

Appendix D

**Responses to Public Comments on the Proposed
Hallsdale-Powell Utility District's Water Intake Facility on Bull Run Creek**

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Comment #1: Your report does not acknowledge the navigational and safety issues brought about by placing a warning sign and buoys in the main channel of Bull Run Creek, directly adjacent to the Henderson Road Bridge and Anderson County Recreation area. Bull Run Creek is a fairly narrow channel and offers navigation under the Henderson Road Bridge only between the set of bridge abutments. A wide variety of boats and personal watercraft utilize this area due to its close proximity to the boat launch ramp. People are frequently fishing around the bridge; with their boats blocking one of the two most widely used navigable channels under the bridge (the other channel may be too shallow depending on water depth at the time). The fact is this is a highly congested area in the summer months. By adding an additional navigational hazard and restricting the navigation options under the bridge, you will be restricting the area in which boaters have to take emergency action in the event of encountering a collision course with an oncoming vessel; a [stream] course that will become even [more] narrower by placing the intakes with their warning signs and buoys in the channel of Bull Run Creek. This buoy (or buoys) will also be directly in the shadow of the bridge in the summer months, making it very difficult to see to those who are not expecting it to be in the main channel. In short, navigation and boating safety will be compromised by this location. (Concerned Residents of Melton Hill Lake)

Response: The applicant's proposal indicates that there will be a warning sign and a buoy over the intakes. Although buoys are not required for navigation safety since there is adequate water depth over the pipes and intake structure, TVA will require a buoy to warn people of the presence of the intake. The warning sign will be placed on the creek bank at the rear of the pump house building and would not present a safety concern. The buoy marking the end of the intake pipe will be approximately 70 feet upstream of Henderson Road Bridge. Additionally, in a letter dated January 27, 2003, Tennessee Wildlife Resources Agency approved plans to place a second "slow congested area" buoy downstream of Henderson Road Bridge. The warning sign and two buoys at this site will not be navigation hazards.

Comment #2: This [navigation and safety issue] would be especially true during periods of routine flowback maintenance as explained at our January 24th meeting by Mr. Campbell. Although it's hard to believe, Mr. Campbell stated that the flowback procedure would generate a two-foot-high wave, as air is passed through the intake pipes to clear debris that has been sucked into the intake. This would be considered routine maintenance, which is why they specified a window to be placed facing the water so the operator could conduct a visible check of the area prior to performing the procedure. However, the flowback operator cannot see all the boat traffic coming towards them from the down-river side of the site, due to the 90 degree kink in the creek just prior to the bridge. Let's say that the operator begins

flowback maintenance on a calm summer weekday after visibly checking the area. Unknown to him is a bass boat, speeding up Bull Run Creek at 60 mph. Just before reaching the bridge, the bass boat unexpectedly encounters the two foot wave, created by the flowback procedure (as explained by Mr. Campbell). If the boat unexpectedly encounters this wave at high speed near the bridge, the boat and its startled operator will be launched into the air and possibly into the bridge. No boat operator expects to hit a two foot roller in calm conditions with no other boats around. But this could happen at this site during routine flowback maintenance. (Concerned Residents of Melton Hill Lake)

Response: The Hallsdale-Powell Utility District (HPUD) will be responsible for designing, constructing, and operating the water intake structure in a safe manner. This will include the placement of signs and buoys upstream and downstream of Henderson Road Bridge to warn boaters (see response to Comment #1). TVA cannot speculate about specific outcomes that could result from activities conducted in disregard of posted warnings and safe boating practices.

Comment #3: Your report states that there would be no underwater hazard created by the underwater pipeline and the intake screens at the 790 water pool average. This is just 3 feet below our average water depth which runs the risk of becoming a navigation hazard especially during low pool draw downs. Many boats draw more than 3 feet at low speed operation or during acceleration. Since this area is attractive to fishermen, it is entirely possible that they could hit the intake pipes in low water situations. (Concerned Residents of Melton Hill Lake)

Response: The revised drawings of the proposed installation (see Appendix A) show that the top of the pipes and intake structures will be about elevation 784.8). The operating range or reservoir operating water level for Melton Hill Reservoir is between elevation 790 msl and elevation 795 msl. Plans now call for the pipeline to the intake to be buried in the reservoir bottom. The top of the intake structure will be covered by 5.2 feet of water during low reservoir operations levels and, therefore, meets the minimum requirement that their tops should be at least 5 feet (elevation 785) below low pool. This depth should be adequate for recreational watercraft to pass. As previously stated, a buoy approximately 70 feet upstream of Henderson Road Bridge will also mark the intake location.

