New York State Department of Environmental Conservation Division of Water Bureau of Water Permits, 4th Floor 625 Broadway, Albany, New York 12233-3505 Phone: (518) 402-8111 • Fax: (518) 402-9029 Website: www.dec.state.ny.us



4/8/2009

NORLITE CORPORATION TIM LACHELL 628 SOUTH SARATOGA STREET COHOES NY 12047-

#### Re: ACKNOWLEDGMENT of NOTICE of INTENT for Coverage Under SPDES General Permit for Storm Water Discharges from CONSTRUCTION ACTIVITY General Permit No. GP-0-08-001

Dear Prospective Permittee:

This is to acknowledge that the New York State Department of Environmental Conservation (Department) has received a complete Notice of Intent (NOI) for coverage under General Permit No. GP-0-08-001 for the construction activities located at:

NORLITE SOUTHERN OVERBURDEN STORAGE628 SOUTH SARATOGA STREETCOHOES NY 12047-County: ALBANY

Pursuant to Environmental Conservation Law (ECL) Article 17, Titles 7 and 8, ECL Article 70, discharges in accordance with GP-0-08-001 from the above construction site will be authorized 5 business days from 4/2/2009 which is the date we received your final NOI, unless notified differently by the Department.

The permit identification number for this site is: NYR 10Q976. Be sure to include this permit identification number on any forms or correspondence you send us. When coverage under the permit is no longer needed, you must submit a Notice of Termination to the Department.

This authorization is conditioned upon the following:

1. The information submitted in the NOI received by the Department on 4/2/2009 is accurate and complete.

2. You have developed a Stormwater Pollution Prevention Plan (SWPPP) that complies with GP-0-08-001 which must be implemented as the first element of construction at the above-noted construction site.

3. Activities related to the above construction site comply with all other requirements of GP-0-08-001.

The second APX 10 2009 SPECTRA

4. Payment of the annual \$50 regulatory fee, which is billed separately by the Department in the early fall. The regulatory fee covers a period of one calendar year. In addition, as of September 1, 2004, construction stormwater permittees will also be assessed an initial authorization fee of \$50 per acre of land disturbed and \$300 per acre of future impervious area. The initial authorization fee covers the duration of the authorized disturbance.

5. Your SWPPP has been reviewed by the regulated, traditional land use control MS4 where your project is located and has been determined to be in substantive conformance with the requirements in the SPDES General Permit for Stormwater Discharges from MS4s.

6. Before disturbing greater than 5 acres of soil at any one time, you have obtained written authorization from the regulated, traditional land use control MS4 that has jurisdiction over the project.

7. When applicable, project review pursuant to the State Environmental Quality Review Act (SEQRA) has been satisfied.

8. You have obtained all necessary Department permits subject to the Uniform Procedures Act (UPA). You should check with your Regional Permit Administrator for further information.

\*Note: Construction activities cannot commence until project review pursuant to SEQRA has been satisfied, when SEQRA is applicable; and, where required, all necessary Department permits subject to the UPA have been obtained.

Please be advised that the Department may request a copy of your SWPPP for review.

Should you have any questions regarding any aspect of the requirements specified in GP-0-08-001, please contact Dave Gasper at (518) 402-8114 or the undersigned at (518) 402-8109.

Sincerely,

Toni aitti

Toni Cioffi Environmental Program Specialist 1

cc: RWE - 4 SWPPP Preparer

> SPECTRA ENGINEERING PC ADEL PAUL 19 BRITISH AMERICAN BOULEVARD LATHAM NY 12110-



### New York State Department of Environmental Conservation Division of Water 625 Broadway, 4th Floor Albany, New York 12233-3505

## MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit GP-0-08-001 (NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information
1. Owner/Operator Name: Norlite Corporation
2. Contact Person: Timothy Lachell
3. Street Address: 628 South Saratoga Street
4. City/State/Zip: Cohoes, NY 12047
II. Project Site Information
5. Project/Site Name: Norlite Southern Overburden Storage Area
6. Street Address: 628 South Saratoga Street
7. City/State/Zip: Cohoes, NY 12047
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information
8. SWPPP Reviewed by: John Ozialn
9. Title/Position: Stormwater Management Coordinator
10. Date Final SWPPP Reviewed and Accepted: 4/1/09
IV. Regulated MS4 Information
11. Name of MS4: Town of Colonie
12. MS4 SPDES Permit Identification Number: NYR20A <u>190</u>
13. Contact Person: Paula Mahan
14. Street Address: Memorial Town Hall 534 Loudon Road
15. City/State/Zip: Newtonville, NY 12128
16. Telephone Number: (518) 783-2728

(NYS DEC - MS4 SWPPP Acceptance Form - 4/10/08, Revised 9/19/08)

## MS4 SWPPP Acceptance Form - continued

#### V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s).

Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name: John Dzialo
Title/Position: Stormunter Management Coordinator
Signature: A Triel
Date: 4/1/09
VI. Additional Information

## STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITY

**PERMIT NO. GP-0-08-001** 

#### **Prepared** for:

Norlite Corporation 628 South Saratoga Street Cohoes, New York 12047

#### Prepared by:

Spectra Environmental Group, Inc. Spectra Engineering, Architecture and Surveying, P.C. 19 British American Boulevard Latham, New York 12110 (518) 782-0882

