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April 17, 2018

Project No. 152596A

Pennsylvania Department of Environmental Protection (PADEP)
Cambria District Office
286 Industrial Park Road
Ebensburg, PA 15931
ATTN: Mr. Rock Martin, P.G., Chief Permits and Technical Services

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APR 17 2018

Transmittal
Large Noncoal Surface Mining Permit Application
Northern Tract Quarry
Charmian, Pennsylvania Facility
Specialty Granules LLC
Hamiltonban Township, Adams County, Pennsylvania

Dear Mr. Martin:

On behalf of Specialty Granules LLC (SGI), this letter transmits revised portions of the Large Noncoal Surface Mining Permit Application for the proposed Northern Tract Quarry Expansion at SGI's Charmian Facility located in Hamiltonban Township, Adams County, Pennsylvania. These revisions have been made in response to a technical review completed by the PADEP received in a letter dated March 6, 2018.

Four (4) hardcopies of the revised documents are provided herein. Each copy is provided in an expandable folder. One (1) CD containing electronic files of the documents is also provided for your use.

We appreciate your efforts in reviewing this application, and are available for any questions or comments. Please contact SGI or D'Appolonia should you have any questions.

Very truly yours,

D'APPOLONIA ENGINEERING DIVISION OF GROUND TECHNOLOGY, INC.

Michael D. Ward, P.E.
Principal Engineer

Robert M. Shusko, P.E.
Senior Principal Engineer

Attachments: Revised Northern Tract Application Documents (4 hardcopies and 1 CD copy)

Cc: Mr. Matthew McClure – SGI (Letter Only)
Mr. Anthony Shepeck – SGI (1 Copy and 1 Additional Drawing Set)
Mr. Kevin Moore, P.E. – SGI (Letter Only)
Ms. Laura Berra, P.E. – Skelly and Loy (1 Copy)



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Pennsylvania Department of Environmental Protection
Cambria District Office
286 Industrial Park Road
Ebensburg, PA 15931
ATTN: Mr. Chad Paronish, Geologic Specialist

**Response to SMP No. 01180301 Technical Review Letter
Northern Tract Quarry
Specialty Granules LLC
Hamiltonban Township, Adams County, Pennsylvania**

Dear Mr. Paronish:

On behalf of Specialty Granules LLC (SGI), D'Appolonia Engineering Division of Ground Technology, Inc. (D'Appolonia) and Skelly and Loy, Inc. (Skelly and Loy) are providing responses to the letter dated March 6, 2018 from the Pennsylvania Department of Environmental Protection – Cambria District Mining Office (PADEP). Each of the review comments from PADEP's March 6, 2018 letter is reproduced in subsequent pages of this letter in normal font with responses following each comment in bold font.

MODULE 1

1. **Section G. Land Use Information:** Provide the Land Use Letter from Hamiltonban Township in response to your Act 67, 68, and 127 Notification Letter dated December 21, 2017.

The Land Use Letters from Hamiltonban Township (dated March 27, 2018) and Adams County (dated January 9, 2018) have been included with this submission for inclusion into the permit application, immediately following the notification letters provided with Module 1.

2. **Section C. Site Information:** Revise the acres shown in the Mining Area to include the rock/mineral removal of the acreage shown outside the proposed permit area located between the proposed permit area and the adjacent Pitts Quarry, SMP No. 01930302. If the operator chooses to include this mining area in a revision to Pitts Quarry, then the mining area will be required to be removed from the proposed

DEP CAMBRIA OFFICE

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GROUND TECHNOLOGY, INC.

APR 17 2018

Northern Tract Quarry application since it is not within the proposed permit area. Also, see Module 10 comment number 1. (77.452)

SGI will complete a minor revision to the existing Pitts Quarry (Permit No. 01930302) for the rock/mineral removal area in question. A permit application regarding this minor revision to expand the rock/mineral removal area of the Pitts Quarry will be submitted to the PADEP at a later time in parallel with the Northern Tract Permit application process. Per conversations that occurred during our on meeting on April 10, 2018, the contours of the Pitts Quarry and Northern Tract Quarry have been revised on the Exhibit 9 Operations Maps to have different colors to differentiate the two quarries.

