COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

June 28, 2016

SENT VIA E-MAIL: chris.stanley@boothenergy.com
RECEIPT CONFIRMATION REQUESTED

Clintwood Elkhorn Mining LLC
c/o Mr. Chris Stanley, Quality Control/Environmental Permitting Manager
P O Box 196
Hurley, Virginia 24620

Re: Virginia Water Protection (VWP) Individual Permit Number 15-1432
Clintwood Elkhorn Mining LLC, Luke (CE#3) Prep Plant Knox Creek Withdrawal, Buchanan County
Notice of Final Permit

Dear Mr. Stanley:

Pursuant to the VWP Permit Program Regulation 9 VAC 25-210-10 and § 401 of the Clean Water Act Amendments of 1977, Public Law 95-217, the Department of Environmental Quality has enclosed the VWP Individual Permit for the "Clintwood Elkhorn Mining LLC, Luke (CE#3) Prep Plant Knox Creek Withdrawal" project.

This permit is valid for 15 years from the date of issuance. No re-issuance or extension of the permit may occur, as the permit term cannot exceed the maximum of 15 years.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have **30 calendar days** from the date of service (the date you actually received this decision or the date it was mailed to you, whichever occurred first) within which to appeal this decision by filing a notice of appeal in accordance with the Rules of the Supreme Court of Virginia with the Director, Department of Environmental Quality. In the event that this decision is served on you by mail, three days are added to that period. Refer to Part 2A of the Rules of the Supreme Court of Virginia for additional requirements governing appeals from administrative agencies.

Alternatively, an owner may request a formal hearing for the formal taking of evidence upon relevant fact issues under Section 2.2-4020 of the Administrative Process Act. A petition for a formal hearing must meet the requirements set forth in 9 VAC 25-230-130.B of the Virginia Administrative Code. In cases involving actions of the board, such petition must be filed within 30 calendar days after notice of such action is sent to such owner by certified mail.

Should you have any questions, please contact Brian McGurk at (804) 698-4180, Brian.McGurk@deq.virginia.gov, or at the above address.

Respectfully,

Scott W. Kudlas
Director, Office of Water Supply

Enclosures: Permit Cover Page, Part I - Special Conditions, Part II - General Conditions, Attachment A, Permit Fact Sheet

cc: Mr. Timothy R. Browning, Artemis Consulting Services, LLC – VIA EMAIL
VDH Office of Drinking Water – VIA EMAIL

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

DRAFT
VWP Individual Permit Number 15-1432
Effective Date: June 28, 2016
Expiration Date: June 28, 2031

VIRGINIA WATER PROTECTION PERMIT ISSUED PURSUANT TO THE STATE WATER CONTROL LAW AND SECTION 401 OF THE CLEAN WATER ACT

Based upon an examination of the information submitted by the owner, and in compliance with § 401 of the Clean Water Act as amended (33 USC 1341 et seq.) and the State Water Control Law and regulations adopted pursuant thereto, the State Water Control Board (board) has determined that there is a reasonable assurance that the activity authorized by this permit, if conducted in accordance with the conditions set forth herein, will protect instream beneficial uses and will not violate applicable water quality standards. The board finds that the effect of the impact, together with other existing or proposed impacts to surface waters, will not cause or contribute to a significant impairment to state waters or fish and wildlife resources.

Permittee:	Clintwood Elkhorn Mining LLC
Address:	c/o Chris Stanley, P. O. Box 196 Hurley, Virginia 24620
Activity Location:	The proposed surface water intake is located on Knox Creek on the same property as the Luke (CE#3) coal preparation plant, approximately two miles northwest of Hurley, VA., on Rte 643. The project is located in Buchanan County, Virginia, approximately 3.3 miles upstream of the state boundary and approximately 11 miles upstream of the junction of Knox Creek with the Tug Fork River.
Activity Description:	The Clintwood Elkhorn Luke (CE#3) Prep Plant (Luke Plant) is a coal preparation plant that currently processes coal from two surface mines and a number of underground mines. Clintwood Elkhorn Mining LLC proposes to install a new surface water intake on Knox Creek to continue to supply water to the plant. The intake will be suspended from an existing bridge and therefore no impacts to state waters are proposed.

The permitted activity shall be in accordance with this Permit Cover Page, Part I - Special Conditions, and Part II - General Conditions.

Director, Office of Water Supply

6/28/16
Date

Part I – Special Conditions

A. Authorized Activities

1. This permit authorizes the installation and operation of a surface water withdrawal to withdraw surface water from Knox Creek as described in Part I. D.

2. This permit authorizes the placement of an intake structure on the bed of Knox Creek using an overhead winch apparatus when stream flow conditions are sufficient to allow withdrawals. The intake structure shall be located and constructed as described by Alternative 4 – Modified Withdrawal Relocated Downstream (Preferred Alternative) in the applicant's submittal dated February 23, 2016. No impacts to state waters are authorized.

3. Authorized activities shall be conducted as described in the Joint Permit Application dated September 8, 2015, and received September 29, 2015, and supplemental materials, revisions and clarifications received through February 23, 2016.
4. The permittee shall notify the DEQ of any impacts to surface waters, including wetlands; of any modifications of the intake structure; and of any change to the type of surface water impacts associated with this project. Any additional impacts, modifications, or changes shall be subject to individual permit review and/or modification of this permit.

B. Permit Term

1. This permit is valid for fifteen (15) years from the date of issuance. A new permit shall be necessary for the continuance of the authorized activities.

2. The permittee shall notify DEQ in writing at least 120 calendar days prior to the expiration of this permit if reissuance of this permit term is required.

C. Standard Project Conditions

1. The activities authorized by this permit shall be executed in such a manner that any impacts to beneficial uses are minimized. As defined in § 62.1-10(b) of the Code of Virginia, "beneficial use" means both instream and offstream uses. Instream beneficial uses include, but are not limited to, the protection of fish and wildlife habitat, maintenance of waste assimilation, recreation, navigation, and cultural and aesthetic values. Offstream beneficial uses include, but are not limited to, domestic (including public water supply), agricultural, electric power generation, commercial, and industrial uses. Public water supply uses for human consumption shall be considered the highest priority.
2. Flows downstream of the project area shall be maintained to protect all uses.

3. The activity shall not impede the passage of normal or expected high flows.

4. Temporary disturbances to stream channels or banks during installation of the suspended intake structure shall be avoided and minimized to the maximum extent practicable.

5. Measures shall be employed at all times to prevent and contain spills of fuels, lubricants, or other pollutants into surface waters.

6. Virginia Water Quality Standards shall not be violated in any surface waters as a result of the project activities.

7. All required notifications and submittals shall include project name and permit number and be submitted to the DEQ office stated below, to the attention of the Water Withdrawal Permit Manager, unless directed in writing by DEQ subsequent to the issuance of this permit: Department of Environmental Quality-Office of Water Supply, P.O. Box 1105, Richmond, Virginia 23219.

8. All reports required by this permit and other information requested by DEQ shall be signed by the permittee or a person acting in the permittee's behalf, with the authority to bind the permittee. A person is a duly authorized representative only if *both* criteria below are met. If a representative authorization is no longer valid because of a change in responsibility for the overall operation of the facility, a new authorization shall be immediately submitted to DEQ.

    a. The authorization is made in writing by the permittee.
    b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, superintendent, or position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position.

9. All submittals shall contain the following signed certification statement:

    "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

10. Any fish kills or spills of fuels or oils shall be reported to DEQ immediately upon discovery at (804) 698-4000. If DEQ cannot be reached, the spill shall be reported to the Virginia Department of Emergency Management (DEM) at 1-800-468-8892 or the National Response Center (NRC) at 1-800-424-8802.

11. DEQ shall be notified in writing within 24 hours or as soon as possible on the next business day when potential environmentally threatening conditions are encountered which require debris removal or involve potentially toxic substances. Measures to remove the obstruction, material, or toxic substance or to change the location of any structure are prohibited until approved by DEQ.

D. Surface Water Withdrawals

1. Surface water withdrawn from Knox Creek and authorized under this permit is authorized to be used for cleaning and processing coal and coal waste material at the Luke Preparation Plant facility.

2. The withdrawal of water from Knox Creek shall not exceed the following:

    a. A maximum instantaneous withdrawal rate of 300 gallons per minute (gpm)
    b. A maximum daily withdrawal of 0.156 million gallons per day (mgd).
    c. A maximum annual withdrawal 40.52 mg.

3. At no time shall the volume of water withdrawn from Knox Creek be greater than 10 percent of the flow in Knox Creek at the intake as estimated by the following equation:
    a. $Q_{intake} = DA_{intake} * (Q_{03207800} / DA_{03207800})$, where:

        - Q_{intake} = daily mean flow at the intake (cfs)
        - DA_{intake} = drainage area of the intake = 41.2 square miles
        - $DA_{03207800}$ = drainage area of U. S. Geological Survey (USGS) Gage No. 03207800 (Levisa Fork at Big Rock) = 297 square miles
        - $Q_{03207800}$ = the previous day's provisional mean daily flow recorded at Gage 03207800

4. Withdrawals from Knox Creek are prohibited when the estimated flow in Knox Creek (Q_{intake}) is less than 4.4 cubic feet per second (cfs).

5. The permittee shall submit a drought management plan to DEQ for review and approval within 180 days of permit issuance. Any revisions to the approved plan shall be submitted to DEQ for review and approval prior to implementing the change. The plan shall include, at a minimum, the following:

    a. Development of drought stages
        i.
        ii.
        iii.

    b. Description of the conservation measures to be implemented during each drought stage.

    c. Plans for the implementation of an alternative water source or sources for the project during low stream flow periods.

6. Should DEQ determine that impacts to downstream beneficial uses have occurred as a result of the authorized project, DEQ may require the installation of a stream gage on Knox Creek and monitoring requirements that differ from those specified herein. Such revisions may require that this permit be modified in accordance with the Virginia Water Protection Permit Program Regulation 9VAC25-210 in effect at that time.