> Revision 02 March 2009

## STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

## TABLE OF CONTENTS

1.0	INT	RODUCTION1					
	1.1 1.2	STORM WATER MANAGEMENT OBJECTIVE1BACKGROUND INFORMATION AND DESCRIPTION OF THE PROPOSED ACTION21.2.1 Site Location21.2.2 Pre-development Conditions21.2.3 Post-development Conditions31.2.4 Description of the Proposed Action3					
2.0	SPE	CIFIC SWPPP PLAN ELEMENTS AND COMPONENTS5					
3.0	2.1 2.2 2.3 2.4 2.5 TEM	Soil Description					
	SED 3.1 3.2 3.3 3.4 3.5 3.6 3.7 3.8	IMENT CONTROLS       9         Landgrading       9         Silt Fence       9         Temporary Diversion Swales       9         Pipe Drains       9         Stabilized Construction Entrance       10         Riprap Outlet Sediment Trap       10         Temporary Practices to be Converted to Permanent Control       10         Measures       10         Stormwater Runoff Characteristics       10					
	3.9	IMPLEMENTATION AND MAINTENANCE SCHEDULE FOR TEMPORARY EROSION           AND SEDIMENT CONTROL PRACTICES					
4.0	POS 4.1 4.2 4.3 4.4	T CONSTRUCTION STORM WATER CONTROLS					
5.0	SITE	SITE ASSESSMENT AND INSPECTION14					
	5.1	INSPECTION SCHEDULE AND FREQUENCY14					
6.0	CON	TRACTOR CERTIFICATION16					
7.0	LON	G TERM OPERATIONS AND MAINTENANCE PLAN					

#### **FIGURE**

Figure 2 Soil Map

Note: Figure 1, Site Location Map, is located in the Storm Water Pollution Prevention Plan, November 18, 2004, prepared by Sterling Environmental Engineering, P.C.

## **PLATES**

Sheet 1	Mine Plan Map* (Existing Conditions)
Plate 1	Riprap Outlet Sediment Trap Details
Plate 2	Erosion and Sediment Control Plan – Temporary Features and Berm Construction Sequence
Plate 3	Temporary and Permanent Erosion Control Details
Plate 4	Southern Overburden Area Berm Construction Schematic Profile of Cross Section A-A' (Proposed Conditions)
Plate 5	Southern Overburden Storage Area Permanent Stormwater Control Structures
Plate 6	Additional Erosion Control Details
SK-1	Slope Cross Section and Berm Detail Prepared by Gifford Engineering, LLC

\* Sheet taken from "Mined Land Use Plan Modification, November 2004"

#### **APPENDICES**

- Appendix A Cultural Resource Documentation
- **Appendix B** Inspection Reports
- Appendix C Contractor Certification
- Appendix D Stormwater Calculations
- Appendix E Section 2.1.2 Norlite Site Hydrology, Best Management Practices Plan, Revision 7/2005 (Prepared by Sterling Environmental Engineering, P.C.)
- Appendix F Construction Notes Gifford Engineering, LLC
- Appendix G Notice of Intent
- Appendix H Notice of Termination
- Appendix I MS4 SWPPP Acceptance Form

## 1.0 INTRODUCTION

Spectra Environmental Group, Inc. and Spectra Engineering, Architecture and Surveying, P.C. (SPECTRA) have prepared this Storm Water Pollution Prevention Plan (SWPPP) to manage runoff during the construction of the proposed Southern Overburden Storage Area at the Norlite Corporation facility located in the City of Cohoes, Albany County, New York. Storm water runoff from the Southern Overburden Storage Area will ultimately be discharged at Outfall 003. The discharge rate from Outfall 003 is fixed by the dewatering pumps, therefore the accumulation of storm water from the Overburden Storage Area does not alter the outfall discharge rate.

Modification of SPDES Permit NY-000 4880 is not required for the construction of the Southern Overburden Storage Area because no new facility outfalls will be established. No new pollutants will be discharged as a result of the construction of the Overburden Storage Area. This Addendum incorporates components of the Storm Water Pollution Prevention Plan required for construction activities because the existing SPDES permit (NY-000 4880) does not address construction activity. Drainage features included in this document have been designed in accordance with the requirements of the SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-08-001, and the New York State Standards and Specifications for Erosion and Sediment Control (the "Blue Book").

Temporary and permanent storm water control devices were presented in the Mined Land Use Permit Modification. In this document, the structures proposed in the modification were sized for anticipated storm water flows. Additional details and drawings are included for the purpose of construction specifications.

## 1.1 Storm Water Management Objective

This SWPPP has been prepared in accordance with the requirements for the SPDES General Permit for storm water discharges from construction activity (Permit No. GP-0-08-001) and sound engineering practices. The SWPPP identifies potential sources of pollution (e.g. materials and practices) that may reasonably be expected to affect the quality of storm water discharges associated with construction activities. It further describes and ensures the implementation of practices such as temporary and permanent soil stabilization, runoff control, and maintenance schedules that are to be used to reduce the pollutants and sediment in storm water discharges, and assures compliance with the terms and conditions of the General Permit.

The site plan drawings and details (Sheet 1, Plates 1 through 6, and SK-1) provide locations, dimensions, and material specifications for the construction of temporary and permanent erosion and storm water controls.

By implementing this SWPPP, Norlite certifies that:

- there will be no increase in turbidity that will cause a substantial, visible contrast to natural conditions;
- there will be no increase in suspended, colloidal, and settleable solids that will cause deposition or impair the waters for their best usages; and
- there will be no residue from oil and floating substances, no visible oil film, and no globules of grease that would impact the water quality.

## **1.2** Background Information and Description of the Proposed Action

### 1.2.1 Site Location

Norlite Corporation is located in the City of Cohoes, at 628 South Saratoga Street, west of Route 787 and north of the intersection of Route 7 and Route 787. The general area setting is commercial, industrial, and residential. The regional setting is predominantly industrial, urban residential and commercial.

