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January 13, 2017
Paul J. Pearman
Tennessee Valley Authority
1101 Market Street, MR 4K
Chattanooga, TN 37402

RE: TDEC Commissioner's Order OGC 15-1077
TVA Cumberland Coal Fired Fossil Fuel Plant
Environmental Investigation Plan Comments
Revised TVA Cumberland Environmental Investigation Plan
Due Date - March 31, 2017

Dear Mr. Pearman:

The Tennessee Department of Environment and Conservation (TDEC) issued Commissioner's Order OGC 15-0177 (the Order") to the Tennessee Valley Authority (TVA) that required TVA action at seven TVA Coal Fired Fossil Power Plants (active and inactive) located in Tennessee. The Order was signed on August 6, 2015 and included information about TVA's right to appeal the Order. TVA did not appeal the Order and it is now final.

The Order required TVA to perform environmental investigations and to take appropriate corrective action at seven TVA Coal Fossil Power Plants (CCR sites) in Tennessee. The Order is specific to Coal Combustion Residual (CCR) material. Paragraph VII. of the Order provides the sequence of events for environmental investigation at a TVA CCR site as presented below.

1. TVA and TDEC are required to schedule and conduct an initial meeting to discuss each CCR site. At each CCR site meeting, TVA provides the operational history of the CCR site, all geological and hydrogeological information currently available, results of environmental investigations and sampling, etc. This is basically a summary of TVA's current understanding of each CCR site.

2. TDEC reviews the information provided by TVA (historical information, geophysical properties of the site, operational history, etc.) at the on-site meeting and historical CCR site information provided by TVA. After review of the information provided by TVA, TDEC sends a letter to TVA that sets the date for submission of the draft CCR site Environmental Investigation Plan (EIP) and informs TVA of any additional environmental activities it believes are necessary to complete the CCR site environmental investigation.

3. TVA submits a draft Environmental Investigation Plan for the CCR site. TDEC reviews the draft CCR site EIP and provides TVA with comments that identify opportunities to improve the environmental investigation of the CCR site EIP. This letter also sets a due date for submission of the revised CCR site EIP.

4. TVA submits a revised EIP for the CCR site to TDEC, with a schedule of onsite activities such as installation of ground water monitoring wells, installing soil/rock borings to determine subsurface geological features, methods that will be used to determine the location and amount of disposed CCR material, surface water and ground water monitoring, etc.

5. TDEC provides TVA with its response to the revised EIP. When TDEC finds the CCR site EIP to be complete, TDEC notifies TVA via letter.

6. TVA is required to issue a public notice for the CCR site EIP before it is implemented. The public has 30 days to submit its EIP comments to TDEC. If EIP comments are submitted to TDEC, then TDEC has 30 days to respond to the comments.

7. Once the public comment period has ended, TDEC may provide TVA with CCR site EIP comments as a result of the review of the public comments submitted to TDEC. TVA submits and TDEC approves/disapproves the schedule of activities for environmental investigation at the CCR site. Unless TDEC disapproves the CCR site EIP schedule of activities, TVA proceeds with the environmental investigation, collects and generates data, then prepares an Environmental Assessment Report (EAR).

8. The EAR is submitted to TDEC. TDEC evaluates the EAR and decides if TVA has generated enough environmental investigation data to:

    a. Determine the impact of CCR materials to public health and the environment.
    b. Provide a comprehensive picture of the areas where CCR material disposed.
    c. Assess the structural and seismic stability of the CCR disposal areas.
    d. Determine the extent of CCR constituents in ground water and discharges to surface water.
    e. Determine if CCR material is disposed below the ground water table.

TDEC also determines if there is enough information generated to prepare a comprehensive corrective action plan.

If TDEC determines the EAR is incomplete or deficient, then TDEC informs TVA of its concerns. TVA is then required to further investigate the CCR site, beginning with item 4. above.

Cumberland CCR site EIP Comments

TVA submitted the draft EIP for TVA Cumberland Coal Fired Fossil Power Plant (TVA CUF) on July 11, 2016. TDEC has completed its review of the draft EIP and the documents submitted with the draft TCA CUF EIP. After review of the TVA CUF EIP, It is

TDEC's opinion that the EIP, as currently drafted, will not provide the data necessary to fully define the environmental conditions at this site. This will adversely impact the ability for TVA to prepare a comprehensive Environmental Assessment Report for the TVA CUF CCR site.