7. Drought Evaluation Region

8. The intake screens shall be designed so that screen openings are not larger than 5.5 millimeters in width and height and the screen face intake velocities are not greater than 0.25 feet per second.

E. Monitoring, Recordation and Reporting Conditions

1. The permittee shall monitor withdrawals from Knox Creek on a daily basis using flow totalizer technology to confirm that the withdrawals are in compliance with this permit. Such meters shall produce volume determinations within plus or minus 10% of actual flows. A defective meter or other device must be repaired or replaced within 60 days. A defective meter is not grounds for not reporting the withdrawals. During any period when a meter is defective, generally accepted engineering practice shall be used to estimate withdrawals and the period during which the meter was defective must be clearly identified in the report.

2. On each day that pumping occurs, the permittee must monitor and record the following, for each pump:

    a. Date and time;

    b. Total amount of water withdrawn each day, and

    c. The provisional stream flow in cubic feet per second (cfs) as measured at the USGS Gage No. 03207800 and

    d. The flow in Knox Creek at the intake (Q_{intake}) as estimated using the equation in Part I.D.3.a.

3. The permittee shall submit a water withdrawal monitoring report to DEQ semi-annually. The semi-annual monitoring period shall be as follows: January through June and July through December. The daily records shall be tabulated by month. The report shall be submitted within thirty (30 days) following each semi-annual monitoring period. Submittal of the report may take the form of electronic reporting or another form determined to be acceptable by DEQ. In the event the electronic reporting system is not available, the permittee may submit the report by electronic mail. These reporting requirements will also satisfy the annual reporting requirement of 9VAC25-200 et seq. The report shall include the following information:

    a. The permittee's name and address;

    b. The permit number;

    c. The source (s) from which water is withdrawn;

    d. The location (latitude and longitude) of the point of water withdrawal ;

    e. Information listed in Part I.E.2.

f. The cumulative volume (million gallons) of water withdrawn each month and for the calendar year;

g. The average daily volume (million gallons per day) of water withdrawn as calculated the last day of the monitoring period.

h. In the last report for the calendar year, the largest single day withdrawal volume (million gallons) that occurred in the year and the month in which it occurred;

i. The method of measuring each withdrawal; and

j. A summary of any occurrences (with dates) when withdrawals exceeded the withdrawal limits listed by Parts I.D.2a-d, I.D.3, and I.D.4.

k. If during a semi-annual reporting period a drought emergency is declared, the report shall include a summary of mandatory conservation measures implemented during the drought event.

4. Water withdrawal monitoring and reporting activities shall comply with this section, Part I.C, and Part II. All records and information that result from the monitoring and reporting activities required by this permit, including any records of maintenance activities to the withdrawal system, shall be retained for the life of the permit. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or as requested by the State Water Control Board.

F. Construction Submittals (Proposed Intake Structure)

1. The final design and construction of the water withdrawal intake structure authorized by Part I.A.2 of this permit shall be as described by Design Alternative 4 and as depicted on the accompanying Plan View and Cross Section sheets dated February 23, 2016 and received on the same date. Any changes to the final plans for the intake structure shall be submitted to DEQ immediately upon determination that changes are necessary. DEQ approval shall be required prior to implementing the changes.

Part II – General Conditions

A. Duty to Comply

The permittee shall comply with all conditions of the VWP permit. Nothing in the VWP permit regulations shall be construed to relieve the permittee of the duty to comply with all applicable federal and state statutes, regulations and prohibitions. Any VWP permit violation is a violation of the law, and is grounds for enforcement action, VWP permit termination, revocation, modification, or denial of an application for a VWP permit extension or reissuance.

B. Duty to Cease or Confine Activity

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the activity for which a VWP permit has been granted in order to maintain compliance with the conditions of the VWP permit.

C. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any impacts in violation of the permit which may have a reasonable likelihood of adversely affecting human health or the environment.

D. VWP Permit Action

1. A VWP permit may be modified, revoked and reissued, or terminated as set forth in 9 VAC 25-210 et seq.

2. If a permittee files a request for VWP permit modification, revocation, or termination, or files a notification of planned changes, or anticipated noncompliance, the VWP permit terms and conditions shall remain effective until the request is acted upon by the board. This provision shall not be used to extend the expiration date of the effective VWP permit. If the permittee wishes to continue an activity regulated by the VWP permit after the expiration date of the VWP permit, the permittee must apply for and obtain a new VWP permit or comply with the provisions of 9 VAC 25-210-185 (VWP Permit Extension).

VWP permits may be modified, revoked and reissued or terminated upon the request of the permittee or other person at the board's discretion, or upon board initiative to reflect the requirements of any changes in the statutes or regulations, or as a result of VWP permit noncompliance as indicated in the Duty to Comply subsection above, or for other reasons listed in 9 VAC 25-210-180 (Rules for Modification, Revocation and Reissuance, and Termination of VWP permits).

E. Inspection and Entry

Upon presentation of credentials, any duly authorized agent of the board may, at reasonable times and under reasonable circumstances:

1. Enter upon any permittee's property, public or private, and have access to, inspect and copy any records that must be kept as part of the VWP permit conditions;

2. Inspect any facilities, operations or practices (including monitoring and control equipment) regulated or required under the VWP permit; and

3. Sample or monitor any substance, parameter or activity for the purpose of ensuring compliance with the conditions of the VWP permit or as otherwise authorized by law.

F. Duty to Provide Information

1. The permittee shall furnish to the board any information which the board may request to determine whether cause exists for modifying, revoking, reissuing or terminating the VWP permit, or to determine compliance with the VWP permit. The permittee shall also furnish to the board, upon request, copies of records required to be kept by the permittee.

2. Plans, specifications, maps, conceptual reports and other relevant information shall be submitted as required by the board prior to commencing construction.

G. Monitoring and Records Requirements

1. Monitoring of parameters, other than pollutants, shall be conducted according to approved analytical methods as specified in the VWP permit. Analysis of pollutants will be conducted according to 40 CFR Part 136 (2000), Guidelines Establishing Test Procedures for the Analysis of Pollutants.

2. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

3. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart or electronic recordings for continuous monitoring instrumentation, copies of all reports required by the VWP permit, and records of all data used to complete the application for the VWP permit, for a period of at least three years from the date of the expiration of a granted VWP permit. This period may be extended by request of the board at any time.

4. Records of monitoring information shall include:

   a. The date, exact place and time of sampling or measurements;

   b. The name of the individuals who performed the sampling or measurements;

   c. The date and time the analyses were performed;

d. The name of the individuals who performed the analyses;

e. The analytical techniques or methods supporting the information such as observations, readings, calculations and bench data used;

f. The results of such analyses; and

g. Chain of custody documentation.

H. Transferability

This VWP permit may be transferred to a new permittee only by modification to reflect the transfer, by revoking and reissuing the permit, or by automatic transfer. Automatic transfer to a new permittee shall occur if:

1. The current permittee notifies the board within 30 days of the proposed transfer of the title to the facility or property;

2. The notice to the board includes a written agreement between the existing and proposed permittee containing a specific date of transfer of VWP permit responsibility, coverage and liability to the new permittee, or that the existing permittee will retain such responsibility, coverage, or liability, including liability for compliance with the requirements of any enforcement activities related to the permitted activity; and

3. The board does not within the 30-day time period notify the existing permittee and the new permittee of its intent to modify or revoke and reissue the VWP permit.

I. Property rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize injury to private property or any invasion of personal rights or any infringement of federal, state or local law or regulation.

J. Reopener

Each VWP permit shall have a condition allowing the reopening of the VWP permit for the purpose of modifying the conditions of the VWP permit to meet new regulatory standards duly adopted by the board. Cause for reopening VWP permits includes, but is not limited to when the circumstances on which the previous VWP permit was based have materially and substantially changed, or special studies conducted by the board or the permittee show material and substantial change, since the time the VWP permit was issued and thereby constitute cause for VWP permit modification or revocation and reissuance.

K. Compliance with State and Federal Law

Compliance with this VWP permit constitutes compliance with the VWP permit requirements of the State Water Control Law. Nothing in this VWP permit shall be construed to preclude the institution of any legal action under or relieve the permittee from any responsibilities, liabilities, or other penalties established pursuant to any other state law or regulation or under the authority preserved by § 510 of the Clean Water Act.

L. Severability

The provisions of this VWP permit are severable.

M. Permit Modification

A VWP permit may be modified, but not revoked and reissued except when the permittee agrees or requests, when any of the following developments occur:

1. When additions or alterations have been made to the affected facility or activity which require the application of VWP permit conditions that differ from those of the existing VWP permit or are absent from it;

2. When new information becomes available about the operation or activity covered by the VWP permit which was not available at VWP permit issuance and would have justified the application of different VWP permit conditions at the time of VWP permit issuance;

3. When a change is made in the promulgated standards or regulations on which the VWP permit was based;

4. When it becomes necessary to change final dates in schedules due to circumstances over which the permittee has little or no control such as acts of God, materials shortages, etc. However, in no case may a compliance schedule be modified to extend beyond any applicable statutory deadline of the Act;

5. When changes occur which are subject to "reopener clauses" in the VWP permit; or

6. When the board determines that minimum instream flow levels resulting from the permittee's withdrawal of water are detrimental to the instream beneficial use and the withdrawal of water should be subject to further net limitations or when an area is declared a Surface Water Management Area pursuant to §§ 62.1-242 through 62.1-253 of the Code of Virginia, during the term of the VWP permit.

N. Permit Termination

After notice and opportunity for a formal hearing pursuant to Procedural Rule No. 1 (9 VAC 25-230-100) a VWP permit can be terminated for cause. Causes for termination are as follows:

1. Noncompliance by the permittee with any condition of the VWP permit;

2. The permittee's failure in the application or during the VWP permit issuance process to disclose fully all relevant facts or the permittee's misrepresentation of any relevant facts at any time;

3. The permittee's violation of a special or judicial order;

4. A determination by the board that the permitted activity endangers human health or the environment and can be regulated to acceptable levels by VWP permit modification or termination;

5. A change in any condition that requires either a temporary or permanent reduction or elimination of any activity controlled by the VWP permit; and

6. A determination that the permitted activity has ceased and that the compensatory mitigation for unavoidable adverse impacts has been successfully completed.

