the UHG? How will the pronounced heterogeneity of the UGH affect the capture? How will performance of the extraction system be monitored/evaluated? Please demonstrate that the proposed spacing of extraction wells will ensure capture at the base of the UHG/top of the MHG clay. One or more clusters of piezometers positioned between the extraction wells – each with short screens spanning the UHG – should be considered.*

Response: See calculation C-5 for the analysis used to select well spacing and pumping rates as well as conservatism incorporated into the design. As described in the response to GRU's Comment No. 13, the estimated groundwater capture is expected to be conservative. See response to GRU's Comment No. 18 regarding the portion of this question about heterogeneity. While a capture zone analysis was used to facilitate the design of the groundwater extraction system, the objective of the groundwater extraction system downgradient of the VBW is the removal of contaminant mass from the UHG through the extraction of groundwater.

GRU Comment No. 17 - Appendix C-6 - Calculations for Extraction Wells Inside the Vertical Barrier Wall: *Section 2 (Approach) begins by stating: "The analysis used for this calculation incorporates the following simplifying assumptions.*

- *No significant flows occur across the VBW where it intersects the upper clay.*

The upper clay is relatively thin and its permeability is significantly less than the permeability's of the Surficial Aquifer and UHG, so flow in this small portion of the domain is minor compared to flows through the VBW across the Surficial Aquifer and UHG."

GRU understands that there will be essentially no flow across the VBW in the Surficial and the UHG. Please clarify.

Response: Flow across the VBW will be small but not zero (also, the design is intended to create an inward-flowing gradient). Calculation C-6 accounts for flow across the VBW when considering the rate of drawdown inside the VBW. The assumption stated above is intended to tell readers that flow across the VBW is predicted over intervals where the VBW passes through the surficial aquifer and UGH, but flow across the VBW is considered negligible where the barrier intersects the upper clay (because the upper clay is thinner and lower permeability than the adjacent surficial aquifer and UHG).

GRU Comment No. 18 - Appendix C-6 Section 2, second bullet: *The report states calculations of extraction well flow rates assume that "Hydraulic conductivities for each layer are homogeneous and isotropic." We know that is not the case but that assumption is probably less of an issue inside the slurry wall than outside.*

Response: It is understood that the aquifer has heterogeneities, but the calculation uses average hydraulic conductivity, and the design incorporates extraction wells with long screens and there are multiple extraction wells. These features limit the impact of heterogeneity.

GRU Comment No. 19 - Appendix C-6, Section 3, pg. 8 of 10: *GRU expects there will be flow from the Surficial aquifer to the UHG across the UHG clay - contrary to the simplifying assumption made in the calculations. What affect would flow across the UHG clay have on the extraction rate and the rated of drawdown from the UHG wells or to the dewatering rate/useful pumping life of the SA extraction wells?*

Response: The surficial aquifer is expected to dewater relatively quickly; the assumption of no vertical (downward) flow from the surficial aquifer to the UHG is expected to have negligible effect on the effectiveness of the remedy.

Also, what is the desired inward gradient across the VBW (to assure hydraulic control) and how long will it take to achieve that condition? Calculations presented in the 50% design document suggest 4 years to reach 15-ft of drawdown 10 years to reach 25 ft of drawdown. Is there a benefit to decreasing the time to achieve maximum / steady state drawdown – such as less downward gradient across the MHG clay?

Response: As soon as there is drawdown of the groundwater level inside the VBW relative to the groundwater level outside the VBW, there will be an inward hydraulic gradient across the VBW. This is expected to occur quickly (<1 year). As stated in calculation C-6, the pumping rates were selected to balance several design parameters. For example, quicker drawdown could be induced by pumping more water, but this would require a larger groundwater treatment system that would likely only be needed for a short time. Once there is drawdown within the barrier, pumping rates decrease so a system design for high initial flow will be oversized. The system is one of the design factors considered – other factors include the compressor; pump capability, type and number; air and water lines; number of wells reasonable for the system; etc.