Comment #4: In addition, this intake is sure to peak the interest of a small number of people who find great enjoyment jumping off this bridge. Although the sheriff's department issues stern warnings to those caught in the act, it only stops the activity temporarily. A water intake, complete with warning signs and buoys, is sure to become a challenging goal for someone to see

if they can jump off the bridge, swim to the buoy and make it back without peril. Your report states that the intakes "are not likely to trap or harm a swimmer or boat." But who is liable if someone is injured or dies while swimming or boating in the area? [Would this potential liability rest with] TVA, Hallsdale-Powell, Anderson County, or the ill-advised person who tempted fate? (Concerned Residents of Melton Hill Lake)

Response: The Hallsdale-Powell Utility District (HPUD) will be responsible for designing, constructing, and operating the water intake structure in a safe manner. This will include the placement of warning signs and buoys to notify boaters, swimmers and other water-users. It would be speculative to discuss possible assignment of potential liability that might result from reckless activities conducted in wanton disregard of warnings posted.

Comment #5: Your report finds no environmental advantage for locating the site in conjunction with the existing West Knox County Utility District site on Melton Hill Reservoir due to (among other things) potential turbidity concerns. In fact, Bull Run Creek offers an almost constant flow of waterborne particles such as silt and pasture runoff, while Melton Hill offers clear, cold water from a depth of almost 40 feet. According to West Knox Utility District, the water drawn from this location on Melton Hill is among the finest in their system. It requires less filtration and less preparation to become fit for consumption. The economic issues you list such as "higher energy use," and "twice the distance of pipeline as the proposed site" are cost issues that may in fact be offset by decreased processing expense, the laying of pipeline in an area that has already been excavated for West Knox Utility's lines, the avoidance of noise abatement costs, and the elimination of the difficult process of blasting Creek Road to install pipeline along this long slab of rock to install the pipeline from the proposed site. (Concerned Residents of Melton Hill Lake)

Response: The West Knox County site was not considered feasible by HPUD before the noise abatement requirements were known. However, even the additional cost of noise abatement and blasting would not completely offset the additional cost of longer water lines (estimated at \$3 million), their greater impact to the environment, or decrease the difficulty in placing a new waterline near an existing one. The quality of the raw water, including turbidity, at the West Knoxville site is good and comparable to the other sites. The description in the text has been changed. See October 31, 2002 letter from Campbell to Ledford in Appendix B.

Comment #6: Even the existing site could be dredged and improved to accommodate the additional demand for water. (Concerned Residents of Melton Hill Lake)

Response: The existing site has been dredged several times. In each instance, the trench excavated to provide adequate flow has quickly filled with sediment, due to the flow and residue in the stream from upstream erosion. See November 21, 2002 letter from Campbell to Ledford in Appendix B.

Comment #7: As far as the proposed site being in agreement with the current land use designation, as outlined by the 1999 Melton Hill Land Use Plan, we must ask you to reconsider your finding. The proposed site is located in Parcel 80 and is placed in Zone 7, Residential Access. I've attached the parcel description from the 1999 report so that you can explain how the "87 feet of pipe that will be out of the ground and exposed in the channel" (from the June 14 letter to Scott Ledford from Robert Campbell, PE) is consistent with this designation. According to the Melton Hill Land Management Plan, there are no other intake facilities designated as project operations that are located so closely to residential development on this entire reservoir. We feel approval of this site for use inconsistent with its original designation would be precedent-setting. (Concerned Residents of Melton Hill Lake)

Response: The proposed pipelines and intakes would be buried under TVA land allocated in the 1999 Melton Hill Land Use Plan for residential access. The change in use of the property adjoining the TVA shoreline for a non-residential use would be brought about because of the change in ownership of the back-lying property. This back-lying property, which was previously in residential use, has now been acquired by HPUD from the Duncan family. TVA has no control over the change in use of this back-lying property since it is not owned by TVA. Although the TVA strip of land (Tract No. XMHR-80PT) would be temporarily used for laying the underground water line, the surface rights over this strip of land would continue to remain with TVA. TVA is not making a decision with respect to future surface rights over this strip. TVA's proposed action pertains solely to the issuance of a Section 26a permit for an intake line and structure in the water.

Eighty-seven (87) feet of the 270-foot length, at the end of the two pipes, will now also be buried in the reservoir bottom [Bull Run Creek] and, thus, will not be visible regardless of water level.