3. Section H. Additional Related Information: Provide the proof of publication when received.(77.121)

SGI intends to publish the public notice in the near future and proof of publication will be forwarded to the PADEP upon completion of the last publication.

MODULE 4

1. Module 4.3 Cultural or Historic Resources: Provide a copy of the Phase I archaeological report completed for the proposed Northern Tract Quarry to both the Department and PA State Historic Preservation Office (PA SHPO). As per the correspondence letter received from the PA SHPO dated February 27, 2018, the PA SHPO states that in a correspondence letter provided to Specialty Granules, LLC on August 11, 2017, a Phase I archaeological survey should be conducted to locate potentially significant resources. The PA SHPO requested a copy of the Phase I archaeological report to complete their review of the proposed Northern Tract Quarry. (77.126)

The Phase I archaeological report was transmitted to the PA SHPO on March 22, 2018. A copy of that report is provided herein for inclusion with Module 4.

MODULE 8

1. Module 8.2 Background Sampling and Monitoring (a)(8): Provide two background samples for the private water supply identified as 95BB16. (77.405)

The results from the two background samples for private water supply 95BB16 are reported on the enclosed, updated Module 8.1(A) Tables.

2. Module 8.2 Background Sampling and Monitoring (a)(8): Provide two background samples for the private water supply identified as 97B16. If the well has been abandoned, provide documentation from the property owner that the 97B16 has been abandoned. (77.405)

Please find the attached photographs that document the condition of the water supply identified as 97B16. Based on the condition of the property and wells, the water supply identified as 97B16 is not suitable for continued background and future monitoring sampling. On January 26, 2018, Skelly and Loy met the property owner, Mrs. Beltowski, at her property to sample 97B16. During this sampling attempt, Skelly and Loy learned that two wells are present at the property. It was also observed that a contractor was in the process of demolishing the property's structures and occupied dwellings no longer exist on the property. Mrs. Beltowski showed Skelly and Loy both wells, which are approximately 100 feet apart. Neither of the wells have a mechanical means to collect water samples. Skelly and Loy learned from Mrs. Beltowski that the wells are not currently used as water supplies. In addition, one of the wells is inaccessible such that the collection of a static water level reading was not possible due to the presence of a rubber seal approximately 5 feet below ground surface. It is Skelly and Loy's opinion that the wells on Mrs. Beltowski's property are unsuitable for background water sample collection and future monitoring. Information concerning the construction of the well was available on the caps of each well (depth of well, casing, etc.) and is reported on Module 8.2(A)(8). Photos of the wells and demolition activity are provided in Attachment #1 to this letter.

3. Module 8.2 Background Sampling and Monitoring (b): Provide an additional two (2) consecutive monthly static water elevation measurements from each monitoring well that coincide with two (2) monthly flow measurements from each surface water monitoring point. (77.405(1)) (77.406(b)(1)(2))

Two additional background samples from the monitoring wells, which coincide with flow measurements from each surface water monitoring point, are reported on the enclosed, updated Module 8.1(A) Tables.

4. Module 8.2 Background Sampling and Monitoring (b): Provide two (2) additional background samples for the monitoring point SS-4. (77.406 (b)(1)(2))

Two additional background samples for SS-4 are reported on the enclosed, updated Module 8.1(A) Tables.

5. Module 8.2 Background Sampling and Monitoring (b): Provide two (2) additional background samples for the private water supply 15A16. (77.405)

Two additional background samples for private water supply 15A16 are reported on the enclosed, updated Module 8.1(A) Tables.

