



A Guide

SURFACE

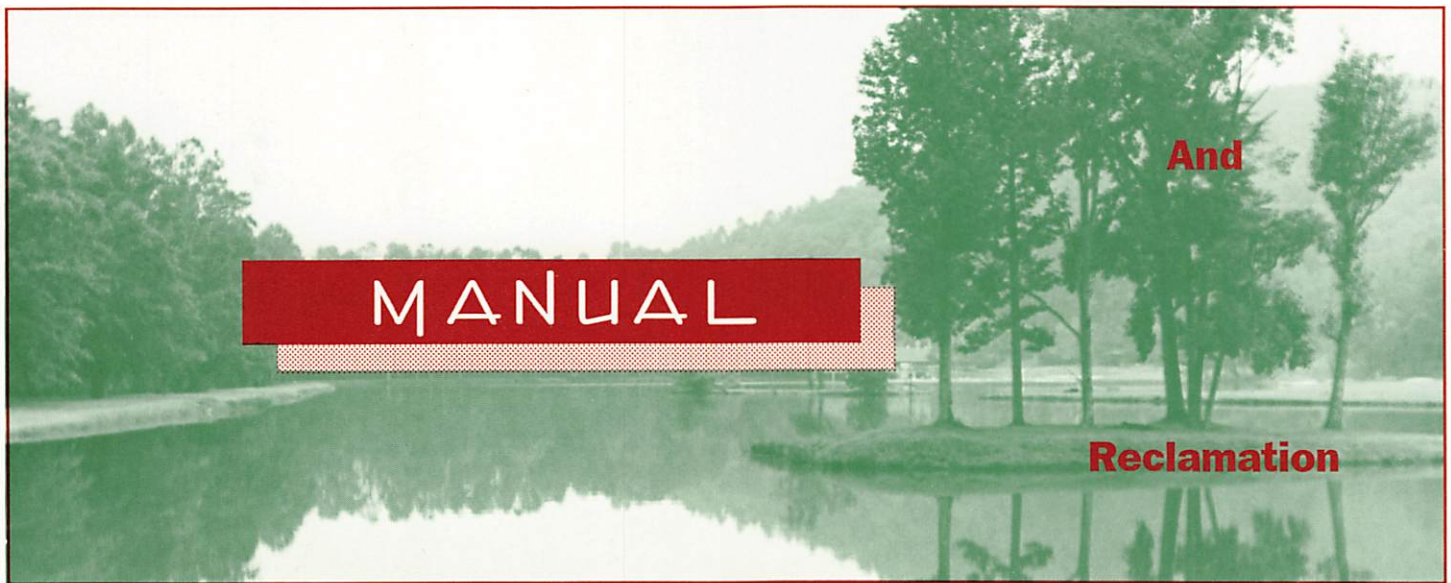
For



Permitting,

MINING

Operation



And

MANUAL

Reclamation

SURFACE MINING MANUAL

***A Guide for Permitting,
Operation, and Reclamation***

***State of North Carolina
Department of Environment, Health and
Natural Resources***

**Division of Land Resources
Land Quality Section**

SURFACE MINING MANUAL

- **Mining Act Overview**
- **Mining Applications and Permits**
- **Permit Renewal, Modification, Transfer and Release Requests**
- **Public Hearings, Permitting Process, Denials and Appeals**
- **Mapping Requirements**
- **Erosion and Sediment Control**
- **Operating Permits and State Requirements**
- **Blasting**
- **Groundwater Monitoring**
- **Reclamation Plans, Bonds, and Reporting**
- **Inspections, Monitoring, and Enforcement**
- **North Carolina State Agency Contacts**
- **Mining Permit Application and Instructions**
- **Revisions and Updates for this Manual**
- **Accessing Information on the Internet**

**State of North Carolina
Department of Environment,
Health and Natural Resources (DEHNR)**

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North Carolina Department of Environment, Health and Natural Resources
Division of Land Resources, Land Quality Section
Raleigh, North Carolina 27611-7687

This manual is published by the State of North Carolina, Department of Environment, Health and Natural Resources to inform current and potential mine operators of the permitting requirements established by the State of North Carolina.

It is intended to be used only as a guide for those involved in the mine permitting process. It should not be interpreted to substitute or supplant established departmental policies, rules, or state statutes.

It is available by request at cost from the State of North Carolina, DEHNR, Division of Land Resources, Land Quality Section, Raleigh, North Carolina 27611-7687.

Printed in the United States of America.

The text of this **Surface Mining Manual** is Times New Roman® and Arial®, with the display set in various weights and styles. Publishing of this handbook was accomplished using Microsoft® Windows™ 3.1 and Microsoft® WORD 6.0. The compilation, format, design, technical editing, and publishing were by *Jennifer D. Willard, Technical Writer/Documentation Specialist, Enviro-Tech Communications and Consulting, 305 Riverwood Drive, Lewisville, North Carolina 27023. (910-945-9806)*. Assisting with the documentation effort were the following independent technical writers/contract consultants: *Curtis H. Mummert, Technical Writer/Documentation Specialist, Leslie B. Ponder, Technical Writer/Programmer, Robert M. Lewis, Technical Writer/Trainer and CAD Graphics.*

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Foreword

This Surface Mining Manual supports well the Mission Statement of our department: *"To promote, protect, and conserve the environment, health, and natural resources of North Carolina and its citizens through responsible stewardship and excellence in public service."*

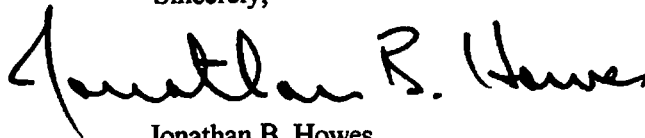
Its publication underscores the need for environmental stewardship now more than ever before. Legislators, policy-making governmental agencies, businesses and consumers alike understand the need for a balance between the needs of man and the environmental limitations of the earth.

Using the manual will result in creative ways to improve environmental quality while ensuring economic prosperity.

The manual's guidelines and procedures will help to streamline our environmental permitting process and enable us to continue to provide technical and educational assistance to mine operators. It will help us maintain our commitment to reducing adverse effects of mining on our natural resources, promote and develop new technologies, and to manage our natural resources to benefit all our citizens.

We commend this manual to all mine operators and others involved with surface mining activities in North Carolina.

Sincerely,



Jonathan B. Howes
Secretary, DEHNR

Preface

The North Carolina Division of Land Resources, in cooperation with the Mining Commission, has prepared this Surface Mining Manual for your use. It is meant to help mining permit applicants in properly completing applications so that the applications can be processed in a timely manner. It is also meant to help mine operators understand the operating and reclamation conditions of their permits. This manual contains easy-to-follow information regarding (1) North Carolina State Laws and Rules, (2) Mining Applications and Operating Permits, (3) Reclamation Plans and Bonds, (4) State Inspections and Monitoring, (5) Recordkeeping, (6) Compliance and Penalties, and (7) Federal and State Agency Contacts and Reference Guides.

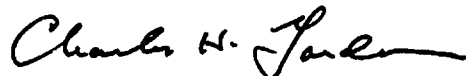
All information contained in this Manual is based on the latest information available at the time of publication. As significant changes occur to mining-related environmental laws and rules, we will update this manual. Each page will have a section name, number and date. You can easily update your Surface Mining Manual by removing out-of-date material and inserting the newly revised pages.

A Change of Address page is included at the end of the Manual for your use in notifying us that your address has changed. This will ensure that you will be contacted when revisions are made to the Manual.

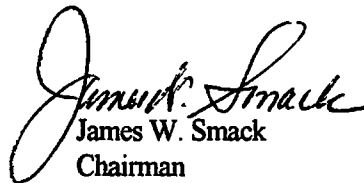
Also included in the Manual is a Comments page for your written comments, corrections and suggestions. Your input is essential in ensuring that the Manual continues to fulfill its intended purpose. As we update the Manual, we will consider your suggestions and correct any errors in the text that have been brought to our attention.

If any questions arise concerning the current status of mining-related State laws and rules, or should you learn that any government law or rule has changed or is purportedly different from those described in this Manual, please contact DEHNR's Division of Land Resources, Land Quality Section, for clarification.

We thank each of you for your commitment to environmental protection. Your continuing efforts and those of all mine operators will help us protect the environment in North Carolina.



Charles H. Gardner, P.G., P.E.
Director and State Geologist
Division of Land Resources
North Carolina DEHNR



James W. Smack
Chairman
North Carolina Mining Commission

Acknowledgments

The preparation of this manual has benefited greatly by the generous participation of many individuals. General supervision and oversight has been under the direction of Charles Gardner, Director and State Geologist, Division of Land Resources, and Mell Nevils, Chief, Land Quality Section, Division of Land Resources.

Beth U. Chesson, Chesson Consulting, previously an Assistant State Mining Specialist with the Land Quality Section, Division of Land Resources, was the principal author of most of the original text of the manual and contributed significantly to its final completion, including many suggestions on content and editing. Tracy E. Davis, State Mining Specialist, Land Quality Section, Division of Land Resources, served as principal editor throughout the process and his unflagging attention to detail and accuracy has been a major contribution to the successful completion of this manual.

Many employees in the Land Quality Section participated in the editing process and made many valuable suggestions and corrections. Included in this group are Richard Phillips, Floyd Williams, John Holley, Doug Miller, David Ward, Harry Bailey, and Pat McClain. Special recognition is due Tony Sample and Judy Wehner, both Assistant State Mining Specialists, who provided valuable assistance during the editing of the first and second draft manuscripts.

Other individuals in the Department of Environment, Health and Natural Resources (DEHNR) generously contributed their time and expertise to the project. Special recognition is due Barbara Glover, Secretary, Division of Land Resources, for transcribing the original manuscript and careful editing of the second draft. Ben Taylor and Brian Bass, Office of Public Affairs, made many valuable suggestions on format and content and their participation and interest is gratefully acknowledged. Denise Smith, Office of Public Affairs, used her considerable talent to design the cover page and mining logo. Kent Nelson and Dennis Stewart, Wildlife Resources Commission, contributed important information on alternative reclamation practices to enhance wildlife habitat.

In addition to the excellent cooperation and contributions made by the many individuals in DEHNR, individuals from the mining industry and engineering consulting firms have given freely of their time and expertise. Without the considerable assistance received from individuals outside state government, this project could not have been completed. Early in the process, Fred Allen, Executive Director, N.C. Aggregates Association, formed a Mining Manual Task Force for the specific purpose of working with the Land Quality Section staff and others in developing the Surface Mining Manual. Through the efforts of this group, David Lee, Wake Stone Corporation, and Carole Cameron, Horace Willson, and Victor Bryan, Martin Marietta Aggregates, were instrumental in moving the project forward and contributed significantly to the final format and content of the Erosion and Sediment Control chapter of the manual. Victor Bryan was the primary author of the chapter on blasting.

The manual contains numerous illustrations of erosion and sediment control measures and devices. All of these illustrations were generously provided by Allen King, formerly with McKim and Creed, and currently with Senior Environmental Consultants, Inc. Lisa Patterson, William G. Daniel & Associates, also provided valuable assistance in the preparation of these illustrations. The considerable amount of time and effort required to reproduce these illustrations is gratefully acknowledged.

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Stephen G. Conrad, former director of the Division of Land Resources, joined the project in March, 1994. He served as a consultant to coordinate the work of various individuals working on the manual and to provide a completed manuscript to DEHNR for publication.

Jennifer D. Willard, Enviro-Tech Communications and Consulting, a Division of Infonix Writing and Publishing, Inc., Winston-Salem, North Carolina, joined the project in April, 1995 and has been instrumental in providing the necessary editing and manuscript preparation to bring the project to a successful conclusion.

DEHNR and the North Carolina Mining Commission extend their deep appreciation to everyone who participated in the considerable effort to make the Surface Mining Manual a reality.

Technical Note

The compilation, including technical editing/documentation, format, design, and desktop publishing of this Manual is intended to provide the reader with accurate and authoritative information in non-technical and technical language as it relates to surface mining. The manual was prepared with the assumption that the audience has prerequisite knowledge regarding mining terminology and/or is currently involved in surface mining operations.

The context is in regard to environmental subject matter as it relates to surface mining. Inquiries regarding official use of terms and phrases for regulatory purposes should be directed to the State of North Carolina DEHNR. Official terminology can be found in the laws and related rules as published by the State of North Carolina.

This Manual is distributed by the State of North Carolina Department of Environment, Health and Natural Resources (DEHNR), Division of Land Resources, Land Quality Section, with the understanding that the compilers/technical writers/editors/publishers are not engaged in rendering legal, accounting, or other professional service. If legal advice or other expert advice is required, the services of a competent professional should be sought.

Those with suggestions for future editions should write to State of North Carolina, DEHNR, Division of Land Resources, Land Quality Section, P.O. Box 27687, Raleigh, NC 27611-7687.

Those interested in customized documentation, custom manuals on disk or CD-ROM, online documentation, or Internet documentation, may inquire to Enviro-Tech Communications and Consulting, a Division of Infonix Writing and Publishing, Inc., 353 Jonestown Rd, Suite 183, Winston-Salem, North Carolina 27104 (910) 733-8915, or (910) 945-9806. FAX 910-760-4834
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CONTENTS

Chapter 1. Introduction

| | |
|------------------------------|-----|
| Purpose..... | 1-3 |
| Updating and Revisions | 1-4 |
| Organization..... | 1-5 |

Chapter 2. Overview of the Mining Act of 1971

| | |
|---|------|
| Overview of the Mining Act of 1971..... | 2-3 |
| Definition of Mining..... | 2-3 |
| Mining Commission | 2-3 |
| DEHNR | 2-4 |
| Coal Mining | 2-4 |
| Exploration Without Permit..... | 2-5 |
| Exemptions from the Mining Act..... | 2-5 |
| Fees | 2-5 |
| Reclamation Bond | 2-6 |
| Public Hearing..... | 2-6 |
| Enforcement Procedures | 2-6 |
| Annual Reclamation Report..... | 2-7 |
| Local Zoning | 2-7 |
| Uranium Exploration..... | 2-7 |
| Definitions..... | 2-8 |
| Adjoining Landowner | 2-8 |
| Affected Acreage | 2-8 |
| Buffer Zone..... | 2-9 |
| Final Reclamation..... | 2-9 |
| Flyrock | 2-10 |
| Highwall..... | 2-10 |
| Highwall Barrier..... | 2-10 |
| High Quality Waters | 2-11 |
| High Quality Water Zones..... | 2-11 |
| Partial Release | 2-11 |
| Permitted Acreage..... | 2-11 |
| Reclamation Plan..... | 2-12 |
| Release From Reclamation Plan..... | 2-12 |
| Safety Bench..... | 2-12 |
| Tailings Ponds..... | 2-12 |
| Visual Screening..... | 2-12 |

Chapter 3. Applications for New Mining Permits

| | |
|--|------|
| Introduction..... | 3-3 |
| Land Quality Section Review..... | 3-3 |
| Other Agency Review..... | 3-3 |
| Permit Review Criteria..... | 3-4 |
| Public Hearings..... | 3-6 |
| Time Frame for Hearing..... | 3-6 |
| Hearing Purpose..... | 3-6 |
| Submitting Comments..... | 3-7 |
| Hearing Format..... | 3-7 |
| Hearing Follow-up..... | 3-8 |
| Submitting Additional Information..... | 3-8 |
| Issuing Draft Permits..... | 3-9 |
| Issuing Permits..... | 3-10 |

Chapter 4. Mining Permit Renewal Requests

| | |
|---|-----|
| Introduction..... | 4-3 |
| Active Renewal Requests..... | 4-3 |
| Mine Map..... | 4-4 |
| Erosion and Sediment Control Design and Construction Details..... | 4-4 |
| Reclamation Plan..... | 4-5 |
| Inactive Renewal Requests..... | 4-5 |
| Undisturbed Sites..... | 4-5 |
| Previously Disturbed Sites..... | 4-6 |
| Mine Map..... | 4-6 |

Chapter 5. Mining Permit Modification Requests

| | |
|---|-----|
| Introduction..... | 5-3 |
| Notification of Adjoining Landowners..... | 5-3 |
| Minor Modification Requests..... | 5-4 |
| Mine Map..... | 5-4 |
| Submission Requirements..... | 5-4 |
| Major Modification Requests..... | 5-5 |
| Mine Map..... | 5-5 |
| Submission Requirements..... | 5-5 |
| DEHNR Modifications..... | 5-6 |
| Written Notices..... | 5-6 |
| Right to Hearings..... | 5-6 |
| Final Decision..... | 5-6 |

Chapter 6. Mining Permit Transfer Requests and Corporate Name Changes

| | |
|--|-----|
| Introduction..... | 6-3 |
| Information Required for Transfers..... | 6-3 |
| Required From Original Permittee | 6-3 |
| Required From Proposed New Permittee | 6-4 |
| Approval of the Transfer Request..... | 6-5 |
| Information Required for Corporate Name Change | 6-5 |
| Approval of the Corporate Name Change..... | 6-5 |

Chapter 7. Mining Permit and Bond Release Requests

| | |
|--|-----|
| Introduction..... | 7-3 |
| Release Types | 7-3 |
| Partial Release of Areas Within the Existing Permitted Acreage | 7-4 |
| Complete Release of Permit and Reclamation Bond | 7-5 |

Chapter 8. Public Input

| | |
|---|-----|
| Introduction..... | 8-3 |
| Public Hearings | 8-3 |
| Filing Comments for Review During Any Proposed Permit Action..... | 8-4 |
| Permit Appeal Process | 8-5 |
| Right to Hearing | 8-5 |
| Complaints | 8-5 |
| General..... | 8-5 |
| Blasting..... | 8-6 |