### 1.2.1.1 Cultural Resources

According to the NYS Historic Preservation Office GIS-Public Access interactive map (<u>http://www.oprhp.state.ny.us/NR/</u>) accessed on September 8, 2008, the site is not listed on the State or National Register of Historic Places. In addition to the GIS resources available online, the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) determined that the site would have no impact on cultural resources in correspondence dated April 3, 2006, attached as Appendix A.

### 1.2.2 Pre-development Conditions

The property is currently an active clay and shale quarry with an operational history of approximately 48 years. Norlite manufactures lightweight aggregate on-site and practices energy recovery by the incineration of low grade fuel.

The topography of the site is generally flat to rolling on the eastern portion of the site, to steep with significant relief on the southern and western portions of the site. The current active excavation area is located in the east-central portion of the site. Currently, drainage within the excavation is directed inward toward the settling pond, the larger of the two ponds, on the quarry floor. Two intermittent drainage courses enter the active excavation area from the west and the southwest. Water that enters the settling pond is retained in the pond until the water begins to encroach on the main part of the quarry floor, at which point water is discharged (pumped at a constant rate via Outfall 003) from the pond to the Salt Kill through Outfall 003 in accordance with SPDES Permit No. NY-000 4880. The discharge rate is limited by the capacity of the quarry dewatering pumps.

Within the Southern Overburden Storage Area, stormwater currently drains to the south and east. Approximately 8 acres which currently drain towards Kirkner Lane to the south and east will be addressed by a temporary swale which will capture stormwater and overland drainage and treat it for suspended particles via a sediment trap. This area is discussed in detail in sections 3.0 and 4.0.

## 1.2.3 Post-development Conditions

The Southern Overburden Storage Area will consist of 34 acres of graded overburden that will be vegetated and will have permanent storm water control spillways and diversion swales to control runoff, erosion, and sedimentation.

Through the construction of the berms and associated drainage features, the approximate 8.5 acre area that currently drains south and east towards Kirkner Lane will be reduced to approximately 1.7 acres. Associated flows will likewise be reduced. This area is discussed in detail in section 4.0.

## 1.2.4 Description of the Proposed Action

Norlite Corporation proposes to fill and grade 34 acres with overburden from the on-site mine. The overburden material is generated as it is stripped to expose the bedrock for mining. Generally, only one year worth of area to be mined is stripped at a time, therefore, the pace of construction will be determined, in part, by the rate of mining of the shale. Grading will consist of the construction of a series of six berms (Plate 2) with fill placed behind each berm. The first berm (Berm 1) will be approximately 30 feet high and 190 feet wide. This berm will be constructed along the eastern portion of the site to provide an acoustic and visual barrier between subsequent construction will proceed with placement of fill behind the berm. Overburden fill will be placed behind the berm until the fill reaches an elevation equal to the top of the first berm. A second berm will then be constructed on top of the placed fill. The construction sequence will continue in this manner from east to west across the southern portion of the site. A gas line

right-of-way runs east-west across the property proposed for the overburden, bisecting the proposed fill area. Since placement of overburden within the gas right-of-way is not permitted, Norlite will grade the overburden to the north and south of the right-of-way to blend with the existing topography at the edge of the right-of-way. As fill is placed in the overburden storage area, the location of the gas line crossing may be relocated to the west.

The sides of the berms will be graded at a slope of 1V:3H. The fill behind the berms will be maintained at a slope of 2% towards the berms. Berms will be constructed in a neat, orderly fashion in accordance with typical industry practices and in accordance with the construction notes provided on Plates 3 - 5 and SK-1. All finished and graded slopes will be seeded and vegetated.

Note that the timing of berm construction and filling behind the berms is governed by the terms and conditions of the Mined Land Use Permit. The first berm may be constructed at any time of year and each successive berm and the fill behind the berms must be constructed during the winter. The berms and fill will both be constructed of overburden.

## 2.0 SPECIFIC SWPPP PLAN ELEMENTS AND COMPONENTS

## 2.1 Soil Description

Soils present on the subject site were mapped in accordance with the Soil Survey for Albany County, New York. The Southern Overburden Storage Area is dominated by two soil types, Hudson silt loam (HuC, HuD), and Nassau channery silt loam (NaC). Hudson silt loam (HuC, HuD) and Nassau channery silt loam (NaC) soils are both in Hydrologic Soil Group (HSG) "C".

The Hudson silt loam is a strongly sloping (HuC) to hilly (HuD), very deep, moderately well drained soil. Permeability is moderate to moderately slow in its surface layers, slow to very slow below, and the available water capacity is high. The mapping of this soil includes small areas of poorly to very poorly drained soils and soils that have less clay in the subsoil. These soils are mostly suited for pasture, woodland, or cropland.

The Nassau channery silt loam (NaC) is a rolling, shallow, somewhat excessively drained soil. Permeability is moderate and available water capacity is very low. The mapping of this soil includes small areas of moderately deep, well drained soils, as well as areas of rock outcrop. Nassau channery silt loam (NaC) is mostly suited for hay and pasture.

The ground surface is underlain by varved silts and clays of glacial Lake Albany.

## 2.2 Receiving Waters

Fresh surface waters in New York State are classified according to their present quality, and the "best" permitted use for water of that quality. In order to protect the best use or class of water, the New York State Department of Environmental Conservation applies water quality standards to these classifications, which limit the concentration at which a pollutant can exist in a water body.