O. Civil and Criminal Liability

Nothing in this VWP permit shall be construed to relieve the permittee from civil and criminal penalties for noncompliance.

P. Oil and Hazardous Substance Liability

Nothing in this VWP permit shall be construed to preclude the institution of legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under § 311 of the Clean Water Act or §§ 62.1-44.34:14 through 62.1-44.34:23 of the State Water Control Law.

Q. Unauthorized Discharge of Pollutants

Except in compliance with this VWP permit, it shall be unlawful for the permittee to:

1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances;

2. Excavate in a wetland;

3. Otherwise alter the physical, chemical, or biological properties of state waters and make them detrimental to the public health, to animal or aquatic life, to the uses of such waters for domestic or industrial consumption, for recreation, or for other uses;

4. On or after October 1, 2001 conduct the following activities in a wetland:

a. New activities to cause draining that significantly alters or degrades existing wetland acreage or functions;

b. Filling or dumping;

c. Permanent flooding or impounding;

d. New activities that cause significant alteration or degradation of existing wetland acreage or functions.

R. Permit Extension

Any permittee with an effective VWP permit for an activity that is expected to continue after the expiration date of the VWP permit, without any change in the activity authorized by the VWP permit, shall submit written notification requesting an extension. The permittee must file the request prior to the expiration date of the VWP permit. Under no circumstances will the extension be granted for more than 15 years beyond the original effective date of the VWP permit. If the request for extension is denied, the VWP permit will still expire on its original date and, therefore, care should be taken to allow for sufficient time for the board to evaluate the extension request and to process a full VWP permit modification, if required.

Attachment A – Water Conservation

Mandatory Non-essential Water Use Restrictions

The following non-essential water uses will be prohibited during periods of declared drought emergencies. Please note the exceptions that follow each prohibited use. These prohibitions and exceptions will apply to uses from all sources of water and will only be effective when the Governor of Virginia or the Virginia Drought coordinator declares a Drought Emergency. Water use restrictions shall not apply to the agricultural production of food or fiber, the maintenance of livestock including poultry, nor the commercial production of plant materials, *provided that best management practices are applied to assure the minimum amount of water is utilized*.

1. ***Unrestricted irrigation of lawns is prohibited.***

   - Newly sodded and seeded areas may be irrigated to establish cover on bare ground at the minimum rate necessary for no more than a period of 60 days. Irrigation rates may not exceed one inch of applied water in any 7-day period.

   - Gardens, bedding plants, trees, shrubs and other landscape materials may be watered with hand held containers, hand held hoses equipped with an automatic shutoff device, sprinklers or other automated watering devices at the minimum rate necessary but in no case more frequently than twice per week. Irrigation should not occur during the heat of the day.

   - All allowed lawn irrigation must be applied in a manner to assure that no runoff, puddling or excessive watering occurs.

   - Irrigation systems may be tested after installation, routine maintenance or repair for no more than ten minutes per zone.

2. ***Unrestricted irrigation of golf courses is prohibited.***

   - Tees and greens may be irrigated between the hours of 9:00 p.m. and 10:00 a.m. at the minimum rate necessary.

   - Localized dry areas may be irrigated with a hand held container or hand held hose equipped with an automatic shutoff device at the minimum rate necessary.

   - Greens may be cooled by syringing or by the application of water with a hand held hose equipped with an automatic shutoff device at the minimum rate necessary.

   - Fairways may be irrigated between the hours of 9:00 p.m. and 10:00 a.m. at the minimum rate necessary not to exceed one inch of applied water in any ten-day period.

- Fairways, tees and greens may be irrigated during necessary overseeding or resodding operations in September and October at the minimum rate necessary. Irrigation rates during this restoration period may not exceed one inch of applied water in any seven-day period.

- Newly constructed fairways, tees and greens and areas that are re-established by sprigging or sodding may be irrigated at the minimum rate necessary not to exceed one inch of applied water in any seven-day period for a total period that does not exceed 60 days.

- Fairways, tees and greens may be irrigated without regard to the restrictions listed above so long as:

    - The only water sources utilized are water features whose primary purpose is stormwater management;

    - Any water features utilized do not impound permanent streams;

    - During declared Drought Emergencies these water features receive no recharge from other water sources such as ground water wells, surface water intakes, or sources of public water supply; and,

    - All irrigation occurs between 9:00 p.m. and 10:00 a.m.

- All allowed golf course irrigation must be applied in a manner to assure that no runoff, puddling or excessive watering occurs.

- Rough areas may not be irrigated.

3. ***Unrestricted irrigation of athletic fields is prohibited.***

- Athletic fields may be irrigated between the hours of 9:00 p.m. and 10:00 a.m. at a rate not to exceed one inch per application or more than a total of one inch in multiple applications during any ten-day period. All irrigation water must fall on playing surfaces with no outlying areas receiving irrigation water directly from irrigation heads.

- Localized dry areas that show signs of drought stress and wilt (curled leaves, foot-printing, purpling) may be syringed by the application of water for a cumulative time not to exceed fifteen minutes during any twenty four hour period. Syringing may be accomplished with an automated irrigation system or with a hand held hose equipped with an automatic shutoff device at the minimum rate necessary.

- Athletic fields may be irrigated between the hours of 9:00 p.m. and 10:00 a.m. during necessary overseeding, sprigging or resodding operations at the minimum rate necessary for a period that does not exceed 60 days. Irrigation rates during this restoration period may not exceed one inch of applied water in any seven-day period. Syringing is permitted during signs of drought stress and wilt (curled leaves, foot-printing, purpling).

- All allowed athletic field irrigation must be applied in a manner to assure that no runoff, puddling or excessive watering occurs.

- Irrigation is prohibited on athletic fields that are not scheduled for use within the next 120-day period.

- Water may be used for the daily maintenance of pitching mounds, home plate areas and base areas with the use of hand held containers or hand held hoses equipped with an automatic shutoff device at the minimum rate necessary.

- Skinned infield areas may utilize water to control dust and improve playing surface conditions utilizing hand held containers or hand held hoses equipped with an automatic shutoff device at the minimum rate necessary no earlier than two hours prior to official game time.

4. ***Washing paved surfaces such as streets, roads, sidewalks, driveways, garages, parking areas, tennis courts, and patios is prohibited.***

- Driveways and roadways may be pre-washed in preparation for recoating and sealing.

- Tennis courts composed of clay or similar materials may be wetted by means of a hand-held hose equipped with an automatic shutoff device at the minimum rate necessary for maintenance. Automatic wetting systems may be used between the hours of 9:00 p.m. and 10:00 a.m. at the minimum rate necessary.

- Public eating and drinking areas may be washed using the minimum amount of water required to assure sanitation and public health.

- Water may be used at the minimum rate necessary to maintain effective dust control during the construction of highways and roads.

5. ***Use of water for washing or cleaning of mobile equipment including automobiles, trucks, trailers and boats is prohibited.***

- Mobile equipment may be washed using hand held containers or hand held hoses equipped with automatic shutoff devices provided that no mobile equipment is washed more than once per calendar month and the minimum amount of water is utilized.

- Construction, emergency or public transportation vehicles may be washed as necessary to preserve the proper functioning and safe operation of the vehicle.

- Mobile equipment may be washed at car washes that utilize reclaimed water as part of the wash process or reduce water consumption by at least 10% when compared to a similar period when water use restrictions were not in effect.

- Automobile dealers may wash cars that are in inventory no more than once per week utilizing hand held containers and hoses equipped with automatic shutoff devices, automated equipment that utilizes reclaimed water as part of the wash process, or automated equipment where water consumption is reduced by at least 10% when compared to a similar period when water use restrictions were not in effect.

- Automobile rental agencies may wash cars no more than once per week utilizing hand held containers and hoses equipped with automatic shutoff devices, automated equipment that utilizes reclaimed water as part of the wash process, or automated equipment where water consumption is reduced by at least 10% when compared to a similar period when water use restrictions were not in effect.

- Marine engines may be flushed with water for a period that does not exceed 5 minutes after each use.

6. ***Use of water for the operation of ornamental fountains, artificial waterfalls, misting machines, and reflecting pools is prohibited.***

    - Fountains and other means of aeration necessary to support aquatic life are permitted.

7. ***Use of water to fill and top off outdoor swimming pools is prohibited.***

    - Newly built or repaired pools may be filled to protect their structural integrity.

    - Outdoor pools operated by commercial ventures, community associations, recreation associations, and similar institutions open to the public may be refilled as long as:

        - Levels are maintained at mid-skimmer depth or lower;

        - Any visible leaks are immediately repaired;

        - Backwashing occurs only when necessary to assure proper filter operation;

        - Deck areas are washed no more than once per calendar month (except where chemical spills or other health hazards occur);

        - All water features (other than slides) that increase losses due to evaporation are eliminated; and

        - Slides are turned off when the pool is not in operation.

    - Swimming pools operated by health care facilities used in relation to patient care and rehabilitation may be filled or topped off.

- Indoor pools may be filled or topped off.

- Residential swimming pools may be filled only to protect structural integrity, public welfare, safety and health and may not be filled to allow the continued operation of such pools.

8. ***Water may be served in restaurants, clubs, or eating-places only at the request of customers.***

June 28, 2016:

FACT SHEET
Virginia Water Protection Individual Permit No. 15-1432
Clintwood Elkhorn Mining LLC, Luke (CE#3) Prep Plant Knox Creek Withdrawal, Buchanan County, Virginia

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DEQ has reviewed the application for the Virginia Water Protection (VWP) Individual Permit Number 15-1432 and has determined that the project qualifies for an individual permit. Based on the information provided in the application and in compliance with § 401 of the Clean Water Act as amended (33 USC 1341 et seq.) and the State Water Control Law and regulations, DEQ has determined that there is a reasonable assurance that the activity authorized by this permit will protect instream beneficial uses, will not violate applicable water quality standards, and will not cause or contribute to significant impairment of state waters or fish and wildlife resources, provided the permittee complies with all permit conditions.