In the draft TVA CUF EIP, TVA proposes to use historical data and data that TVA will collect in the future when it performs environmental investigative activities to complete a full environmental assessment of the TVA CUF CCR site. The EIP discusses future investigative activities only in the terms of plans it will submit to TDEC for review and approval. Given this, it is not possible for TDEC to determine if the planned activities will yield all the environmental data needed to properly assess the impact/potential environmental and public health impact of CCR material at the TVA CUF CCR site or adjacent properties and neighboring citizens.

TVA is required to post the TVA CUF EIP for public notice and comment. TDEC is required to respond to all comments received for the TVA CUF EIP. The greater the detail of the EIP, the better TDEC and the public will understand how the TVA CUF site will be investigated. Per this letter the due date for the TVA CUF Revised Environmental Investigation Plan is close of business **Friday**, **March 31, 2017**.

TDEC's goal is to work with TVA to ensure the environmental investigation of the TVA CUF site is complete, accurate and timely. TDEC has attached, with this letter, its comments regarding the draft TVA CUF EIP. Should TVA wish to discuss the suggestions, please contact me so a meeting may be scheduled.

Sincerely,

Chuck Head

CC:	Susan Smelley	Britton Dotson	James Clark
	Pat Flood	Scotty Sorrells	Rob Burnette
	Tisha Calabrese Benton	Glen Pugh	Joseph E. Sanders

Attachment 1.
TVA Cumberland Coal Fired Fossil Plant - Draft EIP Comments

1. TVA CUF EIP, Section 1.3, Page 2 – TVA should consider including language in the bullet point that provides 45 days in the EIP implementation schedule to allow a TDEC meeting with all interested parties as detailed in Commissioner Martineau's letter date September 28, 2015 to Ms. Angela Garrone.

2. TVA CUF EIP, Section 2.1, Page 4, last paragraph – Consider revising the first sentence to read, "TVA shall provide monthly progress reports to TDEC."

3. TVA CUF EIP, Section 2.2, Page 4 and 5, - All items listed below the last paragraph should be a part of the EIP or as an addendum to the EIP. TDEC will review the description of the planned activity when the TVA submits the revised EIP.TDEC believes it will be much easier for TDEC and the public to understand TVA's planned environmental investigation activities if there is more thorough explanation of the work that will be performed.

4. TVA CUF EIP Section 2.3, page 5 – TVA should include all documents/plans that describe the TVA CUF Quality Control Program to TDEC as part of the revised TVA EIP. If there are specific instances that TVA does not believe it is possible to submit Quality Assurance/Quality Control plans to TDEC, TVA should submit them to TDEC as soon as they are available.

5. TVA CUF EIP Section 3.1.1, page 7, 1st paragraph - TVA should report any CCR material moved from the TVA CUF site and disposed on adjacent or nearby properties, if this has occurred. This also includes any CCR material that has been used off-site as a soil supplement. This information will ensure that soil samples are not collected from an area where CCR material has been disposed. This does not include CCR material that has been provided to a company (ies) for production of wallboard.

6. TVA CUF EIP Section 3.1.1, page 8, 2nd paragraph - TVA should provide a map identifying locations where TVA plans to collect soil samples. Given the area around the TVA CUF site, TDEC believes that more than six soil samples are needed to accurately determine the natural characteristics of native soil. TDEC suggests a minimum of twelve soil samples equidistant from the center of the TVA CUF site should be collected (excluding points that are in Barkley Lake or other water bodies). The soil sampling and analysis plan should be included in the revised EIP.

7. TVA CUF EIP Section 3.1.2, page 10, last paragraph – TVA should report all identified springs and surface streams present prior to the impoundment of Lake Barkley. Including a map with the location of streams and springs will be very helpful

8. TVA CUF EIP Section 3.1.3, pages 9 & 10 – TVA should provide a brief description of the methods it will use to determine the elevation and flow rate of the spring used as a background ground water monitoring point in the revised EIP.

