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FINDING OF NO SIGNIFICANT IMPACT
TENNESSEE VALLEY AUTHORITY

SUGAR CAMP COAL MINE EXPANSION
VIKING DISTRICT #2

Sugar Camp Energy, LLC (Sugar Camp) proposes to expand coal mining operations in Hamilton and Franklin counties, Illinois, to include extraction of Tennessee Valley Authority (TVA)-owned coal reserves in an area known as Viking District #2. The proposal includes the extraction of coal reserves through underground room and pillar methods and longwall methods and the installation of surface infrastructure to support the mining operations. On surface lands, a bleeder shaft facility would be constructed on 5.3 acres, and utilities would be installed along a 1.7-mile corridor to support the bleeder shaft facility and mining operations, affecting approximately 6.6 acres along the corridor.

The Viking District #2 expansion would affect approximately 2,255 acres, consisting of overlapping boundaries of a 2,250-acre underground mining shadow area and the approximately 12-acre surface effects area. The entire bleeder shaft area and a portion of the utility corridor are located within the 2,250-acre shadow area. Approximately 5 acres of the utility corridor extend outside of the shadow area. These areas are collectively referred to as the project area.

Sugar Camp has received a *Surface Coal Mining and Reclamation Operations Permit – Underground Operations* from the Illinois Department of Natural Resources (IDNR), Office of Mines and Minerals (OMM) – Land Reclamation Division for the Viking District #2 shadow area as a portion of Significant Boundary Revision (SBR) No. 6 to underground coal mine (UCM) Permit No. 382 for Sugar Camp Mine No. 1. Sugar Camp has also received approval from IDNR for Incidental Boundary Revision (IBR) No. 90 to Permit No. 382 to construct the bleeder shaft area and utility corridor.

The surface facilities and mine entrance to the Sugar Camp Mine No. 1 are located in Franklin County on privately owned land. The Viking District #2 area would be accessed using the Franklin County mine entrance.

The proposal would facilitate recovery of TVA coal reserves under the terms of a coal lease agreement between TVA and Sugar Camp. The potential environmental impacts of the proposed action was assessed in the attached environmental assessment (EA), finalized on November 8, 2018. The EA is incorporated herein by reference.

Proposed Action
Under the proposed action, TVA would approve the Viking District #2 mining plan as submitted by Sugar Camp in the SBR and IBR applications. Sugar Camp would be permitted by TVA to mine its reserves within a 2,250-acre shadow area. In addition to constructing the bleeder shaft facility and installing utilities within a 12-acre surface effects area, the applications also include Sugar Camp's proposed reclamation plan, which addresses restoring the land to approved pre-mining conditions when mining operations are concluded. A summary of the proposed action follows:

Underground Mining: Under the proposal, Sugar Camp would extract coal reserves using room and pillar and continuous mining techniques during a development period. After entryways are developed, longwall mining and subsequent planned subsidence would begin (anticipated for 2019). Mining operations in Viking District #2 operations would conclude in 2023.

Surface Activities: As noted above, the mine plan includes the construction of a bleeder shaft on approximately 5.3 acres of land and installation of a utility corridor affecting 6.6 acres. At the bleeder shaft site, Sugar Camp proposes to install one 16-foot diameter bleeder shaft (900 feet deep) with a concrete pad (approximately 2,430 square feet in size and four feet thick), two 16-inch (900 feet deep) steel lined boreholes with concrete pads, two 12-inch (900 feet deep) steel lined utility boreholes with concrete pads, a transformer with a concrete pad, a compressor station, and a crib plant with associated facilities. Two (25'x25'x10') temporary drill pits would be used during the construction of the turbine and utility boreholes. The drill site would be gravel with 8 inches of crusher-run gravel.

Sugar Camp would install utility lines extending south from the bleeder shaft site to an existing facility approximately 1.7 miles away. A high density polyethylene 12-inch water line and power lines would be installed and buried a minimum of four feet deep within the utility corridor. The utility lines would be installed within 100 feet of the outside right-of-way of a public road (State Route 14 and County Road 100 E). During reclamation, the lines would be capped/disconnected and left in place.

Removal of topsoil would occur immediately following any necessary vegetation clearing for construction. Topsoil material would be removed and placed in a stockpile for future reclamation. Excavated consolidated material would be utilized for road and parking area base construction or placed in a stockpile for future reclamation. Soil storage stockpiles would be situated on stable sites outside of drainage ways to minimize soil erosion. Sugar Camp would seed soil stockpiles with grasses, legumes, and small grain cover crops to minimize susceptibility to excessive water and wind erosion.