GRU Comment No. 20 - Drawing No. 13/20: *The monitoring wells that Cabot proposes to retain/abandon are displayed on this drawing. GRU suggests that two or more pairs of surficial piezometers be installed inside/outside the barrier wall (four or more piezometers total) to verify the gradient across the VBW. Extraction wells could be used to monitor the water level near the center of containment cell after turning off the pump for a short time.*

Response: See response to GRU Comment No. 15.

GRU Comment No. 21 - Drawing No. 15/20: *Why does Cabot propose only 1 ft of sand above the extraction well screen? Two feet of sand above the screen is standard practice for construction of monitoring wells and GRU suggests at least that much for the proposed extraction wells.*

Response: The details will be updated to show the filter packs extending 2 ft above the extraction well screen.

GRU Comment No. 22: *We understand that the stormwater pond must be constructed and functioning before the start of slurry wall construction. We also understand that installation of the slurry wall requires approximately 30 ft of working space on each side of the wall's centerline. The top of the proposed pond is shown being less than 30 ft from the centerline of the slurry wall [see Appendix B, Drawing 8 of 20 (pdf page 251/40) and Figure 1 (pdf page #339/740)]. GRU wants to ensure that the slurry wall is not moved east to accommodate the pond. The conflict might be resolved by finishing the northern part of the pond after the slurry wall is completed. See also Comments #7 and #8.*

Response: The alignment of the VBW will not be shifted east to accommodate the pond. Alternative stormwater pond design considerations may be considered if needed.

<u>Florida Department of Environmental Protection (FDEP) Comments received via email on 31 July 2018.</u>

FDEP Comment No. 1: *The subject document generally represents the agreed upon remedy as specified in the Site remedy selected and described in the Supplemental Remedial Investigation and Focused Feasibility Study (Gradient, January 2017), subject to the information obtained during supplemental activities recently completed according to the Remedial Design Work Plan (Geosyntec, September 2017) and the Predesign Investigation (PDI) Work Plan (Geosyntec, September 2017), with some exceptions.*

Response: Acknowledged

FDEP Comment No. 2: *The design document does not include any discussion of compliance with the requirements of the National Pollutant Discharge Elimination System (NPDES) stormwater program for construction activities, particularly a plan for management of potential stormwater pollutant discharges during construction activities, and management of construction dewatering discharges that may be impacted by the site constituents of concern (COCs).*

Response: The 100% (Final) Remedial Design Report will address compliance-related issues. In general, construction and construction-related discharges will be discussed per project requirements set forth in the specifications and other relevant documents.

FDEP Comment No. 3: *The Remedial Design Work Plan stated that a discussion of the Institutional Controls for the selected remedy will be presented in the Intermediate (50%) Design Report. Other than referring to the relevance of Institutional Controls in Appendix D, Table 4.2 - Action-Specific Applicable or Relevant and Appropriate Requirements and To-Be-Considered Criteria, there is no other discussion of how the long-term stewardship of the remedy will be preserved in the design document. An Institutional Control Plan should be provided that identifies those parcels requiring site related institutional controls and the restrictions that would apply including engineering controls for the cap slurry wall containment remedy or other existing features serving as engineering controls; land use restrictions; and groundwater use restrictions that would apply until groundwater meets cleanup goals including GCTLs. The instruments that will be utilized to establish those ICs such as restrictive covenant(s) should be identified.*

Response: Institutional Controls will be addressed following implementation of the remedy and pursuant to environmental monitoring. Discussion of Institutional Controls will be included in the 100% RD.

FDEP Comment No. 4: *DEP had previously reviewed the Remedial Design Work Plan and agreed with the proposed sampling plan but reiterated that confirmation sampling during design is necessary around the area of the proposed stormwater pond to determine if vadose zone soils exceed the DEP Soil Cleanup Target Levels and may require Institutional or Engineering Controls. This is consistent with the following Remedial Action Objective for the Site, "Eliminate* *direct contact with vadose zone soils in the Former Lagoon Area that may pose human health risks to potential receptors in the event of future redevelopment." Leachability should also be considered. Groundwater quality may be considered in the evaluation of potentially leachable soils consistent with Chapter 62-780. The design document did not indicate that any of this recommended confirmation sampling was conducted.*

As noted in DEP April 7, 2017 Focused Feasibility Study (FFS) review comments: Table 4-4 of the FFS identifies benzene and carcinogenic PAHs (expressed as BaP TEQ) as the vadose zone soil COCs based on observed exceedances of their respective C-SCTLs at the Cabot site. The majority of exceedances were observed in the Former Lagoon Area.

