Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0253570**
Facility Type	**Storm Water**	APS ID	**1151590**
Major / Minor	**Minor**	Authorization ID	**1551082**

NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Applicant and Facility Information

Applicant Name	**Glen-Gery Corporation**	Facility Name	**Pittsburgh Plant**
Applicant Address	1166 Spring Street Wyomissing, PA 19610-1721	Facility Address	26 Rich Hill Road Cheswick, PA 15024
Applicant Contact	Mike Krzyzanowski	Facility Contact	Eric Brown
Applicant Phone	(610) 562-6422	Facility Phone	(610) 562-6420
Client ID	29414	Site ID	442881
SIC Code	3251,3271	Municipality	Harmar Township
SIC Description	Manufacturing - Brick and Structural Clay Tile, Manufacturing - Concrete Block and Brick	County	Allegheny
Date Application Received	November 25, 2025	EPA Waived?	Yes
Date Application Accepted	December 18, 2025	If No, Reason	
Purpose of Application	Issuance of an NPDES permit renewal for discharges of storm water associated with industrial activities.		

Summary of Review

Glen-Gery Corporation (Glen-Gery) operates a brick manufacturing facility (Pittsburgh Plant) in Harmar Township, Allegheny County. The facility area is on a separate lot from the quarries consisting of 37.7 acres of industrial area along with roughly 93 acres of active mining area. The facility consists of an old plant, new plant, and active mining area. The old plant (also known as west plant) is no longer active and is used primarily for finished product storage and vehicle maintenance. The new plant (also known as the east plant) was built in 2000 and is where the main industrial activity is conducted. The new plant consists of an office/main plant building, raw material building, a finished product storage yard, and a grinding building. Employee work functions that can contribute to stormwater runoff include equipment repair, welding operations, grinding operations, finished product assembly area, excavation of mineral deposits, and loading/unloading zones.

The following materials are stored at this site: raw mineral materials (sand, silt, and clay), solvents, waste mineral materials, scrap metal, used oil (including used oil filters), antifreeze, batteries, machine oils, lubricants, transformer oils, residual wastes, greases, fuel oils, hydraulic oils, and finished brick products.

The stormwater runoff onsite is discharged via Outfalls 005, 007, 008, 009, 010, and 011 onsite for all the plant operations. Outfalls 001 and 002 discharge stormwater from the mining operation west of the plant operations. Outfalls 005, 007, 008, 009, 010, and 011 are currently sampled for Total Suspended Solids (TSS), Total Iron, and Total Aluminum on a semi-annual basis. Outfall 001 and Outfall 002 are currently sampled for dry weather parameters outlined in the mine permit NPDES PA0202916. Outfalls 001, 002, 005, 007, 008, 009, 010, and 011 flow through small conveyances and tributaries of Deer Creek which ultimately flow into the Allegheny River. A downstream notification is not required for the Glen-Gery facility since the aggregate above ground storage tank capacity does not exceed 21,000 gallons of regulated substances.

Approve	Deny	Signatures	Date
X		Alexa Howard / Environmental Engineering Trainee	April 16, 2026
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	April 7, 2026

Summary of Review

Finished extruded brick products are stored outside in bundled packaging, and the bricks are staged outside in various locations onsite until transported by a masonry hauler. The bricks are made out of mineral materials including sand, silt, and clay and do not pose a significant impact to stormwater runoff. Finished extruded products that are sensitive to weather are placed under cover to avoid deterioration thus preventing stormwater exposure.

Raw materials onsite mainly consist of shale and clay materials brought to the plant from the three quarries adjacent to the property. These excavated materials are closely monitored daily and are placed in a large building to cover and control moisture content as well as control stormwater runoff. Other miscellaneous raw materials that are brought onsite are either stored inside the main plant building or the grinding building with no exposure to stormwater runoff. All petroleum products are housed inside buildings or equipped with adequate secondary containment, with no exposure to stormwater runoff.

On February 10, 2020, Brickworks Eddie Acquisition Corporation (Eddie Acquisition) purchased Redland Brick, Inc. including the Pittsburgh Plant and associated surface mine. Eddie Acquisition is a subsidiary of Brickworks North America (Brickworks) and Brickworks is a holding Company for Eddie Acquisition and Glen-Gery Corporation. Brickworks intends to operate the facility under the Glen-Gery name as the “Glen-Gery Corporation – Pittsburgh Plant”. Glen-Gery submitted an application to transfer its various Department-issued permits on May 28, 2020. During the issuance of the 2021 PA0253570, Glen-Gery Corporation was transferred as the operator of the facility.

Permitting Background

In November 2005, Redland applied to renew its coverage for the Pittsburgh Plant’s industrial storm water discharges under the Department’s NPDES “General Permit for Discharges of Stormwater Associated with Industrial Activity” (PAG-03). In June 2007, Redland submitted an application for a new individual NPDES permit in response to the Department's October 17, 2006 decision to deny the Pittsburgh Plant continuing coverage under its PAG-03 permit (PAR216140). The Department's decision to deny Redland coverage under the PAG-03 was based on the Department's observation of untreated wastewater discharges from the Pittsburgh Plant along with sediment-laden storm water runoff. Those observations were made by the Department’s Water Quality Specialist Homer Richey during site inspections conducted on December 6, 2005 and February 16, 2006.

The primary untreated wastewater discharges impacting the Pittsburgh Plant consisted of artesian upwellings of acid mine drainage from Republic Steel Corporation’s Indianola Deep Mine that operated from 1890 to 1957. Two foundation boreholes left open in the 1970s became natural outlets for water which collected in the Indianola Mine Pool. Over time, a steady flow of water caused the borehole openings to widen significantly and large amounts of water discharged continuously (at rates exceeding 1,000 gpm) through Redland Brick’s old plant before flowing untreated into Deer Creek. Acid mine drainage is not an authorized non-storm water discharge under the PAG-03. The Clean Water Program did not take any action on either the 2005 renewal of PAR216140 or on the 2007 individual NPDES permit application because the Department’s Bureau of Abandoned Mine Reclamation and other stakeholders, including Redland, were working on a plan to redirect and passively treat the mine drainage.