Comment #8: Page 7, 1st paragraph under Water Quality: "Removal of the tree canopy adjacent to the shoreline could increase water temperatures." The actual effect needs to be better quantified. (Concerned Residents of Melton Hill Lake)

Response: Only one tree currently exists on the shoreline fronting the proposed pump house facility. HPUD has agreed to avoid this tree during construction to ensure its survival. Thus, no change in water temperature from the removal of tree canopy is expected.

Comment #9: Page 7, 4th paragraph under Water Quality: "The withdrawal of 22 mgd (34 cfs) from Bull Run Creek would not be a significant concern because of the abundance of water from the Melton Hill Reservoir." This statement needs

to be justified (perhaps with a transient volumetric water flow study).
(Concerned Residents of Melton Hill Lake)

Response: The reservoir elevation and water availability (i.e., volume of water at the intake site) will not change substantially. As indicated in the EA, the withdrawal of water is expected to increase water circulation from the reservoir and mixing in the embayment. This effect, while small, would potentially improve water quality through increased aeration and flow. Flow rate and volumetric calculations of the potential thermal effects indicate minimal changes. For example, a maximum temperature rise of 5 °C (Centigrade) between the water intake and the HPUD wastewater discharge (to the Clinch River downstream of Bull Run Creek) results in less than 0.03 °C rise after mixing with the mean river flow temperature. Under extreme low flow conditions, the potential temperature change is less than 0.5 °C. Thus, the potential water temperature changes are not expected to affect reservoir water quality, due to the small potential changes, the short duration of low flows, and the large reservoir volume that will disperse the warmer water and promote surface heat dissipation. TVA's analysis indicates that the discharge will have no observable temperature effect on the Bull Run Creek embayment.

TDEC issued a conditional water quality certification for the project on November 4, 2002, indicating that it will not violate provisions of The Tennessee Water Quality Control Act of 1977 (T.C.A § 69-3-101 et seq.) or of §§ 301,302, 306, or 307 of the Clean Water Act.

Comment #10: Page 7, 4th paragraph under Water Quality: "This movement of reservoir water into the embayment could benefit water quality by increasing circulation." This may be correct for the area between the intake and the main reservoir, but may NOT be true for the area upstream of the intake. Again, a transient volumetric water flow study would resolve this question.
(Concerned Residents of Melton Hill Lake)

Response: The withdrawal zone for the water intake will vary depending on the amount of water coming down Bull Run Creek. When the flow is low, the withdrawal zone will extend both upstream and downstream of the intake. Any water withdrawn from upstream, in excess of Bull Run Creek flow, would be replaced by reservoir water. Thus, there would be increased water circulation upstream of the intake during low flow periods. As the flow in Bull Run Creek increases, the withdrawal zone would move downstream. With high enough flows all of the withdrawal could be provided by the flow from Bull Run Creek. In this case, there would be little or no increase in upstream circulation due to the withdrawal. Since the average flow of Bull Run Creek at the intake site is approximately 41 cfs (compared to the proposed withdrawal of 34 cfs), withdrawals generally

from downstream [the second case] would likely occur more often. In either case, no adverse water quality impacts are expected.

Comment #11: Page 7, 4th paragraph under Water Quality: “Water temperatures and lake levels would not be altered significantly, since the net withdrawal of about 15 cfs is small relative to the average reservoir flow (4,900 cfs) and the reservoir volume (TVA, 2001).” This flow volume needs to be compared to the 34 cfs water being removed from Bull Run Creek, not the 4,900 cfs flow of the reservoir. What is the source of the 15 cfs cited in the last sentence? (Concerned Residents of Melton Hill Lake)

Response: The net withdrawal of 15 cfs is based on a 34 cfs withdrawal from Bull Run Creek and a 19 cfs return flow from the wastewater discharge located downstream of Bull Run Creek. HPUD estimates that 80 percent of the water removed at this proposed new water intake location would be returned to the Clinch River (Melton Hill Reservoir) system. About 20 percent is expected to be lost to evaporation, evapotranspiration, etc. Of the estimated 80 percent of water returned to the system, 44 percent of this consumption would be returned wastewater discharge while roughly 36 percent, including that portion returned through subsurface flow or groundwater from leakage, irrigation, etc., would be returned through sewer, septic and other forms of soil infiltration in the watershed.