Post-Mining Reclamation: The UCM application requires detailed restoration plans for surface effects and subsided areas (the EA addresses reclamation requirements in greater detail). When permanent cessation of operations occurs, final reclamation of the project area would commence immediately and be completed by Sugar Camp in accordance with the approved reclamation plan and the permit conditions developed in accordance with Chapter I, Section 1817.62 Illinois Administrative Code (IAC). The timeframes and limits established in 62 IAC 1817.01 and 1817.113 govern the reclamation activities. If variances or extensions are necessary, timely requests would be made to IDNR-OMM for approval. Reclamation for the Viking District #2 is proposed to occur in 2023. The post-mining land use for the project area would remain the same as the pre-mining conditions.

Related Actions and Environmental Reviews

As stated above, TVA owns the coal reserves beneath this project area and executed a coal lease agreement with Sugar Camp in July 2002 which allows Sugar Camp to mine these reserves. The purpose of the lease agreement is to facilitate the recovery of TVA coal resources in an environmentally sound manner. Under the terms of the agreement, Sugar Camp may not commence mining of TVA-owned coal reserves under a mining plan or any revision until completion of all environmental and cultural resource reviews required for compliance with applicable laws and regulations have been finalized.

In 2008, Sugar Camp obtained a permit from the State of Illinois for underground longwall mining operations at the Sugar Camp Mine No. 1 on approximately 12,103 acres in Franklin and

Hamilton counties. In 2010, Sugar Camp applied to the state for a SBR of that permit to mine TVA-owned coal under an additional 817-acre area. The permit was issued in May 2010. In 2011, TVA prepared an EA to document the potential effects of Sugar Camp's proposed mining of TVA-owned coal underneath a 2,600-acre area for Sugar Camp Mine No. 1. In 2013, TVA supplemented its 2011 EA to consider Sugar Camp's proposal to extend mining operations to include coal reserves underlying an additional 880-acre area in Hamilton County; this proposal included the construction of a bleeder shaft on a 16.5-acre site.

In November 2017, Sugar Camp obtained approval from the State of Illinois to once again expand Sugar Camp Mine No. 1 by 37,791.9 acres (approved as SBR No. 6 to Permit No. 382). The Viking District #2 falls within this permit area. In July 2018, Sugar Camp obtained approval from the state for an IBR related to Viking District #2. TVA is reviewing underground and above ground mine operations for Viking District #2 with this environmental assessment.

The following environmental documents and information provided by Sugar Camp for Viking District #2 were utilized to prepare TVA's environmental assessment of the proposal:

- Application for NEPA Boundary Review. Sugar Camp Mine, Franklin and Hamilton County, Illinois. May 2018. Information in this document was extracted or revised by HMG Engineers from the SBR No. 6 Application for Permit No. 382 submitted by Sugar Camp to IDNR-OMM in 2017. Information includes, but is not limited to the Underground Operations Plan, Indiana Bat Survey, and Water Resources Analysis.
- IBR for Permit No. 382 – Viking Bleeder Shaft, Hamilton County, Illinois; Sugar Camp Mine No. 1 – Submitted to IDNR-OMM by Sugar Camp on May 15, 2018. The application includes, but is not limited to the Surface Operations Plan, Blast Plan, Cultural Resources Survey, and Wetland and Stream Delineation Report.

In early 2018, Sugar Camp began mining activities on portions of TVA-owned coal reserves in the Viking District #2 without first notifying TVA; therefore, TVA was unable to conduct appropriate environmental review of the activities prior to their beginning. After confirming that Sugar Camp was engaging in mining activities, TVA requested that Sugar Camp cease its activities to allow TVA to conduct the required environmental reviews. Sugar Camp did not cease its activities; thus, TVA has pursued legal means to compel Sugar Camp to stop its mining activities until TVA reviewed the proposal. *TVA v. Sugar Camp Energy, LLC*., No. 3:18-cv-239 (E.D. Tenn. 2018). TVA intends to complete an additional environmental review of the mining operations proposed by Sugar Camp for the entire SBR No. 6 proposal.