As part of an August 14, 2008 Consent Order and Agreement by and between the Department, Redland Brick, and the Clean Streams Foundation, Redland agreed to donate property and a road easement and to contribute to the Indianola Mine Trust for the purpose of establishing a passive treatment system to abate the mine drainage. During the spring and summer of 2013 an exploratory drilling project safely lowered the Indianola Mine Pool that was upwelling and discharging untreated to Deer Creek through the Redland Brick plant. Two boreholes were drilled at the new passive treatment system site located between Deer Creek and the Pennsylvania Turnpike and the existing boreholes causing mine drainage emanations across the Pittsburgh Plant were sealed. The passive treatment system includes two iron oxide settling ponds to lessen the 1,200 gallon per minute acid mine drainage source contributing to impairment of Deer Creek. The Clean Streams Foundation owns and operates the treatment system using funds from the Indianola Mine Trust.

Pursuant to the Pennsylvania Environmental Good Samaritan Act, Redland's participation in the Indianola Mine Pool Project to reroute and passively treat mine drainage from the Indianola Mine Pool relieved the company of civil liability for those discharges—provided that the company does not conduct future activities that intercept the mine pool. The Clean Streams Foundation also benefits from the protections and immunities of the Environmental Good Samaritan Act.

Permitting Activities Post-Indianola Mine Pool Projection Completion

On July 18, 2018, the Department conducted an inspection of the Pittsburgh Plant and requested, among other things, that Redland locate outfalls previously identified by the company on its permit application that could not be located during the July 2018 inspection (namely Outfalls 003, 004, 005, 006, and 008). In a December 11, 2019 email, the Department also requested updated analytical data for the site’s outfalls. The purpose of those requests was to update the pending permit applications from

Summary of Review

2005 and 2007 and to determine whether the Pittsburgh Plant was eligible for coverage under the PAG-03 or whether conditions still required an individual permit despite the relocation of mine drainage discharges to an offsite location.

After purchase of the site, Glen-Gery submitted analytical data for Outfall 007 on March 11, 2020 and data for Outfalls 009 and 010 on May 22, 2020. Glen-Gery also reported on March 11, 2020 that it believed that Outfalls 003, 004, 005, 006, and 008 no longer existed. On March 12, 2020, the Department requested that Glen-Gery further investigate Outfall 005 because evidence suggested that Outfall 005 still existed despite no apparent discharge pipe on Deer Creek (a catch basin is located in the old plant's brick storage area and the basin does not flood during storms). The Department also requested that Glen-Gery sample Outfall 008 because it does exist.

The Clean Water Program accompanied District Mining Operations on another inspection of the Pittsburgh Plant on August 27, 2020. Except for Outfalls 003, 004, 005, and 006, the Department and Glen-Gery reached consensus on outfall locations during that inspection. Glen-Gery and the Department concluded that Outfalls 003, 004, and 006 do not exist and that further investigation of Outfall 005 was appropriate. Glen-Gery performed a dye test on October 9, 2020 and concluded that Outfall 005 still exists and that storm water samples would be collected at the catch basin in the old plant's brick storage area since there is no discrete outfall pipe on the bank of Deer Creek. The final set of analytical results for Outfalls 005, 007, 008, 009, and 010 was submitted to the Department on January 7, 2021. Based on the elevated concentrations of iron in those results and due to the primarily iron-based impairment of Deer Creek, the Department determined that an individual NPDES permit would be required. The individual NPDES permit PA0253570 was issued on May 12, 2021 (effective June 1, 2021) and the existing PAG-03 permit PAR216140 was rescinded on the same day.

Draft permit issuance is recommended.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	005	Design Flow (MGD)	Variable
Latitude	40º 33' 25"	Longitude	-79º 50' 28"
Quad Name	New Kensington West	Quad Code	1407
Wastewater Description:	Stormwater runoff from the old plant's brick storage area.		
Receiving Waters	Deer Creek (CWF)	Stream Code	42285
NHD Com ID	123972802	RMI	2.72
Drainage Area	34 mi^2	Yield (cfs/mi^2)	0.0177
Q_{7-10} Flow (cfs)	0.602	Q_{7-10} Basis	USGS Stream Stats
Elevation (ft)	1087.6	Slope (ft/ft)	0.07376
Watershed No.	18-A	Chapter 93 Class.	CWF
Assessment Status	CWF (Cold Water Fishes)		
Cause(s) of Impairment	Siltation; flow regime modification; turbidity; total dissolved solids (TDS); metals; nutrients		
Source(s) of Impairment	Construction (siltation, flow regime modification, turbidity); Subsurface Hardrock Mining (TDS); Acid Mine Drainage (metals and TDS); Source unknown (nutrients)		
TMDL Status	No TMDL	Name	
Nearest Downstream Public Water Supply Intake	Wilkinsburg-Penn JT Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	994
PWS RMI	8.51	Distance from Outfall (mi)	7.08

Comments: Outfall 005 discharges storm water runoff from a catch basin in the brick storage area at the old plant. An outfall pipe is not visible on the eastern bank of Deer Creek. However, Glen-Gery conducted a dye test on October 9, 2020 using approximately 800 gallons of water from Deer Creek and three cups of non-toxic, biodegradable water tracing dye and observed dye along the east bank of Deer Creek during the test. It is likely there is a collapsed pipe that was damaged by flooding.