Since the discharge is located downstream of Bull Run Creek, the entire 34 cfs actually comes from the Bull Run Creek embayment. This is not expected to affect lake levels or water temperatures, however, because the intake is drawing water from Melton Hill Reservoir and is not solely dependant on the flow in Bull Run Creek. Any amount of water withdrawn from Bull Run Creek that is in excess of the flow in Bull Run Creek will be provided by Melton Hill Reservoir. Thus, the total amount of water within Bull Run Creek will be essentially unchanged, because the withdrawal is small relative to the total amount of water in the reservoir.

Comment #12: Would the foundation of the Henderson Road Bridge be in jeopardy while the cofferdam is being constructed and then removed? (Concerned Residents of Melton Hill Lake)

Response: A structural engineering review of the bridge plans has indicated that the temporary eddy currents created by a coffer dam would not create instability to the bridge foundation. Also the coffer dam site is far enough (30 to 40 feet) away from the bridge to avoid any direct damage. See December 3, 2002 letter from Campbell to Ledford in Appendix B.

Comment #13: What is the liability for HPUD if the noise levels stated in the report are exceeded? Do area residents have any recourse? (Concerned Residents of Melton Hill Lake)

Response: HPUD will be responsible for complying with the commitments of the EA which will also be included the TVA Section 26a permit as well as the USACE Section 404 and Section 10 permits. Noncompliance with the any of the conditions of the permits could result in cancellation or revocation of the TVA or USACE permits or the imposition of more stringent or additional mitigation measures. Instances of environmental degradation on Melton Hill Reservoir and elsewhere may report to appropriate state or federal regulatory authorities.

Comment #14: What is TVA's response if HPUD decides to place the pump house in a different location on this parcel of land? Mr. Duncan (the property owner) advises us that HPUD is considering this. Will this require TVA to review the project again under Section 26a of the TVA Act? (Concerned Residents of Melton Hill Lake)

Response: Yes, both TVA and USACE would review and evaluate any proposed changes in location or other plans for this project.

Comment #15: As you can tell, we still have many concerns and questions regarding the approval of this site. As residents who use this part of the reservoir almost daily, we see how this area is utilized by various groups of people and individuals. Please consider our accumulated wisdom and interest in this issue carefully. We are not against HPUD providing water to their customers. We just want TVA and HPUD to consider the safety and navigational realities of locating their facility in Bull Run Creek so close to an area that is so heavily utilized for recreation. (Concerned Residents of Melton Hill Lake)

Response: Comment noted.

Comment #16: Considering all the available alternatives and the serious safety and navigational issues at hand, the preferred alternative is to locate the HPUD intake facility in conjunction with the existing West Knox Utility district intake on Melton Hill at Clinch River Marker 46.1L just south of Bull Run Creek. (Concerned Residents of Melton Hill Lake)

Response: Comment noted. See Comment #5 and the corresponding response.

Comment #17: Is the 3 decibels (sic) (dB) above background the "limit," or is 55 decibels (sic) A-weighted the "limit"? (Howard R. Dyer)

Response: As stated in the EA on page 12, measured noise levels at the site ranging from a low of 36 dBA for nighttime in May to a high of 57 dBA during August summer evenings. Levels of 55 dBA also occur regularly during rush hour throughout the year due to traffic on New Henderson Road. The annual average DNL for the site was computed to be 54 dBA. The incremental

change of the 3 dBA would result in a theoretical maximum of 57 dBA. Therefore, this limit is not used because it would exceed the established limit of 55 dBA.

Without abatement, noise levels of 44 to 57 dBA at the property line would be generated. TVA will require that the sound level at the property line generated by the facility not be greater than 55 dBA. Noise abatement methods, including use of concrete walls, sound absorbing panels, and a noise barrier for the roof-mounted air conditioners will reduce sound levels at the site. These measures will reduce noise levels from the building to 48 to 50 dBA, well below the average background noise measured at the site.

Also, see page 13 of the revised EA and Appendix G.

Comment #18: If it is the latter, over what time period will they allowed to be averaged, and what mathematical technique will they be allowed to use. (Howard R. Dyer)

Response: The time period for the day/night equivalent sound level (DNL) is 24 hours. The calculation of the DNL is given in the equation below.

$$DNL = 10\log \left\{ \frac{1}{24} [15 \cdot 10^{LD/10} + 9 \cdot 10^{(LN+10)/10}] \right\}$$

Where: LD – equivalent sound level day (0700 to 2000)
LN – equivalent sound level night (2000 to 0700)
(Includes 10 dBA penalty for night noise emissions)

Decibels (dB) are the logarithmic presentation of the sound pressure caused by noise propagating through air. For calculations, the anti-logs of the dB are calculated, the base numbers are used for DNL calculation, and the log re-calculated in order to come up with the resultant dB.