Application of commercial SCTLs at the site is acceptable, with an appropriate demonstration that leachable soils outside of the containment area are not and will not contribute to groundwater contamination. Table 3.2 of FFS indicates that benzene, ethylbenzene, isopropylbenzene, methyl acetate, toluene, xylene, naphthalene, acenaphthene, and several site related phenolic compounds were observed in soils above the Chapter 62-777 default leachability based SCTLs. Camphor was also observed in soils and/or tar samples at concentrations above the UF calculated leachability criterion of 1.9 mg/kg. However, a review of the Table also indicates that very few vadose zone soil samples were collected, and few shallower than 5' bls. Review of the Tar fingerprinting results also indicates that less weathered tar samples exceeded leachability criteria for many of the above compounds.

DEP understands that leachable soils within the footprint of the proposed stormwater pond will be excavated as part of pond construction and relocated within the Hawthorn containment cell. Please summarize the current vadose zone soil data in the Design, particularly soils located outside of the proposed footprint of the stormwater pond. Please provide recommendations and a schedule for additional soil samples to determine where exposed soils exceeding SCTLs for commercial use or leachability may require excavation and either relocation within the Hawthorn containment cell (VBW) or offsite disposal.

Response: The design incorporates two techniques to eliminate direct contact with vadose zone soils in the area of the proposed stormwater pond. These techniques include excavation to elevation 171 feet and relocation of vadose zone soils to within the containment system, and installation of the geomembrane at elevation 171 ft for the stormwater pond. Groundwater elevations in the vicinity of the pond are typically between 169 and 174 ft, so these measures effectively eliminate vadose zone soils.

Soils in the vadose zone outside of the VBW that are excavated as part of stormwater pond construction will be contained under the cap and within the VBW as discussed in the response to GRU Comment #9. Vadose zone soils exceeding leachability criteria that remain will continue to be addressed by the Surficial Aquifer Collection trench; the trench has effectively captured impacted groundwater at the site for years.

FDEP Comment No. 5 - Section 2.2 Vertical Barrier Wall Investigation: *Please clarify in Design if any tarry material was observed at VBW-12 and VBW-15, and TP-1 through TP-3. According to the January 26, 2018 PDI weekly field report, solidified tar was observed in all three test pits. "Sheen" and "light NAPL" were noted at VBW-12 and/or VBW-15. Previous assessment activities by HSW (after the 2017 FFS) indicated free product present in the surficial aquifer in the vicinity of the southwest corner of Chevrolet dealership property, downgradient of the former acid pond. WS-26 (2017 FFS) had COCs at groundwater concentrations similar to those inside the proposed VBW in the Upper Hawthorn Group (UHG). Please discuss why these areas were not included in the containment cell and how these areas will be addressed by the remedy, including any concrete debris and solidified pine tar located outside of the containment cell.*

Response: The VBW and cap are part of a UHG remedy that will work in conjunction with the EPA-approved and highly effective groundwater collection trench that has been operating for more than two decades at the site. The groundwater collection trench will continue to be an effective remedy for contaminants outside of the VBW. See USEPA Comment No. 6 above for more details about the alignment of the VBW for the UHG remedy.

FDEP Comment No. 6 - Section 2.2 Vertical Barrier Wall Investigation: *Petroleum impacts in the Surficial Aquifer at location VBW-05 were noted and VBW-05A was utilized as a point of no visual evidence of contamination. It should be clarified how the impacts were determined to be from petroleum. Please discuss why the barrier wall is proposed to be constructed between of VBW-05 and VBW-05A instead of extending through VBW-05A without additional delineation soil borings.*

Response: Odor noticed during drilling at VBW-05 indicated the presence of potential gasoline/diesel within 20 feet of the ground surface. These constituents are distinctly different from pine tar and unrelated to Cabot operations so the UHG remedy has not been designed to address them. VBW-5A was advanced approximately 45 feet north of VBW-5 so that geotechnical information could be gathered from this area of the site for VBW design without penetrating potential petroleum impacts before advancing into the UHG. The alignment of the VBW fortuitously encompasses petroleum impacts observed at VBW-05, but as constituents unrelated to pine tar, Cabot does not plan to delineate or remediate potential petroleum impacts observed at VBW-5.