Since there is no observable outfall pipe, Glen-Gery collects samples of storm water entering the catch basin in the old plant's brick storage area.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	007	Design Flow (MGD)	Variable
Latitude	40º 33' 26"	Longitude	-79º 50' 22"
Quad Name	New Kensington West	Quad Code	1407
Wastewater Description:	Stormwater runoff from the old plant		
Receiving Waters	Deer Creek (CWF)	Stream Code	42285
NHD Com ID	123972802	RMI	2.61
Drainage Area	34 mi^2	Yield (cfs/mi^2)	0.0177
Q_{7-10} Flow (cfs)	0.602	Q_{7-10} Basis	USGS Stream Stats
Elevation (ft)	1087.6	Slope (ft/ft)	0.07376
Watershed No.	18-A	Chapter 93 Class.	CWF
Assessment Status	CWF (Cold Water Fishes)		
Cause(s) of Impairment	Siltation; flow regime modification; turbidity; total dissolved solids (TDS); metals; nutrients		
Source(s) of Impairment	Construction (siltation, flow regime modification, turbidity); Subsurface Hardrock Mining (TDS); Acid Mine Drainage (metals and TDS); Source unknown (nutrients)		
TMDL Status	No TMDL	Name	
Nearest Downstream Public Water Supply Intake	Wilkinsburg-Penn JT Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	994
PWS RMI	8.51	Distance from Outfall (mi)	7.08

Comments: Outfall 007 discharges storm water runoff from the old plant to an unnamed tributary to Deer Creek along Rich Hill Road. The outfall is co-located with deep mine discharge monitoring point “S1” of the Pittsburgh Plant’s Surface Mining Permit 02010301.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	008	Design Flow (MGD)	Variable
Latitude	40º 33' 29"	Longitude	-79º 50' 20"
Quad Name	New Kensington West	Quad Code	1407
Wastewater Description:	Stormwater runoff from the main plant entrance road		
Receiving Waters	Little Deer Creek (TSF)	Stream Code	42289
NHD Com ID	123972667	RMI	0.06
Drainage Area	34 mi^2	Yield (cfs/mi^2)	0.0177
Q_{7-10} Flow (cfs)	0.602	Q_{7-10} Basis	USGS Stream Stats
Elevation (ft)	1087.6	Slope (ft/ft)	0.07376
Watershed No.	18-A	Chapter 93 Class.	TSF
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation; flow regime modification; turbidity; total dissolved solids (TDS); metals		
Source(s) of Impairment	Construction (siltation, flow regime modification, turbidity); Subsurface Hardrock Mining (TDS); Acid Mine Drainage (metals and TDS)		
TMDL Status	Final (August 23, 2006)	Name	Little Deer Creek Watershed
Nearest Downstream Public Water Supply Intake	Wilkinsburg-Penn JT Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	994
PWS RMI	8.51	Distance from Outfall (mi)	7.08

Comments: Outfall 008 discharges storm water runoff from two catch basins on either side of the entrance road that leads to the main plant off Rich Hill Road. The left catch basin connects to the right catch basin, which discharges to Little Deer Creek along its western bank.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	009	Design Flow (MGD)	Variable
Latitude	40º 33' 25"	Longitude	-79º 50' 18"
Quad Name	New Kensington West	Quad Code	1407
Wastewater Description:	Storm water runoff from the main plant entrance road		
Receiving Waters	Deer Creek (WF)	Stream Code	42285
NHD Com ID	123972802	RMI	2.53
Drainage Area	34 mi^2	Yield (cfs/mi^2)	0.0177
Q_{7-10} Flow (cfs)	0.602	Q_{7-10} Basis	USGS Stream Stats
Elevation (ft)	1087.6	Slope (ft/ft)	0.07376
Watershed No.	18-A	Chapter 93 Class.	CWF
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation; flow regime modification; turbidity; total dissolved solids (TDS); metals; nutrients		
Source(s) of Impairment	Construction (siltation, flow regime modification, turbidity); Subsurface Hardrock Mining (TDS); Acid Mine Drainage (metals and TDS); Source unknown (nutrients)		
TMDL Status	No TMDL	Name	
Nearest Downstream Public Water Supply Intake	Wilkinsburg-Penn JT Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	994
PWS RMI	8.51	Distance from Outfall (mi)	7.08

Comments: Outfall 009 discharges storm water runoff from a catch basin near the end of the entrance road to the main plant. The catch basin has a filter insert, which had tears in it at the time it was inspected.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	010	Design Flow (MGD)	Variable
Latitude	40º 33' 21"	Longitude	-79º 50' 12"
Quad Name	New Kensington West	Quad Code	1407
Wastewater Description:	Stormwater runoff from the main plant brick storage area		
Receiving Waters	Deer Creek (CWF)	Stream Code	42285
NHD Com ID	134460289	RMI	2.4
Drainage Area	34 mi^2	Yield (cfs/mi^2)	0.0177
Q_{7-10} Flow (cfs)	0.602	Q_{7-10} Basis	USGS Stream Stats
Elevation (ft)	1087.6	Slope (ft/ft)	0.07376
Watershed No.	18-A	Chapter 93 Class.	CWF
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation; flow regime modification; turbidity; total dissolved solids (TDS); metals; nutrients		
Source(s) of Impairment	Construction (siltation, flow regime modification, turbidity); Subsurface Hardrock Mining (TDS); Acid Mine Drainage (metals and TDS); Source unknown (nutrients)		
TMDL Status	No TMDL	Name	
Nearest Downstream Public Water Supply Intake	Wilkinsburg-Penn JT Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	994
PWS RMI	8.51	Distance from Outfall (mi)	7.08

Comments: Outfall 010 discharges storm water runoff from a catch basin in the main plant's brick storage area to a vegetated area approximately 120 feet from the east bank of Deer Creek.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	011	Design Flow (MGD)	Variable
Latitude	40º 33' 24"	Longitude	-79º 50' 08"
Quad Name	New Kensington West	Quad Code	1407
Wastewater Description:	Storm water overflows from a storm water pond collecting runoff from southern and eastern parts of the main plant		
Receiving Waters	Deer Creek (CWF)	Stream Code	42285
NHD Com ID	134460289	RMI	2.23
Drainage Area	34 mi^2	Yield (cfs/mi^2)	0.0177
Q_{7-10} Flow (cfs)	0.602	Q_{7-10} Basis	USGS Stream Stats
Elevation (ft)	1087.6	Slope (ft/ft)	0.07376
Watershed No.	18-A	Chapter 93 Class.	CWF
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation; flow regime modification; turbidity; total dissolved solids (TDS); metals; nutrients		
Source(s) of Impairment	Construction (siltation, flow regime modification, turbidity); Subsurface Hardrock Mining (TDS); Acid Mine Drainage (metals and TDS); Source unknown (nutrients)		
TMDL Status	No TMDL	Name	
Nearest Downstream Public Water Supply Intake	Wilkinsburg-Penn JT Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	994
PWS RMI	8.51	Distance from Outfall (mi)	7.08

Comments: Outfall 011's discharges are overflows from a pond collecting storm water runoff from the southern and eastern areas of the main plant.