9. TVA CUF EIP Section 3.1.4 – The location of all wells and creeks should be added or overlaid on construction drawings and/or plans. This includes water elevation data.

10. TVA CUF EIP Section 3.1.11, page 16 – TVA should include in the EIP a plan to determine water balance for the NPDES permitted surface impoundment. Measuring the hydrologic balance of the water entering the surface impoundment and the amount of water exiting the NPDES permitted outfall should provide an indication if water is moving through the bottom of the surface impoundment into the ground water below.

11. TVA CUF EIP Section 3.1.13, page 17 – TVA describe the methods and field activities it will employ to assess the stability of the bedrock below the fill areas, the stability of the waste fill and the stability of the side slope berms with the revised EIP. TVA should have all data needed available to prepare this plan. TDEC shall review this additional information when it receives the revised EIP.

12. TVA CUF EIP Section 3.1.14, page 20 – TVA specifies in this section the information it currently has available about ground water levels and additional data it will have collected June 2016. The location of additional ground water monitoring wells described in this section should be located on a map with the understanding that data generated by monitoring wells will be useful in understanding the site's hydrogeology. TVA should include in the revised EIP shall submit the methods it will use to determine the current ground water surface elevation below the landfills and surface impoundment. These activities should provide sufficient information to create a map that identifies the elevation of the potentiometric surface of ground water surface below the footprint of the landfills. The plan should also include the method(s) TVA will use to estimate the amount of CCR material below the ground water potentiometric surface. This includes CCR material located in the surface impoundment and each landfill. TDEC shall this information when it receives the revised TVA EIP.

13. TVA CUF EIP Section 3.1.15, page 21 – TVA states it has data that can be used to determine the shear strength of the CCR materials in each landfill from borings into the Gypsum Landfill and the CCR Fly Ash and Bottom Ash Landfill as well as the soils below the landfills. Given this, TVA should include the methodology it will use to make these calculations.

    TDEC recognizes the value of historical data but also believes current data is important because (1) site conditions change and (2) the methodology used to collect this data historically may be different than the methodology used today. TDEC should install new borings to collect physical data needed to determine shear strength. The location of the borings and the methods used to collect samples to test shear strength should be included in the revised EIP.

14. TVA CUF EIP Section 3.1.17, page 23 – TVA states that it shall identify fractures and/or faults that are filled with quartz or calcite and no longer serve as pathways for conveying ground water using existing data and that additional data will be collected when it completes work through October 2018. The goal of the EIP is to collect enough data to provide a comprehensive picture of the site in the Environmental Assessment Report required in the Order. The work TVA discusses in this section should be described in the revised EIP and completed before TVA submits the Cumberland EAR. TDEC does not believe it is appropriate to wait until after October 2018 to receive a final EAR for the TVA CUF site. TVA should include a description of the work it will perform to collect faulting and fracturing below the TVA CUF site and as schedule of these activities in the revised EIP.

15. TVA CUF EIP Section 3.1.18, page 25 – In the EIP, TVA proposes *"As part of its environmental Investigation Plan, TVA shall map top of bedrock using existing boring data and surface geophysics; installing additional borings/ground water monitoring wells as needed."* TVA should provide the location of existing borings and geophysical information on a map included in the revised EIP. This will allow TDEC to determine if it believes additional borings and associated field activities to map the top of bedrock are needed.

16. TVA CUF EIP Section 3.2.3 page 27– Springs identified by Law (1992b) as shown in Figure 9 of Appendix B may be valuable as background sampling locations if elevations are up-gradient. If TVA does not receive to access springs needed to collect data for this task, TVA shall contact TDEC and TDEC shall work with property owners to gain access to such springs. TVA shall remove the following language from the EIP "Note that access to the springs may be restricted due to lack of right of entry by private owner."

    TVA should describe, in the revised EIP, the methods it will use to implement a surface water and seep sampling program in compliance with the TDEC General Guidelines, part E.5.

17. TVA CUF EIP Section 3.3.1, page 28 – As a part of the water use survey, TDEC has asked TVA to collect data from all identified water supply wells. TVA has identified one well at the TVA CUF site that has been used as a water supply well. TVA should submit all analytical data available for this water supply wells in the EAR. TVA should include this well in the TVA CUF Ground Water Monitoring Program.