The dominant surface water feature of the region is the Salt Kill, which is located to the north and east of the Excavation Area (Sheet 1) within the property boundary. The Salt Kill is designated as a class "D" water body under the jurisdiction of NYSDEC, Region 4. The best usage of Class D waters is for fishing. In 6 NYCRR §701.9, Class D waters are described as follows: "Due to such natural conditions as intermittency of flow, water conditions not conducive to propagation of game fishery, or stream bed conditions, the waters will not support fish propagation. These waters shall be suitable for fish survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes (6 NYCRR §701.9)."

Two intermittent drainage courses currently enter the active excavation area from the west and southwest. The water that enters the active excavation area from the intermittent drainage

courses either infiltrates back into the bedrock and rejoins the groundwater regime, or flows into the mine settling pond on the quarry floor. Water that enters the settling pond from the drainage areas is retained in the settling pond until it is discharged to the Salt Kill during discharge events.

## 2.3 Delineation of SWPPP Implementation Responsibilities

SWPPP implementation responsibilities will be the responsibility of site contractor and the designated site superintendent for the construction project. The designated site contractor is Norlite Corporation or their designee (See Appendix C).

## 2.4 Construction Phasing Plan

The potential for erosion will be greatest during the construction phases of filling and grading the berms. To mitigate this impact, a Temporary Erosion and Sediment Control Plan (Plate 2) will be implemented during construction. The temporary erosion and sediment control measures are consistent with the New York Standards and Specifications for Erosion and Sediment Control (August 2005, New York State Soil and Water Conservation Committee), the currently accepted reference. Corresponding details of these measures are illustrated on Plate 3. These construction methods and best management practices will be installed prior to, and maintained during, construction activities to prevent erosion and sediment from migrating to off-site locations. These measures will be maintained until permanent storm water features are constructed and stabilized, and vegetation has become established on disturbed surfaces.

Geotechnical instrumentation will be installed prior to and during construction of the first berm (Berm 1). Instrumentation consists of settlement plates/monuments and inclinometers. Pore pressure transducers will be installed during construction of Berms 2 through 6. The purpose of the instrumentation is to monitor settlement of the berms and the fill behind the berms and the moisture content of the fill materials.

The filling and Berm construction is broken down into six phases, as detailed below. Within the Southern Overburden Storage Area, the construction area is separated into north and south areas that are separated by the gas right-of-way, and connected by a crossing over the right-of-way. Placement of overburden for berms or fill will be conducted on only one area (north or south) at a time to allow for construction of the berms and settlement of the fill material behind them. It is anticipated that placement of the berm material will progress from north to south until a single lift is completed. Once the lift is compacted to the specification (Plate 3), then a second lift will be added, progressing from north to south. Construction will proceed in such manner until the berm is complete. Placement of the fill will progress in a similar manner behind each berm.

Berm 1: The north area is 0.55 acres and the south area 5.02 acres.

Silt fence will be installed along the downslope perimeter of the construction area before earthmoving activities begin (Detail 1 Plate 4). A temporary diversion swale will be constructed on the construction side of the silt fence, with a minimum slope of 1% toward the quarry. This diversion swale may be converted to a pipe structure. Silt fence will be installed on the downslope side of the proposed berm before earth-moving activities begin (Detail 1 Plate 4). The ground on which berms will be constructed will be cleared and the stumps cut flush with the ground surface. Depressions will be filled and compacted as directed by the field engineer, and the area will be final graded. Mirafi 140N or equivalent geotextile will then be installed over the footprint of Berm 1.

Pipe drains and tile drains will be placed 50 feet on center at the base of the berm in a crushed shale drainage layer to convey runoff under the completed berm to the drainage swales on the outer slopes of the berm. Every third pipe (a pipe drain) will be solid while all others (the tile drains) will be slotted where the drains will daylight at the drainage swale at the outer toe of the berm. Where the tile drains daylight behind Berm 1, they will be capped. Tile drains will be installed such that they key into the temporary swale for the entire length of the swale. The drains will be installed such that they are perpendicular to the swale at all locations. These structures shall be protected by the Contractor. Storm water will be controlled in the area behind the berm by directing runoff to the top of the drain pipe vertical risers. The top of the pipe drains will be raised as fill progresses. This will begin with the first berm. Drainage layers, chimney drains, backslope drainage layers, and intermediate drainage layers will be installed per Sheet SK-1.

Temporary drainage swales will be constructed at the top of the berm and at midheight (Plates 3 and 4 and SK-1). Once the berm is complete, the swales will be completed as a permanent diversion swale. The berm will be constructed to a height of 30 feet with a maximum side slope of 3H:1V. Upon completion, the berm will be vegetated. Since approximately one year will pass before the construction of Berm 2, the silt fence at the base of Berm 1 can be removed once vegetation on the slope is 90% established.

Berm 2: The north and south areas are 0.71 and 5.94 additional acres, respectively.

The fill area behind Berm 1 will be filled to the elevation of the top of Berm 1. In anticipation of settlement, the fill material will be placed at a minimum slope of 2% towards Berm 1. When settlement of the fill area is complete, the slope may have changed. The minimum allowable final slope is 2% towards the berm; this minimum slope must be maintained until Berm 2 is constructed. A second berm (Berm 2) will then be constructed on top of the placed fill. Lateral pipe drains may be constructed through Berm 2 to discharge into the outer slope swale, or may

be connected to the risers or the pipe drains built for Berm I (see Detail 1 Plate 3 and Detail 2 Plate 4). Silt fence will be placed between the existing diversion swale and the base of the second berm, before construction of Berm 2 commences (Detail 1 Plate 4). A temporary drainage swale will be constructed on top of Berm 2 and at midheight along the face of the berm.

