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DOCKET NO. D-1997-045-3

DELAWARE RIVER BASIN COMMISSION

Helix Ironwood, LLC
Surface Water Withdrawal, Importation and Consumptive Use
South Lebanon Township, Lebanon County, Pennsylvania

PROCEEDINGS

This docket is issued in response to an Application submitted by Trinity Consultants on behalf of Helix Ironwood, LLC (Ironwood or docket holder) to the Delaware River Basin Commission (DRBC or Commission) on May 11, 2017 for renewal of an allocation of surface water and review of a surface water withdrawal project and its associated consumptive use (Application). This docket was previously approved by the Commission on May 14, 2008.

The Application was reviewed for continued approval under Section 3.8 of the *Delaware River Basin Compact*. The Lebanon County Planning Commission has been notified of pending action on this docket. A public hearing on this project was held by the DRBC on August 15, 2018.

A. DESCRIPTION

1. Purpose. The purpose of this docket is to renew the approval of an existing surface water withdrawal project to supply up to 72.54 million gallons per month (mgm) of surface water to the docket holder's electric generation facility from existing Intake Pennsy Quarry SG-2. The docket continues approval of an existing importation of up to 4.5 million gallons per day (mgd) of treated effluent from the Susquehanna River Basin (SRB) and a consumptive use of up to 2.34 million gallons per day (mgd) from the source in the Delaware River Basin (DRB). Including the imported treated effluent from the SRB, the docket continues approval of a consumptive use of up to 4.5 mgd.

2. Location. Intake Pennsy Quarry SG-2 is located in the Tulpehocken Creek Watershed in South Lebanon Township, Lebanon County, Pennsylvania. The Tulpehocken Creek near the project site is designated by the Pennsylvania Department of Environmental Protection (PADEP) as supporting Cold Water Fishes (CWF) and Migratory Fishes (MF).

Specific location information has been withheld for security reasons.

3. **Area Served.** The withdrawal serves only the Ironwood 700-megawatt (MW) independent electric generation facility in South Lebanon Township, Lebanon County, Pennsylvania. The facility is situated on a 35-acre industrial-zoned site. Ironwood owns and operates the facility with electricity generated delivered into the Pennsylvania-Jersey-Maryland regional grid. For the purpose of defining Area Served, the Application is incorporated herein by reference consistent with conditions contained in the DECISION section of this docket.

4. **Physical features.**

a. **Design criteria.** The average and maximum water demand from the Pennsy Quarry SG-2 intake (located in the DRB) is 2.16 mgd and 2.34 mgd, respectively. The average and maximum water demand including the importation from the SRB is 3.6 mgd and 4.5 mgd, respectively. The docket holder does not anticipate an increase in water use over the next 10 years. Ironwood is not requesting an increase in surface water withdrawal allocation or consumptive use from that contained in its prior approval. The allocation of 72.54 mgm should be sufficient to meet the future demands of the Ironwood electric generation facility.

The average and maximum consumptive use from the DRB source is 2.16 mgd and 2.34 mgd, respectively. The average and maximum consumptive use including the importation from the SRB is 3.6 mgd and 4.5 mgd, respectively. The docket holder reports that the 10-year projected consumptive use will remain the same.

The water supply to serve the project is provided by an existing quarry dewatering system in the DRB and an existing municipal sewage treatment plant (STP) located in the City of Lebanon, and presently discharging to Quittapahilla Creek in the SRB. The existing Pennsy Supply Company quarry is adjacent to the electric generation facility and the water for the facility is diverted from the Pennsy Supply Company's dewatering operations, which discharges quarry water to Tulpehocken Creek. The water is diverted either via barge-mounted pumps in Pennsy Quarry SG-2 or from connecting to one or both existing subsurface pipes conveying dewatering flow from Pennsy Quarry SG-2 to Tulpehocken Creek.

The Ironwood facility is a 700 MW natural gas-fired combined-cycle electric generator. During normal operations, the Ironwood facility uses 3.6 mgd with 1.44 mgd provided by the treated effluent diversion from the City of Lebanon's STP in the SRB and the remaining 2.16 mgd obtained from Pennsy Quarry SG-2 in the DRB. During the time of maximum water usage, the Ironwood facility obtains equal supply (2.16 mgd) from each Basin source. However, in the event of an emergency, the docket holder's facility obtains all of the 4.5 mgd from the quarry dewatering operations (i.e., when the City of Lebanon STP effluent is not available) (Condition C.II.d).

During peak operation, up to 4.5 million gallons per day (mgd) of water is required for cooling water make-up, make-up of steam evaporative loss, and routine plant maintenance. Up to 2.34 mgd is provided from the on-going Pennsy Supply Company's quarry dewatering operation which discharges an estimated yearly average of 10.0 mgd to Tulpehocken Creek in the DRB. Up to 2.16 mgd of Ironwood's remaining water needs are imported into the basin from

the City of Lebanon sewage treatment plant which discharges treated effluent to Quittapahilla Creek in the SRB.