Surface water impacts have been avoided and minimized to the maximum extent practicable. The proposed permit includes no impacts to state waters.

The following details the application review process and summarizes relevant information for developing the Part I - Special Conditions for permit issuance.

1. Contact Information:

Permittee Legal Name and Address:

Clintwood Elkhorn Mining LLC
P O Box 196
Hurley, Virginia 24620
Phone: (276) 566-8516
Fax: (276) 566-4872
Attn: Chris Stanley, Quality Control/Environmental Permitting Manager
chris.stanley@boothenergy.com

Property Owner Name and Address:
(same as above)

Agent Legal Name and Address:

Artemis Consulting Services, LLC
P. O. Box 1085
Abingdon, Virginia 24212
Phone: (276) 258-5276
Attn: Timothy R. Browning, Principal Engineer/Vice President
tbrowning@artemisllc.com

2. JPA Processing Dates:

Received Application:	September 29, 2015
Joint Publication with VMRC of Received JPA:	n/a (no impacts)
Application Complete:	December 30, 2015
Processing Deadline (120 days from Complete Application):	n/a (no impacts)
Letter(s) sent to Local Government(s):	November 13, 2015
Letters sent to Commissioner of Revenue:	n/a (see Section 12)
Letters sent to VDH, VDGIF, VDCR, VMRC:	October 22, 2015
1st Request for Additional Information Sent:	October 13, 2015
Letters sent to Riparian Land Owners:	December 4, 2015
Response to 1st Request for Additional Information Received:	November 2, 2015
2nd Request for Additional Information Sent:	November 5, 2015
Response to 2nd Request for Additional Information Received:	November 23, 2015,
3rd Request for Additional Information Sent:	December 10, 2015
Response to 3rd Request for Additional Information Received:	February 23, 2016
Permit Fee Deposited by Accounting:	December 30, 2015
Draft Permit Package Issued:	May 13, 2016
Copy of Public Notice sent to DEQ Central Office:	May 11, 2016
Copy of Public Notice sent to Admin. Board Planning:	May 19, 2016
Public Notice Published:	May 19, 2016
End of 30-Day Public Comment Period:	June 20, 2016
Received Verification of Publication:	May 19, 2016

(n/a: not applicable)

3. Project Location:

The proposed surface water intake is located on Knox Creek on the same property as the Luke (CE#3) coal preparation plant, approximately two miles northwest of Hurley, VA., on Rte 643. The project is located in Buchanan County, Virginia, approximately 3.3 miles upstream of the state boundary and approximately 11 miles upstream of the junction of Knox Creek with the Tug Fork River.

City/County:	Buchanan County
Waterbody:	Knox Creek
Basin:	Big Sandy River
Subbasin:	Tug Fork
Section:	3f
Class:	III
Special Standards:	none
HUC:	05070201
Latitude & Longitude (of intakes):	37°26’26’’ N /-82°02’55’’ W
U.S.G.S. Quadrangle:	Hurley
State Watershed No.:	BS05
TMDL Status:	Impaired (PCB in fish tissue, Aquatic life, E.Coli)

4. Project Description:

Project Purpose
The Clintwood Elkhorn Luke (CE#3) Prep Plant (Luke Plant) is a coal preparation plant that currently processes coal from two surface mines and a number of underground mines. The applicant stated in the application that the withdrawal is necessary for the continued operation of the Luke Plant, which is critical to the economic viability of the nearby operations. There is a total of 97 employees who work at the plant and the nearby mines.

Existing and Proposed Water Supply System
The surface water withdrawal system used to support the Luke Plant consists of a 4" submersible pump connected to a flexible pipe that conveys water from the intake to the plant's thickener tank via an open discharge. A single well is also used to support plant operations. Water withdrawal data reported in compliance with the Annual Water Withdrawal Reporting regulation indicates that well withdrawals have occurred since at least 1984. Reporting of surface water withdrawals began in 1996. The applicant stated in a submittal of additional information dated and received November 2, 2015 that the withdrawal may have existed since the construction of the Luke Plant more than 40 years ago. However, the applicant also reported that there is no documentation of surface water withdrawals that occurred prior to July 1, 1989.

The existing intake is situated beneath a conveyor belt structure that transports coal to the plant from storage silos located on the other side of Knox Creek. The pump is suspended from this structure and connected to a pulley system that allows the pump to be removed from the creek during high flows. There is no permanent intake structure situated within or on the streambed.

In response to recommendations made by the Department of Game and Inland Fisheries (DGIF) and staff recommendations made during a site visit conducted on January 13, 2016, the applicant proposed to move the intake location downstream approximately 385 ft so that it can be suspended from the roadway bridge at the facility entrance. The suspension of the new intake would involve no in-stream work and therefore no impacts to state waters are proposed (see discussion below regarding recommendations made by the DGIF).

Permit History
Data from VWUDS indicate that surface water withdrawal for the Facility was apparently initiated between July 1, 1989, and July 25, 2007 and therefore qualified for an exclusion from Virginia Water Protection (VWP) permitting requirements provided the informational requirements contained in 9VAC25-210-60.B.3 had been met and the established withdrawal limitations were not exceeded. Surface water withdrawal limits for this category of exclusion is determined by the largest 12-consecutive month withdrawal that occurred in the 10 years prior to July 25, 2007. The data reported to DEQ by Clintwood Elkhorn Mining indicates that the maximum 12-consecutive month volume of water withdrawn from 1997-2007 was 1.68 million gallons (mg) during calendar year 2003 and that this volume was exceeded in 2010 when the total annual withdrawal was approximately 40.52 mg. . An information requirements form for determining VWP permit exclusion was found on file that was filled out to indicate that this withdrawal was initiated prior to July 1, 1989. However, the documentation on file from the 2009 evaluation of the exclusion form indicates that no response was received from an inquiry about the withdrawal. The accuracy of the submitted exclusion form was questioned because, although groundwater withdrawals from the same facility have been reported since 1984, reporting of this surface water withdrawal did not begin until 1996.

Based on the above information, a Request for Corrective Action (RCA) was sent to Clintwood Elkhorn Mining LLC on July 24, 2015. Clintwood Elkhorn Mining LLC responded to the RCA on August 3, 2015 and requested a 60-day extension of the response time period in order to locate documentation that the surface water withdrawal from Knox Creek was begun prior to July 1, 1989. DEQ granted the extension and provided specific questions regarding the history of the withdrawal via a Request for Information letter dated August 28, 2015. Clintwood Elkhorn Mining LLC responded on September 14, 2015 that documentation of the withdrawal prior to July 1, 1989 could not be found, and then submitted the JPA on September 29, 2015. Therefore, the application was reviewed as a new permit issuance for an existing withdrawal.

5. Water Withdrawal Use, Need and Demand:

Purpose of Water Uses

Water withdrawn from Knox Creek is used by the coal preparation process to separate clean coal from waste rock and to transport fine-grained refuse in slurry form to an upland storage impoundment. The impoundment is located approximately 0.5 miles east of the plant and approximately 750 ft higher in elevation, therefore requiring enough water to form a slurry that can be pumped to the impoundment.

Basis of Need

The applicant's stated need is to provide a reliable source of water for the continued operation of the Luke (CE#3) Prep Plant. Water withdrawn from an on-site well (Well #1) is periodically mixed with surface water in the plant. The applicant stated in a response (dated November 20, 2015) to a request for additional information that water from Well #1 can currently provide approximately 30 percent of the plant's total water demand on an average annual basis, but that it is incapable of providing enough water to run the plant alone at the anticipated rate of production. Approximately 30-35 percent of the process water can be recirculated. Therefore, a maximum reduction of 30-35 percent in surface water withdrawal volumes can be achieved via recirculation. The applicant stated that surface water withdrawals can be reduced in this manner for short periods (3-5 days length) throughout the year before replenishment of the process water is required without reducing plant output. Water demand at the facility is not seasonal, but depends upon market conditions for coal production. The plant normally operates 8 hours per day, 5 days per week, but daily operations sometimes extend to longer hours based upon need.

Water Demand: Current and Projected

Water withdrawals have been reported for this facility since 1984. However, only withdrawals from Well #1 were reported prior to 1996. Total reported withdrawals have been highly variable, ranging from zero (2002) to approximately 1 million gallons per year (mgy) in 1990 to 106.8 mgy in 2010. Total reported withdrawals for the previous 5-year period (2011-2015) ranged from 7.3 mgy in 2015 to 96.1 mgy in 2012 and averaged 45.2 mgy. Groundwater withdrawals dominated prior to 2013, with zero reported withdrawals from Knox Creek during several years since initiation in the mid-1990's. Since 2013, surface water withdrawal from Knox Creek has become the primary source, representing 85% (2013), 69% (2014) and 95% (2015) of reported total annual withdrawals.

The proposed withdrawals listed in the JPA represent current demand for surface water withdrawals only. Therefore, total plant demand equals the proposed surface water withdrawal plus additional groundwater input equal to 30% of the total. There are no current plans for expansion of the facility; therefore current and projected demands are the same. The demand is based upon the need to continue normal operation of

the coal preparation plant, including coal processing and transport of fine-grained reject to the slurry impoundment. In the JPA, the total surface water withdrawal volume reported for 2010 (40.52 mg) was proposed as the maximum annual surface water withdrawal volume for the permit period. The greatest monthly total surface water withdrawal volume reported for the 2010 – 2014 period (5.88 mg during April, 2010) was proposed as the maximum monthly surface water withdrawal volume. These volumes represent the surface water demand for current plant operation.