Chapter 9. Denial of Permit Actions or Requests

| | |
|---|-----|
| Introduction..... | 9-3 |
| Permit Review Criteria | 9-3 |
| Applicant/Permittee Appeal Process..... | 9-4 |

Chapter 10. Other Permit Requirements

| | |
|--|-------|
| Introduction..... | 10-3 |
| Division of Environmental Management..... | 10-4 |
| Air Quality Permit | 10-4 |
| Water Quality Permits..... | 10-5 |
| Division of Land Resources..... | 10-9 |
| Dam Safety Permit..... | 10-9 |
| Division of Solid Waste Management | 10-11 |
| Solid Waste Management Permit | 10-11 |
| U. S. Army Corps of Engineers..... | 10-12 |
| Section 404: Discharge Into and Excavation of Waters and Wetlands of the United States | 10-12 |
| Section 10: Work in Navigable Waters..... | 10-12 |
| Washington, NC..... | 10-13 |
| Raleigh, NC..... | 10-14 |
| Wilmington, NC | 10-15 |
| Asheville, NC | 10-16 |

Chapter 11. Mapping Requirements

| | |
|---|------|
| Introduction..... | 11-3 |
| Permit Life and Mining/Reclamation Information..... | 11-3 |
| Map Types..... | 11-4 |
| Minimum Requirements for Mine Maps | 11-4 |
| Mining Construction Details..... | 11-6 |
| Map Maker Information..... | 11-7 |
| Affected Acreage Table..... | 11-7 |
| Minimum Requirements for Reclamation Plans | 11-8 |
| Reclamation Construction Details | 11-9 |

Chapter 12. Erosion and Sediment Control

| | |
|--|-------|
| Introduction..... | 12-3 |
| Temporary Erosion and Sediment Control | 12-4 |
| Temporary Sediment Traps..... | 12-4 |
| Minimum Criteria for Sediment Traps | 12-6 |
| Silt Fence..... | 12-8 |
| Temporary Diversions..... | 12-10 |
| Construction Entrance | 12-12 |
| Temporary Slope Drains | 12-14 |
| Temporary Stream Crossings..... | 12-16 |
| Check Dams | 12-18 |
| Permanent Erosion and Sediment Control..... | 12-21 |
| Sediment Basin..... | 12-21 |
| Permanent Ditches and Channels..... | 12-28 |
| Permanent Stream Crossings..... | 12-31 |
| Pipes..... | 12-33 |
| Rock Dams | 12-37 |
| Special Considerations..... | 12-39 |
| High Quality Waters | 12-39 |
| Floodplains | 12-40 |
| Wetlands..... | 12-40 |

Chapter 13. Operation Specific Issues

| | |
|--|-------|
| Introduction..... | 13-3 |
| Compliance With Other Permits | 13-3 |
| Hard Rock Excavations..... | 13-4 |
| Crushed Stone Operations..... | 13-4 |
| Dimension Stone Operations..... | 13-6 |
| Industrial Mineral Operations..... | 13-8 |
| Permit Conditions | 13-8 |
| Sand, Gravel and Common Clay Mines | 13-9 |
| Sand and Gravel Mines..... | 13-9 |
| Clay Mines | 13-10 |
| In-stream Mining Operations..... | 13-11 |
| Required Information..... | 13-12 |
| Dredge Operations | 13-13 |
| Dragline Operations..... | 13-14 |
| Gem Mines..... | 13-17 |
| Permit Conditions | 13-17 |

Chapter 14. Blasting

Introduction..... 14-3

Definitions..... 14-3

 Air Blast..... 14-3

 Blast Area..... 14-3

 Blast Site..... 14-3

 Blasting Seismograph..... 14-3

 Burden..... 14-4

 Decibel (*dB*L)..... 14-4

 Decking..... 14-4

 Delay Interval..... 14-4

 Detonator..... 14-4

 Explosive Material..... 14-4

 Flyrock..... 14-4

 Millisecond (*ms*)..... 14-4

 Particle Velocity..... 14-5

 Peak Particle Velocity (*ppv*)..... 14-5

 Powder Factor (*PF*)..... 14-5

 Qualified Blaster..... 14-5

 Scale Distance (*SD*)..... 14-5

 Shot..... 14-5

 Spacing..... 14-5

 Stemming..... 14-5

Typical Blasting Conditions Required By Surface Mining Permits..... 14-6

Vibration..... 14-7

 Scale Distance (*SD*)..... 14-7

 Controlling Vibration..... 14-8

Air Blast..... 14-9

 Causes of Excessive Air Blast..... 14-9

Operation Considerations - Controlling Adverse Effects of Blasting..... 14-11

 Flyrock: Causes and Preventive Action..... 14-11

Management of Complaints..... 14-19

Training..... 14-21

Recommended References..... 14-22

Chapter 15. Groundwater Monitoring

Introduction..... 15-3

Observation/Monitoring Wells..... 15-4

Groundwater Protection Guidelines..... 15-4

Complaints..... 15-5

Chapter 16. Reclamation Plan Requirements

| | |
|---|-------|
| Introduction..... | 16-3 |
| Reclamation Plan Requirements..... | 16-3 |
| Reclaiming as a Water Body..... | 16-5 |
| Construction Details..... | 16-5 |
| Reclaiming As Upland Areas..... | 16-6 |
| Highwall Stabilization..... | 16-7 |
| Wildlife Considerations..... | 16-7 |
| Ground Cover..... | 16-7 |
| Reclaiming Mountain Region Floodplains..... | 16-13 |
| Reclaiming Uplands..... | 16-13 |
| Reclaiming Wetlands..... | 16-14 |
| Reclaiming Riparian Zones..... | 16-14 |
| Alternative Vegetation..... | 16-14 |
| Reforestation..... | 16-15 |
| Reclamation Agencies..... | 16-15 |
| Financial Incentives..... | 16-16 |
| Reclamation Awards..... | 16-16 |
| Submitting a Nomination..... | 16-17 |
| Judging Criteria..... | 16-17 |

Chapter 17. Reclamation Bonds

| | |
|--|-------|
| Introduction..... | 17-3 |
| Computing Reclamation Bond Amounts..... | 17-3 |
| Bond Substitutions (Decreases or Increases)..... | 17-3 |
| Types of Reclamation Bonds..... | 17-4 |
| Bond Cancellations..... | 17-17 |
| Release of Bond by the Department..... | 17-17 |

Chapter 18. Annual Reclamation Reports

| | |
|---|------|
| Introduction..... | 18-3 |
| Annual Reclamation Report Purpose..... | 18-3 |
| Submitting the Annual Reclamation Report..... | 18-3 |
| Maps..... | 18-4 |
| Inspections and Notification..... | 18-4 |

Chapter 19. Inspections and Monitoring by Permittee

| | |
|---|------|
| Introduction..... | 19-3 |
| Off-site Sedimentation..... | 19-3 |
| Safety..... | 19-4 |
| Compliance with Existing Permit Conditions..... | 19-4 |

Chapter 20. Land Quality Section Inspection and Enforcement

Introduction.....20-3
 Inspections.....20-4
 Objectives.....20-4
 Mine Inspection Reports.....20-4
 Enforcement.....20-6
 Notice of Deficiency.....20-6
 Notices of Violation.....20-6
 Appeals.....20-7

Chapter 21. Agency Contacts

Introduction.....21-3
 Department of Environment, Health and Natural Resources (DEHNR).....21-3
 Wildlife Resources Commission.....21-3
 Department of Cultural Resources.....21-3
 Department of Labor.....21-4
 Federal Agencies.....21-4

APPENDICES

A: Mining Act of 1971.....A-1
 B: North Carolina Administrative Code, Title 15A, Chapter 5 Mining.....B-1
 C. Application for a Mining Permit With Helpful Hints.....C-1
 D: Blank Mining Permit Application Form.....D-1
 E. Reclamation Bond Release Request Form.....E-1
 F: Access EPA - EPA on the Internet.....F-1
 G: State of North Carolina - Public Information (Internet Access).....G-1
 H: Change of Address Form.....H-1
 I: Comment Form.....I-1

List of Illustrations

List of Figures

| | | |
|--------------|--|-------|
| Figure 12-1 | Temporary Sediment Trap Detail | 12-7 |
| Figure 12-2 | Silt Fence Detail | 12-9 |
| Figure 12-3 | Temporary Diversion Berm Detail | 12-10 |
| Figure 12-4 | Temporary Combination Diversion and Berm Detail..... | 12-11 |
| Figure 12-5 | Gravel Construction Entrance..... | 12-13 |
| Figure 12-6 | Temporary Slope Drains..... | 12-15 |
| Figure 12-7 | Temporary Stream Crossing - Ford..... | 12-17 |
| Figure 12-8 | Brick Bat Check Dam Detail..... | 12-19 |
| Figure 12-9 | Temporary Rock Check Dam..... | 12-20 |
| Figure 12-10 | Sediment Basin Construction Detail..... | 12-22 |
| Figure 12-11 | Anti Vortex Trash Rack Detail..... | 12-25 |
| Figure 12-12 | Anti Flotation Detail for Sediment Basin | 12-26 |
| Figure 12-13 | Anti-Seep Collar Detail..... | 12-27 |
| Figure 12-14 | Diversion Channel Detail..... | 12-29 |
| Figure 12-15 | Permanent Stream Crossing Detail..... | 12-32 |
| Figure 12-16 | Horse Shoe Filter Berm Detail | 12-33 |
| Figure 12-17 | Riprap Pipe Outlet Protection..... | 12-35 |
| Figure 12-18 | Rock Dam Construction Detail..... | 12-38 |
| Figure 13-1 | Sand Dragline Operation Schematic | 13-16 |
| Figure 14-1 | Sample Blast Report | 14-15 |
| Figure 14-2 | Example Seismograph Reading..... | 14-17 |
| Figure 14-3 | Sample Blasting Complaint Form..... | 14-20 |
| Figure 16-1 | Major Physiographic Regions of North Carolina | 16-9 |
| Figure 17-1 | - Bond Calculation Worksheet (3 pages) | 17-5 |
| Figure 17-2 | - Assignment of Savings Account (2 pages) | 17-9 |
| Figure 17-3 | - Surety Bond (2 pages)..... | 17-11 |
| Figure 17-4 | - Irrevocable Standby Letter of Credit (4 pages) | 17-13 |
| Figure 18-1 | Example Annual Reclamation Report Form | 18-5 |
| Figure 20-1 | Example Mine Inspection Report..... | 20-5 |
| Figure 21-1. | DEHNR Regional Offices | 21-5 |
| Figure 21-2. | Division of Coastal Management Field Offices..... | 21-6 |
| Figure 21-3. | DEHNR Organizational Chart | 21-7 |

List of Illustrations

List of Figures

| | |
|--|------|
| Figure C-1. Point of Discharge Detail | C-13 |
| Figure C-2. Buffer Description Detail | C-16 |
| Figure C-3. Boulder Barrier Berm Detail | C-18 |
| Figure C-4. Typical Chain Link Fence Detail..... | C-19 |
| Figure C-5. Typical Barbed Wire Fence Detail..... | C-20 |
| Figure C-6. Typical Earthen Berm Detail..... | C-21 |
| Figure C-7. Pit Cross-Section Detail | C-22 |
| Figure C-8. Visual Barrier Berm Detail Without Slope Drain | C-24 |
| Figure C-9. Visual Barrier Berm Detail With Slope Drain | C-25 |
| Figure C-10. Combination Tree Plantings and Berm Detail | C-26 |
| Figure C-11. Visual Barrier Chain Link Fence..... | C-27 |

List of Tables

| | |
|---|-------|
| Table 3-1 Interagency Review of Mining Permit Applications..... | 3-5 |
| Table 12-1 Weir Length Required for Measured Drainage Areas | 12-5 |
| Table 12-2 Riprap Apron Energy Dissipater | 12-36 |
| Table 16-1 Seeding Specifications for Mountain Region | 16-10 |
| Table 16-2 Seeding Specifications for Piedmont Region..... | 16-11 |
| Table 16-3 Seeding Specifications for Coastal Region..... | 16-12 |
| Table 17-1 Reclamation Bond Types..... | 17-8 |

1

Introduction

CONTENTS

| | |
|------------------------------|-----|
| Purpose..... | 1-3 |
| Updating and Revisions | 1-4 |
| Organization..... | 1-5 |

1 Introduction

Purpose

The North Carolina Department of Environment, Health and Natural Resources (*DEHNR*) has made a strong commitment to standards that embody human health, safety, and environmental goals. Our goals include:

- That the usefulness, productivity, and scenic values of all lands and waters involved in mining within the State will receive the greatest practical degree of protection and restoration.
- That from June 11, 1971, no mining shall be carried on in the State unless plans for such mining include reasonable provisions for protection of the surrounding environment and for reclamation of the area of land affected by mining.
- To recognize that mining is an important industry and is a necessity in building and maintaining the infrastructure of the State.
- To recognize and respond to community concerns about North Carolina mining operations.
- To operate North Carolina mining operations and plants in a manner that protects the human health, safety, and environment of employees and the general public.
- To promote compliance with all laws and rules that pertain to mining products and operations.
- To promote mining and reclamation practices that safeguard the community and the environment.

This **North Carolina Surface Mining Manual** is a reference for State rules, standards, and procedures for mining operations. It includes information on:

- Compliance with the Mining Act of 1971
- Mining applications and the permitting process
- Public hearings, denials and appeals
- Permit renewal, modification, transfer and release requests
- Mapping requirements
- Erosion and sediment control
- Operation specific issues
- Blasting information
- Groundwater monitoring
- Reclamation plans, bonds, and reports
- Inspections, monitoring, and enforcement
- Agency contacts

The North Carolina Department of Environment, Health and Natural Resources should be consulted for issues or details not covered in this manual regarding compliance with State regulations.

Within the context of this manual, the North Carolina Department of Environment, Health and Natural Resources is also referred to as **DEHNR**.

Updating and Revisions

The **North Carolina Surface Mining Manual** will be updated and revised as laws and regulations change.

Your **North Carolina Surface Mining Manual** is designed with separate chapters that can be revised and new chapters inserted. Each chapter has a date at the bottom of each page. To keep your manual current:

- Call the Land Quality Section of DEHNR and request revisions, or
- Fill out the order form in the appendix of this manual, and order your updated chapter
- Remove the outdated chapter, or pages, and insert the most recently dated pages.

Organization

The North Carolina Surface Mining Manual includes individual chapters that can easily be updated. Some chapters contain or refer to appendices, forms, or other items to assist you with filing your permit applications.

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2 Overview of the Mining Act of 1971

CONTENTS

| | |
|--|------|
| Overview of the Mining Act of 1971 | 2-3 |
| Definition of Mining | 2-3 |
| Mining Commission..... | 2-3 |
| DEHNR..... | 2-4 |
| Coal Mining | 2-4 |
| Exploration Without Permit..... | 2-5 |
| Exemptions from the Mining Act..... | 2-5 |
| Fees | 2-5 |
| Reclamation Bond..... | 2-6 |
| Public Hearing | 2-6 |
| Enforcement Procedures..... | 2-6 |
| Annual Reclamation Report..... | 2-7 |
| Local Zoning | 2-7 |
| Uranium Exploration | 2-7 |
| Definitions..... | 2-8 |
| Adjoining Landowner..... | 2-8 |
| Affected Acreage..... | 2-8 |
| Buffer Zone..... | 2-9 |
| Final Reclamation | 2-9 |
| Flyrock..... | 2-10 |
| Highwall | 2-10 |
| Highwall Barrier | 2-10 |
| High Quality Waters..... | 2-11 |
| High Quality Water Zones | 2-11 |
| Partial Release..... | 2-11 |
| Permitted Acreage..... | 2-11 |
| Reclamation Plan | 2-12 |
| Release From Reclamation Plan | 2-12 |
| Safety Bench | 2-12 |
| Tailings Ponds | 2-12 |
| Visual Screening..... | 2-12 |

2 *Overview of the Mining Act of 1971*

Overview of the Mining Act of 1971

The Mining Act of 1971 (Act) was enacted in June of 1971 to ensure that mining operations provide for the protection of the surrounding environment and for the reclamation of lands affected by the operation. (See Appendix A).

The Act addresses protection of the environment and public safety associated with mining operations in North Carolina.

Definition of Mining

The Act requires that any person planning to conduct mining activities affecting one or more acres must obtain a mining permit prior to initiating the activity. Mining is defined as:

- Breaking the surface soil to facilitate or accomplish the extraction of minerals, ores, or other solid matter.
- Any activity or process constituting all or part of a process for the removal of minerals, ores, soils and other solid matter from its original location.
- The preparation, washing, cleaning, or other treatment of minerals, ores, or other solid matter to make them suitable for commercial, industrial, or construction use.

Mining Commission

Parallel legislation, NCGS 143B-290, created the North Carolina Mining Commission. The Mining Commission is a 9-member citizens board appointed by the Governor. The Commission has the authority to establish Administrative Rules and to hear appeals. (See Appendix B).

DEHNR

The Act gives the authority to the Secretary of the North Carolina DEHNR to issue mining permits with site-specific operating and reclamation conditions. The Secretary has delegated the authority to grant or deny a mining permit to the Director of the Division of Land Resources.

The Land Quality Section reviews permit applications and recommends approval or denial of the permit to the Director of the Division of Land Resources. The decision is based upon the seven criteria outlined in G.S. 74-51 of the Act. (See **Chapter 3 - Application for New Mining Permits**).

The Land Quality Section may also request additional information from an applicant to address the seven criteria.

Note: A permit may be denied if one or more of the seven criteria is not met.