Development of Effluent Limitations

Outfall No. 005, 007, 008, 009, 010, 011 **Design Flow (MGD)** Variable
Latitude 40º 33' 41" **Longitude** -79º 50' 46"
Wastewater Description: Stormwater

Technology-Based Limitations

Storm water discharged from the Pittsburgh Plant is not subject to any Federal Effluent Limitations Guidelines. Therefore, effluent limits and/or monitoring requirements will be developed based on applicable state regulations and guidance.

Storm Water Monitoring Requirements

Pursuant to 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities described in Section III of DEP's "Standard Operating Procedure (SOP) for Clean Water Program – Establishing Effluent Limitations for Individual Industrial Permits", minimum monitoring requirements and Best Management Practices from DEP's NPDES General Permit for Discharges of Stormwater Associated with Industrial Activity (PAG-03) will be applied to the Pittsburgh Plant's storm water discharges. Glen-Gery reported its NAICS Code as 327331 (Concrete Block and Brick Manufacturing), which corresponds to SIC Codes 3251 (Brick and Structural Clay Tile) and 3271 (Concrete Block and Brick). Both SIC Codes are classified under Appendix N – Glass, Clay, Cement, Concrete and Gypsum Products of the PAG-03 General Permit.[1] To ensure that there is baseline consistency across the state for all brick-making facilities that discharge storm water associated with their industrial activities, the monitoring requirements of Appendix N of the PAG-03 will be imposed at the Pittsburgh Plant's storm water outfalls. The Appendix N monitoring requirements are shown in **Table 1**.

Table 1. PAG-03 Appendix N – Minimum Monitoring Requirements

Parameter	Measurement Frequency	Sample Type	Benchmark Values
pH (S.U.)	1 / 6 months	Grab	6.0-9.0
Total Suspended Solids (TSS)	1 / 6 months	Grab	100
Total Aluminum	1 / 6 months	Grab	XXX
Total Iron	1 / 6 months	Grab	XXX

The benchmark values listed in **Table 1** are not effluent limitations and exceedances do not constitute permit violations. However, if the permittee's sampling demonstrates exceedances of benchmark values for two consecutive monitoring periods, the permittee must submit a Corrective Action Plan within 90 days of the end of the monitoring period triggering the plan. That requirement and the benchmark values will be specified in a condition in Part C of the permit.

To the extent that effluent limits are necessary to ensure that storm water Best Management Practices (BMPs) are adequately implemented, DEP's Permit Writers' Manual recommends that effluent limits be developed for industrial storm water discharges based on a determination of Best Available Technology (BAT) using Best Professional Judgment (BPJ). BPJ of BAT typically involves the evaluation of end-of-pipe wastewater treatment technologies, but DEP considers the use of BMPs to be BAT for storm water outfalls unless effluent concentrations indicate that BMPs provide inadequate pollution control. **Table 2** summarizes the existing effluent quality of storm water discharges from the plant.

[1] The determination of which of the PAG-03 General Permit's appendices applies to a facility is based on a facility's SIC Code.

Table 2. Storm Water Analytical Results for the Pittsburgh Plant

Parameter (mg/L)	Outfall 005 (8/2/24)	Outfall 007 (4/3/24)	Outfall 008 (6/14/23)	Outfall 009 (4/3/24)	Outfall 010 (11/11/22)	Outfall 011 (11/22/23)	No Exposure Thresholds (mg/L)	MSGP Benchmarks (mg/L)
O&G	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	N/A
BOD5	<20.0	<4.0	<20.0	<4.0	<4.0	<4.0	10.0	30
COD	13.7	11.0	16.8	15.1	13.2	24.8	30.0	120
TSS	130	12.88	184	235	9.50	339	30.0	100
Total Nitrogen	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	2.0	N/A
Total Phosphorus	0.068	0.025	<0.100	0.039	0.024	0.098	1.0	2.0
pH (S.U.)	8.1	8.1	8.3	8.0	8.4	8.4	6.0 – 9.0 S.U.	6.0 – 9.0 S.U.
Aluminum, Total	1.95	0.34	5.92	6.87	0.36	9.24	0.75	1.1
Iron, Total	2.38	0.73	6.32	7.85	0.49	11.26	7.0	N/A

Sampling dates are shown in column headings. The reported analytical results in Table 2 for Total Suspended Solids, Total Aluminum, and Total Iron are the average of multiple sampling results. The reported analytical result in Table 2 for pH is the maximum result

Based on the storm water analytical results in **Table 2**, TSS, Aluminum, and Iron are pollutants of concern at Outfalls 005, 008, 009, and 011 and may not be effectively controlled by Glen-Gery's BMPs. A Corrective Action Plan (CAP) was implemented in 2025 to address TSS, Aluminum, and Iron levels above Benchmark values. This plan included a schedule to implement new BMPs at the site, shown below in **Table 3**. The monitoring requirements imposed pursuant to 25 Pa. Code § 92a.61(h) and Appendix N of the PAG-03 already include TSS, Aluminum, and Iron, so no additional monitoring requirements are imposed based on the results in **Table 2**. However, additional requirements for aluminum and iron are considered below due to the aquatic life impairments of Little Deer Creek and Deer Creek.