Environmental Assessment

Based on TVA's experience with reviewing mining projects, the nature of the proposed action, and other available information, the potential effects to the following resources were considered:

- Geologic and Soils
- Floodplains
- Water Resources
- Wetlands
- Air Quality
- Greenhouse Gases
- Wildlife
- Migratory Birds
- Vegetation
- Invasive Species
- Aquatic Ecology
- Threatened and Endangered Species
- Natural Areas
- Transportation
- Utilities
- Socioeconomics and Environmental Justice
- Cultural Resources
- Noise Levels

Under the Action Alternative, TVA-owned coal resources would be extracted by Sugar Camp. Within the 2,250 acre project shadow area, an estimated 1,861 acres would subside with a predicted maximum subsidence of 5.3 feet. Generally, TVA's analysis found that the primary impacts anticipated from the proposal relate to subsidence that would occur during mining operations and to impacts associated with surface activities. Subsidence may result in temporary impacts to farmland, floodplains, surface water, wetlands, wildlife, aquatic ecology, transportation, and infrastructure. As described below, subsidence impacts would be addressed by Sugar Camp. Surface activities would result in minor and temporary effects at these surface locations, until the areas are restored to pre-mine condition. Mining operations would result in minor transportation, air quality, greenhouse gas, and economic impacts.

Necessary Permits and Consultation
TVA would not be required to secure any permits to undertake the proposed action. All permits would be held by Sugar Camp.

Surface Coal Mining and Reclamation Operations Permit – Underground Operations: In 2017, Sugar Camp received permits from IDNR-OMM to conduct underground and above ground mining operations in Viking District #2.

National Pollutant Discharge Elimination System: A permit from the Illinois Environmental Protection Agency (IEPA) is needed for all construction projects that disturb more than one acre of land. Sugar Camp would apply for a general National Pollutant Discharge Elimination System (NPDES) permit prior to construction for operations within the surface effects area.

Illinois Joint Permit Application

Section 401 Water Quality Certification: This certification is coordinated through the IEPA Bureau of Water for the discharge of fill material and dredging in waters of the United States. Discharge of fill material and dredging in wetlands is not anticipated for disturbance in the surface effects area. Drainage correction activities in the shadow area that involve dredging would require additional wetland surveys through the Section 404 permitting process but it is likely that a 401 certification would be granted automatically through this process.

Section 404 Permit: This permit, coordinated through the U.S. Army Corps of Engineers (USACE), is a requirement for dredge or fill activities in waters of the U.S., including wetlands, on the private property portion of Viking District #2. Discharge of fill material and dredging in waters of the U.S. is not anticipated for disturbance in the surface effects area. Drainage correction activities in the shadow area that involve dredging would require additional stream and wetland surveys through the Section 404 permitting process.

IDNR Permits: IDNR permits are required for dams, for any construction within a public body of water, and for construction within floodways. These permits are coordinated by the IDNR-Office of Water Resources (OWR). Certain floodway or floodplain construction activities may be authorized by a Statewide or Regional Permit. Statewide Permit No. 8 authorizes the construction of underground pipeline and utility crossings which have insignificant impact on those factors under the jurisdiction of the OWR.

IDNR does not regulate construction near the edge of the floodplain if the obstructions will not cause a significant increase in flood heights. The bleeder shaft area is located at the edge of both the 100-year and 500-year floodplain. IDNR does not regulate construction

activities in the floodways of streams draining less than ten square miles. The bleeder shaft area is located in the floodplain of Campbell Branch, which drains five square miles. Additionally, no floodways are delineated on Campbell Branch or Sullivan Branch.

Consultation Requirements

United States Fish and Wildlife Service (USFWS) and IDNR: Concurrence on the impact of federal actions on state and federally-listed threatened and endangered species by USFWS and IDNR was obtained.

Illinois State Historic Preservation Office (SHPO): Concurrence on the impact of federal actions on Illinois historic and archaeological sites by SHPO was obtained.

Federally Recognized Tribal Governments: TVA consulted with the following federally recognized Indian tribes regarding properties within the proposed project's area of potential effect that may have religious and cultural significance to them and eligible for listing in the National Register of Historic Places: Absentee Shawnee Tribe of Oklahoma, Chippewa Cree Tribe of the Rocky Boy's Reservation, Citizen Potawatomi Nation, Eastern Shawnee Tribe of Oklahoma, Forest County Potawatomi Nation, Ho-Chunk Tribe of Wisconsin, Kaw Nation, Keweenaw Bay Indian Community, Kickapoo Tribe of Oklahoma, Kickapoo Tribe of Kansas, Lac Vieux Desert Band of Lake Superior Chippewa Indians, Menominee Indian Tribe of Wisconsin, Miami Tribe of Oklahoma, Osage Nation of Oklahoma, Ottawa Tribe of Oklahoma, Ponca Tribe of Oklahoma, Ponca Tribe of Nebraska, Pokagon Band of Potawatomi Indians, Peoria Tribe of Indians in Oklahoma, Prairie Band of Potawatomi Nation, Quapaw Tribe of Oklahoma, Red Lake Band of Chippewa Indians of Minnesota, Sac and Fox Tribe of the Mississippi in Iowa, Sac and Fox Nation of Missouri in Kansas and Nebraska, the Sac and Fox Nation of Oklahoma, Shawnee Tribe, United Keetoowah Band of Cherokee Indians, Winnebago Tribe of Nebraska, and the Wyandotte Nation. TVA received comments from one tribe, the Osage Nation, which agreed with TVA's findings.