Comment #19: What is the source of the 55 dBA? Is it a value from the TVA or the USACE, or is it based upon the noise study conducted by Bowlby & Associates, Inc. (Appendix 7 in the draft EA)? (Howard R. Dyer)

Response: The 55 dBA is a guideline published by the USEPA in its document, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*, March 1974, Office of Noise Abatement and Control, USEPA.

Comment #20: I do not know the mathematical technique use in the study to arrive at the “A-weighted (sic) value,” but it is biased very high. (Howard R. Dyer)

Response: USEPA uses A-weighted noise for its 55 dBA DNL guideline, and A-weighted noise is the industry standard used in municipal noise ordinances where they are applicable.

Comment #21: Also, the noise measurements were made only on one day in August, when the natural background noise from crickets, frogs, boats, etc., is at its

highest. A more realistic annual day-night noise level (DNL) should also include winter months. (Howard R. Dyer)

Response: Noise level during winter months are considered in the Bowlby & Associates, Inc., analyses. See Appendix G, Page 3, and paragraph 3.

Comment #22: Will these [noise] limits be defined in the permit issued? (Howard R. Dyer)

Response: Yes, the permit will include all commitments described in the EA. Noise levels reductions using abatement and control measures are amongst those commitments.

Comment #23: If it is determined that the noise levels exceed the limits set forth in the EA, what will be the position of the TVA? (Howard R. Dyer)

Response: See response to Comment #13.

Comment #24: An issue not addressed in the EA or the noise study is the fact that the intake facility will be producing a constant pitched noise or hum. (Howard R. Dyer)

Response: The noise emitted from the intake facility would have a steady motor and pump sound when in operation. It will sound like a home air conditioner at the property line. The potential irritation from steady noise is very subjective. Traffic noise will remain the most noticeable noise because of its level and regularity even when the intake facility is operating.

Comment #25: If noise from the intake facility does not have an absolute limit (reference my example in Question (1) (*i.e.*, *Comment #17*), and then claims compliance by A-weighting over a long period of time), then the noise level in the immediate area could be unlimited. (Howard R. Dyer)

Response: The 55 dBA DNL at the property line will be a commitment and condition of approval. The Bowlby & Associates, Inc., study presents the projected steady-state noise emission from the facility. This projected noise emission will not vary significantly. Based on the mathematical technique for averaging dB (see Response to Comment #18.) a high reading, such as 60 dBA, would “bias” the DNL much above the 55 dBA commitment.

Comment #26: I believe the Environmental Assessment should address the constant pitch noise issue and better define the noise limits. The absolute limit of 3 dB above background will (as the [draft] EA states) has an insignificant effect on the environmental noise. However, the 55 dBA limit will at times allow unacceptable noise levels. (Howard R. Dyer)

Response: The constant pitch noise is addressed in the Response to Comment #24. The noise level commitment is addressed in the Response to Comment #17 and #25. The mathematical technique for calculating an average 3 dB increase above background is the same as for calculating the 55 dBA DNL at the property line because the background level is a DNL value also. The

55 dBA DNL allows for less increase than the 3 dBA level above background would allow.

The 55 dBA limits actually permits less total noise. See responses to Comments #17 and #24.

Comment #27: The East Tennessee Development District recommends that officials from Hallsdale-Powell Utility District and the Tennessee Valley Authority meet with these citizens to address their specific concerns prior to the final approval of this environmental assessment and the final selection for the raw water intake structure. (East Tennessee Development District)

Response: A notice of a public meeting appeared on the TVA external web site on January 8, 2002 and in the *Knoxville News-Sentinel* on January 20, 2002. TVA and the USACE held a public meeting hosted by HPUD in Claxton, Tennessee on January 24, 2002. On March 5, 2002 both TVA and HPUD made presentations and fielded questions at a Melton Hill Lake Users Association meeting open to the public in Oak Ridge, Tennessee. TVA circulated the DEA to 11 federal and state agencies for review and comments on August 3, 2002. At the request of the East Tennessee Development District on behalf of Anderson County Regional Zoning Commission, this comment period was extended thru the end of September, 2002. On September 1 and September 15, the DEA was posted on the TVA web site and a notice of its availability was published in the *Knoxville News Sentinel* and *Oak Ridger* newspapers, respectively. HPUD has made design and construction plans, as well as water quantity and quality, visual, safety and noise study information available to interested persons. TVA and HPUD staff have also been available to take comments and answer questions about the project. TVA believes adequate opportunities for public comments have been provided and comments received have been addressed.