Table 3. CAP Anticipated Implementation Schedule

BMP	Implementation Date	Responsible Personnel
Increase housekeeping efforts around exterior areas of plant including sweeping and redirecting heavy traffic areas away from outfalls.	3/31/2025	Ben Fishburn
Update Preparedness, Prevention, & Contingency (PPC) Plan to reflect changes in BMPs.	3/31/2025	Eric Brown
Replace catch basin filters as needed throughout plant. Ensure outfall pipes are free of debris.	4/30/2025	Ben Fishburn
Chemically treat the sediment pond that discharge Outfall 011 with a bio-flocculant approved by DEP	4/30/2025	Ben Fishburn
Re-line Outfall 009 drainage area with gravel rip-rap rocks (near front entrance).	4/30/2025	Ben Fishburn

Water Quality-Based Limitations

Generally, DEP does not develop numerical WQBELs for storm water discharges. Pursuant to 25 Pa. Code § 96.4(g), mathematical modeling used to develop WQBELs must be performed at Q_{7-10} low flow conditions. Precipitation-induced discharges generally do not occur at Q_{7-10} design conditions because the precipitation that causes a storm water discharge also will increase the receiving stream's flow and that increased stream flow will provide additional assimilative capacity during a storm event. However, some circumstances do lead to the imposition of WQBELs on storm water discharges. For example, if a TMDL assigns waste load allocations to a storm water discharge, then WQBELs may be necessary to ensure that the permit is consistent with the TMDL. Alternatively, watersheds impaired by acid mine drainage may experience critical loading conditions during and after storm events due to increasing mine pool levels caused by storm water infiltration into the mine. Other storm water discharges during that time may contribute to excursions above water quality criteria. Requirements based on final TMDLs and stream impairments for the Pittsburgh Plant's receiving waters are discussed below.

Even though no mathematical modeling is performed, conditions in Part C of the permit will ensure compliance with water quality standards through a combination of best management practices including pollution prevention and exposure minimization, good housekeeping, erosion and sediment control, and spill prevention and response.

Little Deer Creek Watershed Total Maximum Daily Load (TMDL)

On August 23, 2006, DEP finalized the Little Deer Creek Watershed TMDL for Acid Mine Drainage Affected Segments. Little Deer Creek was listed on the 1996 Pennsylvania Section 303(d) list of impaired waters. The cause of the impairment was identified as metals (aluminum, iron, and manganese) from abandoned coal mines.

Glen-Gery has one outfall that discharges into the Little Deer Creek watershed: Outfall 008. Outfall 008—located about 0.06 miles (approximately 300 feet) upstream of where Little Deer Creek empties into Deer Creek—discharges storm water runoff from the entrance road leading to the main facilities of the Pittsburgh Plant.

Pursuant to 40 CFR § 122.44(d)(1)(vii)(B)[2], WQBELs must be consistent with available waste load allocations (WLAs) from a final TMDL. The Little Deer Creek Watershed TMDL developed WLAs and load allocations for point and non-point source discharges in certain segments of the watershed. The TMDL's allocations are identified for stream segments and not specific discharges. Outfall 008 is in the farthest downstream segment of the watershed extending upstream from the mouth of Little Deer Creek (identified as Station LTDR01 in the TMDL) to the mouth of Unnamed Tributary 42290 where that tributary empties into Little Deer Creek at river mile index 0.60. The TMDL did not require any load reductions in that segment of the Little Deer Creek watershed and did not identify any WLAs or load allocations at LTDR01. Therefore, discharges in that segment of the river, including Outfall 008, are not subject to any TMDL WQBELs. It is apparent from the TMDL that the impairments of Little Deer Creek originate primarily from sources further upstream in the watershed.

Glen-Gery Corporation and its predecessor, Redland Brick, Inc., collect/collected stream data quarterly on Little Deer Creek and Deer Creek as a requirement of Surface Mining Permit (SMP) 02010301 for the Pittsburgh Plant's nearby quarry. The TMDL for Little Deer Creek is from 2006, but recent surface water data from Redland Brick's and Glen-Gery's quarterly sampling are available to help determine whether the stream data used to develop the TMDL represent current stream conditions and to help evaluate the need for WQBELs or water quality-based requirements separate from the TMDL. A full summary of the permittees' recent data (1st Quarter 2020 through 4th Quarter 2022) is included at the end of this Fact Sheet as **Appendix C**. SMP 02010301 monitoring point LD1 is located on Little Deer Creek just downstream of Outfall 008, and this data is summarized below in **Table 4**.

Table 4. In-steam Data for Little Deer Creek collected at SMP 02010301 Monitoring Point LD1

Date	Flow (gpm)	Field pH (S.U.)	Lab pH (S.U.)	Alkalinity (mg/L)	Acidity (mg/L)	Aluminum (mg/L)	Iron (mg/L)	Manganese (mg/L)
WQ Criterion	--	6.0-9.0	6.0-9.0	--	--	0.75	1.5	1.0
03/26/2020	--	--	8.00	107	<7.0	<0.20	0.241	0.061
06/30/2020	--	--	8.20	227	<7.0	<0.20	<0.200	0.018
09/29/2020	TLTG	--	8.20	189	<7.0	<0.20	<0.200	0.024
10/09/2020	TLTG	--	8.40	322	<7.0	<0.20	<0.200	0.025
03/25/2021	5984	8.52	8.50	154	-139	<0.1	0.130	0.050
04/27/2021	2992	7.96	8.46	253	-242	<0.1	0.050	0.010
07/15/2021	>1500	7.34	8.01	169	-160	<0.1	0.580	0.070
10/29/2021	>1500	7.20	8.42	225	-215	0.1000	0.200	0.070
03/17/2022	>1500	7.11	8.41	139	-128	<0.1	0.280	0.070
06/08/2022	>1501	7.03	8.08	179	-165	0.2000	0.790	0.120
08/31/2022	>1500	7.92	8.42	245	232	<0.1	0.110	0.040
12/16/2022	>1500	7.56	7.97	105	-92	0.2000	0.350	0.050
Average/Median	**4488**	**7.58**	**8.26**	**192.8**	**-113.6**	**0.167**	**0.303**	**0.051**

[2] "(vii) When developing water quality-based effluent limits under this paragraph the permitting authority shall ensure that: [cont'd…] (B) Effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7."