Before the permit is issued, specific conditions are written into the permit document to ensure compliance with the seven criteria throughout the life of the permit (up to 10 years). Mining permits require compliance with:

- Approved erosion and sediment control plans
- Approved vegetation and reclamation plans
- Buffer zone stipulations
- Requirements to protect public safety
- Blasting limitations
- Other permits (such as Air Quality permits, Water Quality permits, or approvals)

Coal Mining

The Act covers coal mining activities affecting one to two acres of surface area. The Office of Surface Mining and Reclamation of the U.S. Department of Interior regulates all coal mining areas larger than two acres.

Exploration Without Permit

Exploration of potential mine areas can be accomplished without a permit provided the following conditions are met:

- The total affected area is less than one acre.
- No extracted ores or mineral solids are sold, processed for sale, or consumed in the regular operation of a business.
- The purpose of the exploration is to determine the location, quantity, and quality of any natural deposit.

Exemptions from the Mining Act

The Act exempts the following activities:

- Mining operations affecting less than one acre of surface area (including haul roads, stockpiles, cleared areas, and processing areas).
- Processing plants that process minerals produced elsewhere and whose refuse affects less than one acre.
- Excavation or grading solely to aid in farming or construction on the same tract for purposes other than mining.
- Borrow pits used solely for the Department of Transportation (DOT) projects. However, such borrow pits must still meet the Act's minimum standards and are the responsibility of the DOT subject to the Mining Commission's approval.
- Mining on federal lands under a valid permit from the U.S. Forest Service or the U.S. Bureau of Land Management.

Fees

The Application for a Mining Permit includes the processing fees for different types of permit actions. To determine what fee is required for a particular permit action, refer to the fee schedule in the **Blank Mining Permit Application Form in Appendix D**.

Reclamation Bond

Before a permit can be issued for a site, a reclamation bond must be posted with DEHNR in an amount sufficient to cover the proposed reclamation of the operation.

The bond amount is from \$500.00 to \$5,000.00 per acre to be affected by the mining operation. The type of mining operation and proposed method of reclamation determine the per-acre bond amount. A \$500,000.00 blanket bond may be used to cover all operations that one company may have permitted in the State of North Carolina subject to conditions. (See **Chapter 17 - Reclamation Bonds**).

The bond must be in effect for the life of the mining permit. If the bond lapses at any time, the permit can be revoked by the DEHNR.

The reclamation bond amount can be increased or decreased during the life of the permit if the operation expands or reclamation has been completed on a section of the site.

Public Hearing

The Act mandates that a public hearing be held whenever the Director deems that relevant significant public interest exists concerning a new application or a modification that adds new adjoining owners of record to the permitted area. For more information regarding public hearings and public input, see **Chapter 8 - Public Input**.

Enforcement Procedures

The Act outlines enforcement procedures.

Note: Violations of an existing mining permit condition can result in the assessment of civil penalties of up to \$500.00 per day for each day of a continuing violation. Violations for operating a mine without a valid mining permit can result in civil penalty assessments of up to \$5,000.00 per day for each day of continuing violation.

Uncorrected violations can also result in:

- Injunctive relief
- Bond forfeiture
- Permit suspension
- Permit revocation
- Criminal penalties

Civil penalties collected are placed in the State of North Carolina's General Fund.

Annual Reclamation Report

Each year, the permittee must submit an **Annual Reclamation Report** for each permitted mine site to list the acreage affected and reclaimed.

The Land Quality Section inspects the mine site to validate the acreage. The operator may request that permanently reclaimed areas be released from the conditions of the mining permit, or keep the reclaimed land under the permit and request that the bond amount be reduced.

Reclaimed areas at the site may be released from the conditions of a mining permit only when reclamation has been completed by the operator and approved by the Land Quality Section. For more information on bond releases, see **Chapter 17 - Reclamation Bonds**.

Local Zoning

Many local governments have zoning ordinances or regulations which an applicant or mine operator should comply.

When different regulations conflict, follow the more restrictive regulation or contact the agencies that oversee each regulation to discuss alternatives.

Note: The Act does not supersede any ordinance or zoning passed by local governments.

Uranium Exploration

Individuals or companies interested in obtaining the proper permits for uranium exploration should contact the Mining Program with the DEHNR Land Quality Section at (919) 733-4574 for more information.

This action is necessary because uranium exploration is covered by a separate set of rules (15A NCAC 5G).

Definitions

The definitions in this section relate to mining operations across the State of North Carolina. The following definitions clarify terminology used in this manual and are not all inclusive.

Adjoining Landowner

A landowner adjoins a mine site if:

- The landowner's property boundary is the same as one or more of the mining permit boundaries.
- The landowner's land is partially covered by the mining permit.

Affected Acreage

The reclamation bond amount required by the Act is based upon the total amount of land approved by DEHNR to be affected at the site.

- "Affected land" means the surface area of land that is mined, the surface area of land associated with a mining activity so that soil is exposed to accelerated erosion, the surface area of land on which overburden and waste is deposited, and the surface area of land used for processing or treatment plant, stockpiles, nonpublic roads, and settling ponds.
- The affected acreage includes submerged lands, such as the areas in rivers for in-stream mining operations.
- The affected acreage does not include undisturbed buffers.
- Haul roads constructed solely for the mining operation and existing non-public roads that are upgraded for the mine operation are included in the affected acreage.
- Any disturbed area associated with the mining activity within the permitted boundaries that has not been approved as reclaimed or released in writing by DEHNR is considered affected acreage.

Buffer Zone

Buffer zones are required along:

- Permit boundaries
- Rights-of-way
- Natural watercourses and wetlands
- Cemeteries
- Structures

There are two types of buffers:

- **Unexcavated buffer** - No excavating may occur in unexcavated buffers. However, the buffer may be disturbed. For example, a haul road, vegetated earthen berm and/or erosion control measures may be constructed in an unexcavated buffer. Typically, larger unexcavated buffers are required along permit boundaries with a smaller undisturbed buffer on the outer (permit boundary) side. Unexcavated buffers are required along rights-of-way.
- **Undisturbed buffer** - Disturbances may not occur inside buffers designated as undisturbed. Haul roads cannot be constructed in undisturbed buffers. Undisturbed buffers cannot be used for sediment control measures. Sediment must be caught before it enters this type of buffer zone. Undisturbed buffers are required along natural watercourses, including wetlands.

Final Reclamation

All areas affected by mining operations at the site in question must be permanently reclaimed in accordance with the approved reclamation plan.

- No pools of water may be left as a part of reclamation unless they are considered acceptable water bodies or wetlands.
- All slopes in unconsolidated material must be graded to an acceptable slope and permanently revegetated.
- All waste material not approved to remain on-site must be removed.
- The operator must request release in writing.

Flyrock

Mine sites that blast have the potential to create flyrock. Flyrock is rock that is thrown by blasting beyond the guarded area of a mine site.

The guarded area of a mine site is the permitted area and any roadways or other areas that have been evacuated because of potential flyrock.

Note: Report any occurrence of flyrock to the Land Quality Section immediately.

Highwall

Any vertical or near vertical excavation slope exceeding 10 feet in height is considered a "highwall". All highwalls must be protected by a highwall barrier.

Highwall Barrier

Highwall barriers are required along any highwalls and must be substantial enough to prevent inadvertent entry into the excavation along a highwall. Highwall barriers may consist of:

- Fencing along the highwall
- Boulder barriers
- Earthen berms

If highwall protection is provided only at the permit boundary (not immediately adjacent to the highwall), substantial fencing may be required as deemed appropriate by DEHNR. However, the type of highwall barrier needed for each site may vary and must be evaluated on a site-specific basis.

Generally, deeper excavations require more substantial barriers.

Warning signs must be posted at the permit boundary or at the barrier.

Note: For a site to be released, the highwall barrier must be in place, along with the warning signs.

High Quality Waters

High Quality Waters are those streams, rivers and/or creeks classified as such by the Environmental Management Commission in its Administrative Rules, 15A NCAC 2B .0101(e)(5) - General Procedures.

High Quality Water Zones

High Quality Water (HQW) Zones encompass:

- Areas that are within 575 feet of High Quality Waters in the coastal counties covered by the N.C. Coastal Area Management Act (CAMA).
- Areas that are within one mile of and drain to High Quality Waters in the remainder of the state.

Partial Release

Areas within a permit that have been permanently reclaimed can be released from the permit if they are:

- Along permit boundaries
- In other areas where releasing the land would not cause confusion during site inspections by field representatives
- Will not create two separate permit boundaries

The permit boundary should remain unbroken.

Permitted Acreage

Permitted acreage includes the affected acreage and all unaffected acreage, such as buffers, reserves, etc., plus:

- Entrance roads constructed and used solely for the mining operation.
- Any interior haul roads.
- Waste disposal areas, if near or within the permitted area.
- Processing areas near the mine site.

Reclamation Plan

The Act requires that a Reclamation Plan be approved and followed for each permitted mine site.

The plan must address all areas previously affected by mining and any other areas to be affected during the life of the mining permit.

The Reclamation Plan must correspond directly to the mining plan.

The Reclamation Plan may be a written description for simple mine sites. However, for more complex sites, a Reclamation Map is required.

Release From Reclamation Plan

An operator can be released from the obligations of the Reclamation Plan and have the reclamation bond released from DEHNR by transferring the permit in its entirety or by completing final reclamation.

Safety Bench

A safety bench is required at the toe of the overburden cut slope and the top of a hard rock highwall. The minimum safety bench width is 10 feet.

Tailings Ponds

Some mining operations wash the mined material to remove fine, unwanted material called tailings. These tailings are stored in ponds.

Visual Screening

Sites (including processing areas) must be screened from public view to the extent feasible. Examples of typical visual screening methods include:

- Vegetated earthen berms
- Tree plantings at staggered spacing
- A combination of berms and tree plantings or fencing with screening slats

Each site is evaluated individually. The feasibility of screening is often directly related to the topography of the surrounding areas.

3 Applications for New Mining Permits

C O N T E N T S

| | |
|---|------|
| Introduction | 3-3 |
| Land Quality Section Review | 3-3 |
| Other Agency Review | 3-3 |
| Permit Review Criteria..... | 3-4 |
| Public Hearings..... | 3-6 |
| Time Frame for Hearing..... | 3-6 |
| Hearing Purpose..... | 3-6 |
| Submitting Comments..... | 3-7 |
| Hearing Format..... | 3-7 |
| Hearing Follow-up | 3-8 |
| Submitting Additional Information | 3-8 |
| Issuing Draft Permits | 3-9 |
| Issuing Permits | 3-10 |

3

Applications for New Mining Permits

Introduction

Once an application for a new mining permit is received, the Land Quality Section routes the application materials to other selected agencies for review.

Land Quality Section Review

The Land Quality Section has 60 days to review the application materials and either grant the permit, deny the permit, or request supplemental information.

If during routing of the application materials to other agencies the Land Quality Section finds a major deficiency, the applicant will be contacted as soon as possible by letter or phone.

Otherwise, after all agency comments (including the Land Quality Section field staff's comments) are received, the Mining Program staff completes its review of the application and comments.

If the application appears complete and approvable, a draft permit is sent to the applicant.

If the Land Quality Section finds that additional information is needed to complete their review, the information will be requested from the applicant as soon as possible.

(See Appendix C -- Application for a Mining Permit With Helpful Hints).

Other Agency Review

New applications are reviewed by the Land Quality Section Central Office, field office and several other agencies. To better address the criteria listed in G.S. 74-51 of the Act, the following agencies are routinely involved in the review of new applications:

- North Carolina Wildlife Resources Commission
- DEHNR Division of Environmental Management
 - Water Quality Section
 - Air Quality Section
 - Groundwater Section
- Department of Cultural Resources, Division of Archives and History

Other agencies that may be involved in the review of applications:

- DEHNR Division of Parks and Recreation
- U.S. Army Corps of Engineers
- DEHNR Division of Solid Waste Management
- DEHNR Division of Marine Fisheries
- DEHNR Division of Coastal Management

Permit Review Criteria

If any of the following seven criteria exist, then the permit can be denied:

1. The operation will violate the Act or the Administrative Rules.
2. The operation will have unduly adverse effect on potable groundwater supplies, wildlife or fisheries.
3. The operation will violate air, water or groundwater standards.
4. The operation will result in direct and substantial physical hazards to public health and safety or neighboring property, excluding the use of a public road.
5. The operation will have adverse effect on a publicly owned park, forest, or recreation area.
6. The operation will cause substantial sedimentation or acid water pollution.
7. The operation has uncorrected violations of the Act, rules or mining permit.

Table 3-1 outlines how the criteria are addressed through multi-agency reviews.

Table 3-1 Interagency Review of Mining Permit Applications

| Agency | Permit Review Criteria | | | | | | |
|--|------------------------|---|---|----|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| DEHNR Division of Land Resources Land Quality Section | • | • | • | • | • | • | • |
| DEHNR Division of Environmental Management, Water Quality Section | | • | • | | | • | |
| DEHNR Division of Environmental Management, Air Quality Section | | | • | | | | |
| DEHNR Division of Environmental Management, Groundwater Section | | • | • | ** | | | |
| North Carolina Wildlife Resources Commission | | • | | | • | • | |
| DEHNR Division of Parks and Recreation | | • | | | • | | |
| U.S. Army Corps of Engineers | | | • | | | • | |
| North Carolina Department of Cultural Resources, Division of Archives and History | | | | • | | | |
| DEHNR Division of Solid Waste Management | | | • | | | | |
| DEHNR Division of Marine Fisheries | | • | | | | • | |
| DEHNR Division of Coastal Management | | • | | | • | • | |

* Permit Review Criteria 1 through 7 are defined on the previous page.

**Applications that have the possibility of causing subsidence. (These applications may be routed to NC-DOT for review and comment).

Public Hearings

The Notice in the application informs the landowners adjacent to a mine site and the chief administrative officer of the local government of their right to request a public hearing regarding the application.

A written request for a public hearing must be filed with the Land Quality Section within 30 days of the issuance of the Notice, or the filing of the application, whichever is later.

Note: By law, the Notice must be sent by the applicant.

Public hearings can be held for new applications when the Director of the Division of Land Resources deems significant public interest has been expressed about the application, or when requested by the County or City Administrator.

For more information on Public Hearings, see **Chapter 8 - Public Input**.

Time Frame for Hearing

If the Director determines that a public hearing will be held, the hearing must be held within 60 days after the 30-day public hearing request period. The Land Quality Section staff works closely with the local government to secure a building to hold the hearing close to the proposed mine site.

At least 10 days before the hearing, the hearing date, time, and place are published in at least one newspaper with circulation covering the area of the proposed site. All adjoining landowners noted in the application form will be notified by registered mail of the public hearing.

Hearing Purpose

The purpose of the hearing is to hear the concerns of the public, gather additional information about the proposed mine site, and inform those in attendance of the review process for applications.

Submitting Comments

At the hearing, written and oral comments are accepted by DEHNR.

- It is recommended that written comments be provided along with any oral presentation.
- Three copies of written comments should be provided to the Land Quality Section.

Note: Comments must be relevant to the seven criteria listed in G.S. 74-51 of The Mining Act of 1971. The Mining Act does not address truck traffic, noise, property values, or aesthetics.

The comments received at the hearing will be incorporated into the review process. Any person unable to attend the hearing may also file written comments with DEHNR.

Written comments to be included in the public hearing summary must be submitted to the Land Quality Section Central Office within 10 days following the public hearing. However, comments on the application will be accepted and considered by DEHNR until a final decision has been made on the application.

Hearing Format

At the Public Hearing:

- The Land Quality Section briefly outlines the permit review process, including the criteria, and may describe any comments received to date.
- The hearing officer recognizes speakers and allows each speaker approximately 3 - 5 minutes to present comments.
- After all of the speakers have finished, the applicant may provide oral comments.
- Often, after the hearing has been concluded, the applicant may provide a question and answer session with the attending public.

Hearing Follow-up

After the hearing record is closed (10 days after the date of the public hearing), the hearing officer compiles the public hearing summary for the Land Quality Section's consideration in its review of the application.

Copies of the summary are available upon request and may include attachments received at the public hearing, if the attachments are not voluminous.

When a public hearing is held, the Director of the Division of Land Resources must decide to grant the mining permit, deny the mining permit, or request additional information from the applicant **within 30 days from the date of the public hearing.**

In making the decision, the Director reviews the summary, all of the comments provided from other agencies and interested parties, the application materials, any supplemental information submitted, and comments provided by the Land Quality Section staff.

The Director then makes a decision. If a new permit is issued, DEHNR notifies the adjoining landowners by mail of its issuance.

Submitting Additional Information

Prior to the permit being issued or denied, the applicant may be requested to address any relevant concerns that remain unaddressed. The applicant may be requested to contact other agencies to address these concerns.

The applicant must address all of the information requested. If the applicant feels that the previous submittal addressed the concerns in the letter from the Land Quality Section, either the Mining Program staff or the Regional Office should be called to discuss the issue(s) or explain in a letter how the previous submittal addressed the concerns.

Additional information must be submitted to the Land Quality Section **within 180 days** from the receipt of the letter requesting additional information.

If the 180-day period is not sufficient to gather and submit the additional information, an extension to the resubmittal period may be requested from the Director of the Division of Land Resources.

Such a request must be in writing and must be received by the Director prior to the expiration of the original 180-day period. The Director can extend the time period up to one year if the information cannot be provided within the original 180-day time period.

If the one-year extension still does not provide a sufficient amount of time, an extension can be requested in writing from the Mining Commission within the one-year time period. The Mining Commission may extend the resubmittal period for a reasonable amount of time.

If no extension of time is requested and the additional information has not been provided by the applicant, the Director will use the material in hand to either grant a permit with stipulations, or deny the application outright.

