SUSQUEHANNA RIVER BASIN COMMISSION
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Groundwater Withdrawal Application Summary

Source Name: Landisville Well 2/Old Pit **SRBC Pending No.:** 2016-051

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

1.1 Project Sponsor

Company Name:	Pennsy Supply, Inc.
Mailing Address Line 1:	PO Box 3331
Mailing Address Line 2:	
City:	Harrisburg
State:	PA
ZIP Code:	17104

Contact Person:

First Name:	John
Last Name:	Rice
Title:	Director of Environmental Compliance
Telephone:	717-236-7023
Fax:	
Mobile:	
E-mail:	jrice@oldcastlematerials.com

1.3 Existing and Projected Facility Water Use

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

Projected Design Year:
2016

Total Project Water Usage	**Existing Usage (mgd)**	**Projected Usage For Design Year (mgd):**
Maximum 30-day Average Water Demand :	1.524	1.524
Maximum Daily Water Demand :	1.524	1.524
System Capacity :	1.524	1.524

1.4 Requested Withdrawal Amount:

Estimated Daily Hours of Operation per Day (Ex. = 5):	12
Maximum Instantaneous Withdrawal Rate (gpm):	25
Maximum 24-Hour Day (mgd):	0.026
Maximum 30-Day Average (mgd):	0.026

2.2 Facility Location

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

Street Address:	1591 Quarry Rd, Mt Joy PA 17552
State:	PA
County:	Lancaster
Municipality:	West Hempfield Township
Zip Code:	17552
Subbasin:	Lower Susquehanna

Executive Summary

The proposed project is requesting a withdrawal of 1.4 mgd (million gallons per day) and a consumptive use of up to 0.124 mgd. The water will be used for the processing of aggregate and the production of concrete. The project site is known as Landisville Quarry. The owner of the proposed project is Pennsy Supply, Inc., 1001 Paxton Street, Harrisburg, Pennsylvania, 17105. The current owner purchased the operation at the end of 2007. The previous owners, Prospect Aggregates, Inc., had a consumptive use permit approved on June 12, 2003 for 0.081 MGD under docket number 20030610. The site has two existing Noncoal Surface mine permits # 8571 and # 36910302 issued by the Pennsylvania Department of Environmental Protection, Bureau of Mining and Reclamation. Also issued along with these permits is the NPDES permit number PA0594601.

The project is located in the Lower Susquehanna Sub-basin, HUC 02050306, Chiques Creek Watershed, West Hempfield Township, Lancaster County, Pennsylvania.

Quarry operations began at the current location in the late 1800s. The owner excavates limestone and dolomite from an active open quarry pit on the property for the production of aggregate and concrete. There is an original quarry pit that is no longer active and has been allowed to fill with water, and is used as a sediment and water storage pond. The inactive quarry pit has a surface area of approximately 3.83 acres and holds approximately 59 million gallons of water. Overflow from the inactive quarry pit is released into an unnamed tributary to Chiques Creek. This overflow is gravity fed and flow is not regulated by any control device.

The project site utilizes water in a number of different processes from various private sources located on the subject property. The mining and aggregate processing uses a sump pond shown on the attached plans. Currently, the sump discharge is not metered on this site. The sump has two pumps labeled as "B" pumps. Both pumps are turbine pumps capable of 1300 GPM each. The pumps are used for two functions. They can dewater the pit by discharging into the old pit across the street and also provide water used by the stone wash plant. The water is mixed with the excavated aggregate to transport the material through the processing system and separate the various aggregate sizes. The water removes the unsuitable silts and clays from the aggregate.

The pump labeled "A" is used to discharge the sediment laden water from the stone wash plant to the old pit. The pump is capable of 300 gallons per minute (GPM).

The pump labeled "C" is a closed coupled pump capable of 500 GPM. The pump is located in the old pit and is used to provide water to the quarry sump in times of peak demand where additional water is required for the wash plant.

The pump labeled "D" is a 5Hp submersible capable of 53 GPM used for dust suppression when the wash plant is not running dry. The plant typically runs dry in December, January, and February when the temperatures are below freezing.

There are four wells used for water supply located on the property. The wells are utilized to assist in various stages of the quarry operations.

Well number 1 is only domestic water supply and has no consumptive use associated with it. It is located inside the upper garage.

Well number 2 is located near the old pit across the street from the main operation. This well is used to fill water trucks that spray down haul roads to suppress fugitive dust. Water trucks with a capacity of 2,500 gallons are equipped with sprayers that spray water on haul roads in order to control dust. The withdrawal is not metered; however, a log is maintained documenting the daily number of truckloads of water withdrawn from the inactive quarry. All water used for dust control is considered to be consumptive. The well also supplies water to the tire wash system. Well 2 has operated since 1994 and has a pump capacity of approximately 25 GPM. The well had previously been metered until the old concrete plant was demolished. This well is in direct connection to the old pit and the 57 million gallon reservoir.

Well number 3 is located in the new concrete manufacturing plant which was constructed in 2006. This well is currently not metered. The applicant proposes to install meters on this well. The well is used to supply water for the concrete manufacturing process. A log for this well has been attached. The pump is set at approximately 650' and is a 5 horsepower (hp) pump.