FDEP Comment No 7 - Section 2.6 Test Pit Activities: *SPD-01 indicated "orange staining" (8 ft. bls) and SPD-04 indicated "black staining" (8-18 ft. bls). Please confirm that while these locations are outside the proposed slurry wall, they are located within the footprint of the lined stormwater pond.*

Response: These locations are within the footprint of the proposed stormwater pond.

FDEP Comment No. 8: *As noted in DEP's previous email dated June 29, 2018, previous assessment has identified 3,4-methylphenol at levels of 19,0000 ug/l in the surficial aquifer at WS-1, indicative of potential NAPL in that area. In addition, staining was noted in VBW-02 (oily sheen from 18 to 20 ft. bls) and VBW-03. COC concentrations within the UHG at WS-1 and WS-2 were lower than those in the surficial aquifer and are not indicative of a NAPL in the UHG. DEP remains concerned that sources may remain in the surficial in the area of WS-1. As shown in Figures 3 of 20 and 4 of 20 in the Design, the VBW is located approximately 25 ft. west of WS-1 but may not entirely encompass the more highly contaminated surficial groundwater or related source material. In lieu of expansion of the VBW further west/southwest to include the entire former western lagoon, the Design should specify that excavation for the stormwater pond in that area be conducted such that all soils containing tarry material or evidence of source contamination including visible staining will be removed. This may necessitate excavation extending below the water table. Additional soil boring(s) may be necessary during pre-construction activities to determine the necessary area and depth of excavation.*

Response: See USEPA Comment 6 above.

FDEP Comment No. 9 - Section 2.7 Site Stratigraphy: *The Design states that "Mobile pine tar was not observed at any of the vertical barrier wall". The specificity of the phrase "mobile" pine tar is unclear. DEP understands that pine tar is a criterion by which the presence of an ongoing source was determined at the site. As noted in previous comments and discussion, additional criteria including soil analytical data and groundwater concentration data were also utilized to evaluate the likely presence of DNAPL or pine tar sources. Please discuss the data utilized and other factors considered to determine the area to be addressed by the containment cell. It would be helpful to include pertinent data and supporting figures from the PDI or other site investigations including soil and groundwater data, pine tar or staining/DNAPL observations and OVA screening data in an Appendices to the Design report.*

Response: The Supplemental Remedial Investigation/Focused Feasibility Study (SRI/FFS) report provides and discusses much of the data used to determine where mobile pine tar has been found at the site. The definition of mobile pine tar was included in the PDI Work Plan with details for making decisions during the PDI boring program. PDI borings were performed along the proposed alignment of the VBW. Results from these borings are provided in the 50% RD. The alignment of the VBW was selected based on this compilation of data.

FDEP Comment No. 10 - Section 3 Containment System Design: *It is understood that the available area and layout for the stormwater pond is a concern. However, based on the proposed lined construction of the pond, construction of the proposed stormwater pond within the boundary of the VBW may be considered. And would allow expansion of the barrier wall boundary towards the west/southwest or southeast in the area of the acid water pond area if necessary.*

Response: The proposed VBW alignment achieves the goal of the VBW as noted in USEPA Comment No. 6. The Cabot team considered placing part or all of the stormwater pond atop the cap, but considers it an undesirable option for several reasons. Some of these reasons include (1) potential pond leakage could leak into the contained area, (2) for the cap to be below the bottom of the pond, the cap beneath the pond would need to be constructed at or potentially beneath the groundwater table which poses a constructability challenge, (3) not having the pond atop the cap allows for a better positioned groundwater extraction and monitoring wells (i.e., extraction well and piping, and monitoring wells could not be within the footprint of the pond atop the cap).