Issuing Draft Permits

Once DEHNR finds that the seven criteria have been satisfactorily addressed, a draft mining permit is sent by mail to the applicant. The draft is accompanied by a cover letter noting the required reclamation bond unless the applicant has already filed a blanket bond with the Land Quality Section.

Note: The draft permit does not give the applicant permission to mine at the mine site.

The applicant should review the conditions within the draft permit and, if there are no objections to the conditions, the required reclamation bond is sent with a cover letter noting the name of the applicant and name of the mine.

If the applicant has concerns with any of the conditions of the permit, the Land Quality Section mining program staff should be contacted to discuss the condition(s) prior to sending the reclamation bond.

Issuing Permits

When the Land Quality Section receives the required bond, the permit will be issued by the Director of the Division of Land Resources.

If an applicant has a blanket reclamation bond sufficient to cover the proposed mining operation, a draft permit is not sent to the applicant prior to permit issuance. Instead, once the application is found approvable, the Director of the Division of Land Resources will issue the mining permit.

When it has been approved by the Director, the applicant receives the permit. At this time, mining activities may begin.

All adjoining landowners to the mining operation and the local government are notified of the permit issuance by DEHNR through first class mail.

If an individual (other than the applicant) disagrees with the issuance of the permit, the permit issuance may be appealed through the correct process. (See **Chapter 8 - Public Input**).

4 Mining Permit Renewal Requests

C O N T E N T S

| | |
|--|------------|
| Introduction | 4-3 |
| Active Renewal Requests | 4-3 |
| Mine Map | 4-4 |
| Erosion and Sediment Control Design and Construction Details..... | 4-4 |
| Reclamation Plan | 4-5 |
| Inactive Renewal Requests | 4-5 |
| Undisturbed Sites | 4-5 |
| Previously Disturbed Sites | 4-6 |
| Mine Map | 4-6 |

4 Mining Permit Renewal Requests

Introduction

As indicated in the Act, renewal of an existing permit may be requested at any point during the two years prior to the expiration of the permit. The applicant may request that the permit be renewed for up to 10 years. The applicant is not required to resubmit information that remains unchanged from the prior application. However, the applicant must provide any additional information necessary to satisfy application requirements. The criteria are the same for renewal requests as for new applications (See Chapter 3 - Applications for New Mining Permits).

There are two types of renewals:

- Active
- Inactive

Active Renewal Requests

Active renewal requests are for sites that are currently in operation.

A renewal request containing any disturbed (unreclaimed) or active areas within the permitted boundary is considered an **active renewal**.

The appropriate processing fee must accompany the renewal request. The fee is based upon the total permitted acreage at the site.

The requirements for active renewal requests are the same as those for new applications except as noted in this section.

Mine Map

The mine map must include the following:

- Existing mine area and associated features, including --
 - Permit boundaries
 - Natural watercourses and wetlands
 - Haul roads
 - Stockpile areas
 - Berms
 - Buffer zones
 - Processing areas
 - Existing erosion and sediment controls
 - Adjoining landowners' names

- Proposed expansions of the pit and associated features, including --
 - Stockpile areas
 - New disturbances
 - New haul roads
 - New pits
 - Proposed erosion and sediment control measures.

(See Chapter 11 - Mapping Requirements).

Erosion and Sediment Control Design and Construction Details

If new land disturbances and/or new erosion and sediment control measures are proposed, a major modification request is required.

Supporting design calculations are required for erosion and sediment control measures that:

- Have not functioned adequately for the 6-month period prior to the renewal request
- Have not been approved during a prior permit action
- Have additional proposed disturbed areas draining into the existing measures.

Existing erosion and sediment control measures that have been previously approved and have functioned adequately for the 6-month period prior to the renewal request do not have to be accompanied by calculations. However, the applicant must show the measures on the mine map.

The applicant must provide typical construction details for all erosion and sediment control measures noted on the mine map. (See Chapter 12 - Erosion and Sediment Control).

Reclamation Plan

The applicant must provide a reclamation plan that corresponds with the mine map.

Inactive Renewal Requests

Inactive sites are either undisturbed sites where the operator wants to keep the site permitted or sites that were once in operation and are currently stabilized and inactive. There are two types of inactive sites:

- Undisturbed sites
- Previously disturbed sites

Calculations and construction details are not needed, as there are no erosion and sediment control measures within the permit boundaries. A Reclamation Plan is not required.

Once issued, the inactive renewal permit states that prior to re-activating the site, a modification request shall be submitted to and approved by the Land Quality Section.

To remain in compliance with the permit, a major modification request should be submitted at least 60 days prior to the permittee's intent to reactivate the site. The modification must be approved prior to any land disturbing activities in the modified area.

Undisturbed Sites

The site has never been in operation and has no disturbed area, pit or stockpile area.

Previously Disturbed Sites

The site may have been in operation before but has since been completely reclaimed and is currently inactive.

No erosion problems exist at the site.

Mine Map

For inactive renewal requests, the following information is required on the mine maps:

- Outline of permit boundaries
- Locations of haul roads, access roads
- Locations of creeks, rivers
- Locations of previously active pits, stockpile areas, processing facilities
- North arrow
- Legend
- Adjoining property owners' names
- Access from a state roadway

The processing fee for inactive renewal requests should be included with the request.

5 Mining Permit Modification Requests

CONTENTS

| | |
|--|-----|
| Introduction | 5-3 |
| Notification of Adjoining Landowners | 5-3 |
| Minor Modification Requests | 5-4 |
| Mine Map | 5-4 |
| Submission Requirements..... | 5-4 |
| Major Modification Requests | 5-5 |
| Mine Map | 5-5 |
| Submission Requirements..... | 5-5 |
| DEHNR Modifications..... | 5-6 |
| Written Notices | 5-6 |
| Right to Hearings | 5-6 |
| Final Decision | 5-6 |

5 Mining Permit Modification Requests

Introduction

There are two types of modification requests:

- Minor Modification Requests
- Major Modification Requests

A modification request may be submitted at any time, in order to:

- Change the existing permit conditions
- Change any operating aspect of the permitted mine operations
- Revise the Reclamation Plan
- Add additional, adjoining acreage to the existing permit

Notification Of Adjoining Landowners

Before submitting a modification request, the following must be notified:

- All new owners of record of added lands adjoining the permit boundaries, and
- The chief administrative officer of the local government.

To correctly notify all new adjoining owners, the Notice Form in the Mining Permit Application Form must be sent. (See **Appendix C -- Application for a Mining Permit With Helpful Hints**).

All new adjoining owners have the right to request a public hearing. See **Chapter 3 - Applications for New Mining Permits** for more information about public hearings.

Minor Modification Requests

Minor modifications involve adding undisturbed land adjoining the permit boundary, ownership changes, name changes, or bond substitutions. The following mine map and submission requirements must be met.

Details of Transfers and Corporate Name Changes are described in **Chapter 6 - Mining Permit Transfer Requests and Corporate Name Changes**. Information regarding bond substitutions is provided in **Chapter 17 - Reclamation Bonds**.

Mine Map

If a Mine Map is required, it must:

- Show existing permit boundaries
- Show the proposed addition of buffer areas
- Note that the new buffer area will remain undisturbed
- Locate all landowners adjoining the existing and proposed permit boundaries

Submission Requirements

If undisturbed land is added, the following information is required:

- A letter outlining the proposed modification, noting the acreage of land to be added.
- Completed Notice and Affidavit of Notification forms in the application form.
- New Land Entry Agreements, if applicable.
- Mine map with information described above.
- The processing fee for a minor modification is required before review of the request begins.

Note: Before initiating any land-disturbing activity in any areas designated as buffer (undisturbed land), a Major Modification Request must be submitted to the Land Quality Section for review and approval.

Major Modification Requests

Major modifications include:

- Adding adjoining land to be disturbed by mining operations
- Changing land-disturbing activities within the permitted area

Major modification requests involve a more in-depth review by the Land Quality Section than do Minor modifications.

Mine Map

An updated mine map, noting all of the requirements listed in **Chapter 11 - Mapping Requirements**, must be provided. The map must clearly identify the proposed modification and corresponding erosion and sediment control measures.

Submission Requirements

The following items must be provided:

- A letter describing in detail the modification request, including the amount of new acreage (not previously approved by a prior permit action) to be added to the permit.
- Mine map, as noted above.
- Completed Notice and Affidavit of Notification forms in the Mining Permit Application Form, in the event that new land will be added to the permit which will result in new owners of record of lands adjoining the proposed permit boundaries.
- New Land Entry Agreement, if new lands are to be added.
- An updated reclamation plan clearly showing the reclamation of the modified area and how it may affect reclamation of other areas within the permit boundaries.
- All proposed erosion and sediment control measures designed in accordance with **Chapter 12 - Erosion and Sediment Control**.
- Revised Mine Reclamation Bond Calculation Worksheet.
- Processing Fee as follows:

The fee is based upon the actual acreage to be affected by the modification if the area to be newly affected is inside the permitted area, or

If the modification involves adding land to the permitted area and any portion of the added land will be affected, then the fee will be based upon the **total** acreage to be added to the permit (not just the affected acreage).

DEHNR Modifications

Periodically DEHNR may modify existing permits to either update or add additional operating or reclamation conditions to a permit.

Departmental modifications may be generated by:

- Field inspections
- Finding that the existing conditions of a permit are failing to achieve the purposes and requirements of the Act
- When statutes and/or administrative rules change

Written Notices

The operator/permittee will be given a written notice of DEHNR's intent to modify the existing permit conditions and an explanation of the modifications.

Right to Hearings

The operator/permittee will also be notified of his right to a hearing on the proposed modification.

The date for the hearing will be not less than 30 days and not more than 60 days after the date of DEHNR's notice unless the operator/permittee and DEHNR agree on another date.

Final Decision

The Director will make a final determination on the modification. The decision will be based on the information obtained by the Land Quality Section staff and the information provided by the permittee.

6 Mining Permit Transfer Requests and Corporate Name Changes

C O N T E N T S

| | |
|--|-----|
| Introduction | 6-3 |
| Information Required for Transfers | 6-3 |
| Required From Original Permittee..... | 6-3 |
| Required From Proposed New Permittee..... | 6-4 |
| Approval of the Transfer Request | 6-5 |
| Information Required for Corporate Name Change | 6-5 |
| Approval of the Corporate Name Change | 6-5 |

6 *Mining Permit Transfer Requests and Corporate Name Changes*

Introduction

The Act allows for a permit to be transferred from one operator to another. However, the sale or lease of the operation alone does not constitute an approved transfer. **Until a site has been transferred by the DEHNR to another company or individual, the original permit holder is held responsible for any activities at the site.** The existing permittee is also liable for any violations at the site until the transfer has been completed and approved.

Information Required for Transfers

The following information is needed when transferring a mining permit from one company or individual to another. This information must be submitted to the Land Quality Section Central Office.

Required From Original Permittee

- **Two copies of a letter from the original permittee requesting that the permit be transferred from the company or individual to the new permittee. The permit name and number must be identified in the letter.**
- Non-refundable processing fee.

Required From Proposed New Permittee

- Two copies of a letter from the new permittee requesting transfer of all responsibilities and liabilities related to the mine site (including permit name and number).
- Two copies of updated mine map. The map must show all existing features of the operation, including erosion and sediment control measures, permit boundaries, limit of excavations, and other pertinent information.
- Two completed copies of pages 1 through 3 of the Mining Permit Application form.
- Two copies of the completed Land Entry Agreement from the Mining Permit Application form (page 19), signed by both the new permittee and the owner/owners of the land covered by the mining permit.
- A reclamation bond in the appropriate amount. This may be determined by completing page 15 of the Mining Permit Application form as noted above. Departmental bond forms must be used in posting the required bond unless approval to use an alternative has been obtained from DEHNR.

The name on the bond must be the same as the name listed on page 1 of the Mining Permit Application form. If the proposed permittee has an existing mining permit blanket bond sufficient to cover the new site, this step is not required.

Note: Any pit expansion or other land disturbing activity not previously approved under a prior permit action requires a separate major modification request. Expansion of permit boundaries also requires a separate modification request.

Approval of the Transfer Request

If the transfer request is approved, the new permit document will be sent to the new permittee. The permit document may have been updated to include operating or reclamation conditions to ensure compliance with the Act. **The permit should be read thoroughly.**

The prior permittee will be notified by letter of the approved transfer and the release from further responsibility for the site. The reclamation bond posted by the prior permittee will be returned with the release letter if it is no longer needed to cover other permitted sites.

Note: If the existing and/or proposed permittee is not in compliance with the Act at the site to be transferred, or at any other site, the transfer may be delayed until both permittees are in compliance at all of their sites.

Information Required for Corporate Name Change

For corporate name changes on which the permittee requests the name on the permit document to be changed, the following must be provided:

- Two copies of a letter stating each permit number, mine name, and new company name
- A non-refundable processing fee is required for each permit
- A new reclamation bond in the new company's name
- A new Land Entry Agreement for each permit

Approval of the Corporate Name Change

If the name change is approved, the appropriate pages of the permit document or a letter will be sent to the new permittee indicating the changes.

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7 Mining Permit and Bond Release Requests

CONTENTS

| | |
|---|-----|
| Introduction | 7-3 |
| Release Types | 7-3 |
| Partial Release of Areas Within the Existing Permitted Acreage..... | 7-4 |
| Submitting Partial Release Requests | 7-4 |
| Review Procedure | 7-5 |
| Complete Release of Permit and Reclamation Bond..... | 7-5 |
| Review Procedure | 7-6 |

7 Mining Permit and Bond Release Requests

Introduction

A request for release from mining permit conditions may be submitted to the Land Quality Section, either to the appropriate field office or to the central office in Raleigh, at any time during the life of the permit when the operator believes the area(s) or site has been sufficiently reclaimed and the operator wishes to release the reclamation bond from all or a portion of a permitted site.

Note: It is to the operator's advantage to keep the affected area to a minimum at the mine site(s) so that the reclamation bond may be kept to a minimum.

Appendix E--Reclamation Bond Release Request Form, is to be filled out by the operator/permittee to request release. Such a release request must be filed with the Land Quality Section before DEHNR will release any or all areas within a mining permit.

The approximate amount of acreage reclaimed within each reclamation category is required on the form.

Release Types

There are two types of release requests:

- **Partial release** of an area or areas within the permitted boundaries
- **Complete release** of all permitted areas and the reclamation bond

When an area or site has been released, the mine operator/permittee is no longer responsible for any further reclamation of that area or site under the Act unless the area or site is re-affected by the mining operation.

Prior to re-affecting the released area, the operator must apply for and obtain permit approval and adjust the reclamation bond as appropriate.

Partial Release of Areas Within the Existing Permitted Acreage

Partial releases consist of areas within the permitted boundaries that have been sufficiently reclaimed to be released by the DEHNR. Such releases may reduce an individual reclamation bond and possibly a blanket reclamation bond by reducing the affected area covered by the bond.

To avoid complicating field inspections and mine maps, the Land Quality Section discourages partial releases of areas within a permit that are not along existing permit boundaries. Released areas that are isolated in the middle of permitted areas are difficult to inspect, and the released acreage is difficult to identify.

Submitting Partial Release Requests

To request a partial release, submit:

- A Release Request Form to the Land Quality Section. (See **Appendix E -- Reclamation Bond Release Request Form**).
- Two copies of a mine map clearly indicating the area(s) and corresponding acreage to be released with respect to the active mining area and permit boundaries.

Review Procedure

After the release request has been received, the Land Quality Section field office will inspect the site to verify reclamation of the areas noted on the mine map.

If the areas are sufficiently reclaimed in accordance with the previously approved Reclamation Plan, the field office will recommend to the central office that the area(s) are to be released, and the reclamation bond amount will be re-evaluated.

The Director will send a letter approving the partial release to the operator/permittee and note whether the operator/permittee may need to replace or reduce the amount of the bond.

If the areas are not sufficiently reclaimed, the operator/permittee will be notified of the additional work that is needed to complete reclamation. For example, the ground cover may need an additional growing season to become permanently established.

If an area has been sufficiently reclaimed to be released but the operator/permittee does not wish to have the area removed from his permit, the area may be approved as **reclaimed and kept under the mining permit**.

The reclamation bond may be adjusted to remove the area approved as reclaimed upon request from the permittee.

Complete Release of Permit and Reclamation Bond

When an entire mine site has been reclaimed sufficiently to be released, the operator/permittee may request release from further reclamation responsibilities under the Act for the site.

A Reclamation Bond Release Request Form must be submitted to the Land Quality Section. (See Appendix E -- Reclamation Bond Release Request Form).

Review Procedure

When the completed Reclamation Bond Release Request Form is received, the Land Quality Section will inspect the site for complete reclamation of all areas affected by mining.

If the site is found to be completely reclaimed, the Land Quality Section field office will recommend to the Central Office that the site be released.

If an individual reclamation bond was posted for the particular site, the bond will be released and sent to the operator/ permittee by certified mail with a letter from the Director approving the release.

If a blanket bond was submitted to cover the particular site, as well as other sites operated by the same mining company, the bond will be re-evaluated and the operator/permittee notified if the bond may be replaced or the amount reduced.

If the site is not found to be completely reclaimed, the operator/permittee will be notified of the corrective actions to be taken at the site to complete reclamation.

8

Public Input

CONTENTS

| | |
|---|-----|
| Introduction | 8-3 |
| Public Hearings..... | 8-3 |
| Filing Comments for Review During Any Proposed Permit Action..... | 8-4 |
| Permit Appeal Process | 8-5 |
| Right to Hearing..... | 8-5 |
| Complaints | 8-5 |
| General | 8-5 |
| Blasting..... | 8-6 |

8

Public Input

Introduction

Any person may comment on a pending permit action, whether it is a new application, renewal request, modification request, or a transfer.