Fill and berm construction will proceed for each berm listed below as described for Berm 2 (Plate 2).

Berm 3: The north area is 3.63 additional acres and the south area is 6.28 additional acres.

Berm 4: The north area is 2.84 additional acres and the south area is 5.64 additional acres.

Berm 5: The north area is 2.34 additional acres and the south area is 7.12 additional acres.

Berm 6: The north area is 1.45 additional acres.

All disturbed areas will be seeded and mulched with hay as soon as practicable (within 14 days after all earthwork has been completed, unless construction is temporarily ceased and will resume within 21 days). The lower half of the berm will be hydroseeded as soon as the midslope diversion swale is constructed and stabilized. Temporary erosion control measures shall be left in place and maintained until the vegetative cover has become established. Exceptions to these measures are the temporary features that will be converted to permanent features as soon as practicable. Silt fence along the permanent diversion will remain in place until channel vegetation has become established.

## 2.5 Construction Phase Pollution Prevention Measures

To control litter from becoming a pollutant source in storm water discharges, existing on-site dumpsters will be used for disposal of litter and construction debris. Damaged silt fence and used hay bales will be properly discarded in the dumpsters.

Since construction on this site consists of excavating, filling, and regrading, geotextile, pipe, silt fence, haybales, washed stone, and riprap will be used or staged on site. These materials will be brought on site as needed. All stripped vegetation materials such as brush, shrubs, trees, and stumps will be removed or chipped for reclamation purposes or for sale. Marketable trees will be stored at a centralized location in the southwest portion of the site. Clearing and grubbing in the footprint of the proposed overburden storage area will be conducted and managed in accordance with existing practices at the site.

# 3.0 TEMPORARY SOIL STABILIZATION, RUNOFF CONTROLS, AND SEDIMENT CONTROLS

During construction, temporary erosion and sediment controls consisting of vegetative and structural measures will be implemented. Locations and details of these controls are provided on Plates 1 through 4 and SK-1. Proposed controls to be implemented during construction activities may need to be adjusted or modified slightly to accommodate localized field conditions.

The temporary erosion and sediment control measures needed for the construction phase of the project have been designed in accordance with the New York State Standards and Specifications Erosion and Sediment Control (NYS Soil and Water Conservation Committee, August 2005).

## 3.1 Landgrading

The completed overburden storage area will consist of six berms, each 30 feet in height, and the placement of overburden fill behind the berms. The berms will be compacted in lifts of not more than one foot in thickness with the first lift being two feet thick. The fill areas behind the berms will be compacted in two foot lifts.

## 3.2 Silt Fence

Silt fence will be installed in the locations shown on Plate 2 and constructed in accordance with the details provided on Plate 3. Silt fence will be maintained as needed. Accumulated sediment will be removed and silt fence replaced when bulging occurs.

## **3.3** Temporary Diversion Swales

A temporary diversion swale (Detail 4 Plate 3) will be installed around the limits of construction and discharge to a riprap outlet sediment trap located as shown on Plate 2. The swale will be lengthened as construction activities progress. The swale may be removed once the upslope diversion swales are constructed and the intermediate slope is stabilized.

## 3.4 Pipe Drains

Pipe drains will be installed to convey runoff that accumulates behind each berm while fill (overburden material) is being placed behind the berm. Pipe drains will consist of solid horizontal pipe placed beneath the berm, and a vertical riser within the bermed area. The riser inlet will be constructed and protected with silt fence and sediment traps as shown in the details on Plates 3 and 4. It is the Contractor's responsibility to protect the pipe drains during fill and grading activities and to repair any damaged pipe drains to full functionality should they be damaged or disturbed during fill activities. The lowest horizontal pipe drains will discharge to the lowermost swale of the first berm. Horizontal sections of pipe in the upper fill areas will be connected to the riser in the previous lift, or will run through the berm to a swale (see Detail 1 Plate 3 and Detail 2 Plate 4). The fill area will be graded to direct runoff to the risers.

Additional vertical sections of risers will be added as necessary as lifts of fill are placed. Risers will be terminated and abandoned as show in Detail 1 Plate 3.

### 3.5 Stabilized Construction Entrance

A stabilized construction entrance is not required for the proposed construction activity. All access to the Southern Overburden Storage Area is internal to Norlite's property. Trucks accessing the Southern Overburden Storage Area during construction will not be trucking fill outside the property boundary.

## 3.6 Riprap Outlet Sediment Trap

A riprap outlet sediment trap will be installed according to the plans on Plate 1. Once construction is complete, the sediment trap will be filled in and vegetated.

## **3.7** Temporary Practices to be Converted to Permanent Control Measures

Berm top and midslope diversion swales will remain as permanent features and will be initially installed per Detail 2 on Plate 3. Once grading has been completed and vegetative ground covers have been established, runoff in the swales will be directed to spillways. Spillways will be riprap lined, and will have riprap energy dissipaters (See Detail 1 Plate 6) at the toe of the constructed slope. Runoff in the swales will be conveyed to the existing settling pond in the mine. No other permanent control measures will be required because the existing pond within the excavation has more than sufficient volume (see Section 4.4) to handle the runoff in a manner consistent with the requirements of the New York State Stormwater Management Design Manual and Industrial Activities, Permit No. NY-000 4880. There will be no changes in the discharge from Outfall 003 as permitted by SPDES Permit No. NY-000 4880.

### 3.8 Stormwater Runoff Characteristics

On-site storm water runoff is described in Section 2.1.2 Norlite Site Hydrology, Best Management Practices Plan, Revision 7/2005 (Appendix E).