18. TVA CUF EIP Section 3.3.2, page 29 – Water Use Survey – TVA describes the Water Well Survey in this section. The section discusses how TVA will identify wells used for domestic water supply within a ½ mile boundary of the TVA CUF site, the process it will use to obtain permission to collect samples and determine the geographic location of each well. In Section 3.4 of this EIP, TVA discusses ground water monitoring. The Water Use Survey is a part of the Ground Water Assessment in Section 3.4 of the EIP. The portion of the Ground Water Assessment concerning the Water Well Use Survey should include:

a. The procedures that TVA will use to locate and identify water wells used for domestic water supplies within ½ mile of the TVA CUF property boundary. Much of this information is included in Section 3.3.
b. The methods TVA will use to collect samples from wells identified in the Water Well Survey. The method does not have to be described in detail; it can simply be a reference to a standard EPA or 3rd party standard such as ASTM.
c. A commitment to include water supply wells identified in the Water Well Survey in the Ground Water Monitoring Program.

All samples should be analyzed for CCR constituents listed in Appendices 3 and 4 of 40 CFR Part 257. TVA shall include the method quantitation limits and method detection limits for each CCR constituent. TVA shall analyze samples for Ra_{226} and Ra_{228}.

TDEC will review the Water Well Survey submitted as a part of the revised EIP.

19. TVA CUF EIP Section 3.4.1, page 30 – TVA should include all existing ground water monitoring wells in its ground water monitoring program, including the four ground water monitoring wells mentioned in this section, all wells identified in the Water Well survey and the water supply well at the TVA CUF facility. As a part of the Ground Water Monitoring Program discussed in 18. above, TVA should also include any additional ground water monitoring wells it believes are necessary to identify CCR contamination at or near the TVA CUF facility. A map with the location of current ground water monitoring wells, domestic water supply wells and springs to be used in the ground water monitoring program should be included in the revised EIP. Further, TVA should include the location of additional ground water monitoring wells (on the map mentioned above) that will be installed to establish a comprehensive ground water monitoring program at the TVA CUF site.

20. TVA CUF EIP Section 3.4.2, page 31 – TVA should include Monitoring Well 93-2R in the TVA CUF Ground Water Monitoring Plan unless it has a reasonable scientific reason why this well should not be included.

21. TVA CUF EIP Section 3.4.4, page 32 – TDEC referred to the term “perched aquifer” in its letter to TVA setting the due date for the TVA CUF site. The term “perched aquifer” refers to shallow ground water that is trapped above an impermeable subsurface layer, such as clay. Generally, a perched aquifer is small and does have a hydrologic connection with typical aquifers. At this site, TVA may incur a “perched aquifer”, the 1st aquifer and possibly a second aquifer when drilling into bedrock. TVA should use all data collected at TVA CUF to develop a site wide map (submitted as a part of the Environmental Assessment Report) that identifies all subsurface hydrologic features at the TVA CUF site.

22. TVA CUF EIP Section 3.4.5, page 33 – This section discusses comparing fluctuations in ground water levels with fluctuations in the surface elevation of the Cumberland River. TVA should identify two different locations on the Cumberland River, adjacent to the TVA CUF plant, to be used as the points for measuring surface water elevation. These points should be identified in the Ground Water Monitoring

Program. The surface water elevation should be measured following the same schedule as the ground water monitoring reference points. This information shall be included in the revised EIP.

23. TVA CUF EIP Section 3.4.6, page 33 – TVA discusses piezometers used to define ground water gradients at the TVA CUF site. The location of the piezometers should be included in the Ground Water Assessment Program and identified on the map that also provides the location of existing ground water monitoring wells, springs and proposed ground water monitoring wells. Measuring the ground water elevation in the piezometers should follow the schedule set in the Ground Water Assessment Program for the site

24. TVA CUF EIP Section 3.5, page 34 – As mentioned previously, TVA should submit a Ground Water Assessment Program with the revised EIP for the TVA CUF site. The revised EIP should include a Ground Water Monitoring Program as a part of the Ground Water Assessment. TVA should identify all water supply wells, existing monitoring wells, springs, piezometers and new monitoring wells that will be part of the ground water monitoring program. TVA should measure the ground water elevation in all wells and piezometers quarterly and sample all wells and springs quarterly. Groundwater samples should be analyzed for CCR constituents listed in Appendices 3 and 4 of 40 CFR Part 257.