6. Module 8.2 Background Sampling and Monitoring (b): Include monitoring well MW-14D in the monitoring program and revise the Exhibit 6.2: Environmental

DEP CAMBRIA OFFICE

APR 17 2018

Resource Map to show MW-14D as a monitoring point. As mentioned in your response letter received with the application, MW-14D was not included due to the proximity to 15A16. Although MW-14D is within close proximity to 15A16, the monitoring well is developed to a bottom elevation of 694 feet (ft) and represents the lowest level of mining. 15A16 is only developed to an elevation of 993 feet and does not represent the lowest proposed level of mining of 740 ft. In addition, the pump test results presented in the Groundwater Model Report show that the hydraulic conductivity for MW-14D was 0.6384 ft/day (highest of the 9 monitoring wells) suggesting a higher permeability locally. (77.457(a)(3)) (77.532)

MW-14D has been added into the monitoring program. Exhibit 6.2 and Module 8 have been updated to reflect this change.

7. Module 8.3 Groundwater Information: Provide a copy of the raw flow monitoring data from June 6, 2017 to August 29, 2017 for the dewatering of Pitts Quarry. (77.403(b)) (77.532)

A copy of the raw flow data for the Pitts Quarry pumping system is provided as Attachment #2 to this letter.

8. Module 8.3 Groundwater Information: Revise the Groundwater Model Report on pages 7 and 14 to show the range for the underlying bedrock hydraulic conductivity values from 0.0047 to 0.6384 ft./day. Currently the hydraulic conductivity range is shown from 0.0047 to 0.1591 ft/day and does not include the highest reported hydraulic conductivity of 0.6384 ft./day from MW-14D. (77.403(b))

The Groundwater Model Report has been updated as requested. A copy of the updated report is included herein with Module 8.

9. Module 8.3 Groundwater Information: Revise the Groundwater Model Report, Table 10 - Total Stream and Wetland Losses (Table 10) to use a calculated percentage of the low and high flows observed at each stream reach that consider the drainage area for each of the following wetland and seep areas: Wetland Seep Area (1, 3, and 4), Delineated Wetland (A, C, D and E) that lie within the zone of influence of the quarry (Figure 32: Site Area Simulated 12th Level (740 FT.-ASML Drawdown). For example, the low and high flow volumes used for Wetland D assume 60 % of Stream Reach C's surface water flow (39 gpm and 198 gpm) due to the higher topographic elevation of the wetland. A review of this percentage using streamstats shows that the overall drainage area for Stream Reach C is approximately 0.83 mi² and the drainage area for Wetland D is approximately 0.03 mi² pre-mining and 0.006 mi² post-mining. Using the pre-mining drainage area, Wetland D represents approximately 3.6 percent of the drainage area to Stream Reach C. This would then result in a low flow of 2.3 gpm and a high flow of 11.9

gpm. (77.403(b)) (77.406)

Based on discussions at the 4/10/2018 meeting with PADEP, it was agreed that Table 10 could create confusion regarding the results of the groundwater model. Given that Table 10 does not influence the overall analysis of the groundwater condition and adjacent features associated with the proposed Northern Tract Quarry, Table 10 has been removed from the groundwater report. Please refer to the revised Groundwater Model Report included with Module 8.

10. Module 8.3 Groundwater Information: Revise the Groundwater Model Report, Table 10 to compare total flow loss (base flow and overland flow) from quarry development to total stream and wetland flow volumes. Currently, Table 10 only shows the base flow loss to the streams and wetlands and does not include overland flow loss from the affected drainage area of the proposed Northern Tract Quarry. (77.403(b))

Per the response to Comment 9 above, Table 10 has been removed from the groundwater model report.

