pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REGIONAL PERMIT COORDINATION OFFICE

SUPPLEMENTARY GEOLOGY AND GROUNDWATER INFORMATION FOR STORMWATER DRAINAGE WELLS

APPLICANT NAME	
LOCATION	

1. The name and date of the latest edition of the 7.5-minute topographic map covering the area is:

a. Is the required copy or, if not available, a topographic map of equivalent scale attached? ☐ Yes ☐ No

b. Is the proposed and/or existing facility shown on the 7.5-minute topographic map? ☐ Yes ☐ No

c. Supply the location of the facility, in latitude and longitude (degrees, minutes and seconds).

(3) Other (describe): Stormwater Drainage Well(s)

☐ PROPOSED ☐ EXISTING	North - ; West - ;	Latitude - ; Longitude -
☐ PROPOSED ☐ EXISTING	North - ; West - ;	Latitude - ; Longitude -

2. Is the required large-scale map showing the facility attached? ☐ Yes ☐ No

a. Is the large-scale topographic map drawn to the following minimum scales?

(1) Topography Scale 1" - 200' Contour interval 2' ☐ Yes ☐ No ☐ N/A

b. Is the following information plotted on the large-scale map?

(1) Location of soils/geologic/and hydrologic test pits, wells or borings? ☐ Yes ☐ No

(2) The location(s) of stormwater drainage wells, piezometers, and monitoring wells? ☐ Yes ☐ No

3. All of the following which occur within the site boundaries or within 0.25 mile of the site must be plotted on the large-scale map and/or the 7.5-minute topographic map.

Check the appropriate space:

		7.5-min. topo map	Large-scale map	Not applicable
a.	Water wells	☐	☐	☐
b.	Springs	☐	☐	☐
c.	Swamps	☐	☐	☐
d.	Streams	☐	☐	☐
e.	Public and private water supplies	☐	☐	☐
f.	Other bodies of water	☐	☐	☐
g.	Sinkholes, depressions and other karst features	☐	☐	☐
h.	Underground and/or surface mines	☐	☐	☐
i.	Mine pool discharge points	☐	☐	☐
j.	Mining spoil piles or mine dumps	☐	☐	☐
k.	Quarries	☐	☐	☐
l.	Sand and gravel pits	☐	☐	☐
m.	Gas and oil wells	☐	☐	☐
n.	Diversion ditches	☐	☐	☐
o.	All water quality monitoring points	☐	☐	☐
p.	Occupied dwellings	☐	☐	☐
q.	Roads	☐	☐	☐
r.	Power lines	☐	☐	☐
s.	Pipelines and other underground utilities	☐	☐	☐
t.	Public buildings	☐	☐	☐
u.	Abandoned canal	☐	☐	☐

Applicant Name:

SOILS/GEOLOGY			
1.	List each of the soil series and phases present on the site. (Ensure that each soil type and its boundary is reflected on the site plan(s)) Soil Series -- Phase a. b. c. d. e.		
3.	Have a sufficient number of borings been made to describe soils and bedrock and determine their depth?	☐ Yes	☐ No
	a. Are their locations shown on both the large-scale map and the soils map?	☐ Yes	☐ No
	b. Are the required pit or boring descriptions (by horizon) attached?	☐ Yes	☐ No
4.	All of the following which occur within the site boundary or within 0.25 mile of the site are to be plotted on the large-scale map and the 7.5-minute topographic map. Location(s) of maximum and minimum thickness of glacial deposits Lithologies Areas where bedrock outcrops Faults Lineaments Fracture traces Directions of groundwater flow		
5.	Sediments		
	a. Are the required pit or boring descriptions (by horizon) attached?	☐ Yes	☐ No
	b. Are there:		
	(1) Glacial deposits present under the proposed site?	☐ Yes	☐ No
	(2) Colluvial deposits?	☐ Yes	☐ No
	(3) Alluvial deposits?	☐ Yes	☐ No
	(4) Lacustrine deposits?	☐ Yes	☐ No
	c. Describe the type and texture of the unconsolidated materials.		
	d. What is their maximum thickness? Feet		
	e. What is their minimum thickness? Feet		
6.	Bedrock		
	a. Formation Name		
	b. Lithologies (plot on large-scale map if more than one lithology)		
	c. Is the location of all places where the bedrock is less than 5 feet plotted on the large-scale map?	☐ Yes	☐ No
	d. How were the locations determined?		
	e. Does bedrock crop out within the boundaries or within 200 feet of the proposed facility?	☐ Yes	☐ No
	f. Are all outcrops shown on the large-scale map?	☐ Yes	☐ No
7.	Weathering		
	a. Characterize the degree of weathering.		
	b. Has saprolite developed on the bedrock?	☐ Yes	☐ No
	(1) What is the shallowest depth from the surface to bedrock? Feet		
	(2) Describe the texture.		
	c. If bedrock is a carbonate rock:		
	(1) Are there any undrained surface depressions or sinkholes at the site?	☐ Yes	☐ No
	(2) Are all sinkholes and other karst features within 0.25 mile of the site shown on the 7.5-minute topographic map and/or on the large-scale map?	☐ Yes	☐ No
	(3) Characterize the results of on-site geologic investigation from borings and other appropriate methods.		

Applicant Name:

8. Structure

a. Are all lineaments and fracture traces on the site and within 0.25 mile of the site located on the 7.5-minute topographic map and/or the large-scale map? ☐ Yes ☐ No

b. Briefly characterize these fractures, joints, etc. and discuss their control on the movement of infiltrating water and groundwater.

c. Describe the regional structure of bedrock in the area of the site.

d. Give a detailed description of the local structure.

e. Describe folding as it applies to the site.

(1) Strike and plunge of fold axis are: Strike Plunge

(2) Location of site in relation to local structure

f. Attitude of bedding

(1)	Strike	and dip	of	formation.
(2)	Strike	and dip	of	formation.
(3)	Strike	and dip	of	formation.

g. Attitude of jointing

(1)	Strike	and dip	of	formation.
(2)	Strike	and dip	of	formation.
(3)	Strike	and dip	of	formation.

h. What is the respective spacing of these joints?

(1)

(2)

(3)

i. Are joints open? (explain) ☐ Yes ☐ No

(1)

(2)

(3)

j. Cleavage

(1)	Strike	and dip	of cleavage.
(2)	Strike	and dip	of cleavage.
(3)	Strike	and dip	of cleavage.

k. Faults

(1)	Strike	and dip	of faults.
(2)	Strike	and dip	of faults.
(3)	Strike	and dip	of faults.

Are the locations of all faults that occur within 0.25 mile of the site's boundaries shown on the large-scale map and 7.5-minute topographic map? ☐ Yes ☐ No

9. Land Use

a. Are there any active or inactive surface mines at the site or within 0.25 mile of the site? ☐ Yes ☐ No

b. Are there any active or inactive deep mines at the site or within 0.25 mile of the site boundaries? ☐ Yes ☐ No

Sources of Data:

Comments:

Name and address of the Licensed Professional Geologist supplying the above data:

Name
Street
City and State Zip
Phone number (include area code): ( )
PA License No.

Applicant Name:

CLIMATOLOGY AND FLOODING

1. Will this be an all-season operation? ☐ Yes ☐ No
   If seasonal, include operating dates: to

2. Precipitation data:
   a. Maximum precipitation in./yr
   b. Average precipitation in./yr
   c. Maximum monthly precipitation Month in.
   d. Minimum monthly precipitation Month in.
   e. Station of record
   f. Length of historical record

3. Flooding Frequency
   Will all or part of the site be inundated? (check one)
   ☐ Once in 5 years or more
   ☐ Once in 10 years
   ☐ Once in 25 years
   ☐ Once in 50 years
   ☐ Once in 100 years
   ☐ Never

4. Source of flooding information:

HYDROLOGY

1. Have test pits ☐, borings ☐, or wells ☐ (check one or more) been made for the hydrologic investigation? ☐ Yes ☐ No
   a. Is the required complete geologic description (log) of all earth materials penetrated included? ☐ Yes ☐ No
   b. If a well, what was the method of drilling?