    a. TVA CUF EIP Section 3.6, page 35 – TVA does not propose to install new soil/rock borings to help determine Structural and Seismic Stability of the TVA CUF site in the draft EIP. TDEC recognizes that drilling has occurred previously at the site and that this information can be helpful in evaluating TVA CUF site stability. However, new borings are needed to ensure that data is collected from borings specifically designed to help determine structural and seismic stability. TVA should also install borings in the landfills to develop an accurate three-dimensional picture of the CCR material disposed and to accurately determine the amount of CCR material in each landfill. TVA should identify the locations of historical borings and proposed new borings on a map that is included in the revised EIP.
    b. TVA should also describe in the revised EIP the drilling methods, drilling schedule, methods used to determine the types of material in each boring from surface to refusal and the methods used to determine the physical properties of ash, soil and rock encountered.

    TDEC will review the drilling plan as part of the TVA revised EIP

25. TVA CUF EIP Section 3.6.3, page 37 – TVA should provide a citation from the Federal CCR regulation that verifies the statement “an overfill that was in operation as of October 19, 2015, is regulated as an existing Landfill”. TVA should discuss in the EAR how TVA demonstrated that “good engineering practices have been incorporated into the design of the CCR unit to ensure that the integrity of the structural components of the CCR unit will not be disrupted.” If TVA has not completed this activity, then TVA should describe in the EIP how it will meet the requirement listed in Part § 257.64 of the EPA CCR regulations. TVA mentions a scope of work that includes unstable area assessments in the draft EIP. A plan for

this activity should be included with the revised EIP. TDEC will evaluate this plan as when it reviews the TVA revised EIP.

26. TVA CUF EIP Section 3.6.6, page 38 – TVA has stated that it plans to close the two CCR landfills and the existing CCR surface impoundment in place. Closure in Place is dependent upon the ability of TVA to demonstrate that the current landfills and surface impoundment meet structural and seismic stability requirements and that closure in place is the will result ensures that public health and the environment are appropriately protected.

    TVA states that it plans to "conduct additional soil borings (discussed in Item A.10), field testing, seismic cone penetration test soundings and laboratory testing were performed and seismic analysis is ongoing". TVA should include the plan for performing this work in the revised TVA CUF EIP.

    Also, TVA states in the draft TVA CUF EIP (page 39) "TVA is developing a scope of work to assess closed in place conditions for the CCR Units, and those will be provided to TDEC upon completion." Under the TDEC Consent Order, TVA is required to perform an environmental investigation. Information which will be used to make a final corrective action decision should be collected during the work proposed in the TVA CUF EIP and reported in the Environmental Assessment Report. Only after TDEC has determined that TVA has performed a comprehensive site investigation will TDEC discuss final corrective action options. Should TVA decide to move forward with Closure in Place before TDEC has determined that it is an appropriate corrective action under state law and regulation, TVA moves forward at its own risk. Should TDEC determine from review of the data generated during the TVA CUF site investigation that Closure in Place is not the appropriate corrective action for the CCR landfills and surface impoundment, TVA shall be required to take appropriate corrective action for site conditions and the extent of CCR contamination in the environment.

27. TVA CUF EIP Section 3.6.7, page 39 –TVA plans to perform work at the TVA CUF site "to promote positive drainage in the drainage ditches around the disposal complex", While this work is not a part of the activities to complete the TVA CUF environmental investigation, TVA should submit its plans for review and approval by TDEC before beginning any work.

28. TVA CUF EIP Section 3.6.9, page 40 – TVA includes this statement from a September 22, 2011 Stantec report ***"Although the minimum Factors of Safety for the stacks under the conditions analyzed are less than the target of 1.0, it is judged that the risk of slope stability failure under seismic loading conditions is acceptable, considering that".*** TVA should include in the revised EIP its plans to perform additional work at the TVA CUF site to accurately determine "factors of safety". TDEC believes it is important to determine the Factors of Safety for the "stacks" using data collected during implementation of the EIP. Because site conditions are subject to change and the volume of CCR materials in the stacks increases over time.