For new applications and modification requests that add new owners of record of lands that adjoin the permit boundaries, the operator must notify all adjoining owners and the Chief Administrative Officer of the local government of the proposed permit action and of their right to a public hearing.

Although other permit actions do not require an operator to notify adjoining owners, public comments submitted to the Land Quality Section are considered in the permit review process.

Public Hearings

All landowners adjoining the permit boundaries and the local government must be notified of:

- A new Mining Permit Application
- A modification request adding owners of record of lands that adjoin the permit boundaries

The adjoining owners and local government receive a completed Notice. See the application form in **Appendix C - Application for a Mining Permit With Helpful Hints**, which indicates:

- Approximate location, type, and size of the operation
- Applicant's name
- Permit action proposed
- Department's address.

DEHNR recommends that location or mine maps be sent to adjoining landowners with the Notice.

When the application has been received, the application and all accompanying materials become public information documents and may be reviewed at the appropriate Land Quality Section Regional Office or Central Office.

In the Notice, the recipients are advised that they may respond and state their concerns.

The Notice also informs the recipients of their right to request a public hearing on the permit application.

Parties believing that they are potentially affected by the proposed operation may request that DEHNR hold a public hearing.

Comments submitted at the public hearing must be related to the seven criteria outlined in G.S. 74-51. (See Chapter 3 - Application for New Mining Permits for a list of these criteria).

Local governments address issues such as:

- Hours of operation
- Noise
- Truck traffic
- Property values
- Other zoning issues

Filing Comments for Review During Any Proposed Permit Action

Any comments to be included in the public hearing record must be forwarded to the Land Quality Section within ten days after the hearing date. (See Chapter 3 - Application for New Mining Permits).

Any other comments received during the review of any proposed permit action, including new applications, renewal requests, modification requests and transfers, are considered during the application review.

The Land Quality Section will make every attempt to respond to all letters and telephone calls received concerning a pending application.

Permit Appeal Process

Each person or company listed as adjoining landowners in applications for new permits, or modifications adding new owners of record of lands adjoining the permitted area, and the Chief Administrative Officer of the local government, will receive a Notice of Issuance from the Land Quality Section when the permit has been issued.

Other persons who have commented to the Land Quality Section on new applications or modifications involving new adjoining landowners will also receive a Notice of Issuance.

A person claiming to be aggrieved by the issuance of a mining permit has the right to initiate a contested case hearing in the Office of Administrative Hearings (pursuant to NCGS 150B-23 of the Administrative Procedures Act).

**Office of Administrative Hearings
PO Drawer 27447
Raleigh, NC 27611-7447**

Right to Hearing

To preserve the right to a hearing, a petition for a hearing must be filed in the Office of Administrative Hearings within 60 days of the mailing of the Notice of Issuance of the permit.

Complaints

General

Complaints about mine sites may be filed with the Land Quality Section for inspection and/or follow-up.

Only complaints related to issues within the jurisdiction of the Act will be investigated. Complaints on a mine site regulated by another agency will be directed to the appropriate Division or Department. (See **Chapter 10 - Other Permit Requirements** and **Chapter 21 - Agency Contacts** for information on other agencies).

Some issues, such as water quality, air quality, and groundwater complaints, are jointly investigated by the Land Quality Section and other regulating agencies.

Any violation of the Act or mining permits will be handled as outlined in **Chapter 20 - Land Quality Section Inspection and Enforcement**.

Blasting

Blasting complaints are filed with the Land Quality Section, and should include the following information:

- Date and approximate time of the blast
- Weather conditions at the time of the blast (clear, cloudy, raining, etc.)
- Severity of the blast in comparison to other blasts
- Location of the home, building, or other structure where blast was felt
- Any flyrock noted in the area from the blast in question

Upon receiving a blasting complaint, the Land Quality Section:

- Inspects the site
- Inspects any associated flyrock and alleged damages
- Requests blasting records from the operator

The Land Quality Section will evaluate the blasting records to verify compliance with the blasting conditions in the mining permit.

Exceeding any permit limitations constitutes a violation of the mining permit.

The operator is notified of a violation in accordance with the procedure outlined in **Chapter 20 - Land Quality Section Inspection and Enforcement**.

Note: The Land Quality Section does not perform quantitative economic certificates of damage from mine blasting or flyrock. If property damages are incurred from blasting at a mine site or from flyrock, contact a private consultant to investigate the damages.

9 Denial of Permit Actions or Requests

C O N T E N T S

| | |
|---|-----|
| Introduction..... | 9-3 |
| Permit Review Criteria..... | 9-3 |
| Applicant/Permittee Appeal Process..... | 9-4 |

9

Denial of Permit Actions or Requests

Introduction

This chapter describes how the criteria relate to permit denial and the appeal process.

Permit Review Criteria

Most permit actions, including new applications, renewal requests and modification requests, are reviewed with respect to the seven criteria outlined in The Mining Act of 1971 (G.S. 74-51(1-7)). (See Chapter 3 - Applications for New Mining Permits). A permit action may be denied if one or more of the seven criteria is present.

If DEHNR review finds that one or more of the seven criteria is present, a letter will be sent by certified mail to the applicant/permittee explaining the review process and the reason for denial of the permit action.

The letter also explains the modifications, if any, that could be made to the application or permit action that would make it acceptable.

Applicant/Permittee Appeal Process

The applicant/permittee may then modify the application or appeal DEHNR's findings by filing a petition for a contested case with the Office of Administrative Hearings at the following address:

**Office of Administrative Hearings
PO Drawer 27447
Raleigh, NC 27611-7447**

Such an appeal must be filed within 30 days of DEHNR's decision to deny the permit action.

The Office of Administrative Hearings:

- Hears the evidence
- Compiles the record
- Recommends a final decision

That recommendation is then taken before the Mining Commission, which makes the final agency decision in a contested case.

The Mining Commission decision may be appealed to the North Carolina Superior Court.

10 Other Permit Requirements

CONTENTS

| | |
|---|------|
| Introduction | 10-3 |
| Division of Environmental Management | 10-4 |
| Air Quality Permit | 10-4 |
| Type of Project | 10-4 |
| Requirements | 10-4 |
| Process Time | 10-4 |
| Public Hearing | 10-4 |
| Fees | 10-4 |
| Permit Duration | 10-4 |
| Contact | 10-5 |
| Water Quality Permits | 10-5 |
| NPDES Permit | 10-5 |
| Type of Project | 10-5 |
| Requirements | 10-5 |
| Process Time | 10-5 |
| Public Hearing | 10-5 |
| Fees | 10-6 |
| Permit Duration | 10-6 |
| Contact | 10-6 |
| Permit For Waste Not Discharged to Surface Waters | 10-6 |
| Type of Project | 10-6 |
| Requirements | 10-6 |
| Process Time | 10-6 |
| Public Hearing | 10-7 |
| Fees | 10-7 |
| Permit Duration | 10-7 |
| Contact | 10-7 |
| 401 Certification | 10-7 |
| Requirements | 10-7 |
| Process Time | 10-8 |
| Public Hearing | 10-8 |
| Fees | 10-8 |
| Permit Duration | 10-8 |
| Contact | 10-8 |

| | |
|---|-----------|
| Stormwater Certification | 10-8 |
| Type of Project..... | 10-8 |
| Requirements..... | 10-8 |
| Process Time | 10-9 |
| Public Hearing..... | 10-9 |
| Fees | 10-9 |
| Certification Duration..... | 10-9 |
| Contact..... | 10-9 |
| Division of Land Resources | 10-9 |
| Dam Safety Permit..... | 10-9 |
| Type of Project | 10-9 |
| Requirements | 10-9 |
| Process Time..... | 10-10 |
| Public Hearing | 10-10 |
| Permit Duration | 10-10 |
| Fees..... | 10-10 |
| Contact..... | 10-10 |
| Division of Solid Waste Management | 10-11 |
| Solid Waste Management Permit | 10-11 |
| Type of Project | 10-11 |
| Requirements | 10-11 |
| Process Time..... | 10-11 |
| Fees..... | 10-11 |
| Public Hearing | 10-11 |
| Permit Duration | 10-11 |
| Contact..... | 10-12 |
| U. S. Army Corps of Engineers..... | 10-12 |
| Section 404 - Discharge Into and Excavation of Waters and Wetlands of the United States | 10-12 |
| Section 10 - Work in Navigable Waters..... | 10-12 |
| Type of Project | 10-12 |
| Requirements | 10-12 |
| Public Hearing | 10-13 |
| Fees..... | 10-13 |
| Contact..... | 10-13 |
| Washington, NC..... | 10-13 |
| Raleigh, NC..... | 10-14 |
| Wilmington, NC..... | 10-15 |
| Asheville, NC..... | 10-16 |

10 *Other Permit Requirements*

Introduction

In addition to a mining permit required for all mining operations that exceed one acre in size, most mining operations require one or more additional regulatory permits.

Other state permits most often required include air quality and water quality permits.

However, depending on individual circumstances, several other state and federal permits may be required.

In order to avoid confusion and unnecessary delays, an applicant should request a pre-application conference with appropriate DEHNR personnel to determine exactly what permits will be required.

Also, DEHNR publishes an **Environmental Permits Directory**, available from each DEHNR regional office.

The following is a condensed listing of state and federal permits most often required for mining operations.

Division of Environmental Management

Air Quality Permit

Type of Project

Required for any person who:

- Establishes or operates any air contaminant source
- Builds, erects, uses, or operates any equipment which may result in emissions of air contaminants or is likely to cause air pollution

Requirements

Application for an air permit should be made as soon as the construction designs are complete. The application must be filed with the DEHNR Division of Environmental Management, Air Quality Section, Air Permits Branch or the appropriate Regional Office.

Process Time

For State of North Carolina air quality permits, the processing time is normally 60 to 80 days with a 90-day statutory limit for a complete air quality permit application.

The processing time for a PSD (Prevention of Significant Deterioration) application may range from 180 days to one year.

Public Hearing

Public hearings are at the discretion of the DEHNR Division of Environmental Management Director.

Fees

A non-refundable permit or permit renewal application processing fee shall accompany each application. After permit issuance, annual administrative and compliance fees are required.

Permit Duration

Air Quality Permits may be issued for a period not to exceed 5 years. Upon written request, permits may be renewed for periods not to exceed 5 years.

Contact

Appropriate Regional Office or local Air Pollution Control Agency or:

**Division of Environmental Management
Air Quality Section
Air Permits Branch
Post Office Box 29535
Raleigh, North Carolina 27626-0535
Telephone (919) 715-6235**

Water Quality Permits

NPDES Permit

Type of Project

The National Pollution Discharge Elimination System (NPDES) permit is required for any project involving the construction, alteration, and/or operation of any sewer system, treatment works, or disposal system and certain stormwater runoff which would result in a discharge into surface waters.

Requirements

The State of North Carolina has full authority to administer the NPDES Permit Program.

The application shall be filed with the Division of Environmental Management at least 180 days prior to new construction or expansion of existing facilities.

Separate application forms are available for municipal, agricultural, manufacturing, mining, commercial, stormwater, or residential discharges.

Process Time

Processing time is normally 120 to 180 days from receipt of the completed application.

Public Hearing

Public hearings are at the discretion of the DEHNR Division of Environmental Management Director.

Fees

Permit application, processing, annual administrative, and compliance monitoring fees are associated with NPDES permits. A fee schedule may be obtained from the Division of Environmental Management.

Permit Duration

Permits do not exceed 5 years. Modifications or extensions of existing permits shall be requested at least 180 days prior to the expiration of the permit.

Contact

Appropriate Regional Office or:

**Division of Environmental Management
Permits and Engineering Unit
Water Quality Section
Post Office Box 29535
Raleigh, North Carolina 27626-0535
Telephone (919) 733-5083**

***Permit For Waste
Not Discharged
to Surface Waters*****Type of Project**

A permit is required for any project involving the construction, alteration, or extension and/or operation of any sewer system, treatment works, or disposal system which does not discharge to surface waters.

Requirements

The application shall be filed at least 90 days prior to initiation of construction. Supporting information, including plans and specifications signed and sealed by a licensed North Carolina professional engineer, is required for any project that involves closed systems or recycle disposal systems and treatment works.

Process Time

The processing time is a 90-day statutory time limit upon receipt of a complete application.

Public Hearing

Public hearings are at the discretion of the DEHNR Division of Environmental Management Director.

Fees

Permit application, processing, annual administrative, and compliance monitoring fees are associated with the non-discharge permit. A fee schedule can be obtained from the DEHNR Division of Environmental Management.

Permit Duration

Permit duration is set as deemed appropriate by the DEHNR Division of Environmental Management Director. Requests for renewals must be submitted 6 months prior to date of expiration.

Contact

Appropriate Regional Office or:

**Division of Environmental Management
Permits and Engineering Unit
Water Quality Section
Post Office Box 29535
Raleigh, North Carolina 27626-0535
Telephone: (919) 733-5083**

401 Certification**Requirements**

Any person engaged in an activity which may result in a discharge to navigable waters of the United States and requires a federal permit must obtain a 401 Certification that such discharge will be in compliance with applicable State water quality standards.

The application shall be filed prior to project initiation with the Division of Environmental Management, Water Quality Section.

An application for a U.S. Army Corps of Engineers Section 404 Permit is considered as an application for a water quality certification.

The applicant must send an application to the state for initiation of the certification process. The documentation requires:

- Project description
- Nature of discharge
- Maps

Public notice is issued at least 15 days prior to the proposed final action and a public hearing may be held.

Process Time

130-day regulatory limit; the processing time is normally 45 days.

Public Hearing

A public hearing is not required, but may be allowed at the discretion of the DEHNR Division of Environmental Management Director.

Fees

Not applicable

Permit Duration

Not applicable

Contact

Appropriate Regional Office or:

**Division of Environmental Management
Water Quality Section
Post Office Box 29535
Raleigh, North Carolina 27626-0535
Telephone (919) 733-5083**

Stormwater Certification**Type of Project**

A Stormwater Certification is required for all permitted mining operations.

Requirements

Requirements vary and are affected by the classification of the waters to which project drains. The Division of Environmental Management Regional Office in the project area will provide site-specific requirements.

Generally any mining permit meeting the requirements of **Chapter 12 - Erosion and Sediment Control** will meet state stormwater standards.

Process Time

Normally 90 days from receipt of complete application.

Public Hearing

Not applicable

Fees

A fee schedule may be obtained from the Division of Environmental Management.

Certification Duration

For the life of the project.

Contact

Appropriate Regional Office or:

**Division of Environmental Management
Water Quality Section
Stormwater Group
Post Office Box 29535
Raleigh, North Carolina 27626-0535
Telephone (919) 733-5083**

Division of Land Resources

Dam Safety Permit

Type of Project

Many mining operations require an impoundment to store water, store waste or tailings, or for other purposes.

A permit is required prior to beginning dam construction or modification if:

- The dam is high hazard
- The dam is 15-feet or more in height, and
- The impoundment capacity is 10-acre-feet or more

Requirements

A complete application, including preliminary engineering plans and specifications, must be filed at least 60-days prior to the proposed construction date.

The plan must be approved by the Director of the DEHNR Division of Land Resources before construction can start.

A North Carolina registered professional engineer must:

- Prepare the plans
- Inspect the construction
- Certify that the dam was constructed according to the approved plans before permission to impound may be granted.

On-site inspections may be made during construction as well as periodic inspections after completion.

Process Time

The processing time is a 60-day statutory limit upon receipt of a complete application.

Public Hearing

Not applicable.

Permit Duration

Permit activity must be initiated within one year of issuance.

Fees

A non-refundable application processing fee is required with the filing of an application for construction, modification, or removal of a dam.

Any additional application processing fees are due when as-built plans are submitted; the fees are based upon a percentage of the cost of construction.

Contact

Appropriate Regional Office or:

**Division of Land Resources
Land Quality Section
Post Office Box 27687
Raleigh, North Carolina 27611-7687
Telephone (919) 733-4574**

Division of Solid Waste Management

Solid Waste Management Permit

Type of Project

If solid waste other than mining refuse is disposed of within a mining permitted area, either during active mining operations or after mining operations cease, a Solid Waste Management Permit must be obtained from the DEHNR, Division of Solid Waste Management.

Requirements

The North Carolina Solid Waste Management rules describe the requirements for completing a permit application for a specific type of facility and, in some cases, for a special waste type.

The application process is also defined according to the type of facility.

Applications are submitted to the Solid Waste Section of the DEHNR Division of Solid Waste Management.

Process Time

The processing time for an application varies based on the type of facility. From the receipt of a completed application, typical review periods for the different facilities are:

| | |
|---------------------------|-------------|
| Transfer Stations: | 30-60 days |
| Treatment and Processing: | 60-90 days |
| Disposal (each phase): | 90-180 days |

Fees

A fee schedule is available on request.

Public Hearing

Not applicable.

Permit Duration

Permits are subject to review every five years.

Contact

Appropriate Regional Office or:

**Division of Solid Waste Management
Solid Waste Section
Post Office Box 27687
Raleigh, North Carolina 27611-7687
Telephone: (919) 733-0692**

U. S. Army Corps of Engineers

**Section 404: Discharge
Into and Excavation of
Waters and Wetlands
of the United States**

**Section 10: Work in
Navigable Waters**

Type of Project

A 404 Permit may be required for any activity in water or wetlands which would excavate materials or discharge dredged or fill materials into waters of the United States and adjacent wetlands.