## **3.9** Implementation and Maintenance Schedule for Temporary Erosion and Sediment Control Practices

All temporary erosion and sediment control practices will be installed prior to and will be maintained as construction activities progress until permanent storm water control features and permanent vegetation have become established. Measures will be maintained until grading is complete and vegetation coverage has reached 90 percent. Regular inspections of temporary erosion and sediment control practices will be conducted in accordance with the procedures outlined in Section 5.

### 4.0 POST CONSTRUCTION STORM WATER CONTROLS

During and after construction, there will be no off-site discharge from construction areas. Permanent storm water controls will be constructed to maintain slope stability and to ensure onsite management of potentially impacted storm water during construction. Once the Southern Overburden Storage Area is completed and stabilized, there will be no contact with industrial activity. Permanent storm water controls have been designed and will be constructed in accordance with the New York Standards and Specifications for Erosion and Sediment Control and monitored as described in Section 5.

The majority of storm water runoff from the Southern Overburden Storage Area is directed back into the quarry through a series of diversion ditches and spillways. The exception to this is a small area of the eastern slope of Berm 1. This area is located topographically below the midslope diversion swale of Berm 1 (to the east). A sediment trap must be installed at the location shown on Plate 2 because the topography does not allow for gravity drainage of the temporary swale towards the quarry. The riprap outlet sediment trap has been designed with 3,600 cubic feet of storage per acre of drainage area. Calculations are provided in Appendix D of the this Plan for the sizing of the sediment trap; dimensions are provided on Plate 1.

The area that drains to the sediment trap during construction (once the midslope diversion is constructed) is 1.17 acres. The area that drains to the general region of the sediment trap prior to commencement of any construction activities is 8.5 acres. Results of modeling runoff from the 1-, 2-, 10-, and 100-year 24-hour storms pre- and post-construction are listed in Table 1 below and detailed design calculations can be found in Appendix D.

	Pre-Construction Post-Construction		struction	Decrease (%)		
Storm	Peak Discharge (cfs)	Volume (acre-feet)	Peak Discharge (cfs)	Volume (acre-feet)	Peak Discharge	Volume
1-year	6.18	0.353	3.04	0.139	50.8	60.6
2-year	8.04	0.452	3.55	0.164	55.8	63.7
10-year	20.13	1.111	6.47	0.310	67.9	72.1
100-year	33.51	1.871	9.36	0.461	72.1	75.4

Table 1. Peak Discharge and Runoff Volumes UPDATED

As shown in Table 1, the post-construction storm water runoff from the Southern Overburden Storage Area that is not captured and diverted back to the quarry is significantly less than what drains to the east currently. The peak discharge has been reduced a minimum of 50.8% and the volume of discharge has been reduced a minimum of 60.6%.

## 4.1 Stabilized Diversion Swales

These permanent features will be established on the berms and built in accordance with the details provided on Plate 3. The swales will have the center and side slopes stabilized with seeding protected by jute or excelsior matting or with seeding and mulching. They will be trapezoidal drainage channels with a supporting ridge on the lower side and will intercept and convey runoff to the spillways. These structures will be installed at regular intervals on the slope as determined by the spacing of berms during construction (See Plates 4 and 5 for channel location). Once the berms are stabilized and construction is complete, the swales will be inspected for structural soundness and accumulation of sediment. Repairs will be made in accordance with Detail 2 Plate 3.

The swales were modeled in HydroCAD for the 10-year storm with a Manning's Number of 0.010 and a minimum slope of 0.5%. The maximum water depth is 1.2 feet providing the minimum 0.3 feet of freeboard in accordance with Blue Book design criteria (Page 5B.1).

All swales were designed to provide the minimum freeboard for the 10-year storm and to safely pass a 100-year storm. Average flow depth within the swales for the post-construction 100-year 24-hour storm does not exceed 0.86 feet. Detailed design calculations can be found in Appendix D.

## 4.2 Spillways

Centralized spillways will convey water accumulated by the diversion swales to the mine excavation and existing settling pond (See Plate 6 for Details and Plate 5 for spillway location). Diversion swales are sloped across the length of the berm towards the spillways such that all storm water in the diversion swales, collected from upland vegetated areas, will drain into the spillways. These spillways are segmented with energy dissipaters at each berm terrace to reduce velocity and prevent erosion. The spillways will be stabilized with riprap.

All spillways have been designed to safely pass the 100-year 24-hour storm flows.

## 4.3 Riprap Protection

Riprap protection for energy dissipation will be installed at each location where a spillway, located on the berms, discharges into a stabilized diversion swale. See Plate 6 for details.

## 4.4 Settling Pond

The existing settling pond within the excavation area is 4.5 acres in size and has a minimum of five feet of freeboard which provides 22.5 acre-feet of storage volume above the normal storm high water level. Runoff from the proposed Southern Overburden Storage Area for the 100-year storm is projected to be 11.329 acre-feet. This amount of runoff would result in an increase in the pond water elevation of 2.5 feet. With a minimum of five feet of freeboard and the 2.5 feet increase from the 100-year storm, 2.5 feet of freeboard would remain. Therefore, discharging runoff from the Southern Overburden Storage Area to the existing pond will be well within the capacity of the pond and will not require enlarging the pond or constructing an additional pond. The discharge rate from the pond to Outfall 003 is limited by the existing pump capacity. It will not be necessary to increase the pumping rate to accommodate runoff from the Southern Overburden Storage Area.

## 5.0 SITE ASSESSMENT AND INSPECTION

A qualified inspector will conduct all site assessments and inspections and provide inspection reports according to Part IV.C. of the General Permit. A certification will be provided on each individual inspection report. Inspection report forms are attached in Appendix B of this report.