Mitigation and Restoration

Sugar Camp mining operations would be carried out in compliance with 62 IAC 1700-1850, which specifies a comprehensive set of environmental protection measures for the control of adverse ecological impacts resulting from coal mining. Included are considerations for air, water, acid and toxic materials, soils, landform, vegetation, among other items, in both spatial and temporal capacities. As such, general protective measures for all environmental values are inherent within the regulatory program. The expanse of mining and mining-related disturbances would be limited to that acreage necessary for conducting mining operations in compliance with the applicable land reclamation regulatory requirements. Disturbances to sites not required for mining or mining-related activities would be held to a minimum.

IDNR-OMM would require Sugar Camp to implement best management practices and mitigation to minimize potential adverse environmental effects throughout the project area as conditions of their mine permit. Additional mitigation requirements, not listed below, may arise, such as measures related to cultural resources that have not yet been identified.

Permit conditions would be enforced by the State of Illinois; TVA does not regulate the mining activities of Sugar Camp. Anticipated State of Illinois mitigation measures include:

1. The implementation of sediment and erosion control practices (e.g., silt fences, straw, mulch, or vegetative cover) and fugitive dust minimization (e.g., wetting roads prior to heavy use).
2. The implementation of water quality protection measures (e.g., sediment pond treatment, water quality monitoring, or establishment of riparian zone buffer zones).
3. The repair of any damage to buildings or other structures caused by subsidence.
4. The minimization of invasive species transmission per the requirements of the Illinois Noxious Weed Law.
5. Compensation for any interruption to well water quality or quantity caused by subsidence until the groundwater is restored.
6. The repair of any damage to roads caused by subsidence.
7. The repair of any drainage alteration caused by subsidence.
8. The compensatory mitigation of wetlands and streams impacted by subsidence, if necessary. This condition would also be enforced by the USACE.
9. The repair of any damage to utilities caused by subsidence.

Although TVA does not regulate Sugar Camp's mining activities, TVA will require mitigation measures to minimize adverse impacts resulting from allowing Sugar Camp to mine TVA coal. TVA identified two additional measures relating to floodplains:

1. Sugar Camp must prepare an evacuation plan for the bleeder shaft area, to address the relocation of all portable flood-damageable surface equipment (including the mobile crib plant) outside of the floodplain in the event of a flood. In addition, Sugar Camp must construct boreholes and shafts such that they are flood-proof to or above the 500-year flood elevation at the bleeder shaft area. With these measures, the proposed action would comply with Executive Order (EO) 11988 (Floodplain Management) and there would be no significant impacts to floodplains and their natural and beneficial values.
2. TVA requires that Sugar Camp adhere to the coal lease agreement requirements, as applicable.

IDNR would require Sugar Camp to submit quarterly progress reports detailing mining, monitoring, and mitigation activities as a permit condition. TVA can verify Sugar Camp's adherence to the commitments of this EA by obtaining copies of quarterly progress reports.

The UCM application requires detailed restoration plans for surface effects and subsided areas. When permanent cessation of operations occurs, final reclamation of the project area would commence immediately and be completed by Sugar Camp in accordance with the approved reclamation plan and the permit conditions developed in accordance with Chapter I, Section 1817.62 Illinois Administrative Code (IAC). The timeframes and limits established in 62 IAC 1817.01 and 1817.113 govern the reclamation activities. If variances or extensions are necessary, timely requests would be made to IDNR-OMM for approval. While actual mining durations can vary, Sugar Camp estimates that the reclamation for Sugar Camp Mine No. 1 would begin in 2045. Reclamation for the Viking District #2 is proposed to occur in 2023. The post-mining land use for the project area would remain the same as the pre-mining conditions.

Sugar Camp would backfill and seal mine openings, such as the bleeder shaft and boreholes, in accordance with pertinent state and federal regulations. The six boreholes would be permanently sealed within 60 days of inactivity. The bleeder shaft and any boreholes would be

plugged from top to bottom according to all Mine Safety and Health Administration and IDNR regulatory standards after they are no longer needed. Any steel casings would be cut off three feet below natural soil level and the void filled with subsoil, and then covered with topsoil, mulched and seeded. Shaft holes would be filled with stockpile shaft material/rip rap and have at least one foot concrete reinforced cap. All utility boreholes would be plugged and filled with neat cement. The shaft would be surveyed and the Hamilton County Courthouse would be notified as required by Operator Memorandum 00-01.