The fourth well is located at the primary crusher and is used to provide water for dust suppression at the primary crusher. Well number four is metered and has been in operation since 1994. The pump has a capacity of 19 gallons per minute (GPM). This well only uses 200 gpd and is by no means a significant source of drawdown on the aquifer. Because this well uses such a small quantity of water and is located in close proximity to the active sump we believe that this should be considered as the same source as the sump.

The quarry sump has a surface water of 0.39 acres. The settling ponds have been used for processing since approximately 1994. The settling ponds are maintained at adequate operating levels by water returning from the processing operation, by the capture of surface runoff from the quarry and from the processing plant, and water pumped from the inactive quarry pit to the settling ponds. The withdrawal of water from the inactive quarry pit is not metered. There is also approximately 0.18 acres of standing water on the site which is considered consumptive.

The entire quarry site is interconnected and therefore will need to be assessed as a whole. This will involve different pumping test methods than typically recommended by SRBC, over an extended period of time. SRBC regulations require sources that pump greater than 100,000 GPD to submit a groundwater withdrawal permit. Although none of the pumping wells exceed this limit the overall project site combined including quarry dewatering exceeds this limit. Because of this we are proposing to submit one aquifer test for the entire project that will include creating a three dimensional groundwater model of the effects the withdrawal has on the surrounding groundwater table. Presented below is a brief summary of the testing plan, which will be outlined in greater detail throughout this Aquifer Test Plan.

The Landisville Quarry has been operating since the late 1800s, however, it is still a relatively shallow quarry operation. The maximum daily sump discharge is only 1.4 mgd, which is very small in comparison to other similar operations. For this reason, the associated sump is also relatively small, which prevents the ability to perform a large-scale sump drawdown test. Quarry operations are different from other types of water uses in that, for the most part, the quarry does not want to use water. Rather, they have to pump water from the footprint of the active pit in order to keep a dry and workable quarry. Therefore, pumping is done on an "as-needed" basis and occurs more often during wetter periods and significantly decreases in times of minimal

recharge (during drought conditions, no pumping may be required for extended periods of time). In addition, the quarry has to follow PaDEP, MSHA and local zoning laws. Landisville is capped on the amounts of product they can mine, process and export. This leaves the plant with limited hours of operations, which equates to a limited time they can use their wells. This submission and proposed testing are based upon the maximum pumping periods, which will always occur during high water table and high recharge conditions. This will require a deviation from standard SRBC testing, because there is no way to prove a sustainable yield from the sump.

To truly understand the quarry pumping and its associated impacts on the surrounding aquifer, data will be collected and used to establish a three-dimensional groundwater model. The sump will pump under "normal" operating conditions for a minimum period of two (2) weeks. Dataloggers will collect water level data, while flow meters record the pumping rate and total gallons pumped. This will accurately allow the calculation of the bulk aquifer characteristics which will be used to create the model. The model will then allow predictions to be made about the current and future water handling needs, as well as the effects on the surrounding groundwater table. It should be noted that the quarry currently does not have a monitoring well network. Prior to testing, a series of three monitoring wells will be installed around the quarry perimeter to better assist in analyzing impacts to the surrounding aquifer.

As previously mentioned, Well 2 is drilled into the "old quarry pit". This old pit serves as a reservoir that conservatively holds 57 million gallons of water. This means that Well 2 could pump for 2280 consecutive days, without recharge, and still provide the daily demand required by Well 2. In addition, the old pit has the ability to send water to the sump, which can assist in supplementing other sources around the quarry. This means that the site has the ability to provide the total maximum projected consumptive use for 460 days without recharge. Prior to testing, dataloggers and a flow meter will be installed on this well. This well will be monitored, under normal daily operation for a minimum of 2-weeks.

Well 3 is located in the new concrete manufacturing plant which was constructed in 2006. Well 3 uses a maximum of 14,400 gallons per day (gpd). The water use calculations for the plant are based upon the maximum allowed production. A well log for Well 3 has been attached. This well will be monitored, under normal daily operation for a minimum of 2 weeks.

Well 4 is located near the crusher and provides water to the crusher spray nozzles which aid in dust suppression. This well uses less than 200 gpd. With the above listed data, and the pumping activities of the sump, this 200 gpd is scientifically irrelevant to the project. However, this well will be monitored, under normal daily operation for a minimum of 2-weeks.

Although this testing deviates from standard SRBC testing, these wells will be monitored during the period of the sump testing and the data will be used in the groundwater model. This will give a clear picture of the well uses and any potential impacts to the aquifer. Wells 2 and 4 do not have well logs available. Prior to testing, a camera log will be developed for these wells.

This site is using a relatively small amount of water for a quarry operation. Also, the site is severely restricted on production, which prevents expansion of production. For these reasons, the testing presented herein, coupled with three-dimensional groundwater modeling, will give the

most accurate portrayal of the quarry's water handling needs and potential impacts to the surrounding aquifer. Attached on the following page is a breakdown of the various consumptive uses around the quarry.

Some major items have been mentioned in this Executive Summary. Each item will be discussed in greater detail in the appropriate section of this submission. This testing has been proposed based upon a plethora of past quarry groundwater experience and will give the best and most accurate results to aid the Commission in approving this site for the water use requested. This document was prepared by Charles Brown, under the supervision of Michael Nawrocki, P.G., P.E., and will ultimately use the expertise of Mr. James Rumbaugh, P.G., for groundwater modeling.