Before beginning any work in waters or wetlands, or before beginning construction or other work in navigable waters, it is advisable to contact the Regulatory Branch in the Wilmington District of the U. S. Army Corps of Engineers (COE) to obtain a determination as to the necessity for a general (nationwide), or individual permit.

Requirements

If a permit is required, a formal application must be submitted.

Instructions for preparing applications are available from the Wilmington District or its field offices.

The COE will thoroughly analyze the impacts of the proposed activity upon the public interest. In determining the public interest, the COE will consider all facets of the proposed activity.

A public notice is issued on most permit applications.

Public Hearing

A public hearing may be held before the District Engineer issues or denies a permit.

Fees

Not applicable

Contact

For additional information regarding such items as application requirements, process time, and permit duration, contact the following or one of the field offices listed on the following pages.

**U. S. Army Corps of Engineers
Wilmington District Regulatory Branch
Post Office Box 1890
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11 Mapping Requirements

CONTENTS

| | |
|---|------|
| Introduction | 11-3 |
| Permit Life and Mining/Reclamation Information..... | 11-3 |
| Map Types..... | 11-4 |
| Minimum Requirements for Mine Maps..... | 11-4 |
| Mining Construction Details..... | 11-6 |
| Map Maker Information..... | 11-7 |
| Affected Acreage Table..... | 11-7 |
| Minimum Requirements for Reclamation Plans | 11-8 |
| Reclamation Construction Details..... | 11-9 |

11 Mapping Requirements

Introduction

As noted in Section B of the Mining Permit Application Form and in the North Carolina Administrative Code, mine maps must meet certain minimum requirements. Reclamation plans may be in written form and/or accompanied by supplemental material in map form.

However, often these minimum requirements either do not apply to the type of mining operation proposed or additional clarification is needed on the maps.

This chapter of the Surface Mining Manual describes the minimum requirements for mine maps and reclamation plans. It also suggests additional information that would be helpful if provided on the maps or in the written material submitted with the maps.

Permit Life and Mining/Reclamation Information

For both mine maps and reclamation plans, the mining and reclamation information provided must correspond to the permit life.

For example, if a new applicant requests a permit for 10 years, the mine maps and reclamation plans must show the predicted mining and reclamation activities for the 10-year period. In reality, the applicant may have a conceptual plan for the life of the mine that may be 100 years. However, such a plan could not be approved, as mining permits may only be issued for up to 10-year periods. **Information should focus on the permit life, not the mine life.**

Map Types

Mine maps and reclamation plans may be:

- Scaled drawings
- Enlarged topographic maps
- Aerial photographs

However, the maps must clearly and accurately depict the existing site conditions. In some cases, aerial photos are submitted with scaled and engineered drawings to more clearly illustrate site conditions and support the proposed mining plan.

The type of mining operation, location of the proposed activity, the surrounding topography, and the site's potential for off-site damage dictate the complexity of the maps required. For example, a 5-acre sand pit in the Coastal Region may require simpler maps than a 100-acre crushed stone quarry in the Mountain Region.

Minimum Requirements for Mine Maps

As outlined in the North Carolina Administrative Code and in the Mining Permit Application form, the following items must be clearly indicated and labeled on mine maps:

- Property lines of the tract or tracts on which the mining activity is to be located, including easements and rights-of-way
- Existing or proposed permit boundaries. Distinguish between permit boundaries and property lines by using differently weighted lines, different line symbols, or some other means of clearly distinguishing the two.
- Initial and ultimate limits of clearing and grading. Distinguish clearing limits from other lines with a unique symbol, color, etc.
- All buffer zones and their widths. (See Chapter 2 - Overview of the Mining Act of 1971 and the *Definitions* section for additional information on buffer zones).
- All pits/excavations with associated acreage
- All stockpile areas with associated acreage

- Location of planned and existing on-site buildings
- Acreage of all temporary and/or permanent overburden disposal areas. If disposal areas are off-site, their locations on additional maps may be provided, with letters of approval from the appropriate agency.
- Location and acreage of all processing plants. If the processing plant is located a significant distance away from the mine site, its location must be provided on a map.
- Locations and names of all streams, rivers and lakes. Wetlands within the permit boundaries or adjacent to the site should also be noted on the maps.
- Acreage of all settling and/or processing wastewater ponds. Discharge points should be noted. Access for periodic clean-out should be provided and noted on the maps.
- Location of 100-year floodplain limits
- Location and acreage of all planned and existing access roads and on-site haul roads. Existing, pre-mining roadways or paths should be clearly indicated as such, especially if they are not to be used by the operation.
- Location and dimensions of all proposed sediment and erosion control measures
- Names of owners of record of all adjoining land. Owners across state roads, streams and rivers should also be noted on the maps
- Map legend
- Name of applicant
- Name of mine
- North arrow
- County
- Scale
- Symbols used and corresponding names

Mining Construction Details

For mine maps the following details must be provided:

- Typical construction and/or cross-sectional details for all:
 - Erosion and sediment control measures
 - Roadways
 - Channels

If several of the same structures are specified on the mine map(s), the detail page may have a typical detail with a chart noting individual dimensions.

The structures should be individually labeled on the mine map(s) and in the chart on the detail sheet.

- Cross-sectional views through all proposed or existing pits; the cross-sectional views must note, if applicable:
 - Safety benches
 - Highwall barriers
 - Estimated depth of the pit
 - Benching
 - Normal water depth and slopes of pit walls

Note: In cases where the excavation encroaches upon a stream, property or permit boundary or easement, the stream, boundary or easement must also be shown on the pit cross-section.

Map Maker Information

If a permit is issued, it will refer to the specific mine map approved with the application. Therefore, the following information must be clearly shown on the map:

- Date the map was prepared or revised.
- Name, title and phone number of person preparing map.
- Map scales must, at a minimum, meet the following guidelines:

| PERMITTED ACREAGE | MAP SCALE |
|--------------------------|-------------------|
| 0-99 Acres | 1 inch = 50 feet |
| 100-499 Acres | 1 inch = 100 feet |
| 500+ Acres | 1 inch = 200 feet |

Affected Acreage Table

A table must be provided on the mine map that clearly lists the approximate affected acreage of:

- Tailings/sediment ponds
- Stockpiles
- Waste piles
- Processing area/haul roads
- Mine excavation, and
- Any other major aspect of the mining operation that affects or disturbs other lands within the permit area

A table similar to the following is acceptable:

| Category | Affected Acreage |
|----------------------------|-------------------------|
| Tailings/Sediment Ponds | |
| Stockpiles | |
| Waste Piles | |
| Processing area/Haul Roads | |
| Mine Excavation | |
| Other | |
| | |

Minimum Requirements for Reclamation Plans

Reclamation plans must correspond with the mine maps. For example, if the mine maps note that for the life of the permit the disturbed area would expand to 10 acres, then the reclamation plan must clearly indicate the method of reclamation for that 10-acre disturbed area.

If a reclamation map is used to illustrate the reclamation plan, the map must clearly address the reclamation of all areas affected by mining activities within the permitted boundaries. The following items must be labeled or illustrated on the reclamation map:

- Property lines, permit boundaries, and buffers.
- Outlines of all permanent bodies of water. Note whether the water bodies were existing or created by the mining activity. The permanent access points to the water body and all water outlet points must be indicated.
- Outlines of all highwalls to be left at final reclamation. Show the locations of permanent highwall protection.
- Lines of flow or topographic information for areas to be reclaimed as positively drained and permanently revegetated areas
- Method of reclamation of all stockpiles and overburden disposal areas
- Method of reclamation of the processing area and any buildings within the permit boundaries

Note: If a reclamation map is not used, the above information must be addressed in a written narrative.

Reclamation Construction Details

For reclamation plans, the following details must be provided:

- Typical construction and/or cross-sectional details for all erosion and sediment control measures to be installed (or left in place) for any reclamation efforts.
 - A typical detail may be provided if many of the same structures are specified in the reclamation plan.
 - The individual dimensions in a chart should be noted on the detail.
 - Each measure's location must be addressed in the reclamation plan.
- Cross-section details through any proposed body of water to be left as a part of final reclamation.
 - The expected water depth, side slopes, point of overflow, and access to the water, if applicable.
 - The highwall barrier, safety bench, and soil-rock interfaces, if applicable.
- Cross-sectional details of all excavations to be reclaimed as positively drained and permanently revegetated areas.
 - The grades of all slopes to be left at final reclamation.
 - The maximum depth of the excavation.
 - The highwall barriers, safety bench, and soil-rock interface, if applicable.

- Construction details for all highwall barriers, roads, ditches or channels to be left as part of final reclamation.
 - All dimensions and specifications for all highwall barriers.
 - All dimensions and the methods of stabilization for all roads, ditches, and channels.
 - Side slopes and bottom widths for all ditches and channels.

Note: Use a chart when several of the same structures are specified in the reclamation plan.

12 Erosion and Sediment Control

CONTENTS

| | |
|--|-------|
| Introduction | 12-3 |
| Temporary Erosion and Sediment Control | 12-4 |
| Temporary Sediment Traps | 12-4 |
| Minimum Criteria for Sediment Traps | 12-6 |
| Silt Fence | 12-8 |
| Temporary Diversions | 12-10 |
| Construction Entrance | 12-12 |
| Temporary Slope Drains | 12-14 |
| Temporary Stream Crossings | 12-16 |
| Check Dams | 12-18 |
| Permanent Erosion and Sediment Control | 12-21 |
| Sediment Basin | 12-21 |
| Sediment Storage | 12-23 |
| Spillway System | 12-23 |
| Criteria for Spillway Structures | 12-24 |
| Permanent Ditches and Channels | 12-28 |
| Permanent Stream Crossings | 12-31 |
| Pipes | 12-33 |
| Pipe Outlet Protection | 12-34 |
| Rock Dams | 12-37 |
| Special Considerations | 12-39 |
| High Quality Waters | 12-39 |
| Floodplains | 12-40 |
| Wetlands | 12-40 |

12 Erosion and Sediment Control

Introduction

Erosion and sediment control measures for mining operations are classified as either temporary or permanent.

Temporary measures are designed to function for less than one year.

Permanent measures function for more than one year and have more stringent design criteria.

Note: The design criteria for erosion and sediment control measures to be installed on mine sites are, under some circumstances, more stringent than those specified for short-term construction projects in the North Carolina Erosion and Sediment Control Planning and Design Manual. This manual is available from the Land Quality Section of DEHNR.

The North Carolina Erosion and Sediment Control Planning and Design Manual is referenced throughout this section as a general guide for calculations, not for design criteria.

Note that the following erosion and sediment control standards meet Environmental Protection Agency (EPA) Stormwater regulations.

The issuance of any mining permit meeting these EPA standards qualifies the permittee to obtain the final stormwater permit from the DEHNR Division of Environmental Management.

Temporary Erosion and Sediment Control

Temporary Sediment Traps

Temporary sediment traps are sediment control measures that will be used for less than one year. Traps may not be located in:

- natural watercourses
- where more than 5 acres of drainage will be intercepted by the measure.

The trap must have a storage capacity of at least 1,800 cubic feet of sediment per disturbed acre of drainage area, and must safely pass the 10-year design storm for the total drainage area.

- The sediment storage zone may be created by excavating in natural ground or by constructing an embankment. However, the trap embankment should not exceed 5 feet in height.
- For trap efficiency, the length of the trap should be at least twice the width of the trap.
- Trap depth should not exceed 5 feet. The more efficient trap is a shallow trap with a large surface area.
- To pass the 10-year design storm, the trap must be provided with a spillway section:
 - the spillway should be constructed from North Carolina Department of Transportation (NCDOT) Class B or Class 1 erosion control stone or an equivalent, and faced with 1 foot thickness of washed stone (NCDOT # 57 stone or equivalent)
 - key the stone spillway into natural ground and carry stone up the sides of the embankment to prevent erosion of the sides. A filter liner should always be placed between the stone and soil grade.

- a weir section in the center of the spillway section, approximately 1.5 feet lower than the top of the embankment, must be provided. See Table 12-1 for minimum weir lengths for spillways.

Note: The spillway must be designed to safely pass the 10-year storm event for the total drainage area.

Traps should be inspected after every rainfall event and cleaned out when the designed sediment storage zone is half full. Washed stone must be replaced when it becomes clogged with sediment.

- All dimensions on the construction detail provided are to be included with the mine map. If there are several traps, a table referring to the traps by number or letter with the specific dimensions for each trap noted will suffice.

Table 12-1. Weir Length Required for Measured Drainage Areas

| Drainage Area (acres) | Weir Length (feet) |
|-----------------------|--------------------|
| Up to 1 | 4 |
| 2 | 6 |
| 3 | 8 |
| 4 | 10 |
| 5 | 12 |

Minimum Criteria for Sediment Traps

The greatest potential for off-site sedimentation occurs during the initial stages of land-disturbance, such as clearing and grubbing, before actual excavation begins.

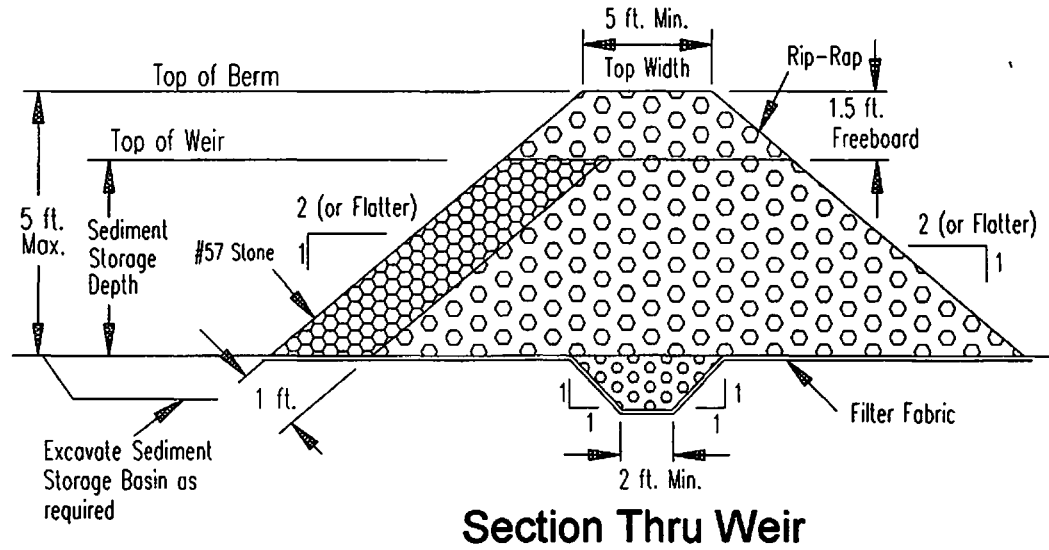
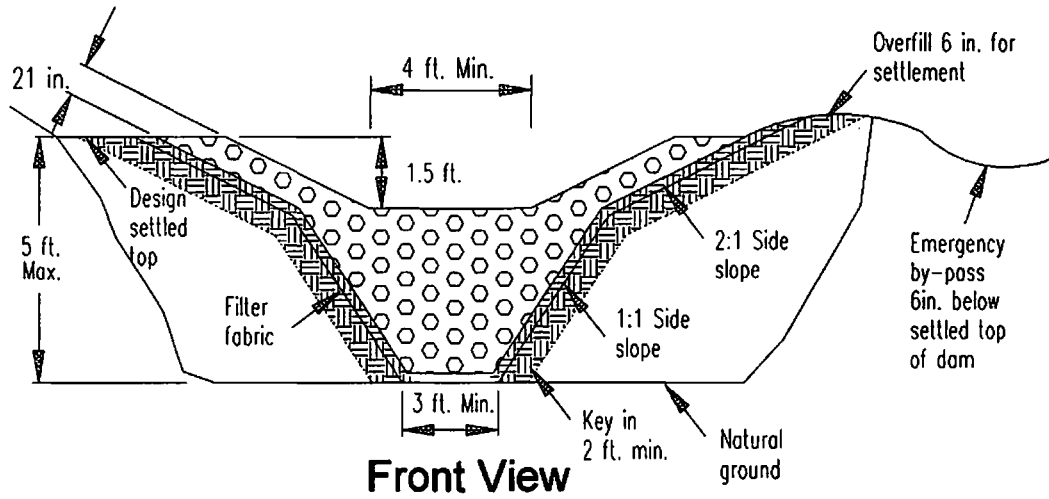
For new mining operations where drainage from affected areas will be directed into the excavation (once established) and where pit water is discharged from the pit by mechanical means, a minimum size trap may be specified on the mine map and installed in the field without supporting design calculations.

All of the following restrictions must be met before the minimum size trap, specified in Figure 12-1, may be used without supporting design calculations:

- The site must be located in the Coastal Plain or in sandy soils with high infiltration rates.
- The trap must be temporary.
- Drainage from affected areas at the mine site must be directed into the established mine excavation within 6 months of initiation of land-disturbing activities.
- 50-foot undisturbed buffers must be maintained between land-disturbing activities and any natural watercourses.

Note: Supporting calculations are required for any traps that are:

- smaller than the minimum dimensions noted in Figure 12-1
- for drainage areas greater than 5 acres
- for any sites that do not meet all of the criteria listed above.



| Sediment Trap No. | Storage Depth | Bottom Width | Bottom Length | Weir Length |
|-------------------|---------------|--------------|---------------|-------------|
| | | | | |

Note:

1. Provide Sediment Storage Depth, Bottom Length, Bottom Width and Weir Length for each Sediment Trap in tabular form.
2. Excavate sediment storage area as needed.