Water is consumed mainly via a mechanical draft evaporative cooling tower. Wastewater is produced from two main sources: cooling tower blowdown and reverse osmosis reject water (other sources include plant drains, boiler blowdown and maintenance wash down). Cooling tower blowdown and reverse osmosis reject water is directed to a brine concentrator, evaporator and crystallizer system.

b. Facilities. The existing project wells have the following characteristics:

INTAKE NO.	WITHDRAWAL WATER BODY	PUMP CAPACITY (GPM)	7Q10 FLOW AT INTAKE (CFS)	YEAR CONSTRUCTED
Pennsy Quarry SG-2	Quarry in Tulpehocken Watershed	3,000	N/A	2002

The surface water intake is metered.

Prior to entering the electric generating facility, the water is demineralized for process make up.

The facility is above the 100-year flood elevation.

c. Other. Sanitary wastewater is conveyed to an on-lot septic system. The Ironwood facility is a zero liquid discharge facility, there is no discharge any type of waste or process water from the site.

d. Cost. There is no cost associated with this project.

B. FINDINGS

The docket holder submitted an Application to renew the approval of their existing electric generating facility. During review of the original application, the Pennsylvania Fish and Boat Commission (PF&BC) studied both the Quittapahilla Creek, downstream from the treatment plant in the SRB, and the Tulpehocken Creek, downstream from the quarry dewatering outfall in the DRB, to determine if either of these streams would be significantly harmed by the diversion. The analysis was based upon a concept to enhance overall habitat conditions for the coldwater fishery by damping out significant diurnal variations in quarry discharge and stabilizing flows in Tulpehocken Creek above a minimum discharge of 3,000 gallons per minute

(equivalent to 6.65 cubic feet per second or 4.32 mgd). Based on PF&BC's recommendations, the docket approved a preferential withdrawal from the quarry dewatering discharge when water demands at the Ironwood facility were high, over the reuse of treated effluent from the wastewater treatment plant.

In accordance with the prior dockets (D-1997-045-1 and D-1997-045-2), the docket holder is required to maintain a minimum discharge to Tulpehocken Creek of 4.32 mgd from the quarry under all operation scenarios. If quarry operations cease, the docket holder shall continue to provide this discharge, and within three months, apply for a revised Operating Plan to evaluate an appropriately revised discharge schedule (Condition C.II.e).

The diversion from Pennsy Quarry SG-2 results in a maximum reduction in flow to Tulpehocken Creek of 2.34 mgd in Tulpehocken Creek during winter months when the facility is using more treated effluent while using No. 2 fuel oil instead of gas. This withdrawal represents approximately three percent (3%) of the average annual flow for the Tulpehocken Creek at Bernville, just upstream of the Blue Marsh Reservoir.

The existing quarry dewatering discharge to the Tulpehocken Creek averages between 7.1 mgd and 16 mgd, depending on regional groundwater conditions. The docket holder's review of studies produced by the USGS, indicate that up to 62 percent of the dewatering pumpage originates from drawdown induced groundwater flow from the SRB.

The docket holder will continue to meter the diversion from the quarry dewatering operation, the dewatering discharge to Tulpehocken Creek, the treated effluent from the City of Lebanon STP, and the potable water supply from the City of Lebanon Authority municipal system. Ironwood will continue to monitor and record the dewatering discharge to Tulpehocken Creek, and Tulpehocken Creek flow will be obtained on a monthly basis near Ramona Road Bridge (southwest of Myerstown). Instream gaging data will be used to estimate net stream flow.

The Tulpehocken Creek, from Blue Marsh Dam to the confluence with the Schuylkill River, is part of the Pennsylvania Scenic Rivers system classified as "Recreational". This classification is intended to preserve water-based recreational opportunities as well as maintain aquatic habitat and fish. From the Tulpehocken Creek headwater to the Dam, the Schuylkill River is classified "Pastoral" with one reach classified as "Conditional Pastoral" near Myerstown. The "Pastoral" classification also recognizes the importance of supporting water-based recreational fishing and aquatic life. The docket holder's project should have minimal impact to fisheries and recreational uses. The project should cause no significant changes to the near-stream "Pastoral" visual aesthetics or uses of the river.

Consumptive Use

The project includes a consumptive water use of greater than 100,000 gallons per day (gpd). The electric generating facility will continue to consumptively use up to 2.34 mgd of water provided by the Pennsy Quarry SG-2 intake. With the imported treated effluent from the SRB, the project includes a consumptive use of up to 4.5 mgd.