FDEP Comment No. 11 - Section 3.1.3 Design Approach: *It would appear that the mix-in-place (continuous trenching) method is a more feasible method for barrier wall installation due to the depth of the barrier.*

Response: Multiple established VBW construction methods are available. Installation methods will be selected by the contractor.

FDEP Comment No. 12 - Appendix A-4: *How were the 4%, 6%, and 8% bentonite slurries mixed? Dry material mixing is mentioned in the report. It appears that site groundwater mixing resulted in issues regarding flocculation, uniformity, and heights of free water, etc. We recommend additional evaluation prior to determining which water should be used for full scale implementation in the final design and to ensure the compatibility of the slurry mix and its performance in the site groundwater environment.*

Response: Details regarding mix design will be summarized in the 100% RD report. Mixes were created using site groundwater and hydrant water. During construction, site groundwater will be present and dry bentonite will be added via hopper if using one-pass trenching methodology. This will reflect the laboratory mixing procedure done for the mix design samples, which used site groundwater to evaluate compatibility. During construction using traditional methods, hydrant water will be used to generate a slurry and site soils, which will likely be saturated, will be mixed at the ground surface. This will reflect the laboratory mixing procedure done for the mix design samples with hydrant water.

FDEP Comment No. 13 - Section 4.3.4: *"One of the monitoring wells to be plugged is HG-29D." Simply plugging well HG-29D may not mitigate the "leaky well seal". We would recommend overdrilling this well to permanently seal HG-29D. In addition, although the presence of COCs at HG-29D may be attributed to the leaky well construction, elevated COCs at well HG-31D hydraulically upgradient of HG-29D indicated that a leak between the Upper Hawthorn and Lower Hawthorn may not be entirely attributable to HG-29D construction. The large vertical hydraulic gradient between the Upper Hawthorn and Lower Hawthorn Groups may continue to cause downward mass flux if natural transport pathways exist in the Middle Clay layer. Groundwater monitoring including HG-28D, 30D, 31D, and 37D should continue in order to support evaluation of the effectiveness of the containment cell and interior extraction system in mitigating vertical migration into the Lower Hawthorn.*

Response: We are evaluating methods for abandoning HG-29D, which will be included in the 100% RD. Groundwater monitoring in the LHG will be addressed as part of the OM&M Plan that will be included in the 100% RD.

FDEP Comment No. 14 - Appendix J: *Please clarify that performance objectives and associated monitoring requirements for the VBW will be included in the Environmental Monitoring Plan for the 100% Design Report.*

Response: A description of the site monitoring program will be provided in the 100% RD Report.

FDEP Comment No. 15 - Appendix C-2: *What evaluation has been conducted to determine if additional settlement or consolidation will occur as a result of the proposed dewatering in the Surficial Aquifer and UHG within the barrier wall and below the cover system? The current settlement evaluation assumes a maximum groundwater depth of 4 ft. bls which does not appear consistent with the proposed extraction rates and projected drawdowns inside the VBW system.*

Response: Evaluation of the long-term drawdown beneath the cap will be included in the 100% design.

1. *Appendix C-2: The final design should incorporate a methodology for surface preparation, including clearing and grubbing, surface compaction, and underground utility removal, prior to cover placement.*

Response: Methodologies for activities such as these will be described in the Specifications provided in the 100% RD Report.

2. *Section 3.2.3: Final design should discuss what land use restrictions and load bearing restrictions are applicable to protect the integrity of the low permeability cover system consistent with the final construction specifications for the cover system.*

Response: The OM&M that will be part of the 100% RD will describe post-construction allowable use and loading.

FDEP Comment No. 16 - Section 3.3.2 Existing Stormwater Management System: *It is expected that the existing pond will be cleared and grubbed of vegetation prior to backfilling. The existing pond is reportedly underlain by a clay liner. If clay lined, the pond may continue to be a reservoir for water. Scarification of the clay liner should be considered.*

Response: The existing pond is entirely within the footprint of the proposed vertical barrier wall and final cover system. The proposed final cover system will prevent infiltration into this area, therefore no specific requirements to remove or alter the existing clay liner will be required.