Not To Scale

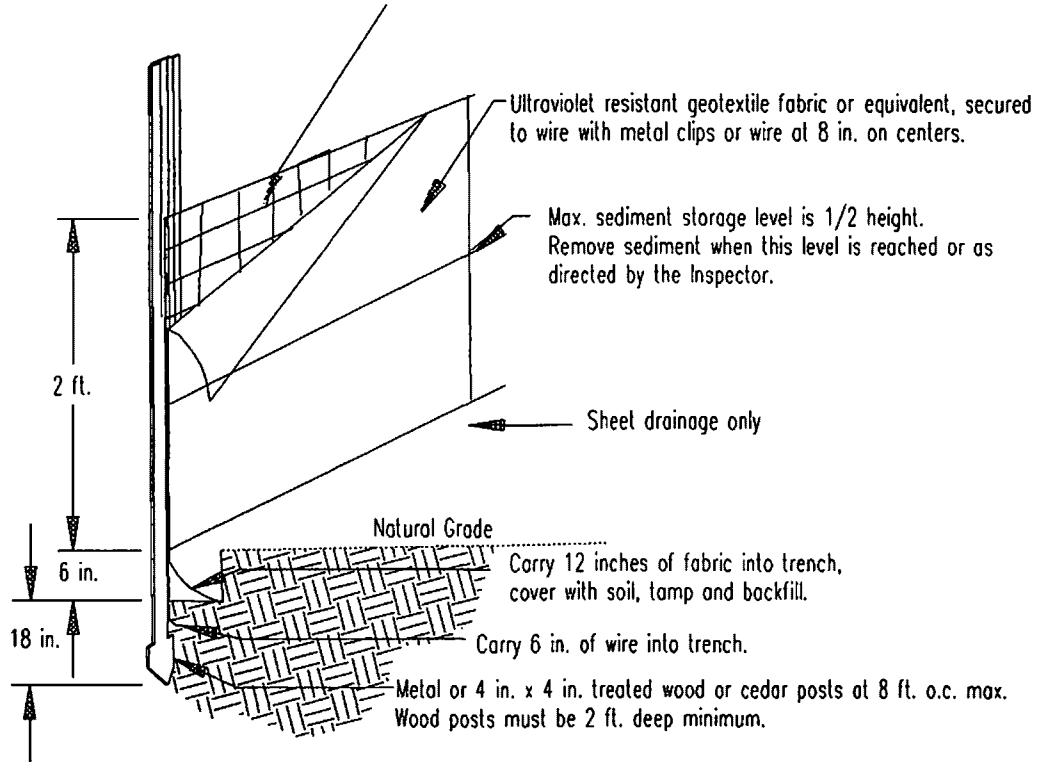
Figure 12-1. Temporary Sediment Trap Detail

Silt Fence

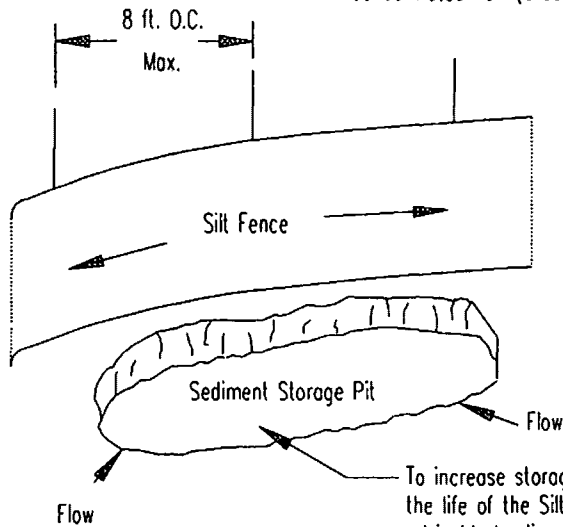
Silt fence is a temporary sediment barrier with limited use. The fence is comprised of filter fabric and wire stretched and supported by posts. The most appropriate use for silt fence is at the toe of a slope after it has been constructed and during slope stabilization. (See **Figure 12-2 - Silt Fence Detail** for the correct installation of silt fence.)

- The bottom section of the filter fabric must be buried.
- Silt fence may not be installed in areas of concentrated flow or where runoff will flow parallel to the fence once installed.
- After each significant rainfall, the fence should be inspected for erosion or piping under or around the fence. Any damaged sections are to be repaired or replaced.

12 Gauge 4ft. X 4ft. or 2ft. X 2ft. welded wire hooked on to preformed channels on metal posts or fastened to wood posts with No. 8 staples.



Note: Silt Fence should not be used at pipe outlets or in areas of concentrated flow (Creek, Ditch lines, Swales, Etc.)



Note: Flow should not run along silt fence. Use diversion ditches instead.

To increase storage capacity and prolong the life of the Silt Fence, it is generally advisable to dig a sediment pit in front of the Silt Fence whenever possible.

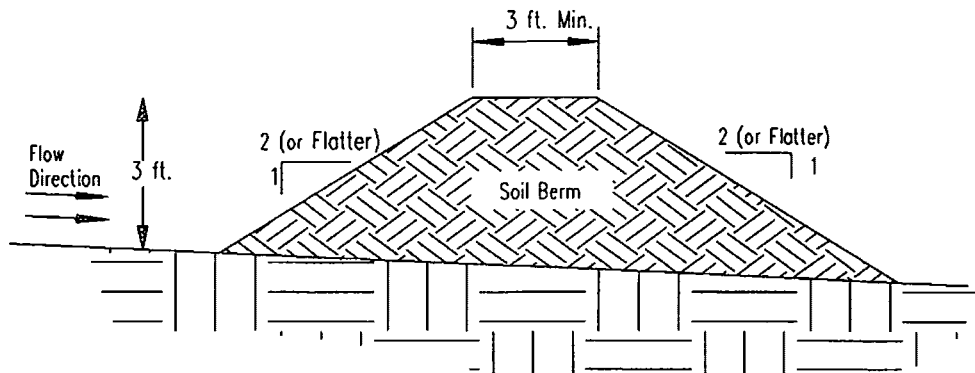
Not To Scale

Figure 12-2. Silt Fence Detail

Temporary Diversions

Temporary diversions are berms or ditches. Diversions may also be a combination of berms and ditches installed to direct runoff across sloping land to a predetermined destination. These diversions direct sediment-laden water into sediment control structures.

(See Figure 12-3, Temporary Diversion Berm Detail, and Figure 12-4, Temporary Combination Diversion and Berm Detail for the correct installation of these measures.)



Berm Construction Specifications:

1. Construct berm by placement of topsoil and overburden taken from initially disturbed areas.
2. Prior to placement of materials for berm formation, cut vegetation nearly flush with ground.
3. Compact materials in 1ft. lifts by construction traffic.

Not To Scale

Figure 12-3. Temporary Diversion Berm Detail

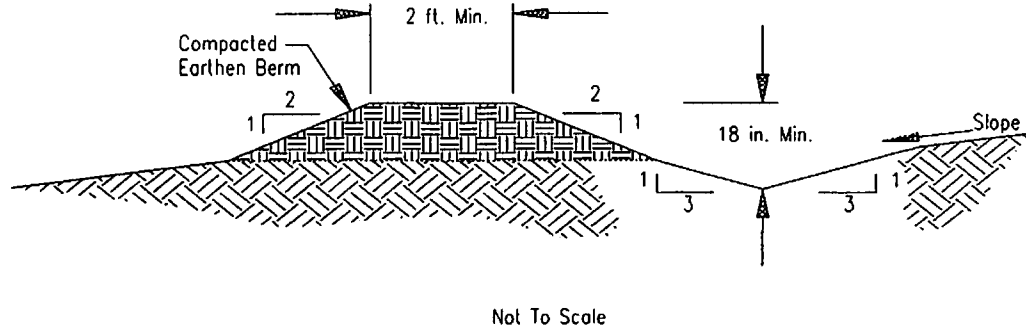


Figure 12-4. Temporary Combination Diversion and Berm Detail

Note: The berm may be constructed either of the soil excavated from the ditch or from gravel or crushed stone. Gravel or crushed stone must be used to construct the berm where traffic crosses frequently. The berm should be at least 1.5 feet high after compaction.

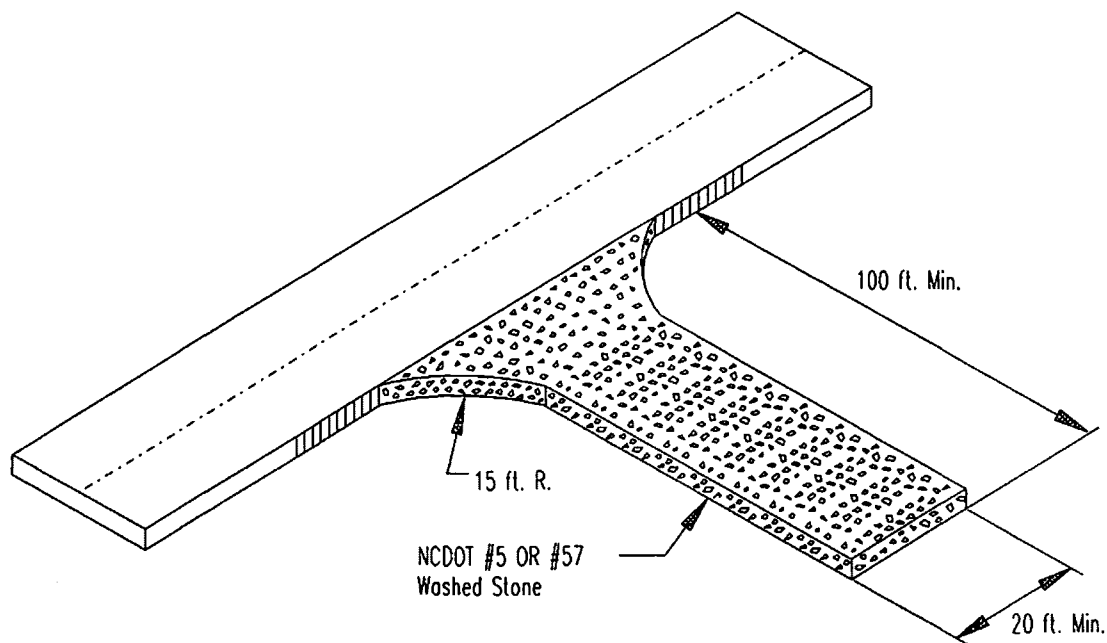
- Temporary diversions function for less than one year.
- Diversions are installed before initiating any land-disturbing activity up-gradient from the measure, so that sediment-laden runoff is intercepted by the diversions.
- The diversion should be designed to carry at least the appropriate 10-year design storm for the total drainage area.
- Temporary diversions require stabilization (protection from erosion). Velocities over 2.5 feet per second may require a temporary liner with supporting design calculations unless the soil is especially erosion resistant.
- Side slopes of the diversion berm should be constructed to a 2 horizontal to 1 vertical, or flatter. The slopes then should be immediately seeded.
- Diversion berm, ditch, or combination must be maintained after each significant rainfall. Accumulated sediment must be removed from the temporary diversion, and repairs made, as necessary.

Construction Entrance

A construction entrance is a gravel or crushed stone pad installed at each entrance and exit point for construction traffic. The construction entrance serves to clean the tires of the construction equipment so that sediment is not carried off the mine site onto adjacent roadways. If the entrance slopes towards the road, a water bar should be provided upslope of any roadside drainage way.

See **Figure 12-5 - Gravel Construction Entrance** for minimum dimensions of a construction entrance.

- The construction entrance is constructed with NC DOT #5 stone or NC DOT #57 washed stone placed a minimum of 6 inches thick. The stone is replaced when it is no longer effective at cleaning equipment tires, when the stone is covered with sediment or when sediment is being transported onto adjacent roadways.

**Notes:**

1. NCDOT #5 stone is preferred. Pad to be 100 ft. L x 20 ft. W x 6 in. thick (min).
2. Turning radius sufficient to accommodate large trucks.
3. Must be maintained in a condition which will prevent tracking or direct flow of mud onto streets. Periodic topdressing may be necessary.

Not To Scale

Figure 12-5. Gravel Construction Entrance

Temporary Slope Drains

A temporary slope drain is a flexible pipe installed along a slope to convey runoff down the slope in a non-erosive manner.

Diversions are generally used to direct runoff into the slope drains.

Slope drains are required when fill slopes exceed 30 feet in vertical height or when shorter slopes prove difficult to vegetate because of erosion.

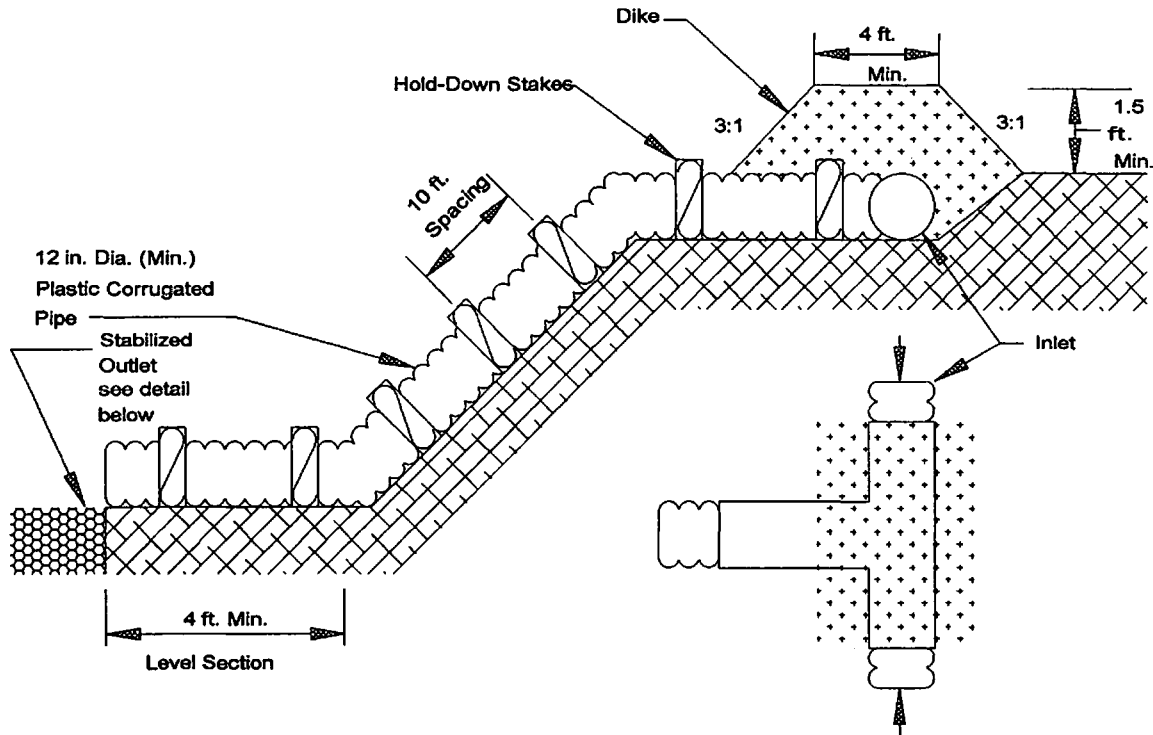
(See **Figure 12-6 - Temporary Slope Drains** for correct installation of slope drains).

Note that the pipe inlet must be anchored to the slope to prevent displacement.

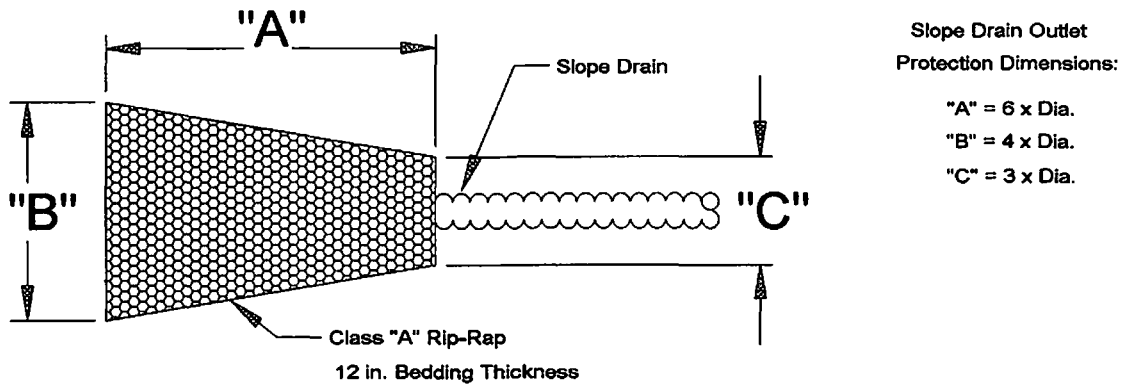
- Runoff must be directed into the pipe by installing berms or diversions. The pipe outlet must extend beyond the toe of the slope to prevent erosion of the slope.
- Pipes with outlet velocities over the allowable velocity of the receiving area must be stabilized against erosion. (See the **Pipe Outlet Protection** section of this chapter).

Note: Unless they are individually designed, 12-inch diameter slope drains should be installed 50 feet apart. Each slope drain should receive no more than 0.5 acre of total drainage.

- Smaller diameter slope drains, greater spacing or larger drainage areas will require supporting calculations to verify the adequacy of the design.



Plan View of Standard T-Section



Plan View of Stabilized Outlet

NOTES:

1. Slope inlet T-Section under the dike toward outlet end.
2. Hand tamp the soil under and around entrance sections in lifts not to exceed 6 in.
3. Ensure that all slope drain connections are water tight.

Not To Scale

Figure 12-6. Temporary Slope Drains

Temporary Stream Crossings

A temporary stream crossing is a ford, bridge or other temporary structure placed in a stream to provide short-term access for construction traffic.