Water Importation

The Ironwood electric power generating facility presently receives up to 4.5 mgd of effluent from the City of Lebanon STP located along the Quittapahilla Creek in North Cornwall Township in the SRB. The exportation of effluent from the SRB was approved by the Susquehanna River Basin Commission (SRBC) in Docket No. 19980502-1 on May 21, 1998. The continued importation of water to the DRB from sources outside of the DRB reduces reliance on in-basin sources. No significant benefit or impairment is incurred to the basin from the ongoing importation of water from the City of Lebanon Wastewater Treatment Plant located in the SRB.

The project is designed to conform to the requirements of the *Water Code* and *Water Quality Regulations* of the DRBC.

The docket holder shall pay for surface water use in accordance with the provisions of *Administrative Manual Part III Basin Regulations – Water Charges*.

The DRBC estimates that the project withdrawals, used for the purpose of electric generation, result in a consumptive use of 100 percent of the total water use. The DRBC definition of consumptive use is defined in Article 5.5.1.D of the *Administrative Manual – Part III – Basin Regulations – Water Supply Charges*.

The project does not conflict with the Comprehensive Plan and is designed to prevent substantial adverse impact on the water resources related environment, while sustaining the current and future water uses and development of the water resources of the Basin.

C. DECISION

I. Effective on the approval date for Docket No D-1997-045-3 below, Docket No. D-1997-045-2 is terminated and replaced by Docket No. D-1997-045-3.

II. The project and appurtenant facilities as described in the Section A “Physical features” are approved pursuant to Section 3.8 of the *Compact*, subject to the following conditions:

a. The intake and operational and corresponding consumptive use records shall be available at all times for inspection by the DRBC.

b. The intake shall be operated at all times to comply with the requirements of the *Water Code* and *Water Quality Regulations* of the DRBC.

c. During any month, the withdrawal from the Pennsy Quarry SG-2 intake shall not exceed 72.54 million gallons. No source shall be pumped above the maximum instantaneous rate and monthly allocation as indicated below:

INTAKE NO.	MAXIMUM INSTANTANEOUS RATE (GPM)	MONTHLY ALLOCATION (MGM)
Pennsy Quarry SG-2	3,000	72.54

d. During times of emergency or required maintenance, either the City of Lebanon Wastewater Treatment Plant or the quarry may be used exclusively as the project's source of water with an allocation of 4.5 mgd for a period not to exceed 24 hours, provided the Delaware and Susquehanna River Basin Commissions are notified within twelve (12) hours if the exclusive use occurs on a business day or on the next business day if the use occurs on a non-business day. If the exclusive use is needed during a weekend, holiday or other time when the next business day is more than 24 hours in the future, up to 4.5 mgd may be used from an exclusive source for the initial 24-hour period, and the maximum rates of 2.16 mgd from the City of Lebanon Wastewater Treatment Plant and 2.34 mgd from the quarry shall be used after 24 hours until a written approval for a greater amount is obtained from the Commissions.

e. The docket holder shall provide, at a minimum, an average daily discharge of 4.32 mgd from the quarry to Tulpehocken Creek. If quarry operations cease, the docket holder shall continue to provide this discharge, and within three months, shall apply for a revised Operating Plan to evaluate an appropriately revised discharge schedule. Pumping from the quarry to Tulpehocken Creek shall not vary by more than approximately 20 percent in any one day, except during an emergency.

f. The docket holder shall pay for surface water use in accordance with the provisions of *Administrative Manual Part III Basin Regulations – Water Charges*.

g. During any month, consumptive use may not exceed 2.34 mgd from the DRB source for the Ironwood electric power generation facility. Including the importation of treated effluent from the SRB consumptive use shall not exceed 4.5 mgd.

h. The project withdrawals shall be metered with an automatic continuous recording device that measures to within 5 percent of actual flow. An exception to the 5 percent performance standard, but no greater than 10 percent, may be granted if maintenance of the 5 percent performance is not technically feasible or economically practicable. A record of daily withdrawals shall be maintained, and monthly totals shall be reported to the PADEP annually and shall be available at any time to the Commission if requested by the Executive Director.

i. Each new water service connection shall include a water meter in accordance with the DRBC's Resolution No. 87-7 (Revised).

j. The docket holder shall implement to the satisfaction of the PADEP, the continuous program to encourage water conservation in all types of use within the facilities served by this docket approval. The docket holder will report to the PADEP on the actions taken pursuant to this program and the impact of those actions as requested by the PADEP.

k. No water service connections shall be made to newly constructed premises with plumbing fixtures and fittings that do not comply with water conservation performance standards contained in Resolution No. 88-2 (Revision 2).

l. The docket holder shall implement to the satisfaction of the PADEP, a drought or other water supply emergency plan.

m. Nothing herein shall be construed to exempt the docket holder from obtaining all necessary permits and/or approvals from other State, Federal or local government agencies having jurisdiction over this project.