29. TVA CUF EIP Section 3.6.10, 3.6.11 and 3.6.12, beginning at page 40 – TVA discusses making stability calculations using historical data. As stated above, site conditions change with time. To ensure structural and seismic stability calculations are correct, TVA should propose, in its revised TVA CUF EIP, the field activities it will conduct to obtain current information for performing stability calculations.

30. TVA CUF EIP Section 4.1.2, page 44 – Determining the leachability of CCR constituents from CCR material is critical to this environmental investigation. TVA should include in the revised EIP a plan that meets the criteria set out in the April 6, 2016 TDEC letter setting the draft TVA CUF due date. The specific language was "TVA shall propose a sampling plan to determine the leachability of CCR constituents from CCR material in surface Impoundments, landfills and non-registered sites at each TVA site. The plan should include sampling points at each disposal area and at different depths in each disposal area. TVA shall describe sample collection methods, sample transport, analytical methodology and the qualifications of the laboratory selected to perform the analyses."

32. TVA CUF EIP Section 4.1.6, page 47 – The draft TVA CUF does not provide the methods TVA will employ to perform a water balance calculation for the TVA CUF surface impoundment. This should be included in the revised EIP. As stated by TDEC "Describe the method TVA shall use to provide a water balance analysis for active surface impoundments at each TVA site. This should include all wastewater and surface water runoff entering the impoundment from the TVA site and the amount of water discharged from the surface impoundment(s) into receiving streams at the NPDES permitted discharge point. TVA shall also describe briefly how it will determine the transpiration rate of water from the surface impoundment(s) into the atmosphere" TDEC agrees the word "evaporation" should have been here rather than the word transpiration.

33. TVA CUF EIP Section 4.2 – TVA should expand the water well survey to include all water wells in use, not just domestic water supply wells. If CCR constituents are detected at the fringe of the initial survey boundary, then TVA should report the information to TDEC and submit an addendum to the Water Well Use Survey.

34. TVA CUF EIP Section 4.3, page 47 – As mentioned earlier in this letter, TVA is required to implement a comprehensive Ground Water Monitoring Program at the TVA CUF site. TVA discusses activities TVA plans to conduct and activities required per the EPA CCR regulations. However, submission of a Ground Water Monitoring Plan and Ground Water Assessment Program is required as part of the TVA CUF EIP.

    TVA should correct CRCR typo in Section 4.3.3. TVA has announced that it plans to close the CCR landfills and impoundments in place. This is confirmed in Section 4.3.6. Given this, TVA should submit a Pore Water Sampling Plan for the TVA CUF site when it submits the revised EIP. Finally, TVA should include language in the revised TVA CUF EIP stipulating that it will extend the boundary of its Ground Water Assessment Program, should the CCR constituents appear at greater than background levels in ground water samples at the boundary

35. TVA CUF EIP Section 4.4 TVA Site Conditions, beginning with page 51 – TVA has not included in the TVA CUF EIP plans to conduct additional work at the site to fully identify site conditions. TVA states that it will use existing data to determine:

    a. If solution channeling has occurred at and near the soil/rock interface following Section 3.1.16
    b. If faults and/or fractures have been identified in the subsurface and whether faulting and fracturing has impacted and/or controls groundwater movement following Section 3.1.17
    c. Mapping the top of bedrock and the characteristics of the subsurface geology following Section 3.1.18
    d. The stability calculations for the landfills at the TVA CUF site as described Sections 3.1.13 and 3.6.2
    e. The properties of the drainage layers between each stacked layer of waste disposed in the landfills as described in Section 3.6.3
    f. The potential overfill situations for the landfills at the TVA CUF site following Section 3.6.4 of the draft EIP.
    g. The shear strength of the CCR materials in the landfills and the surface impoundment using the criteria in Section 3.6.15 and 3.6.11.
    h. Through static, seismic and liquefaction analysis determine the potential for structural failure of the landfills and surface impoundment as described in Sections 3.6.2 and 3.6.6.
    i. The seismic stability of the TVA CUF site as described in Section 3.6.6.
    j. The structural integrity of the entire CCR disposal area as discussed in Section 3.6.6.
    k. The structural strength and load bearing capacity of the underlying geology to support closure in place of the landfills and the surface impoundment per Section 3.1.13. It is our understanding that TVA plans to close the TVA surface impoundment and landfills in place. TVA shall include with the revised TVA CUF EIP the plans and methods it will use to determine structural and seismic stability.

