



SUSQUEHANNA RIVER BASIN COMMISSION

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Web <http://www.srbc.net>

Consumptive Use Application Summary

Source Name: Pennsylvania State University -
Consumptive Use

SRBC Pending No.: 2018-077

This summary is only a portion of the application materials and is meant to provide general information about the proposed project.

1.0 Application Background

This section requests pertinent information related to the application that is being submitted.

1.1 Project Sponsor

Company Name: The Pennsylvania State University
Mailing Address Line 1: 139J Physical Plant Building
Mailing Address Line 2: 209 Water Treatment Plant
City: University Park
State: PA
ZIP Code: 16802

Contact Person:

First Name: James
Last Name: Baird
Title: Utility Systems Engineer "Water"
Telephone: (814) 863-5536
Fax:
Mobile: (814) 826-8344
E-mail: jkb125@psu.edu

1.4 Requested Consumptive Use Quantity:

The consumptive use should be entered in million gallons per day (mgd) and rounded up to the nearest one thousand gallons (three decimal places).

1.4.1 Projected Design Year:
2035

1.4.2 Existing Consumptive Use
1.26(mgd)

1.4.3 Projected Consumptive Use
2.622(mgd)

2.3 Facility Location

Please enter the address of the parcel where the Project Facility is located.

Street Address: Office of Physical Plant
State: PA
County: Centre
Municipality: State College Borough
Zip Code: 16802

The Pennsylvania State University
Consumptive Use Application
Section 2.1 Project Facility Description

1. Site/Facility name

The Pennsylvania State University
Contact:
Office of Physical Plant
University Park, PA 16802

2. Anticipated long-term owner and operator, if different

The Pennsylvania State University
Contact:
Office of Physical Plant
University Park, PA 16802

3. Type of facility

State University
The University was founded as an agricultural school, and has developed into a major university with numerous educational and research areas. Our web site address is <https://www.psu.edu/>.

4. Briefly describe how water is or will be consumptively used at the facility and the purpose of the consumptive use

The University's current SRBC Docket lists three consumptive uses; golf irrigation, spray irrigation of wastewater, and "other consumptive losses associated with the groundwater withdraw".

5. Description of site activities

The Pennsylvania State University is a land grant university founded in 1855. The first campus site was the University Park Campus. Currently, the University Park Campus has over 46,000 students, housing for over 13,000 students, and over 10,000 employees.

Similar to a small city, the Campus has its own utilities including the following.

- Water production, treatment, distribution, and storage. Our water system is permitted and classified as a Community Water System by the PA DEP, and is the second largest "public water" system in Centre County.
- Wastewater collection, treatment, and effluent irrigation at the Living Filter, and is permitted by the PA DEP.
- Stormwater collection, some treatment and detention facilities. The University is regulated as a MS4 facility and is permitted by PA DEP.
- Steam production, distribution, condensate collection/reuse, and electrical generation.
- Natural gas distribution system.
- Chilled water system (supply and return).
- Electrical distribution system.

The University conducts over a billion dollars of research activities each year. At the University Park Campus, numerous types of research occur including agricultural research. Numerous farm animal operations and crop production activities occur at the University Pak Campus, including irrigation.

Irrigation occurs on sports fields and general landscape watering. There are potential evaporative losses associated with water cooling towers.

6. The requested quantity of the water to be consumptively used

The University requests to increase the current permitted consumptive use quantity of 2.180 mgd contained in the current SRBC Docket to 2.622 mgd, based on the current methodology of calculation.

Year 2035 Projections	Annual Average Day	Maximum Day	Consumptive Use Maximum Day
<u>Facility/Location</u>	<u>(mgd)</u>	<u>(mgd)</u>	<u>(mgd)</u>
Golf Course		1.620	1.620
WTP - Raw Water Demand	4.095	6.281	0.628
WWTP Influent	2.200	3.740	<u>0.374</u>
Total			2.622
Current Docket - Total			2.180
Current Docket - Golf Course			1.44

7. Provide the date operations began at the site or are anticipated to begin

The Campus was founded in 1855, and has expanded numerous times since its founding. The campus is projected to continue to grow in the future.

8. For golf courses, please indicate the number of holes, number and area (acres) of ponds (ornamental and functional), and any other pertinent information that describes the golf course operation

Originally built in 1921, and has been expanded.

Number of Holes = currently 36 holes.

Two irrigation ponds = 0.84 acres and 0.85 acres.

Two ornamental ponds = 0.15 acres and 0.32 acres.

Currently, Well UN37 is the primary source of water for irrigation, but historically other PSU wells supplied water for irrigation.

The Golf Course plans to add additional irrigation capacity in the future.

9. For mining projects, briefly describe all water-related uses, such as dust suppression on roads, addition of water to product (e.g. aggregate) and approximate acreage of project area

Not applicable.

10. For power generating facilities, please indicate the size (megawatts), fuel type, cooling method, and other water use processes (inlet cooling, etc.), as well as any consideration given to dry cooling

West Campus Steam Plant

Two steam turbines: one unit is approximately 2 megawatt and the other unit is approximately 3 megawatt.

Fuel type: previously coal, natural gas, and oil; currently natural gas and oil.

Cooling method for turbines, air compressors, etc. is a cooling tower.

At this time, dry cooling has not been elevated.

East Campus Steam Plant

One cogeneration combustion turbine/boiler (CT/HRSG) which is rated for approximately 7 megawatt.

Fuel type: natural gas and oil.

Cooling method for equipment, air compressors, etc. is a cooling tower.

At this time, dry cooling has not been elevated.