n. The docket holder is permitted to provide the water approved in this docket to the areas included in Section A.3. Area Served of this docket. Any expansion beyond those included in Section A.3. Area Served is subject to DRBC review and approval in accordance with Section 3.8 of the *Compact*.

o. The docket holder is responsible for timely submittal to the DRBC of a docket renewal application on the appropriate application form including the appropriate docket application filing fee (see 18 CFR 401.43) at least 6 months in advance of the docket expiration date set forth below. The docket holder will be subject to late filed renewal surcharges in the event of untimely submittal of its renewal application, whether or not DRBC issues a reminder notice in advance of the deadline or the docket holder receives such notice. In the event that a timely and complete application for renewal has been submitted and the DRBC is unable, through no fault of the docket holder, to reissue the docket before the expiration date below, the terms and conditions of the current docket will remain fully effective and enforceable against the docket holder pending the grant or denial of the application for docket approval.

p. Unless otherwise approved by the Executive Director of the DRBC, the applicant shall limit the operations of the project to the level corresponding to its equivalent consumptive use within the Delaware River basin that the applicant can replace on a daily basis, (1) whenever the Commission's Drought Management Plan (present or future) indicates that storage levels in the Delaware River basin have fallen below normal conditions for five consecutive days, and the daily mean "Equivalent Flow" (as measured at the Trenton U.S.G.S. gage, minus the previous day's release from Merrill Creek Reservoir, and including appropriate adjustments for directed releases from Blue Marsh Reservoir) is below 3,000 cfs and is forecast to remain below 3,000 cfs for the next day, or (2) whenever the salt front (250 isochlor) is above River Mile 92.5.

q. The docket holder shall be subject to applicable DRBC regulatory program fees, in accordance with duly adopted DRBC resolutions and/or regulations. (see 18 CFR 401.43).

r. This approval is transferable by request to the DRBC Executive Director provided that the project purpose and area served approved by the Commission in this docket will not be materially altered because of the change in project ownership. The request shall be submitted on the appropriate form and be accompanied by the appropriate fee (see 18 CFR 401.35).

s. The docket holder shall request a name change of the entity to which this approval is issued if the name of the entity to which this approval is issued changes its name. The request for name change shall be submitted on the appropriate form and be accompanied by the appropriate fee (see 18 CFR 401.35).

t. The issuance of this docket approval shall not create any private or proprietary rights in the water of the Basin, and the Commission reserves the rights to amend, alter or rescind any actions taken hereunder in order to insure the proper control, use and management of the water resources of the Basin.

u. If the monitoring required herein or any other relevant data or information demonstrates that the operation of this project is interfering with or otherwise impairing existing uses of ground or surface water, or if the docket holder receives a complaint from an existing ground or surface water user within the zone of influence of the withdrawal alleging such interference or impairment, the permit holder shall immediately notify the Executive Director, and unless excused by the Executive Director, shall investigate the demonstrated or alleged impacts. For purposes of this condition, notification shall mean either (a) electronic transmittal of written notice to the Executive Director via email (using addresses posted on the DRBC website); or (b) written notice to the Executive Director and a telephone call to the Project Review Section at 609-883-9500, ext. 216. (Oral notification must always be accompanied by immediate written notification directed to the Executive Director.) In addition, the docket holder shall provide written notice to all potentially affected water users of the docket holder's responsibilities under this condition. **Any well or surface water supply that is impaired as a result of the docket holder's project withdrawal shall be repaired, replaced or mitigated at the docket holder's expense.** The scope of the options to consider for repair, replacement and/or mitigation shall not be limited solely to those that are owned, operated, or controlled by the project sponsor. An investigation report and/or mitigation plan prepared and certified by a licensed professional engineer and/or a licensed professional geologist shall be submitted to the Executive Director as soon as practicable following notice of the demonstrated or alleged impairment consistent with this paragraph. The Executive Director shall make the final determination regarding the scope and sufficiency of the investigation and the extent of any mitigation measures that may be required. Where ground and surface waters are rendered unavailable, unusable, or unsuitable for the pre-existing use, the Executive Director may direct the docket holder to take interim actions to mitigate such impacts, pending completion of the investigative report and any long-term repair, replacement or mitigation.

v. The Executive Director may modify or suspend this approval or any condition thereof, or require mitigating measures pending additional review, if in the Executive Director's judgment such modification or suspension is required to protect the water resources of the Basin.

w. Any person who objects to a docket decision by the Commission may request a hearing in accordance with Article 6 of the *Rules of Practice and Procedure*. In accordance with Section 15.1(p) of the *Delaware River Basin Compact*, cases and controversies arising under the *Compact* are reviewable in the United States district courts.

BY THE COMMISSION

APPROVAL DATE:

EXPIRATION DATE: September 13, 2028

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