At the proposed maximum instantaneous withdrawal rate of 300 gpm (18000 gallons per hour), surface water withdrawal daily volume for an 8-hour period of operation equals 144,000 gallons (0.144 mg). The proposed daily maximum withdrawal of 0.156 mgd would require pumping at 300 gpm for approximately 8.67 hours, or for longer periods at a reduced instantaneous rate. Therefore, the proposed maximum instantaneous withdrawal rate and the proposed maximum daily withdrawal volume are reasonable. The proposed maximum monthly withdrawal volume of 5.88 mg/month cannot be reached by pumping at the proposed maximum daily withdrawal volume (0.156 mg/day * 31 days/month = 4.836 mg/month).

Based upon staff's review of the information submitted and the above considerations, the applicant's requested maximum annual, daily and instantaneous withdrawal volumes are reasonable for this project.

The requested and calculated water demand volumes for the Knox Creek intake are summarized in the table below:

Table 1: Requested and Calculated Water Demands

	JPA Water Demand Volumes	Staff Calculated Demand Volumes
Maximum Instantaneous Withdrawal (gpm)	300	300
Average Daily Volume (mgd)	0.097	--
Maximum Daily Volume (mgd)	0.156	0.156
Maximum Monthly Volume (mg)	5.88	-
Maximum Annual Volume (mg)	40.52	40.52

Staff proposes to use the volumes calculated by staff as limitations in a permit.

Staff concluded that the water demand and statement of need is reasonable and has been adequately justified by the application through the information submitted in the VWP permit application process.

For additional information, see the revised Joint Permit Application with an applicant signature date of September 8, 2015 and received September 29, 2015, and responses to requests for additional information received on November 2, 2015 and November 23, 2015.

6. Alternatives Reviewed:

In a response to a request for additional information dated and received on November 2, 2015, the applicant stated the only alternative water source is groundwater. In a later response to a request for additional information dated November 20, 2015 and received the same date, the applicant explained that the current well is incapable of providing enough water to operate the plant at anticipated production rates. The applicant also stated that approximately 30 to 35 percent of the projected average and maximum daily surface water withdrawal volumes can be recirculated. However, because Well #1 is

already being used to provide approximately 30% of the plant demand, conservation reduction of surface water is limited to the 30-35 percent that can be recirculated. Such reductions can be accomplished as a conservation measure during low-flow periods, but only for relatively short periods of 3-5 days duration before replenishment of the process water is required to avoid cutting back on plant production.

7. Water Withdrawal Volumes and Flow-by Requirements:

Staff reviewed the proposed withdrawal using the water demand volumes proposed for the 15-year permit term.

Water Withdrawal Volumes Requested in JPA
The applicant requested authorization of the following withdrawal volumes based upon the plant's current water demand:

- Maximum Instantaneous: 300 gallons per minute
- Average Daily: 0.097 mgd
- Maximum Daily: 0.156 mgd
- Maximum Monthly: 5.88 mg
- Maximum Annual: 40.52 mg

Return Flow
A portion of the water pumped to the slurry impoundment drains through a sedimentation control system prior to being discharged. The discharge point is located on Knox Creek approximately 1230 ft downstream of the proposed new intake location and is permitted as a NPDES outfall (R-1-002) under the Surface Mining Control and Reclamation Act. A second permitted outfall (R-1-004) collects surface water from the plant area and is located less than 100 ft downstream and was reported to rarely discharge. The applicant stated in a response to a request for additional information dated and received November 2, 2015 that the outfalls are stormwater driven and primarily treat runoff. Therefore, the percentage of return flow is unknown.

Cumulative Impact Analysis
An impact analysis was conducted by staff on the withdrawal volumes requested. Based upon the results of the analysis, staff determined the proposed project as limited in the draft permit, will protect existing beneficial uses while meeting the applicant's purpose and need.

The staff modeling analysis is attached to this fact sheet (Attachment A).

Permit Withdrawal Limitations
The permit limits surface water withdrawals to the volume justified based upon the application materials submitted and staff modeling analyses. Based upon this information, the permit proposes the following limits on the withdrawal volumes:

- Maximum Instantaneous: 300 gpm
- Maximum Daily: 0.156 mgd
- Maximum Annual: 40.52 mg

The permit also limits the instantaneous withdrawal rate to no more than ten percent of the estimated stream flow at the intake location and prohibits withdrawals when the estimated stream flow at the intake is less than 4.4 cfs. At this flow rate, the instantaneous withdrawal rate achieved by recirculating water at the maximum of 35 percent (195 gpm, or 0.44 cfs) equals ten percent of the stream flow.

8. Water Supply Plan Review:

The JPA was coordinated with Water Supply Planning staff on November 2, 2015, who responded on November 25, 2015. The proposed withdrawal is located within the area covered by the Southwest Virginia Water Supply Plan (SWVA WSP), which was submitted on November 2, 2011 and developed in accordance with the Water Supply Planning Regulation 9VAC25-780. The applicant is not named in the SWVA WSP. Because withdrawals for this plant have occurred for at least 20 years, there are no known concerns for the locality. There are no known users that have significant surpluses that could be a viable alternative source for this plant.

The SWVA WSP does not include this plant or alternatives for water sources for this plant. The SWVA WSP does not provide any information that would affect the applicant's evaluation of any alternatives, nor anything that contradicts the alternative listed in the JPA (recirculation). This project is consistent with the State Water Resources Plan (SWRP).

9. Surface Water Impacts:

The proposed withdrawal activity proposes to suspend the proposed intake structure in Knox Creek during withdrawal periods. Therefore, no in-stream construction or impacts to surface waters are proposed.

Water quality impacts are expected to be temporary and minimal provided the permittee abides by the conditions of the permit. Impacts have been avoided and minimized to the greatest extent practicable.

10. Compensation for Unavoidable Impacts:

Compensation is not required as impacts to surface waters are not proposed.

11. Site Inspection:

A site visit was conducted on January 13, 2016. A summary of the site inspection is located in VWP Permit File No. 15-1432.

12. Relevant Regulatory Agency Comments:

As part of the application review process, DEQ contacted the appropriate state regulatory agencies. Any relevant agency comments were addressed in the VWP individual permit Part I - Special Conditions. Therefore, the staff anticipates no adverse effect on water quality and fish and wildlife resources provided the applicant adheres to the permit conditions.

Summary of State Agency Comments and Actions

By email dated October 22, 2015, comments were requested from the following state agencies: Virginia Department of Game and Inland Fisheries (DGIF), Virginia Department of Conservation and Recreation (DCR), Virginia Marine Resources Commission (VMRC), and Virginia Department of Health (VDH). Failure to provide comments within 45 calendar days of the DEQ request for comments infers that the agency has no comments on the project activities. Additional information submitted by the applicant in response to requests for additional information was shared with DGIF on February 29, 2016, and with VMRC on April 6, 2016. Comments were received from DGIF, DCR and VDH.

DGIF

DGIF provided to DEQ by email dated December 3, 2015, the comments summarized below:

- Recommended that, to protect resident aquatic species from impingement and entrainment, the existing intake be modified or replaced so that it is fitted with a 1 mm mesh screen and that the intake velocity should not exceed 0.25 feet per second (fps)
- Recommended that the withdrawal rates not exceed 10% of instantaneous flow in Knox Creek to ensure access to instream habitat
- Commented that a method for monitoring flows in Knox Creek should be made available because withdrawals may need to be adjusted if flow in Knox Creek falls below 3.3 cubic ft per second (cfs)
- Commented that outfall discharges should only be included in flow calculations if the quality of the water discharged is high
- Recommended that any in-stream activities should be conducted during low or no-flow conditions, using non-erodible cofferdams or turbity curtains, blocking no more than 50% of the streamflow at any given time, as well as other measures to minimize harm to the aquatic environment during such activities

Staff coordinated DGIF's comments and recommendations with the applicant's agent (Artemis Consulting Services LLC) on December 3, 2015. The agent replied via email on December 7, 2015 with a proposal for a ¾ inch (19 mm) screen mesh on the intake. Staff requested additional information regarding intake design alternatives to address the DGIF recommendations via email on December 10, 2015. During the site visit conducted on January 13, 2016, the potential for relocating the existing intake to the existing bridge crossing Knox Creek at the facility entrance was discussed. The applicant subsequently presented an alternative intake design at the bridge crossing as additional information submitted on February 23, 2016. The new intake would be a 2 ft by 2 ft box structure fabricated to have 5.5 mm mesh openings and would be set on the stream bed below the upstream side of the bridge. It would be light enough to be raised and lowered by a winch attached to the bridge structure. The estimated intake velocity at a withdrawal rate of 300 gpm would equal the recommended 0.25 fps.

Staff coordinated the proposed intake design with DGIF via email on February 29, 2016. DGIF replied via email on March 9, 2016 that, even though the proposed 5.5 mm mesh design is not optimal, they are agreeable to the proposed new design.

The surface water withdrawal was considered 100% consumptive in the instream flow analysis (see Attachment A). The permit contains conditions that address the DGIF comments regarding percent of instream flow, monitoring and in-stream activities.

- Recommended coordination with the U. S. Fish and Wildlife Service (USFWS) if any tree removal is necessary because federally Threatened Northern Long-eared bats are documented in the project area.

  Staff did not coordinate with the USFWS because no tree removal is proposed.

- Recommended coordination with VDCR-DNH because the project is located within 2 miles of a documented occurrence of a state or federal threatened or endangered plant or insect species and/or other Natural Heritage coordination species.

  Staff coordinated with DCR on October 22, 2015. See the discussion regarding the response from DCR below.

DCR

DCR provided a response dated November 25, 2015 with the following comments:

- The Knox Creek Stream Conservation Unit (SCU) is located within the project site. The Knox Creek SCU has been given a biodiversity ranking of B5, which represents a site of general significance. The natural heritage resource associated with this site is the Teays River Crayfish, which is considered rare but is not listed as threatened or endangered by the USFWS or the DGIF.
- DCR supports re-circulation of water withdrawn from Knox creek during low flow conditions to reduce the required withdrawal during these periods and other conservation measures.
- The current and proposed activity will not affect any documented state-listed plants or insects, and there are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

  Although not specifically identified by DGIF nor DCR in their comments, the JPA listed the variegate darter as a State Endangered fish species listed in a Virginia Fish and Wildlife Information Service (VaFWIS) report compiled on September 24, 2015. To address this concern, the applicant submitted additional information on February 23, 2016 regarding the potential presence of the variegate darter in the Knox Creek watershed. A fish survey conducted on February 9, 2016 within Knox Creek on behalf of the applicant did not detect any fish of this species. In addition, the information presented stated that a literature survey revealed that of the nine fish surveys conducted within two miles of the proposed intake since 1988, none documented the presence of variegate darters.