11. Module 8.3 Groundwater Information: In your response letter received with the application, you provided aquifer testing results for the following monitoring wells MW-3R, MW-4R, MW-5 and MW-7 to partially address Module 8 comment number 18 (h) and (i). However, aquifer testing results were not provided for MW-1, MW-2 and MW-8S. Since MW-8S is a perimeter monitoring well for the proposed Northern Tract Quarry, please complete an aquifer test for MW-8S and provide the test results. (77.403) (77.405)

Based on Skelly and Loy's observations and measurements during past aquifer testing at surrounding monitoring wells, the use of MW-8S as well for aquifer testing is not viable. Water levels at MW-8S were monitored during the pumping test MW-8D, which only exhibited a 0.01 foot drop in water level after the pump was shutdown, as presented on the field notes provided in Attachment #3. At the time of aquifer testing at MW-8D there was only 2.49 feet of water in MW-8S, which is too little to set a data logger and slug the well during aquifer testing. Note that the limited water in MW-8S is consistent with the measured water levels from the time period between September 2017 and February 2018. During this monitoring period, the average water depth was approximately 4.5 feet, and was as little as 1.1 feet.

12. Module 8.6 Hydrologic Assessment (a): Provide the field record for the specific capacity test completed for the private water supplies 16A16 and 07A16 that show the measured drawdown and recovery, pumping rate and corresponding time intervals. (77.532(b)) (77.532)

Field records are provided for the referenced specific capacity testing as Attachment #4.

MODULE 10

1. Module 10 - Bond Calculation Summary-Noncoal Consolidated: As per Module 1 comment number 2, revise the bond calculation summary to include the mining and support area noted as being outside the proposed Northern Tract Quarry permit area. (77.452) (77.193(b)) (77.202)

The reclamation bond for the Pitts Quarry will be revised in a separate submission as discussed in Comment 2 under Module 1.

MODULE 13

1. Module 13.3 Dams and Impoundments: Since the operator has decided to design the sediment pond for a 100-year, 24-hour storm event, the operator must design the Peak Discharge and the Emergency Spillway Capacity on the Pond Certification sheet and in the pond design calculations for Sediment Ponds NT No 1 & 2 for the 100-year, 24-hour storm event. Presently, the Pond Certification sheets and design calculations do not provide this information. (77.527) (77.531) & (Technical Guidance #563-0300-101) (Technical Guidance #363-2134-008)

The proposed NT Ponds are designed to safely store the 100-year, 24-hour design storm. Stormwater runoff will enter each respective pond via overland flow and/or flow through collection ditches and culverts. The ponds are sized to allow for the storage of runoff volume from the 100-year, 24-hour storm while providing the required freeboard so that the emergency spillway is not activated. In other words, the entire volume of stormwater runoff from the 100-year, 24-hour storm can accumulate and be stored within the pond without the need for a discharge structure to limit the height of the water surface below the emergency spillway invert elevation.

This is summarized in the calculations provided with Module 13. For NT Pond No. 1, the calculated runoff volume for a 100-year, 24-hour storm is 433,947 cubic feet (CF). Technical Guidance #363-2134-008 recommends that 2,000 CF of sediment storage be provided in the pond for each acre of disturbed area. Therefore, NT Pond No. 1 has a required sediment storage volume of 36,740 CF, based on a watershed of 18.37 acres. NT Pond No. 1 was designed with a total storage volume of 638,586 CF with 537,159 CF provided from the pond bottom to

DEP CAMBRIA OFFICE

APR 17 2018

Elevation 1058.5. Thus, the pond can store the sediment storage volume (36,740 CF) and the 100-year storm runoff volume (433,947 CF), for a total volume of 470,687 CF, below Elevation 1058.5 without discharging. The emergency spillway is configured with an invert at Elevation 1058.5. Therefore, the pond can safely control the 100-year, 24-hour storm without discharging and the associated peak discharge is zero. NT Pond No. 2 is configured in a similar manner, as summarized in the design calculations.