Table 5. Water Quality Data at LTDR01 used in TMDL Calculations

Date	Flow (gpm)	Lab pH (S.U.)	Alkalinity (mg/L)	Acidity (mg/L)	Aluminum (mg/L)	Iron (mg/L)	Manganese (mg/L)
4/29/2003	4460	8.4	255.0	0.0	<0.5	<0.3	0.068
6/18/2003	10010	7.4	104.8	0.0	<0.5	0.56	0.078
8/6/2003	2446	8.3	136.0	0.0	<0.5	<0.3	<0.05
8/19/2003	1192	8.3	152.0	0.0	<0.5	<0.3	<0.05
10/6/2003	3130	8.1	133.4	0.0	<0.5	<0.3	0.073
Average	**4247.6**	**8.1**	**156.24**	**0.0**	**<0.5**	**0.56**	**0.073**
Std. Dev.	3430.8	0.406	57.76	0.0	N/A	N/A	0.005

Comparing the data collected by Glen-Gery/Redland Brick on Little Deer Creek to the data from the 2006 TMDL report indicates that the TMDL's conclusion that load reductions are not necessary for the furthest downstream segment of Little Deer Creek remain valid. In-stream concentrations of the TMDL's pollutants of concern (aluminum, iron, and manganese) are less than the most stringent water quality criteria, so assimilative capacity is available in Little Deer Creek. Note that, even if water chemistry data indicate that water quality criteria are achieved in-stream, impairments may still exist based on biological metrics such as the diversity of organisms in the stream and the prevalence of pollution-tolerant organisms.

Notwithstanding the availability of assimilative capacity in Little Deer Creek, BMPs should be able to reduce the concentrations of metals at Outfall 008. Therefore, benchmark values of 1.1 mg/L and 1.5 mg/L will apply for aluminum and iron at Outfall 008 based on EPA's aluminum benchmark value from the 2021 Multi-Sector General Permit and Pennsylvania's water quality criterion for total iron from 25 Pa. Code § 93.7(a), respectively. DEP notes that the iron criterion is a 30-day average, so its use here for a short-duration storm water discharge is conservative.

Even though manganese is generally associated with acid mine drainage, discharge and stream data indicate that manganese is not a pollutant of concern for either the Pittsburgh Plant's discharges or for Little Deer Creek. Therefore, no requirements are imposed for manganese.

Deer Creek Impairment

Deer Creek's aquatic life use impairment is caused by a variety of sources (siltation, flow regime modification, and turbidity from construction; total dissolved solids from mining and mine drainage; metals from acid mine drainage; and nutrients from unknown sources), but the primary contributor to the impairment is the discharge from the Indianola Mine Pool. As explained at the beginning of this Fact Sheet, discharges from the Indianola Mine Pool were rerouted away from the Pittsburgh Plant's site to a location further upstream on Deer Creek. The mine drainage is treated passively in two settling ponds, but the effluent still discharges to Deer Creek and still contains iron. Data collected on Deer Creek at monitoring point UD1 (downstream of the Indianola Mine Pool discharge) pursuant to SMP 02010301 indicate that, on average, iron concentrations in Deer Creek still exceed water quality criteria.

Table 6. In-steam Data for Deer Creek collected at SMP 02010301 Monitoring Point UD1

Date	Flow (gpm)	Field pH (S.U.)	Lab pH (S.U.)	Alkalinity (mg/L)	Acidity (mg/L)	Aluminum (mg/L)	Iron (mg/L)	Manganese (mg/L)
WQ Criterion	—	6.0 to 9.0	6.0 to 9.0	—	—	0.75	1.5	1.0
03/26/2020	--	--	7.50	165	<7.0	0.292	1.050	0.082
06/30/2020	--	--	7.40	370	<7.0	0.200	4.160	0.323
09/29/2020	TLTG	--	7.50	406	<7.0	<0.20	1.960	0.494
10/09/2020	TLTG	--	7.80	368	<7.0	<0.20	0.816	0.182
03/25/2021	8976	7.9	8.20	208	-194	<0.10	0.950	0.100
04/27/2021	4488	7.6	8.14	291	-283	<0.10	1.580	0.150
07/15/2021	>1500	7.1	7.94	179	-169	0.100	0.690	0.080
10/29/2021	>1500	**18.4**	8.22	217	-201	0.100	0.560	0.070
03/17/2022	>1500	7.1	8.06	151	-138	<0.10	0.042	0.050
06/08/2022	>1501	7.3	7.98	193	-184	0.200	0.960	0.100
08/31/2022	>1500	6.9	7.82	282	-269	<0.10	0.660	0.200
12/16/2022	>1500	7.8	8.16	106	-91	0.300	0.710	0.050
Average/Median	**6732**	**7.39**	**7.89**	**244.7**	**-191.1**	**0.199**	**1.178**	**0.157**

It is assumed that the bolded result on 10/29/2021 was a typo and is therefore ruled as an outlier and not used when taking the average

SMP 02010301 - Deer Creek Sampling Point UD1. Iron precipitate is visible in the stream.

Since there is no final TMDL for Deer Creek that assigns waste load allocations to Glen-Gery's discharges and since the aquatic life impairment is presumed to still exist based on recent water chemistry data and observations of the creek, Glen-Gery's storm water outfalls that discharge to Deer Creek will be subject to a benchmark value of 1.5 mg/L for total iron. The outfalls subject to the benchmark value are Outfalls 005, 007, 009, 010, 011.