VDH

VDH provided comments in an email dated November 10, 2015, and via letter dated November 12, 2015, in which they provided the following comments:

- No public water intakes were found in the Commonwealth downstream of the project or within a 5-mile radius of the project.
- No public groundwater wells are located within a 1 mile radius of the project.
- The project is not within the watershed of any public surface water intakes.
- There are no apparent impacts to public drinking water sources due to this project.

Summary of Federal Agency Comments and Actions
Comments were also requested from the U. S. Army Corps of Engineers (USACE). The USACE stated via email on November 2, 2015 that they have no comments specific to the water withdrawal; but that the proposed action will be reviewed under a Department of the Army Nationwide Permit.

13. Public Involvement during Application Process:

Riparian/Adjacent Landowner Notification and Local Government
Staff notified Buchanan County of the proposed project via letter emailed on November 12, 2015. Staff notified the three riparian landowners within one-half mile downstream of the intake location by letter dated December 4, 2015. Staff received no responses to the notification letters.

Notifications of riparian and adjacent landowners were conducted in accordance with DEQ's Guidance Memorandum No. 11-2005 (Revised Local Government, Riparian Property Owner, Adjacent Property Owner or Resident, and General Public Notification Procedures for VPDES, VPSA and VWP Permit Applications and Draft Permits).

14. Draft Permit Public Comment Period:

The public notice was published in The Virginia Mountaineer on May 19, 2016. The public comment period ran from May 20, 2016 to June 20, 2016.

No public comments were received during the public comment period. Therefore, no changes have been made to the permit conditions.

15. Special Conditions:

The following conditions were developed to protect instream beneficial uses, to ensure compliance with applicable water quality standards and to prevent significant impairment of state waters or fish and wildlife resources.

Section A Authorized Activities

No 1 addresses the activity authorized by this permit.
No. 2 authorizes the placement of the proposed new intake structure in accordance with the description submitted in the response dated February 23, 2016 to a request for additional information.
No. 3 states that the authorized activities shall be conducted in accordance with the application materials and any subsequent materials received during the application process.
No. 4 requires the applicant to notify DEQ of any changes to the authorized activities or of new activities which require a VWP permit.

Section B Permit Term

Nos. 1 and 2 addresses the permit term and re-issuance process to ensure that all permit conditions are completed.

Section C Standard Project Conditions

No. 1 addresses the requirement for the minimization of adverse impacts to instream beneficial uses.
No. 2 ensures that downstream flows will be maintained to protect both instream and off-stream beneficial uses.
Nos. 3 and 4 ensure that the proposed intake structure will not impede the passage of normal or expected high flows and that installation of the structure will not cause temporary disturbances to the stream channel or banks.
Nos. 5 and 6 prohibits the violation of Water Quality Standards and and requires measures to prevent and contain spills of fuels, lubricants, or other pollutants into surface waters as a result of project activities.
Nos. 7 through 11 set forth all reporting requirements concerning as required by the permit and current law and regulations.

Section D Surface Water Withdrawal Conditions

No. 1 restricts water withdrawal usage to cleaning and processing coal and coal waste material at the Luke Preparation Plant facility.
No. 2 states the withdrawal limits for the withdrawal system. The annual limit is based upon calendar year.
No. 3 restricts surface water withdrawals from Knox Creek to no more than 10 percent of the estimated flow at the intake and prescribes a method for calculating stream flow at the intake location.
No. 4 prohibits surface water withdrawals from Knox Creek when the estimated stream flow is less than 4.4 cfs.
No. 5 requires the permittee to submit a drought management plan to DEQ for review and approval within 180 days of permit issuance. The plan shall include a description of the conservation measures to be implemented during each drought stage. The plan also requires the permittee to develop a plan for the implementation of an alternative water source or sources for the project during low stream flow periods.
No. 6 states that should DEQ determine that impacts to downstream beneficial uses have occurred as a result of the authorized project, DEQ may require the installation of a stream gage on Knox Creek and monitoring requirements that are different than those currently in the proposed permit.
No. 7 contains provisions for the implementation of conservation measures in the event of a declaration of a drought emergency and requires the permittee to
No. 8 requires that the intake screens shall be designed so that screen openings are not larger than 5.5 millimeters in width and height and the screen face intake velocities are not greater than 0.25 feet per second.

Section E Monitoring, Recordation and Reporting Conditions

Nos. 1 and 2 require the daily monitoring and recording of water withdrawal activities to determine compliance with the withdrawal limitations and specify the parameters to be monitored and recorded. Monitoring is not required on days when a withdrawal does not occur.
No. 3 requires the permittee to submit a water withdrawal monitoring report to DEQ semi-annually on the schedule stipulated in the condition. The information shall be submitted electronically using the

Virginia Water Withdrawal Reporting System, and in the event the system is not available, via electronic mail. These reporting requirements will also satisfy the annual reporting requirement of 9VAC25-200 et seq.

No. 4 states that the monitoring and reporting activities shall comply with the permit. Any records shall be retained for the life of the permit and potentially longer due to any unresolved litigation.

Section F Construction Submittals (Proposed Intake Structure)

No. 1 requires submittal of final plans for the water withdrawal intake structure authorized by Part I.A.2 no sooner than thirty (30) calendar days prior to initiating construction.

16. General Conditions:

General Conditions are applied to all VWP individual permits, as stated in the VWP Permit Program regulation.

17. General Standard:

This project may result in minimal, temporary impacts to beneficial uses related to the propagation and growth of aquatic life as defined in the General Standard. Provided the permittee abides by the conditions of the permit, no substances shall enter state waters in concentrations, amounts or combinations that would contravene established standards or interfere with beneficial uses or are inimical or harmful to human, animal, plant, or aquatic life.

18. Staff Findings and Recommendations:

- The proposed activity is consistent with the provisions of the Clean Water Act and State Water Control Law, and will protect beneficial uses.
- The proposed permit addresses avoidance and minimization of surface water impacts to the maximum extent practicable.
- The effect of the impact will not cause or contribute to significant impairment of state waters or fish and wildlife resources.
- This permit is proposed to prevent unpermitted impacts.
- The draft permit reflects the required consultation with and full consideration of the written recommendations of VDH, DCR and DGIF.

Staff recommends VWP Individual Permit Number 15-1432 be issued as proposed.

Approved:

Director, Office of Water Supply

6/28/16
Date

Attachment A – DEQ Modeling Summary

Introduction

The Clintwood Elkhorn Luke (CE#3) Prep Plant (Luke Plant) is a coal preparation plant that currently processes coal from two surface mines and a number of underground mines. The existing surface water withdrawal from Knox Creek provides water necessary for the operation of the Luke Plant. Water is used to crush and process coal and also to generate a slurry to transport fine grained refuse to a slurry pond. Although some of the process water eventually discharges through treatment ponds, an unknown amount is lost to evaporation and seepage.

Existing Water Supply System

The surface water withdrawal system used to support the Luke Plant consists of a 4" submersible pump connected to a flexible pipe that conveys water from the intake to the plant's thickener tank via an open discharge. A single well is also used to support plant operations. Water withdrawal data reported in compliance with the Annual Water Withdrawal Reporting regulation indicates that well withdrawals have occurred since at least 1984; however, reporting of surface water withdrawals began in 1996.

As described in a response to a request for additional information dated February 23, 2016, the applicant proposes to relocate the existing intake to a location approximately 385 ft. downstream on Knox Creek from the current intake. The proposed new intake would consist of a box-shaped structure suspended from a bridge that spans Knox Creek at the plant entrance. The proposed withdrawal rates at the new location would remain the same as originally proposed (Table 1). The analysis was conducted assuming that the intake would be relocated to the new proposed location.

Table 1: Requested Surface Water Withdrawal Volumes

Requested Withdrawal	JPA Water Demand Volumes	JPA Water Demand Volumes (cfs)
Maximum Instantaneous Withdrawal Rate	300 gpm	0.67
Average Daily Volume	0.097 mgd	0.15
Maximum Daily Volume	0.156 mgd	0.24
Maximum Monthly Volume	5.88 mg	-
Maximum Annual Volume	40.52 mg	-

The purpose of the analysis was to determine whether the proposed withdrawal volumes may exceed the DGIF recommended limit of no greater than 10% of the instantaneous flow rate in the stream (Knox Creek); if so, how often might such exceedances occur. The evaluation was conducted by comparing the proposed daily and instantaneous withdrawal rates to estimated daily flow rates in Knox Creek during both severe low flow conditions (drought of record) and estimated conditions during normal climatic years. The analysis also included an assessment of whether the proposed conservation measures (reducing surface water demand by recirculating water through the plant) would reduce the number of days during which 10% flow exceedances would occur.

Conceptualization and Assumptions

The project was conceptualized as a direct surface water withdrawal from Knox Creek, which flows northward from the project area to the Kentucky border approximately 3.5 miles away and eventually discharges to the Tug Fork River, a tributary to the Big Sandy River. Water storage, other than the volume currently in use in the plant, is not available at the facility; therefore storage was not incorporated

into the analysis. A significant amount of the surface water withdrawn from Knox Creek is lost to evaporation and/or seepage from the slurry pond. Because the percentage of water returned via the downstream discharge and the time-scale of the return flow is unknown, the water use was considered to be 100% consumptive for the purposes of the analysis.