The discharge capacity of the proposed emergency spillway at either NT Pond No. 1 or No. 2 is 21 (cubic feet per second) cfs, assuming a flow depth of 1 foot. Since the emergency spillway is not needed to control the design storm which will be entirely stored, the capacity of the proposed emergency spillways exceeds what is needed to control the 100-year, 24-hour design storm while providing at least one foot of freeboard. This meets the storm routing and freeboard criteria of Item 22 on page 162 of the Erosion and Sediment Pollution Control Program Manual (Technical Guidance #363-2134-008). The design storm required by the Engineering Manual for Mining Operations (Technical Guidance #563-0300-101), is the 25-year, 24-hour storm for a pond with a watershed less than 20 acres and the 50-year, 24-hour storm for a pond with a watershed ranging from 20 acres to 100 acres. The watershed area for NT Pond Nos. 1 and 2 are 18.4 acres and 28.2 acres, respectively. Therefore, the proposed designs, which can safely route and store the 100-year, 24-hour storm, are conservative and meet the criteria of the Engineering Manual for Mining Operations. Therefore, no changes to the pond designs have been completed.

The previously submitted Pond Certification forms were completed with the understanding that "Peak Discharge" referred to the discharge rate from the pond during the design storm. The forms have been revised to indicate the peak inflow from the 100-year design storm as requested. As previously discussed, the peak discharge or outflow from the pond considering a routed 100-year, 24-hour storm is 0 cubic feet per second (cfs). The stored water in the pond will be mechanically emptied using pumps to the discharge point at Miney Branch Creek as set forth in the design. The pumping volume is not included in the 100 year, 24 hour storm capacity and is extra control.

MODULE 14

1. **Module 14.4 Mitigation/Replacement**: Based on the information provided, no direct impacts to five delineated wetlands (A-E) along the proposed eastern permit boundary are anticipated. Based on hydrologic modeling potential indirect impacts to Wetland D may occur. The operator proposes vegetative bi-annual (twice per year) monitoring of Wetland D during mining activities. The operator proposes that a mitigation plan will be developed should any impacts be observed. The monitoring plan should include all identified wetlands and plans for any necessary mitigation must adequately address the impact to or loss of all wetlands resources due to the proposed mining operations. If

DEP CAMBRIA OFFICE

APR 17 2018

Wetland D is impacted by mining, the operator must conduct vegetative bi-annual (twice per year) monitoring for Wetlands A and C since these wetlands are on the same side of unnamed tributary to Toms Creek. This should be noted in the Module 14.4 narrative. Presently, the Module 14.4(a)(1) narrative does not state that the operator proposes bi-annual (twice per year) vegetative monitoring, however this was noted in your response to the Pre- Application Technical Review letter dated January 4, 2018. (105.17) (Technical Guidance #563-0300-101) (Technical Guidance #363-2134-008)

Please see revised Module 14 attached that discusses the bi-annual vegetative monitoring.

MODULE 23

1. Module 23.3 Permanent Cover: Revise the seed mixtures A and D to remove Johnstone Fescue from the proposed permanent cover seed mixtures. As per correspondence from the Pennsylvania Game Commission (PGC) dated February 12, 2018, studies have shown fescue (*Fetuca* sp.) to be toxic to several wildlife species. In addition, because of its ability to out-compete other grass species, it could create a sterile fescue environment. We emphasize that, while Exhibit 18 does not include a list of seed mixtures containing any fescue, replacing the fescue species with a combination of big and little bluestem (*Andropogon gerardi* and *Andropogon virginicus*, respectively), indian grass (*Sorghastrum nutans*) and switchgrass (*Panicum virgatum*) should either of these mixtures be used is recommended.

The seed mixtures A and D have been removed from Module 23.3.

We trust that the enclosed information addresses the PADEP's technical review comments.

We appreciate your efforts in reviewing the application and are available for any questions or comments. Please contact D'Appolonia or Mr. Kevin Moore of SGI should you have any questions or require additional information.

Respectfully Submitted,
D'APPOLONIA ENGINEERING DIVISION OF GROUND TECHNOLOGY, INC.



Robert M. Shusko, P.E.
Senior Principal Engineer

Attachments/Enclosures

cc: Mr. Anthony Shepeck, SGI
Mr. Kevin Moore, P.E., SGI
Mr. Matthew McClure, SGI
Ms. Laura Berra, P.E., Skelly and Loy, Inc.

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APR 17 2018