Implementing BMPs to achieve a storm water effluent concentration goal of 1.5 mg/L for total iron will ensure that Glen-Gery's storm water discharges do not contribute to the impairment of Deer Creek.

Like Little Deer Creek, Deer Creek has assimilative capacity for aluminum as evidenced by the 'non-detect' data collected at monitoring point UD1. However, separate from water quality considerations, BMPs should be able to reduce the concentrations of aluminum in Glen-Gery's discharge to Deer Creek. Therefore, a benchmark value of 1.1 mg/L will apply to aluminum in Glen-Gery's Deer Creek outfalls based on the aluminum benchmark from EPA's 2021 Multi-Sector General Permit.

As with Outfall 008 and Little Deer Creek, data for Deer Creek and the Pittsburgh Plant's discharges to Deer Creek indicate that manganese is not a pollutant of concern, so no monitoring requirements are imposed for manganese.

Proposed Effluent Limitations and Monitoring Requirements

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61, effluent limits at Glen-Gery's storm water outfalls are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements. The current sampling frequency and type for all parameters is 1/6 months grab samples established in Appendix N of the PAG-03 General Permit on which the monitoring requirements are based. However, based on the sample data shown in **Table 2**, there have been regular exceedances in the benchmark values during the last few years. In order to ensure that the permittee is able to identify and respond to benchmark exceedances sooner than twice per year, the Department is proposing to increase the Measurement Frequency to four per year (once per quarter). Benchmark values for TSS, Aluminum, and Iron (100 mg/L, 1.1 mg/L, and 1.5 mg/L) will be included in a condition in Part C of the permit. The benchmark values apply to all outfalls. These proposed effluent limitations and monitoring requirements are shown below in **Table 7**.

Table 7: Proposed Effluent Limits for Outfalls 005, 007, 008, 009, 010, and 011

Parameter	Mass (pounds/day)		Concentrations (mg/L)			Measurement Frequency	Sample Type	Basis
	Average Monthly	Daily Maximum	Average Monthly	Maximum Daily	Instant Maximum			
Total Suspended Solids (TSS)	--	--	--	Report	--	1/Quarter	Grab	25 Pa. Code § 92a.61(h); PAG-03, Appendix N
Aluminum, Total	--	--	--	Report	--	1/Quarter	Grab	25 Pa. Code § 92a.61(h); PAG-03, Appendix N
Iron, Total	--	--	--	Report	--	1/Quarter	Grab	25 Pa. Code § 92a.61(h); PAG-03, Appendix N
pH	--	--	--	Report	--	1/Quarter	Grab	25 Pa. Code § 92a.61(h); PAG-03, Appendix N

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). When a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under § 122.62.). The previous permit did not include any effluent limitations. The monitoring requirements below in **Table 8** are from the current permit.

Table 8: Current Monitoring Requirements

Parameter	Max Daily Concentration	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
pH (S.U.)	Monitor and Report	XXX	1/6 Months	Grab
Total Suspended Solids (TSS)	Monitor and Report	XXX	1/6 Months	Grab
Aluminum, Total	Monitor and Report	XXX	1/6 Months	Grab
Iron, Total	Monitor and Report	XXX	1/6 Months	Grab

Tools and References Used to Develop Permit	
☐	WQM for Windows Model
☐	Toxics Management Spreadsheet
☐	TRC Model Spreadsheet
☐	Temperature Model Spreadsheet
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

Appendices

Appendix A – Site Map
Appendix B – Outfall Photos
Appendix C – SMP Stream Monitoring Data

Appendix A – Site Map


Map Legend
- Property Boundary
- Outfall Markers
1 - Diesel Fuel Storage
2 - Hydrated Lime Silo
3 - General Waste Rolloff
4 - Additive A Silo
5 - Scrap Metal
6 - Raw Material Shed
7 - Finished Product Storage
N
Outfall 008
Outfall 007
Outfall 005
Outfall 009
Outfall 011
Outfall 010
Rich Hill Rd
Pennsylvania Tpke (Toll road)
800 ft

Appendix B – Outfall Photos

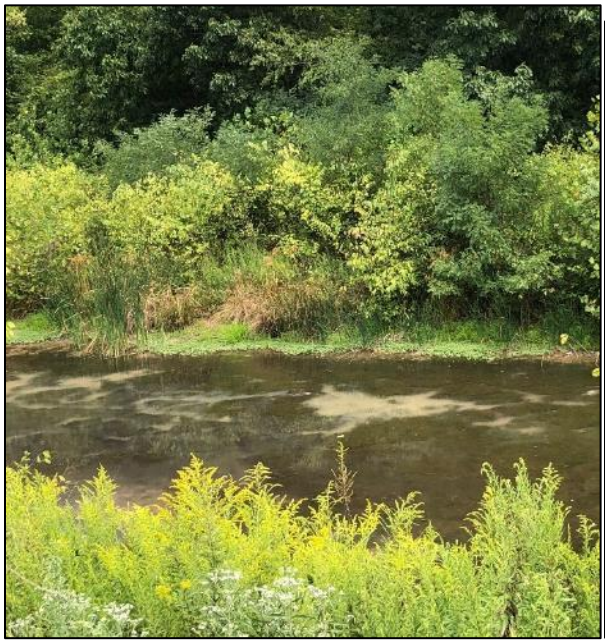
Outfall 005

Outfall 007

Outfall 008

Outfall 009

Outfall 010



Outfall 011

Appendix C – SMP Stream Monitoring Data

5600-PM-MR0311 Rev. 3/01

Module 8.1(A)

☐ BACKGROUND or ☒ MONITORING POINT*

(check appropriate box)

Operator: Glen-Gery Corporation
Operation Name:Redland Brick, Inc. Harmar Plant
Permit No: 02010301
Township: Harmar Township
County: Allegheny

Monitoring Point ID: LD1
Latitude: 40-33-26.90
Longitude: -79-50-19.00
Grid Coordinate: N/A
Surface Elevation: N/A