Upon completion of the active mining operation, reclamation operations would commence. All rough grading would be completed within 180 days following the removal of all facilities. Final grading, including root medium placement, topsoil placement, and temporary crop cover would be completed within 12 months of the completion of the active mining operation. Upon completion of reclamation and the first normal period for favorable planting or farming conditions, pasture land would be seeded and returned to its pre-mine condition. Topsoil would be distributed over the site evenly. Sugar Camp would accomplish backfilling and re-grading procedures by using scrapers, dozers, loaders, and/or trucks to grade the disturbed areas and to re-distribute the stored subsoil and topsoil. Soil materials required for the reclamation effort would be obtained from stockpiled soils removed prior to disturbance by the mining operations. Topsoil and subsoil would be redistributed throughout the permitted area in a method that would allow for proper soil depth placement and minimize soil compaction. The minimization of soil compaction would allow for a better root medium and promote plant growth. In the surface effects area, topsoil depth would be the approximate thickness of pre-mining conditions.

All the area affected by the installation of surface facilities would be final-graded to the approximate original contour. In permitted areas adjacent to undisturbed areas, re-grading would be blended with the adjacent undisturbed grades. Methods to deter erosion of the reclaimed area would include, but not be limited to, the use of terraces, ditches, hay bales, silt fence, vegetation, erosion control matting, and/or riprap.

Soil replacement and vegetation establishment are dictated by seasonal weather conditions. Soil placement would generally be accomplished during the drier months of the year to avoid undesirable compaction. Grading and construction and the removal or renovation of water and erosion control structures would likely occur between April 1 and November 15 as this is a typical growing season and would result in the best opportunity to control runoff. This time schedule would allow for revegetation and mulching of the disturbed areas. Unforeseen situations may require that structures be constructed during adverse weather conditions. If this should occur, a temporary vegetation seed mixture would be used until the area can be seeded with a permanent seed mixture. The same time schedule of April 1 through November 15 would be used for the removal and/or renovation of structures. Prior to this type of work being conducted, approval would be received from the appropriate regulatory agencies. Agencies involved would be dictated by the location of work and particular resource in need of protection, but may include IDNR, IEPA, USFWS, and USACE. Work would be performed in accordance with accepted engineering and conservation practices. Upon completion of grading activities, areas would be stabilized using cover crops, as stated below, and/or by applying mulch. The approved species would then be seeded to provide vegetative cover in accordance with the post-mining land use.

In accordance with its IDNR mining permit, Sugar Camp would restore the original drainage conditions and correct any damage that may have been caused by subsidence (e.g., cracks in building foundations, road surfaces, or ponding of water from subsided streams). Drainage restoration would be accomplished through stream-dredging activities, which are subject to

requirements under state law, and Sections 401 and 404 of the Clean Water Act. The goal of the drainage restoration is to return the land to the baseline conditions that existed prior to the start of coal recovery.

Longwall mining results in predictable and uniform subsidence patterns. Pre-subsidence contours have been documented by aerial mapping. This mapping provides a basis to determine the extent of subsidence to the lands. Any impacts that may impair the value or use of the lands would be mitigated to insure the land reaches a condition capable of maintaining the value and reasonable foreseeable uses which it was capable of supporting prior to subsidence. Primary methods would include restoration of drainage by small cut and fill operations and filling of cracks which fail to close on their own, utilizing soil or limestone materials. A pre-subsidence survey would be pursued on structures prior to subsidence occurring. This survey would include photographic and sketched documentation of the condition of the structures in a pre-subsidence condition. The survey would be performed by a person trained and experienced in performing such surveys. A report would be generated including a description of the structure including photographs and documentation of the physical condition of the structure. A copy would be provided to the structure owner and any comments to the survey would be addressed.

After subsidence has occurred, a post subsidence survey would be performed in the same manner and procedures as the pre-subsidence survey. Any changes to the structures due to subsidence would be noted and would provide a basis to determine the extent of material damage to the structures.

Conclusion and Findings

Based on the findings of the EA and in consideration of the environmental protection measures required by the State of Illinois, TVA concludes that the proposed mining of TVA coal reserves underlying 2,250 acres in the lease area known as Viking District #2 and the associated construction and operation of a bleeder shaft with above-ground facilities and the installation of utilities would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required.

Lana Bean
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Tennessee Valley Authority

11/8/18
Date Signed