    TDEC has reviewed the draft EIP and the data TVA plans to use to complete the activities listed above. TVA consistently states that it will make these determinations with existing information. TVA states that it will provide TDEC information later regarding the uses of existing data to make the determinations above. TVA states that if it determines new information is needed to make decisions, it will submit a plan to collect that data to TDEC at a later date.

    TVA is required to submit a comprehensive EIP to TDEC that provides the details of how TVA will conduct the environmental investigation at the TVA CUF site. This includes how TVA plans to make determinations using existing data and historical information. TVA is also required to submit with the EIP all activities it plans to conduct to collect new data during the environmental investigation. In the revised TVA CUF EIP, TVA should include the “plans” it will implement to make the determinations listed in items a. through k. above. As stated by TDEC earlier in the review of the draft TVA CUF EIP, to properly investigate the TVA CUF site, TVA

must collect new data to supplement existing data to complete a comprehensive environmental investigation of the TVA CUF site.

36. TVA CUF EIP Section 4.5 Surface Water Impacts, beginning on page 57 -– TVA has not included in the TVA CUF EIP its plans to conduct additional work at the site to fully identify site conditions. TVA states that it will collect new data to evaluate any impact of CCR material on surface water.

    TVA should consider preparing and including in the EIP the methods it will use to determine if CCR material has migrated from the TVA CUF site into Wells Creek and the Cumberland River. TVA discusses this activity in section 4.5.2. TVA should also discuss in the revised EIP the strategies and methods it will use to prepare maps that accurately portray the distribution and depth of CCR material on the bottom of the streams.

    In Section 4.5.4 TVA states it will provide information about the movement of ground water containing CCR constituents into surface streams on or adjacent to the TVA CUF site. TVA states it will submit data from 2002. This data is old and may not represent current site conditions. TVA should include in the revised EIP the methods it will use to collect new data.

    Section 4.5.5 – TVA states it will develop a Sampling and Analysis Plan for the surface waters of Wells Creek, its unnamed tributaries and the Cumberland River. Per TVA's language in Section 4.5.5, the SAP will include methodologies and procedures for sample collection, collection methods, sample preservation and sample analysis methods for CCR materials. For Surface Water, TVA is proposing a phased approach beginning in Wells Creek and unnamed tributaries. TDEC agrees with this strategy, however, there is little detail about the methods TVA plans to employ to collect this information. This should be better described in the revised EIP. Should TVA extend its surface water sampling boundary, TVA shall notify TDEC of the new sample collection points.

    This plan should also include all seeps along the surface impoundment and the landfills at the TVA CUF facility. Samples shall be analyzed for 40 CFR 257 Appendix 3 and 4 constituents. This plan shall be submitted to TDEC as a part of the TVA CUF EIP.

    In the last paragraph of Section 4.5.5, TVA makes the following statement *"The term "Area of Interest" will be used until such time that TVA determines if the area is wet as a result of lack of drainage or if the area is wet as the result of controlled seepage through the embankments, which is a desirable condition for the stability of an earthen-filled embankment.*

    While TVA may consider seepage through embankments as "desirable" for operation of its surface impoundment, TDEC does not agree that seepage can continue from a repaired seep repair without further action from TVA. TVA is required to repair seeps that release wastewater from the surface impoundment or landfills. When TVA finds seeps along surface impoundments and/or landfills, it is required to repair the seeps and eliminate continued discharge from that point. Should TVA wish to have continued discharge from repaired seeps, TVA must notify TDEC and receive approval to allow this continued discharge.

37. Appendix A – TVA should add 45 days to the EIP implementation schedule to allow time for TDEC to meet meeting with all interested parties as detailed in Commissioner Martineau's letter date September 28, 2015 to Ms. Angela Garrone.

38. Appendix B – TVA should consider updating Figure CUF-1 using recent aerial photograph.