FDEP Comment No. 17 - SW Design Report, Appendices A and B: *Nodes defined in the ICPR model exaggerate (overestimate) the storage capacity of the proposed stormwater system. Most nodes are not ponds yet meet or exceed basin areas. Revised nodes should verify if system capacity is sufficient.*

> *Design Drawings, SW Design Report/Calculations:* *There are inconsistencies between design documents with pipe sizing, invert elevations, etc. Please verify that specifications in all documents are consistent.*

Response: Nodes within the ICPR model do not overestimate the storage capacity of the proposed stormwater system. All nodes, with exception of the two boundary condition nodes associated with North Main Street at the northern property are "Stage Area" nodes. With exception to the stormwater pond (Node NA008), the stage/area tables represent the surface storage available within its associated sub-basin. This can be the surface storage associated with the shopping center parking lot, Hamilton Park property, NE 1st Blvd, etc. When hydraulic grade lines associated with the storm sewer system exceed the pipe and manhole elevation, stormwater will flood the sub-basin area. The stage/area data included in the ICPR model parameterizes this surface "ponded area" to reflect the potential flooded condition. Flooded basins are permitted to overtop into adjoining sub-basin areas with overland flow using weir links specified in the ICPR4 model. All nodes stage/areas are calculated so as not to exceed each sub-basin area.
The Design Drawings, SW Design Report and Calculations have been cross checked to address any inconsistencies between the various design documents.

FDEP Comment No. 18: *DEP will forward the Design to SJRWMD for review to confirm that assumptions, calculations and final stormwater system specifications meet the substantive State requirements pursuant to CERCLA.*

Response: Acknowledged

FDEP Comment No. 19 - Section 2.5, Appendix A-3, and Appendix C-5 Aquifer Hydraulic Testing and Groundwater Extraction System Calculations: *The hydraulic testing at monitoring well (HG-28S) was attempted, but was dewatered at the lowest pump setting. HG-38S was utilized instead, indicating that anisotropy exists in Upper Hawthorn Group. In addition, there was no attempt to calculate vertical hydraulic conductivity in either aquifer and no vertical anisotropy was assumed. Please discuss what uncertainty is introduced in the extraction system calculations by the assumption of vertical homogeneity within the UHG.*

Response: Vertical heterogeneity is accounted for by designing extraction wells with longer screens. Longer screens do not require as much vertical groundwater to flow to enter the well compared to extraction wells with a shorter screened interval.

FDEP Comment No. 20 - Section 4 and 4.2.2. Groundwater Extraction System Design and Extraction Wells Downgradient of the Vertical Barrier Wall: *How will extraction from the UHG within and downgradient of the VBW affect the existing Surficial Aquifer interceptor system? Extraction from the UHG only downgradient of the VBW may create vertical downward migration of mass from the Surficial Aquifer to the UHG.*

Response: The objective of the groundwater extraction system outside of the VBW is the removal of contaminant mass from the UHG through the extraction of UHG groundwater. The installation of the VBW will provide containment of the known impacts in both the Surficial Aquifer and UHG. The groundwater interceptor trench has proven to be extremely effective in remediating the Surficial Aquifer at the Cabot Carbon portion of the Superfund Site. A 2009 investigation conducted by Gradient confirmed that the interceptor trench was effective at providing capture of impacted Surficial Aquifer groundwater from the Cabot Carbon portion of the Site – a conclusion that was confirmed in a 2009 approval letter from US EPA Region IV. The groundwater interceptor trench will continue to operate and provide capture of impacted Surficial Aquifer groundwater. In addition, there are minimal groundwater quality impacts, if any, in the surficial aquifer in the area of the proposed downgradient UHG extraction system. Therefore, operation of only the downgradient UHG system is not expected to result in contaminant mass migration from the Surficial Aquifer into the UHG.