A technician will inspect geotechnical instrumentation and take measurements on a regular basis during and after construction.

## 5.1 Inspection Schedule and Frequency

For the construction of six berms and fill behind the berms, each berm and fill behind the berm is considered an individual construction event for the purposes of inspection and assessment.

<u>Pre-Construction Inspection</u>: Conduct once prior to the initial disturbance of soils to confirm that temporary controls are in place and properly installed.

<u>Weekly Inspections</u>: Conduct a site inspection at least once every seven (7) calendar days where soil disturbance activities are ongoing. If total site disturbance is greater than five (5) acres, at least two (2) site inspections must be performed every seven (7) calendar days after Pre-Construction Inspection has been completed until Final Temporary Controls Inspection has been conducted. If only two (2) site inspections are performed every seven (7) calendar days, the inspections shall be separated by a minimum of two (2) full calendar days.

<u>Storm Event Inspection</u>: Conduct on areas that are subject to weekly inspections. Conduct within 24 hours of the end of a storm event of 0.5 inches or greater.

<u>Temporary Shutdown (e.g. winter) Inspection</u>: Once soil disturbance activities have been temporarily suspended and temporary stabilization measures have been applied to all areas, a site inspection must be conducted at least once every thirty (30) calendar days. The owner or operator shall notify the NYSDEC Regional Office in writing prior to reducing the frequency of inspections.

<u>Final Construction Inspection</u>: Conduct one time when berm or fill behind berm construction is completed and the site has undergone final stablization<sup>1</sup>.

<sup>1. &</sup>quot;Final Stabilization" means that all soil disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 80% has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures (GP-0-08-001 Appendix A).

<u>Operation and Maintenance</u>: Conduct for the first time after the Construction Inspection is completed. Conduct quarterly (four times) for the first year and annually after that for the life of the controls.

All completed Inspection Forms and Post-Construction Maintenance Inspection Reports for Permanent Stormwater Controls will be maintained onsite until all disturbed areas have achieved final stabilization and the Notice of Termination has been submitted to the NYSDEC.

An Inspection Log Sheet is provided in Appendix B.

## 6.0 CONTRACTOR CERTIFICATION

Contractors will also be required to comply with this SWPPP by signing a contractor certification, attached as Appendix C.

## 7.0 LONG TERM OPERATIONS AND MAINTENANCE PLAN

Upon completion of the southern overburden storage Berm, Norlite will be responsible for the long term operation and maintenance of each post construction stormwater control. Norlite or their designee will conduct post construction stormwater control inspections quarterly throughout the year following final stabilization and annually in subsequent years. Maintenance of post construction stormwater controls will include the following:

- 1. All erosion and sediment controls will be checked for stability and operation. Any needed repairs will be made immediately to maintain all controls as designed and installed according to this SWPPP.
- 2. Berm vegetation will be monitored and mowed as needed. If an area lacking vegetation is observed, it will be reseeded to re-establish vegetation. Likewise, the berm will be monitored for animal burrows. If any are found, they will be filled and reseeded.
- 3. Stabilized diversion swales and spillways with riprap protection will be inspected for erosion and accumulation of sediment. See details on Plate 3.
- 4. The existing settling pond will be cleaned out when the level of sediment reaches 50% of settling pond capacity.

## FIGURE

FIGURE 2 SOIL MAP

## PLATES

- SHEET 1 MINE PLAN MAP\* (EXISTING CONDITIONS)
- PLATE 1 RIPRAP OUTLET SEDIMENT TRAP DETAILS
- PLATE 2 EROSION AND SEDIMENT CONTROL PLAN TEMPORARY FEATURES AND CONSTRUCTION PHASING
- PLATE 3 TEMPORARY AND PERMANENT EROSION CONTROL DETAILS
- PLATE 4 SOUTHERN OVERBURDEN AREA BERM CONSTRUCTION SCHEMATIC PROFILE OF CROSS

**SECTION A-A' (PROPOSED CONDITIONS)** 

- PLATE 5 SOUTHERN OVERBURDEN STORAGE AREA STORMWATER CONTROL STRUCTURES
- PLATE 6 ADDITIONAL EROSION CONTROL DETAILS
- SK-1 SLOPE CROSS SECTION AND BERM DETAIL PREPARED BY GIFFORD ENGINEERING, LLC

APPENDICES

## APPENDIX A Cultural Resource Documentation

## APPENDIX B INSPECTION REPORT

## Stormwater Control Inspection Log

Type of Inspection				Stor	rm Event					
Pre-Construction	Weekly 1	Weekly 2	Storm Event	Temporary Shutdown	Final Construction	Operation & Maintenance	Inspection Date	Date	Precipitation (in), Type	Inspector Initials

Note: Refer to SWPPP Section 5.1 for the frequency of each type of inspection.

## **INSPECTION REPORT**

To be used for the inspection prior to the start of construction, weekly inspections, postprecipitation inspections, and final construction inspection.

1. Weather and soil conditions (e.g. dry, wet, saturated) at time of inspection:

2. Record sediment accumulation in temporary erosion and sediment controls

<ul> <li>silt fence and haybales</li> <li>haybale inlet protection</li> <li>temporary diversion swale</li> <li>riprap outlet sediment trap</li> </ul>		
3. Are there		
a. Rill or gully erosion occurring on slopes	yes	no
If yes, state where:		
b. Discharges of sediment from the construction site	yes	no
If yes, state where:		
c. Any erosion or sediment controls that need to be reinstalled or replace	edyes	no
If yes, state where:		

4.	Provide a description and sketch of areas that are disturbed and areas that have been stabilized
	since the last inspection.