2. Depth to groundwater table.
   a. The maximum depth to the water table within the site is feet
      (1) Date of measurement
      (2) The location is shown on the (check one) ☐ 7.5-minute map ☐ large-scale map.
      (3) If measurement is from a well or pit, give date of completion for same.
   b. The minimum depth to the water table within the site is feet
      (1) Date of measurement
      (2) The location is shown on the (check one) ☐ 7.5-minute map ☐ large-scale map.
      (3) If measurement is from a well or pit, give date of completion for same.
   c. Describe seasonal water table fluctuations at the above locations.
   d. Describe all perched or special water table conditions.
   e. Does groundwater drain to deep mines? ☐ Yes ☐ No

3. Have you shown the direction(s) of groundwater movement from the site on the ☐ large-scale or ☐ 7.5-minute map (check one)? ☐ Yes ☐ No
   a. Describe how the above was determined.
   b. The location of the groundwater discharge point(s) affected by this facility is:
   c. Discuss the rate of groundwater flow at this site as it applies to the operation of this facility.

Applicant Name:

4. Describe below the proposed groundwater quality monitoring points for approval. (Monitoring point proposals are subject to final approval of the Engineering Design Plans. No wells are to be drilled until final approval of the Engineering Design Plans.) Use numbers only and number all monitoring points consecutively.

   a. Wells (check one). For multiple wells indicate with monitoring point number (a) for existing and (b) for proposed.

   ☐ For existing wells complete the table below.

   ☐ For proposed new well construction, complete the table from your specifications.

MONITORING POINT NUMBER	DRILLING METHOD	DEPTH	DIAMETER	CASING		LOCATION		SURFACE ELEVATION
				SIZE & DEPTH	ZONES[1] PERFORATED	LATITUDE	LONGITUDE	

[1] *What zones or at what depth is the casing perforated?*

   b. Springs

MONITORING POINT NUMBER	ELEVATION	RATE OF FLOW (gpm)	DATE OF MEASUREMENT	LOCATION	
				LATITUDE	LONGITUDE

5. Do all springs listed have a continuous year-round flow? ☐ Yes ☐ No

   If not, explain.

6. Background groundwater quality must be determined. Describe how background water quality was determined?

7. What is the background water quality?

a.	Temperature	Degrees C
b.	pH	SU
c.	Alkalinity	mg/L
d.	Total solids	mg/L
e.	Suspended solids	mg/L
f.	Settleable solids	mg/L
g.	MBAS	mg/L
h.	BOD 5-day	mg/L
i.	COD .25 w $K_2Cr_2O_8$	mg/L
j.	Specific conductance	Micromhos/cm (Microsiemens/cm)
k.	Total iron	mg/L
l.	Manganese	mg/L
m.	Aluminum	mg/L
n.	Copper	mg/L
o.	Zinc	mg/L
p.	Nickel	mg/L
q.	Chromium	mg/L
r.	Sulfate	mg/L
s.	Chloride	mg/L
t.	Fluoride	mg/L

u. Kjeldahl - Nitrogen mg/L

v. Ammonia - Nitrogen mg/L

w. Nitrate - Nitrogen mg/L

x. Phosphorus mg/L

8. Other (describe)

Sources of Data:

Comments:

Name and address of licensed professional geologist (or hydrogeologist) supplying the above data:

Name

Street

City and State Zip

Phone number (include area code): ( )

PA License No.

NOTE: Phase II must be completed within 60 days after the monitoring points are approved and the permit is issued.

FOR DEPARTMENT USE ONLY:

Proposed monitoring point locations and construction approved:

Name: _____ Date: _____

Comments: _____