FDEP Comment No. 21 - Section 4.2.2. Extraction Wells Downgradient of the Vertical Barrier Wall: *The design width of the extraction zone is 450 feet with 3 UHG recovery wells spaced approximately 100 + feet apart and each pumping a maximum of 1 gpm with a projected sustainable flow rate of 0.5 gpm. Considering the low hydraulic conductivity and heterogeneity of the UHG, a groundwater flow model and perhaps a fate and transport model should be developed for the future presence of the VBW to determine how the VBW affects the flow regime, mounding, and plume width, and verify the design width of the extraction zone is sufficient. Please also clarify in the design the criteria use to develop the width of the extraction system relative to UHG plume and what contaminant concentrations are targeted by the system.*

Response: The effects of groundwater extraction outside of the VBW will be assessed through the groundwater monitoring program, so numerical modeling is unnecessary. Adjustments to the pumping can be made if necessary. The 450-foot width for design was selected as an approximate 300-foot plume width plus the addition 75 ft on either end of the plume as a factor of safety (refer to the SRI/FFS report for groundwater quality in the area of the proposed UHG groundwater extraction system downgradient of the VBW). While a capture zone analysis was used to facilitate the design of the groundwater extraction system, the objective of the groundwater extraction system downgradient of the VBW is the removal of contaminant mass from the UHG through the extraction of groundwater.

FDEP Comment No. 22 - Section 4.3.3 Groundwater Treatment System: *Will there be a sidestream storage reservoir for the Oil-Water Separator (OWS) in the event of excess NAPL recovery causing system upset or unscheduled downtime?*

Response: The volume of tar that will be recovered by extraction wells is unknown. The specified OWS has ports for LNAPL and/or DNAPL drainage as well as the ability to install a skimmer pump. Storage reservoirs for LNAPL and/or DNAPL (or a skimmer pump) can be installed if sufficient tar is removed and once the yield is known.

FDEP Comment No. 23 - Section 4.3.4 Groundwater Monitoring: *DEP understands that groundwater monitoring to track performance during active Hawthorn remediation as well as post active remedial monitoring will be provided in an Environmental Monitoring Plan in the 100% Design.*

The plan should discuss the milestone criteria that will be used as well as the sampling scope and frequency to determine when groundwater extraction may cease, both inside the VBW and downgradient. DEP recommends that the milestone criteria be based on Chapter 62-777, F.A.C. Natural Attenuation Default Criteria (NADCs) for groundwater contaminants of concern or other appropriate numeric criteria, after which Monitored Natural Attenuation (MNA) may be utilized to address UHG groundwater contamination until remedial goals are met. Asymptote conditions would also be considered. Evaluation of asymptote conditions should include monitoring during a trial period of shutdown of the P&T system to obtain representative plume data (versus more dilute influent concentrations) and to observe any rebound of contaminant concentrations during the shutdown period. Depending on the observed plume stability and contaminant levels, system modifications including adjustments to recovery rates and/or P&T locations may be warranted.

Performance monitoring should include monitoring of source area wells as well as Temporary Point of Compliance (TPOC) wells downgradient to confirm plume stability during both active remediation and subsequent Monitored Natural Attenuation, in the Upper and Lower Hawthorn.

As discussed in DEP April 7, 2017 FFS review comments: Monitoring downgradient of the VBW system will be required to document that both the health based plume and remaining non-health based plume are stable and/or shrinking based on appropriate points of compliance. Migration beyond the currently documented extent of the plume is not allowed. As an update to the FFS comments, DEP recommends that down gradient performance monitoring for plume stability include HG--37S/D and monitoring of a paired UHG/LHG monitoring well to be installed west of HG-37S/D (proximal to WS-21). Well pair HG-36S/D should continue to be monitored but are too distal to be used alone to confirm that the leading edge of the plumes in either the UHG or LHG are not migrating. DEP also recommends that performance monitoring outside of the containment area include HG-28S/D, HG-38S/D. HG-39S/D and NELMW007.