Description of Sample Point*: Little Deer Creek

NF= No Flow TLTG= Too Large to Gauge FM=Float Method

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Selenium µg/l	Sulfate mg/l	Suspended Solids mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
03/26/20	-	-	-	8.00	-	-	107.00	<7.0	0.241	0.061	<0.20	-	235.0	<5.0	286	Microbac / Wes Fravel
06/30/20	-	-	-	8.20	-	-	227.00	<7.0	<.200	0.018	<0.20	-	450.0	<5.0	1060	Microbac / Wes Fravel
09/29/20	TLTG	TLTG	-	8.20	-	-	189.00	<7.0	<.200	0.024	<0.20	-	362.0	<5.0	945	Microbac / Wes Fravel
10/09/20	TLTG	TLTG	-	8.40	-	-	322.00	<7.0	<.200	0.025	<0.20	-	584.0	<5.0	1500	Microbac / Eric Brown
03/25/21	FM	5984	8.52	8.50	915	16.9	154.00	-139.00	0.130	0.050	<0.1	-	139.0	<2.0	530	Geochemical Testing / CME
04/27/21	FM	2992	7.96	8.46	1400	18.4	253.00	-242.00	0.050	0.010	<0.1	-	273.0	<2	844	Geochemical Testing / CME
07/15/21	FM	>1500	7.34	8.01	771	20.5	169.00	-160.00	0.580	0.070	<0.1	-	77.0	6	422	Geochemical Testing / CME
10/29/21	FM	>1500	7.20	8.42	1100	18.3	225.00	-215.00	0.200	0.070	0.1000	-	199.0	4	620	Geochemical Testing / CME
03/17/22	FM	>1500	7.11	8.41	797	11.8	139.00	-128.00	0.280	0.070	<0.1	-	78.0	4		Geochemical Testing / CME
06/08/22	FM	>1501	7.03	8.08	915	21.5	179.00	-165.00	0.790	0.120	0.2000	-	161.0	6	430	Geochemical Testing / CME
08/31/22	TLTG	>1500	7.92	8.42	1250	18.3	245.00	-232.00	0.110	0.040	<0.1	-	229.0	4	716	Geochemical Testing / CME
12/16/22	TLTG	>1500	7.56	7.97	488	15.56	105.00	-92.00	0.350	0.050	0.2000	<1.0	35.0	10	252	Geochemical Testing / CME

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature of Permittee or Responsible Official or Authorized Representative *** Date

*** Written notification of delegation of signatory authority must be submitted to the Department if signatory is other than company official. Signature not necessary if this report is submitted as part of the permit application.

* Water Monitoring Report Cover Sheet Form 5600-FM-MR0113 may be used for multiple monitoring point sample submittals.

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

May 5, 2017

5600-PM-MR0311 Rev. 3/01

Module 8.1(A)
☐ BACKGROUND or ☒ MONITORING POINT*
(check appropriate box)

Operator: Glen-Gery Corporation
Operation Name:Redland Brick, Inc. Harmar Plant
Permit No: 02010301
Township: Harmar Township
County: Allegheny

Monitoring Point ID: UD1
Latitude: 40-33-17.8
Longitude: -79-50-32.7
Grid Coordinate: N/A
Surface Elevation: N/A

Description of Sample Point*: Deer Creek, Upstream

NF= No Flow TLTG= Too Large to Gauge FM=Float Method

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Selenium µg/l	Sulfate mg/l	Suspended Solids mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
03/26/20	-	-	-	7.50	-	-	165.00	<7.0	1.050	0.082	0.292	-	84.0	13.5	376	Microbac / Wes Fravel
06/30/20	-	-	-	7.40	-	-	370.00	<7.0	4.160	0.323	0.200	-	231.0	87.0	894	Microbac / Wes Fravel
09/29/20	TLTG	TLTG	-	7.50	-	-	406.00	<7.0	1.960	0.494	<.20	-	238.0	<5.0	910	Microbac / Wes Fravel
10/09/20	TLTG	TLTG	-	7.80	-	-	368.00	<7.0	0.816	0.182	<.200	-	193.0	<5.0	851	Microbac / Eric Brown
03/25/21	FM	8976	7.9	8.20	1020	16.6	208.00	-194.00	0.950	0.100	<0.1	-	113.0	5.0	566	Geochemical Testing / CME
04/27/21	FM	4488	7.6	8.14	1260	19.4	291.00	-283.00	1.580	0.150	<0.1	-	199.0	3.0	742	Geochemical Testing / CME
07/15/21	FM	>1500	7.1	7.94	787	19.5	179.00	-169.00	0.690	0.080	0.100	-	111.0	8.0	436	Geochemical Testing / CME
10/29/21	FM	>1500	18.4	8.22	880	18.4	217.00	-201.00	0.560	0.070	0.100	-	107.0	6.0	480	Geochemical Testing / CME
03/17/22	FM	>1500	7.1	8.06	834	12.3	151.00	-138.00	0.042	0.050	<0.1	-	71.0	<2.0		Geochemical Testing / CME
06/08/22	FM	>1501	7.3	7.98	881	21.4	193.00	-184.00	0.960	0.100	0.200	-	106.0	6.0	402	Geochemical Testing / CME
08/31/22	TLTG	>1500	6.9	7.82	1120	18.6	282.00	-269.00	0.660	0.200	<0.1	-	152.0	6.0	628	Geochemical Testing / CME
12/16/22	TLTG	>1500	7.8	8.16	519	14.7	106.00	-91.00	0.710	0.050	0.300	<1.0	45.0	11.0	264	Geochemical Testing / CME

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature of Permittee or Responsible Official or Authorized Representative *** Date

*** Written notification of delegation of signatory authority must be submitted to the Department if signatory is other than company official. Signature not necessary if this report is submitted as part of the permit application.

* Water Monitoring Report Cover Sheet Form 5600-FM-MR0113 may be used for multiple monitoring point sample submittals.

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

May 5, 2017