Use area provided below for sketch:

5. Has construction begun on permanent stormwater controls?	yes	no
a. If yes, is construction in compliance with the SWPPP and the technical standards?	yes	no

6. Repair/Maintenance required:

"I certify under penalty of law that this document is true and accurate as observed by me and based on inquiry of person or persons who constructed the structures."

Title:	Name:	
Date/Time:		Signature of Authorized Person

POST CONSTRUCTION MAINTENANCE INSPECTION REPORT
FOR PERMANENT STORMWATER CONTROLS
(Cas *Nate for Schedule)

(See \*Note for Schedule)

#### **Permanent Structural Controls**

Record sediment accumulation in (% or height):

Diversion swales:

Spillways:

Riprap energy dissipators:

Is erosion occurring in:

Diversion	swales:	$\Box$ Yes	□No

Riprap energy dissipators:  $\Box$  Yes  $\Box$  No

Describe stabilization measures that will be implemented to stop erosion and prevent additional erosion:

Diversion swales:
Spillways:
Riprap energy dissipators:
Vegetation
Most recent date of mowing on berm:
Is berm vegetation healthy?
Are there bare patches in the vegetation that need to be reseeded? $\Box$ Yes $\Box$ No
If yes, note location on Plate 5 and describe:

### **Berm Face**

Are there rills, erosion, or animal burrows on the face of the berm?	$\Box$ Yes $\Box$ No
If yes, note location on Plate 5 and describe measures to be taken to fix e	xisting erosion and
prevent additional erosion:	

Name:
Position/Title:
Signature:
Date:

\*NOTE: Quarterly during first year after construction. Annually starting at end of year two (2) after construction.

## APPENDIX C Contractor Certifications

Name:		 	 
Title:			

Responsible for: Long Term Operation & Maintenance

Name of Contracting Firm:	Norlite Corporation
Address:	628 South Saratoga Street, Cohoes, NY 12047

Telephone Number:

<u>(518) 235-0401</u>

Site Address: 628 South Saratoga Street

City of Cohoes

Albany County, New York

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement and corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the New York State Pollutions Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings."

Contractor/Subcontractor Signature

Date

Name: \_\_\_\_\_

Title:

Responsible for: Construction & Temporary Erosion and Sediment Controls

Name of Contracting Firm:	Warren W. Fane Incorporated
Address:	449 State Route 40, Troy, NY 12182-5531
Telephone Number:	(518) 235-5531

Site Address: 628 South Saratoga Street

City of Cohoes

Albany County, New York

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement and corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the New York State Pollutions Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings."

Contractor/Subcontractor Signature

Date

Name:			

Title:

Responsible for: <u>Weekly/Storm Event Inspections</u>

Name of Contracting Firm:	Spectra Environmental Group, Inc.
Address:	19 British American Boulevard, Latham, NY 12110
Telephone Number:	(518) 782-0882

Site Address: 628 South Saratoga Street

City of Cohoes

Albany County, New York

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement and corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the New York State Pollutions Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings."

Contractor/Subcontractor Signature

Date

## **APPENDIX D**

**STORMWATER CALCULATIONS** 

## **APPENDIX E**

SECTION 2.1.2 NORLITE SITE HYDROLOGY, BEST MANAGEMENT PRACTICES PLAN, REVISION 7/2005

## **APPENDIX F**

CONSTRUCTION NOTES – GIFFORD ENGINEERING, LLC (SUBMITTED PRIOR TO TECHNICAL MEETING HELD ON NOVEMBER 16, 2007)

## APPENDIX G Notice of Intent

## APPENDIX H Notice of Termination

## APPENDIX I MS4 SWPPP ACCEPTANCE FORM

#### Addendum to Norlite Corp. Southern Overburden Storage Area Construction SWPPP

#### Introduction

The following additions and amendments to the SWPPP are in response to permit GP-0-10-001 going into effect on January 29, 2010. The following additions and amendments keep the Construction SWPPP consistent with GP-0-10-001. This Addendum is arranged by existing report sections as noted below.

#### **1.0 INTRODUCTION**

The SWPPP will be amended and/or updated:

a. whenever the current provisions prove to be ineffective in minimizing pollutants in stormwater discharges from the site;

b. whenever there is a change in design, construction, or operation at the construction site that has or could have an effect on the discharge of pollutants; and

c. to address issues or deficiencies identified during an inspection by the qualified inspector, the Department or other regulatory authority.

#### 5.1 Inspection Schedule and Frequency

#### Weekly Inspections:

The qualified inspector will inspect all points of discharge to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site. He/she will provide a description of the condition of all points of discharge to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas.

The qualified inspector will also take digital photographs, with date stamp, of the practices that have been identified as needing corrective actions. Paper color copies of the digital photographs will be attached to the onsite inspection report. The qualified inspector will also take digital photographs, with date stamp, which show the condition of the practice(s) after the corrective action has been completed. Paper color copies of the digital photographs documenting the completion of the corrective action will be attached to the inspection report. Paper copies of the

photographs must be attached to the inspection report(s) within seven (7) calendar days of that inspection.

Final Construction Inspection:

The Notice of Termination located in Appendix I has been updated to reflect the form consistent with GP-0-10-001.

#### 4.0 POST CONSTRUCTION STORM WATER CONTROLS

Norlite will notify the MS4 (Town of Colonie) of any planned amendments or modifications to the post-construction stormwater management practices. Norlite will not proceed to construct the post-construction stormwater management practices until the amendments or modifications have been reviewed and accepted by the Town of Colonie.