Please identify the monitoring wells within the VBW area, that will be utilized to track the progress of mass reduction in the surficial and UHG and confirm effective mitigation of vertical contaminant migration into the Lower Hawthorn. Please discuss the need for piezometers inside *and immediately outside the VBW to monitor water levels and confirm the desired hydraulic gradient across the VBW.*

In addition, DEP recommends installation of additional UHG monitoring wells at the following locations based on previous direct push sampling results: WS-31, WS-26 and WS-25. These wells would serve to monitor the response to the Hawthorn remedy in UHG groundwater southeast of the VBW and in the former Process Area and Pine Tar Storage Area.

Response: The OM&M Plan that will be included in the 100% RD will summarize the objectives of monitoring and will include a comprehensive potentiometric heads and groundwater quality monitoring program.

FDEP Comment No. 24 - Appendix C-6 Groundwater Model for Vertical Barrier Wall: *The spreadsheet analytical model assumes a flat-water table inside and outside the 6-acre VBW area. As demonstrated in the 2017 FFS, an approximate 3 ft. head difference was noted in the surficial aquifer across the VBW area and an approximate 8 feet head in the Upper Hawthorn group was noted across the VBW area. Development of a numeric groundwater flow model and a fate and transport model should be considered for this site. There is heterogeneity in aquifer parameters across the site that may impact the design of the extraction system as well as the monitoring system. A groundwater model will allow for a variable distribution of heads and aquifer parameters and remove some of the simplifying assumptions used in the calculations in Appendix C-6. Some idea of the timeline for cleanup, and potential changes in plume dimension, direction, and concentration can be evaluated with a fate and transport model.*

Response: The gradients noted above occur because of ambient regional groundwater flow across the site and recharge. Horizontal hydraulic gradients inside the VBW will cease once the VBW is installed because the VBW will prevent groundwater flux in and out of the enclosed area, and the cap will prevent recharge (i.e., the VBW and cap will create stagnant groundwater conditions within the contained area). We feel it is therefore more appropriate to model static groundwater conditions inside of the VBW than to assume pre-remedy gradients and recharge will continue after the VBW and cap are installed. A contaminant fate and transport model, to understand the impact of the proposed remedy (VBW and downgradient UHG system) on the downgradient portion of the plume, has been developed and was presented in the SRI/FFS report.

FDEP Comment No. 25 - ARARs- Proposed Health Based Criteria (HBC): *DEP understands that a determination of health based groundwater cleanup goals is required prior to approval of the 100% Design for the Hawthorn remedy. In particular this resolution may affect the need for and duration of the proposed groundwater extraction component of the remedy outside of the VBW system.*

DEP does not support Cabot's proposed alternative HBCs. The revised alternative HBC for phenolic compounds based on updated toxicity values proposed in the Cabot's January 16, 2018 *correspondence do not use assumptions consistent with Chapter 62-777, F.A.C. methodologies for calculating alternative cleanup target levels. Please see attached review comments from University of Florida for DEP, dated March 19, 2018. There is a significant disparity between the proposed alternative HBCs as compared to current Chapter 62-777, F.A.C (GCTLs) as well as Alternative GCTLs previously under consideration by DEP for this site, such that DEP does not consider the proposed alternative HBCs adequately protective. EPA has consistently cited health based GCTLs in Chapter 62-777, F. A. C. as ARARs. More recently EPA Region 4 and DEP have initiated discussions regarding the possible use of alternative CTLs at Superfund sites, but no final decisions have been reached. Therefore, DEP recommends the use of the health based GCTLs currently in Chapter 62-777, F. A. C. as the Superfund groundwater remedial goals for 2-, 3- and 4-methylphenol and 2,4-dimethylphenol at the Cabot Carbon site, consistent with the 2011 Amended Record of Decision (AROD). In lieu of Alternative GCTLs, DEP recommends continued application of the health based groundwater remedial goal of 2,630 ug/l for phenol that was established in the original 1990 Record of Decision.*

Response: US EPA has reviewed the calculations of site-specific health-based criteria, and the most recent set of alternate HBC values (Gradient 2018) utilize all of the recommendations provided by their toxicologist. Revisions to these values are not planned. As has been previously discussed with FDEP, Cabot will use the site-specific HBCs to make remedial decisions (outside the VBW), but will continue to monitor groundwater quality at the Site until the State's GCTLs have been met.