Determination of Drought of Record Period

Stream flow measurements made at a long-term gaging station in the project vicinity were examined in order to determine the drought of record, or historic period of lowest stream flow, in the area. Gaging station No. 03207800 (Levisa Fork at Big Rock) is the closest gaging station with current daily measurements and a long-term period of record. It is located 10 miles southwest of the project area and measures flow in the Levisa Fork River, which joins the Tug Fork River many miles downstream in Kentucky to form the Big Sandy River. Station 03207800 has a period of record dating from October 1, 1967. Drought periods during the 03207800 period of record were evaluated by determining the number of daily mean streamflow records that were lower than the 5th percentile value for each month's recorded flows. Two multi-year drought periods were apparent using this comparison: 1967 through 1970 and 1998 through 2002 (Figure 1). Of these two periods, the October, 1967 through December 1970 period stood out as the drought of record because there were more than 50 days each year from 1968 to 1970 with mean flows that were less than the monthly 5th percentile value. Therefore, assuming that climatic conditions at station 03207800 are representative of those at the project area, the drought of record period is 1968 – 1970.

This analysis assumes stationarity in the time series dataset. That is, it was assumed that the statistical properties (e.g., mean, variance and monthly percentile values) of the period of record daily mean flow values have not changed over time. If, for example, the stationarity assumption is not valid and current and/or future climatic conditions in the area are wetter (producing higher stream flows) than conditions during the late 1960's, then the 1998-2002 period may be a more representative drought of record period.

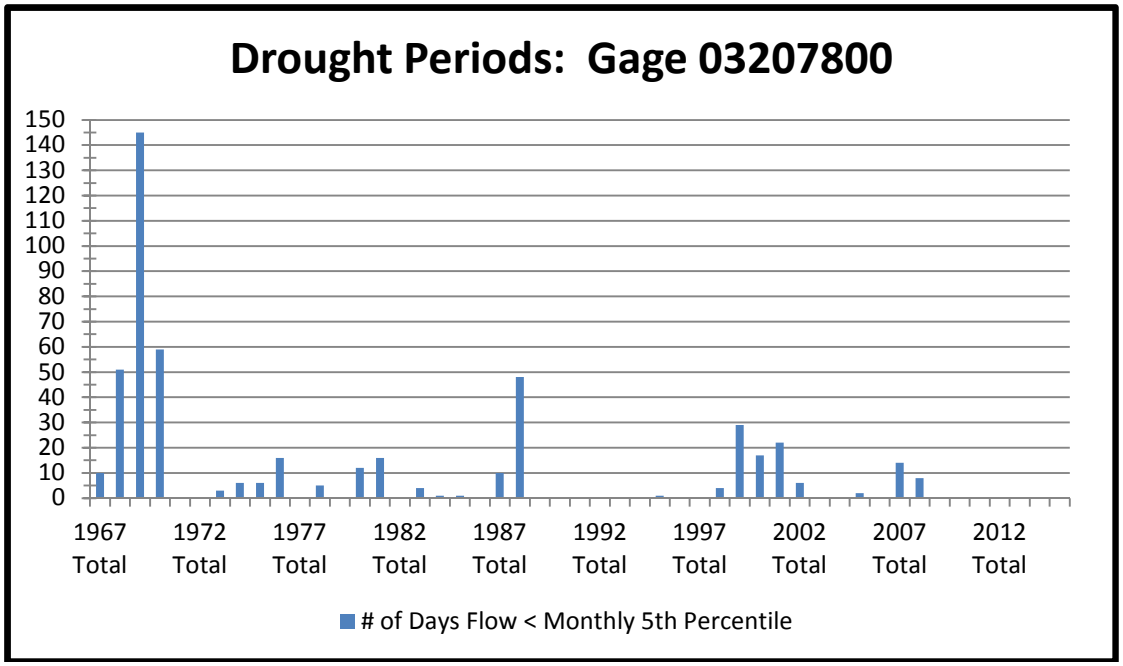

Figure 1: The drought of record period for the project area was determined to be 1968 – 1970.

Estimation of Stream Flow at the Intake Location

Flow in Knox Creek at the proposed new intake location was estimated using two methods. First, daily mean flow values from Station 03207800 were used to estimate daily mean flows at the intake by assuming that the watersheds upstream of each location have the same rate of flow per square mile of drainage area and adjusting the station's recorded values by the difference in upstream drainage area. The following equation was used for this purpose:

Equation 1: $Q_{intake} = DA_{intake} * (Q_{03207800} / DA_{03207800})$, where

Q_{intake} = daily mean flow at the intake (cfs)
DA_{intake} = drainage area of the intake = 41.2 square miles
$DA_{03207800}$ = drainage area of Station 032307800 = 297 square miles
$Q_{03207800}$ = daily mean flow recorded at Station 03207800

Secondly, the VaHydro operational model was used to estimate stream flow at the intake location. This model uses historic regional-scale estimates of precipitation, evaporation, and other hydrologic parameters to explicitly estimate basin flow upstream of a given location in Virginia. Daily flow estimates of Q_{intake} were made for the period from 1984 through 2005 using each method. The VaHydro estimates were consistently lower than those derived from Station 03207800, including both high and low flow periods (Figure 2).

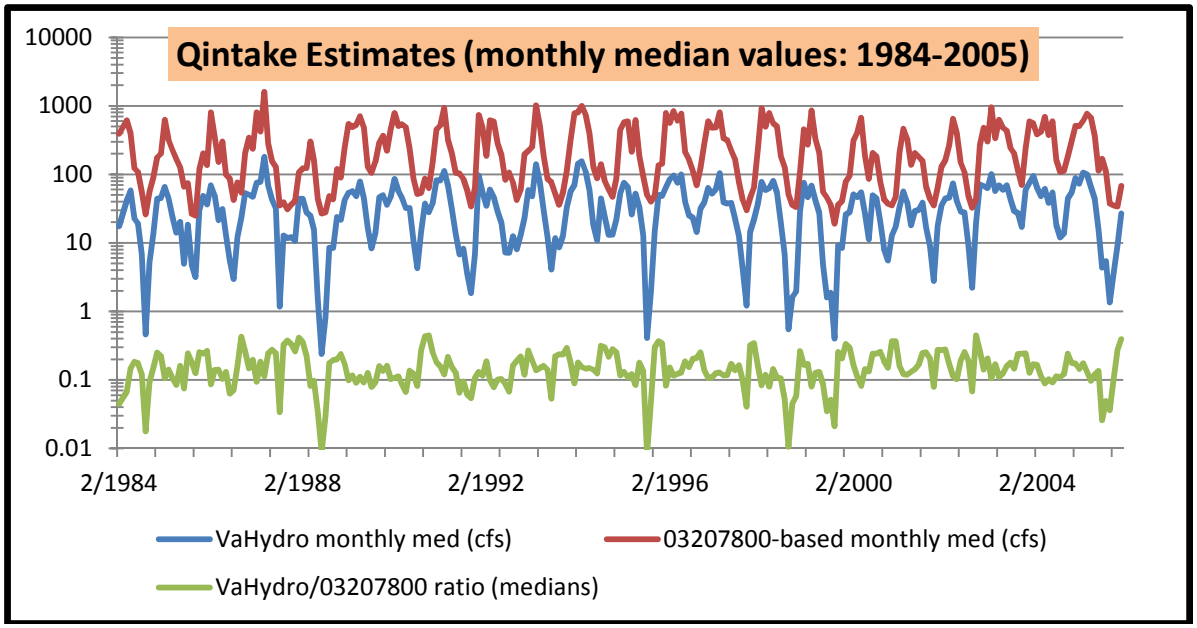

Figure 2: Estimates of flow at the intake derived using VaHydro were consistently less than those derived using Station 03207800 (equation 1).

Some historical daily stream flow data from Knox Creek is available from discontinued gaging station No. 03213590 (Knox Creek at Kelsa) for the period from April, 1980 to October, 1981. This station was located approximately 1 mile downstream of the project area. Mean daily flows from this station compare well to estimates made using equation 1 for the same period (Figure 3). VaHydro model input data are not available for periods earlier than 1984. Therefore, equation 1 was considered the most reliable estimator of flow at the project intake for the drought of record period and for normal climatic years.

It was also noted that drought-related mean daily flow rates (5th percentile and lower) at Station 03207800 for September and October are less than 20 cfs. Therefore, Q_{intake} can be less than 3 cfs during these months (41.2 sq miles * (20 cfs/297 sq miles) = 2.77 cfs), indicating that exceedances of the 10% criterion are likely to occur with the proposed instantaneous withdrawal rate.

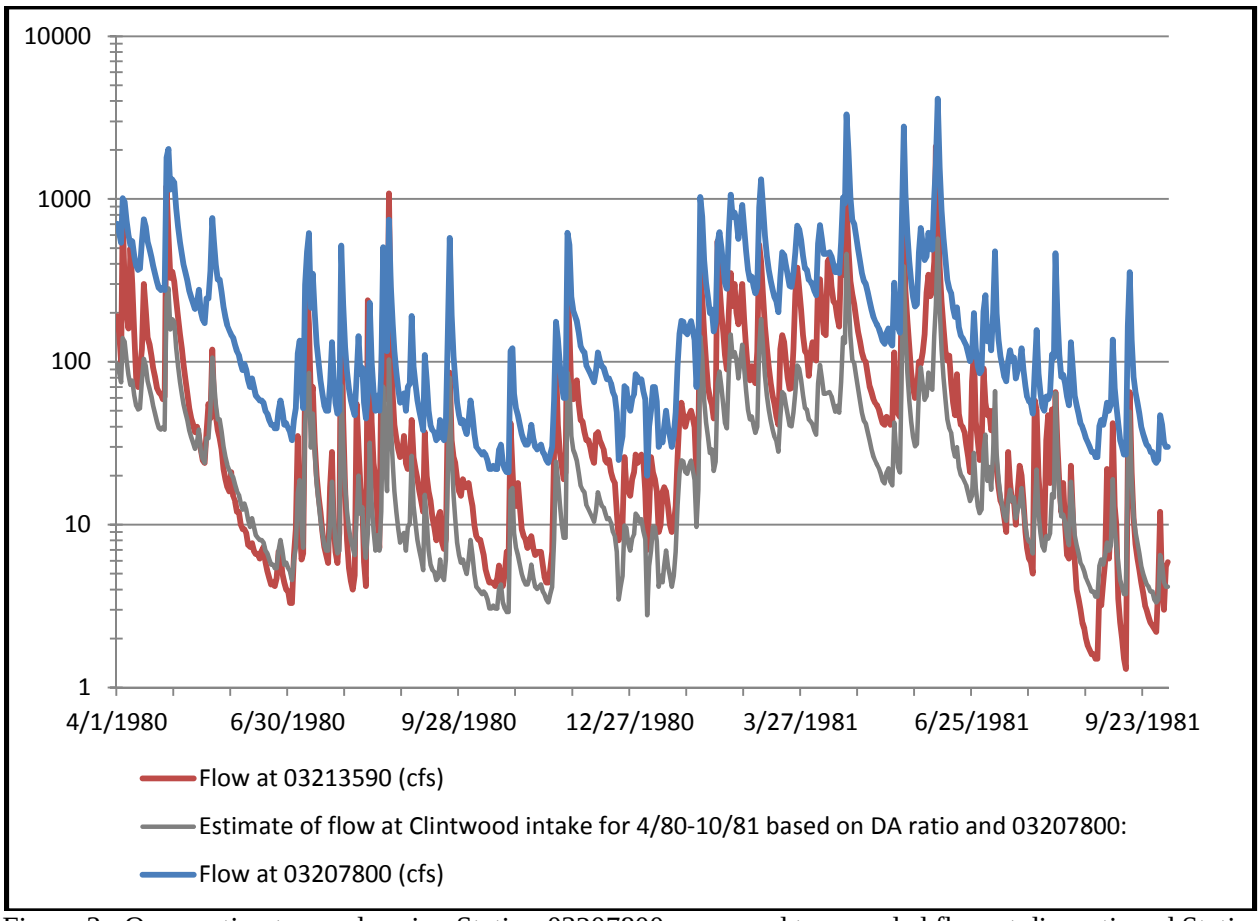

Figure 3: Q_{intake} estimates made using Station 03207800 compared to recorded flow at discontinued Station 03213590 for the period from April, 1980 to October, 1981.

Analysis of the Proposed Water System

Estimates of stream flow in Knox Creek at the proposed new intake location (Q_{intake}) were made using Equation 1 above to determine how often exceedances of the DGIF recommended limit of no greater than 10% of the instantaneous flow rate in the stream might occur. The estimates were made for both the drought of record period (1968 – 1970) and for a recent period representing normal (non-drought) years (2005 – 2010), and compared to both the proposed maximum daily withdrawal volume of 0.156 mgd (0.24 cfs) and the proposed maximum instantaneous withdrawal rate of 300 gpm (0.67 cfs).

Drought of Record Conditions:
During conditions similar to the drought of record period that occurred from 1968 through 1970, the proposed maximum daily withdrawal rate would exceed 10% of stream flow for extended periods during

late summer and early fall (Table 2). Exceedances would not be expected during months when higher stream flows normally occur (January through June). Conditions similar to 1969 would be particularly severe, with the maximum withdrawal exceeding the 10% criterion throughout almost all of September and October.

Pumping at the proposed maximum instantaneous rate of 300 gpm (0.67 cfs) would exceed 10% of estimated stream flow during the same drought of record conditions much more frequently (Table 3). The applicant indicated in responses to requests for additional information that recirculation of water can allow a 35% cutback in withdrawals from Knox Creek while still allowing the plant to operate without reducing output. Cutting the instantaneous withdrawal rate by 35% to 195 gpm (0.44 cfs) reduces the number of exceedances, but still results in lengthy periods when the criterion is not met (nearly all of August through November in 1969).

The estimated Q_{intake} flows are less than 6.7 cfs (10 times the maximum instantaneous withdrawal rate) for extended periods during the drought of record. For example, between June 1, 1969 and December 31, 1969, the estimated flow was greater than 6.7 cfs during 45 days, or just 21% of the days in that 7-month period. Q_{intake} flows below 1.5 cfs were estimated to occur throughout most of September and October of that year. Surface water withdrawals may not even be physically possible from Knox Creek at that low level of flow with the suspended intake structure that is proposed.

Table 2: Number of days during the drought of record in which withdrawal would exceed 10% of streamflow at the Knox Creek intake; maximum daily withdrawal = 0.156 mgd (0.24 cfs):

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1968	0	0	0	0	0	0	0	3	14	16	0	0	33
1969	0	0	0	0	0	0	2	12	24	31	19	7	95
1970	0	0	0	0	0	0	14	5	0	11	0	0	30

Table 3: Number of days during the drought of record in which withdrawal would exceed 10% of streamflow at the Knox Creek intake; maximum instantaneous withdrawal rate = 300 gpm (0.67 cfs):

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1968	0	0	0	0	0	1	20	13	25	28	7	1	95
1969	0	0	0	0	0	17	14	26	30	31	28	23	169
1970	6	0	0	0	0	26	25	19	11	25	0	7	119

Table 4: Number of days during the drought of record in which withdrawal would exceed 10% of streamflow at the Knox Creek intake with a reduced instantaneous withdrawal rate of 195 gpm (0.44 cfs):

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1968	0	0	0	0	0	0	11	9	23	24	6	0	73
1969	0	0	0	0	0	6	11	21	27	31	27	17	140
1970	0	0	0	0	0	8	19	16	7	21	0	0	71

Normal Climatic Conditions:

The proposed maximum withdrawal rates were also compared to estimated flows in Knox Creek (Q_{intake}) during 2005 through 2010. This period includes years with normal to above-normal stream flows plus two years with low summer flows (2007 and 2008) that can be considered to be short term drought periods. Flow conditions during this period were such that the proposed maximum daily withdrawal

exceeds 10% only 8 days over the entire period (Table 5). The proposed maximum instantaneous pumping rate of 300 gpm, however, exceeds the criterion consistently through the summer and fall months in 4 of the 6 years (Table 6). A reduction in the instantaneous withdrawal rate 195 gpm results in less exceedances. However, there would still be extended periods during September through November of dry years when the instantaneous withdrawal rate exceeds 10% of estimated stream flow (Table 7).

Table 5: Number of days during 2005 through 2010 in which withdrawal would exceed 10% of streamflow at the Knox Creek intake; maximum daily withdrawal = 0.156 mgd (0.24 cfs):

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2005	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2006	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2007	0	0	0	0	0	0	0	0	0	7	0	0	**7**
2008	0	0	0	0	0	0	0	0	1	0	0	0	**1**
2009	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2010	0	0	0	0	0	0	0	0	0	0	0	0	**0**

Table 6: Number of days during 2005 through 2010 in which withdrawal would exceed 10% of streamflow at the Knox Creek intake; maximum instantaneous withdrawal rate = 300 gpm (0.67 cfs):

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2005	0	0	0	0	0	0	0	0	**27**	**26**	**24**	**4**	**81**
2006	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2007	0	0	0	0	0	6	**20**	**21**	**28**	**26**	**26**	7	**134**
2008	0	0	0	0	0	0	4	**13**	**26**	**30**	**21**	3	**97**
2009	0	0	0	0	0	0	0	0	**14**	0	0	0	**14**
2010	0	0	0	0	0	0	0	0	**11**	**25**	**10**	0	**46**

Table 7: Number of days during 2005 through 2010 in which withdrawal would exceed 10% of streamflow at the Knox Creek intake; with a reduced instantaneous withdrawal rate of 195 gpm (0.44 cfs):

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2005	0	0	0	0	0	0	0	0	3	**10**	**14**	0	**27**
2006	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2007	0	0	0	0	0	0	4	4	**21**	**25**	**11**	0	**65**
2008	0	0	0	0	0	0	0	5	**21**	**27**	**10**	0	**63**
2009	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2010	0	0	0	0	0	0	0	0	0	0	2	0	**2**

Conclusions and Recommendations:

The proposed maximum daily withdrawal volume of 0.156 mgd exceeds the estimated mean daily flow at the Knox Creek intake only rarely during years that are considered to represent relatively normal climatic conditions (2005-2010). However, a direct comparison between the maximum daily withdrawal volume and a daily mean stream flow rate in cfs assumes that the withdrawal would occur 24 hours per day. Because the Luke Plant generally operates 8-12 hours per day, the instantaneous withdrawal rate, which can be adjusted by plant operators, should be compared to the estimated stream flow. The proposed maximum instantaneous withdrawal rate of 300 gpm exceeds the 10% criterion during most days during low-flow summer-fall months of dry years (e.g., 2007 & 2008), and often during low-flow months of non-

drought years (e.g., 2005). The 35% reduction in the instantaneous withdrawal rate produced by recirculation reduces, but doesn't come close to eliminating exceedances of the 10% criterion.

The flows estimated for Knox Creek during drought of record conditions indicate that surface water withdrawals may not even be possible for extended periods during extreme low flow summer and fall months. When the instantaneous withdrawal rate is reduced by 35 percent, the 10% criterion would probably still be exceeded for extended periods during severe droughts and occasionally during low-flow periods of normal to slightly below normal climatic years.

It should be noted that the Luke Plant withdrawal is the only known surface water withdrawal facility on Knox Creek in Virginia. Therefore, the project's withdrawals from Knox Creek do not contribute to a larger, cumulative withdrawal increase within the Virginia portion of the Knox Creek watershed. Also, the impact analysis is conservative because it did not include an estimate of the portion of the withdrawal that is eventually returned to Knox Creek via drainage from the slurry pond.

The proposed withdrawal rates will provide a reasonable margin of safety for protection of beneficial uses during normal and above normal flow conditions. Permit conditions should include requirements to 1) monitor stream flow and surface water withdrawals on a daily basis, 2) reduce or cease surface water withdrawals during low flow conditions, depending upon estimated stream flow, and 3) develop a plan for an alternative water source or sources to provide water to the plant during drought conditions.