Stream crossings are to be avoided when possible. If no other alternatives are available, stream disturbance in and around the stream must be minimized.

- The flow of the stream may not be obstructed.
- Label the clearing limits for the installation of the stream crossing on the mine maps.
- Design the structure to withstand bankfull flow. The design must ensure that no erosion will result from the 10-year design storm. (See **Figure 12-7 - Temporary Stream Crossing - Ford** for the correct installation of a temporary stream ford).
- After the structure is no longer needed, it must be removed and the disturbed areas of the stream permanently stabilized. (See the **Permanent Ditches and Channels** section of this chapter for permanently stabilizing channels).

Note: Contact the Division of Environmental Management and the U.S. Army Corps of Engineers before placing any fill material in any watercourse or wetland.

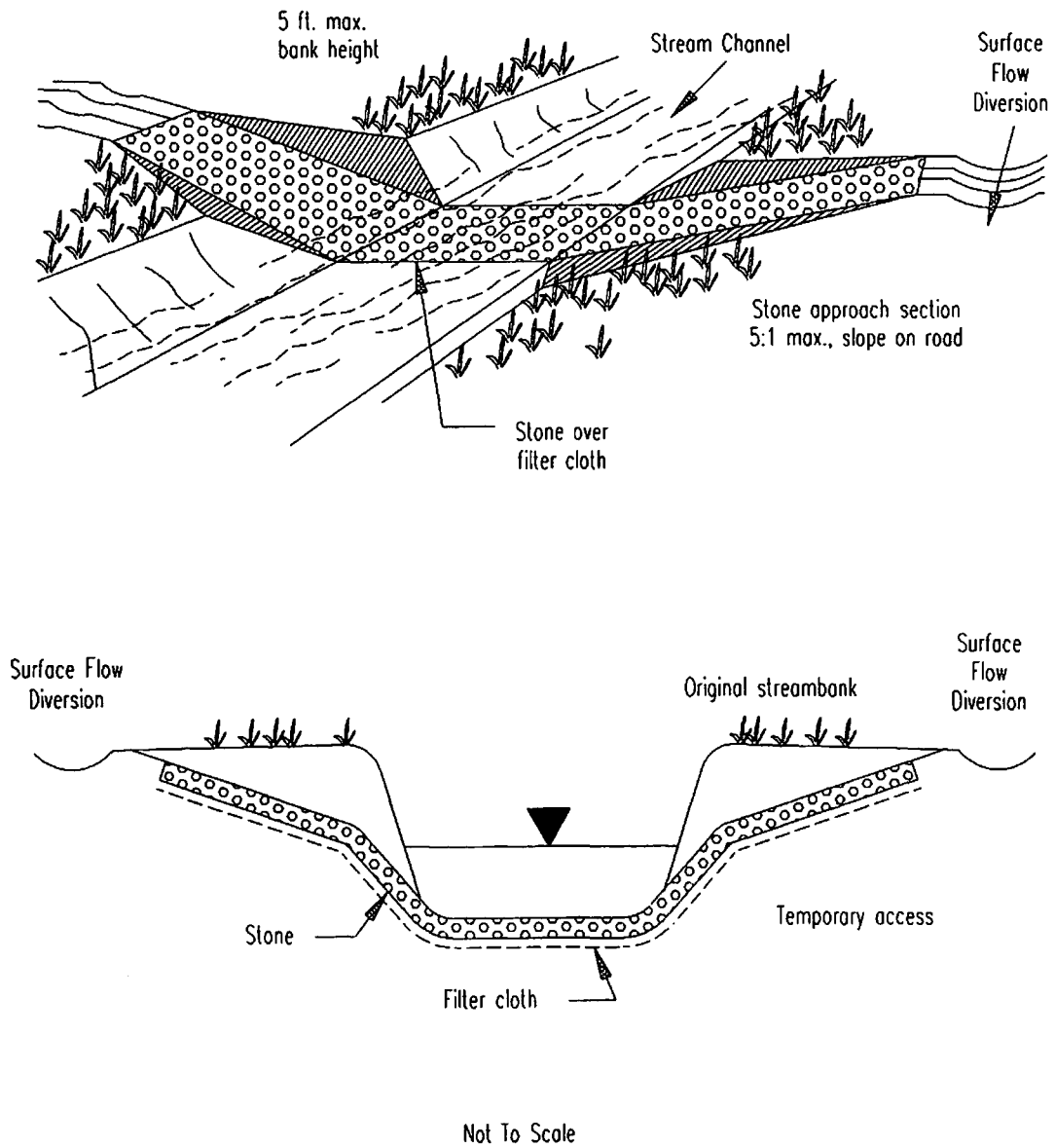


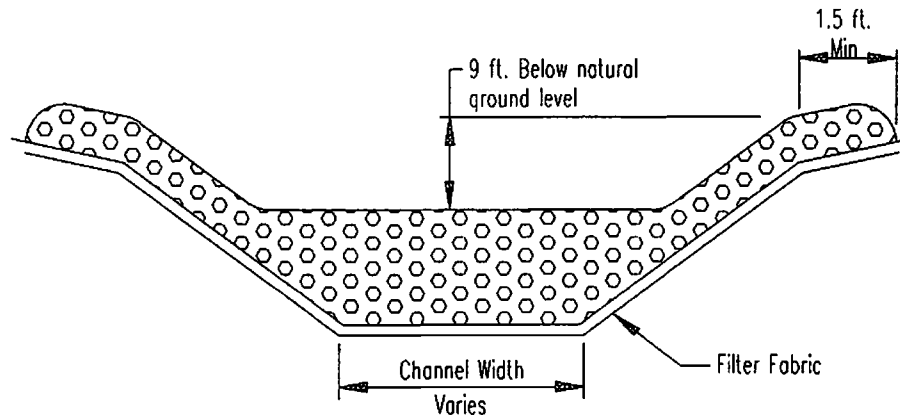
Figure 12-7. Temporary Stream Crossing - Ford

Check Dams

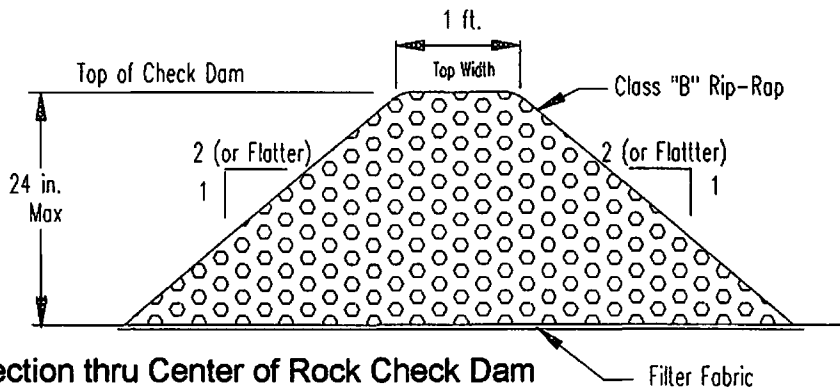
Check dams are temporary measures installed to slow velocities in areas of concentrated flow to aid in erosion control.

Note: Check dams may not be installed in natural watercourses.

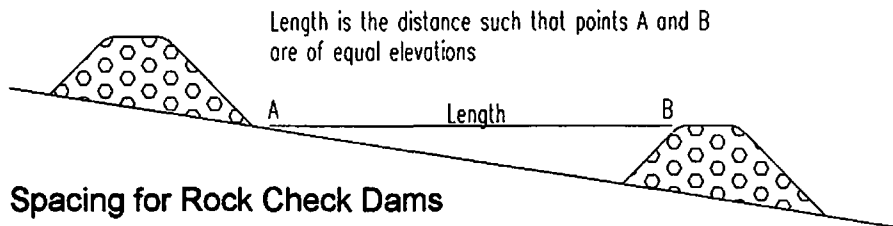
- Check dams must be installed immediately to restrain erosion in channels that will be filled or permanently stabilized at a later date.
- Check dams will kill existing vegetation in channels and ditches by ponding water and retaining sediment.
- Channels must be stabilized as soon as possible to avoid installing check dams.
- Check dams must be constructed of NCDOT Class A or B (2 - 15 inches) stone or with brick bats, where appropriate. When installing brick bat check dams, calculations verifying that the dam will withstand the 10-year design storm for the entire drainage area must be provided.
- See Figure 12-8 - Brick Bat Check Dam Detail.
- Many check dams fail at the abutments. Carry stone or brick bats up the side slopes and at least 18 inches beyond the dam to avoid washout around the dam.
- Check dams must be maintained after every rainfall event. Remove accumulated sediment and repair any washed-out sections. The ditch line must be stabilized as soon as possible. (See Figure 12-9 - Temporary Rock Check Dam for minimum dimensions for check dams).



Plan of Rock Check Dam



Section thru Center of Rock Check Dam



Spacing for Rock Check Dams

Not To Scale

Figure 12-9 - Temporary Rock Check Dam

Permanent Erosion and Sediment Control

Sediment Basin

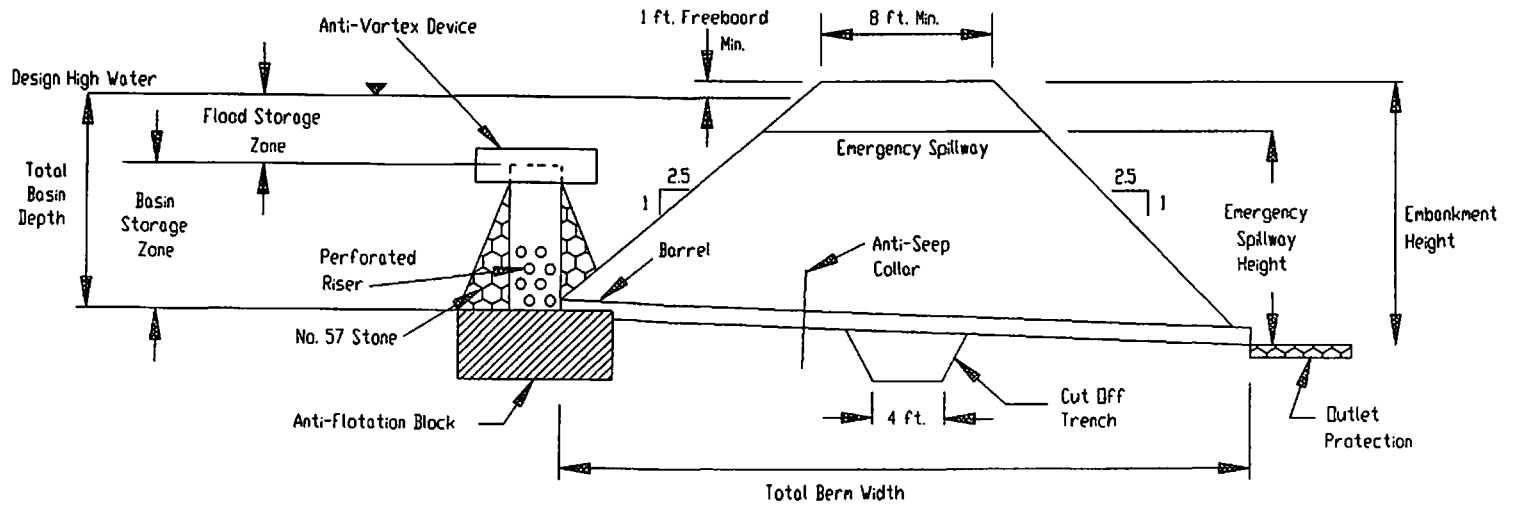
Sediment basins are riser/barrel embankment structures that are designed to serve drainage areas greater than 5 acres and remain in place and function for more than one year. In addition, basins should not be constructed in perennial streams. See Figure 12-10 - **Sediment Basin Construction Detail** for typical construction detail for a sediment basin with an emergency spillway.

Note: Embankments that are high hazard and/or 15 feet or higher from the lowest point on the downstream toe to the highest point on the embankment and that have a storage capacity of 10 acre-feet or more are subject to the North Carolina Dam Safety Law of 1967.

Note that a separate permit is required.

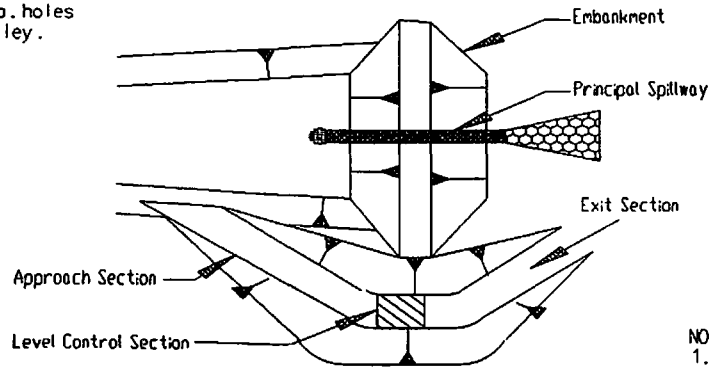
- Access must be provided for continued maintenance of the basin.
- Sediment removed from the basin shall be placed upslope from the basin.
- All basin dimensions must be provided.
- Supporting calculations must be provided with the design of all sediment basins. Refer to the North Carolina Erosion and Sediment Control Planning and Design Manual for detailed design information.

Figure 12-10. Sediment Basin Construction Detail



Section Thru Principal Spillway

NOTE: Lower half of riser to be perforated with 1/2 in. Dia. holes spaced 3 in. on outside valley.



Plan View of Emergency Spillway

- NOTES:
1. Neither the location nor the alignment of the control section has to coincide with the centerline of the dam.
 2. The level control section shall be 20 ft. in length or greater.

Not To Scale

Sediment Storage

- Design the sediment storage area for 1,800 cubic feet of storage per disturbed acre of drainage area.
- The maximum amount of acreage to be disturbed during the life of the mining permit must be considered in the design.
- The flow length to width ratio must be greater than 2:1.
- To further improve trapping efficiency, a settling basin surface area greater than 0.01 times the peak inflow rate in cfs (Barfield and Clar, 1985) is required, as indicated in the following relationship:

$$A = .01 \times Q$$

where:

A = surface area, acre

Q = peak inflow rate, cubic feet per second

Note: In the Coastal Plain and Piedmont regions, the above equation has been shown to provide a trapping efficiency of 75% or greater for the 40-micron particle. However, in High Quality Water Zones, a more detailed analysis of the basin trapping efficiency is required. (See the Special Considerations section of this chapter).

- The sediment storage area must be cleaned out when half full.

Spillway System

- As a minimum, design the combined spillway system for sediment basins to be capable of passing the 25-year storm event for the total drainage area.

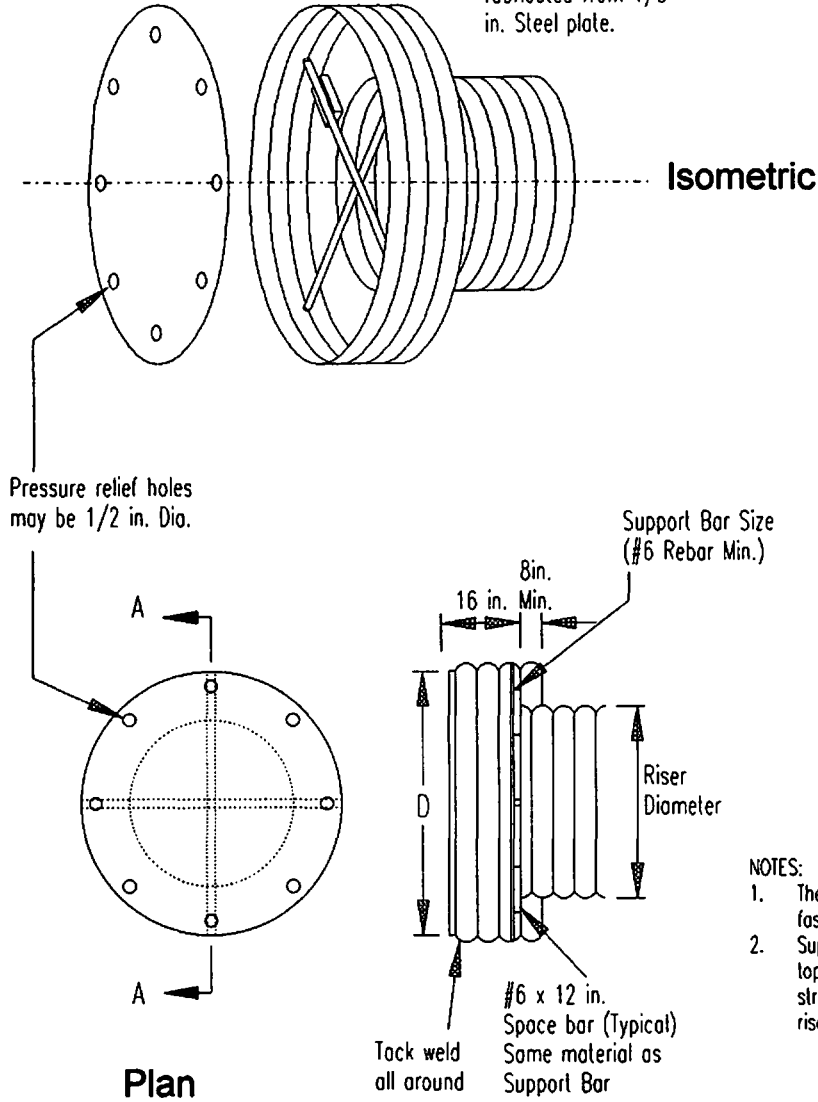
For sediment basins constructed in a floodplain or in High Quality Water Zones, the design of the spillway system must be adequate for the 50-year storm event. (See the **Special Considerations** section of this chapter.) The site should be evaluated assuming the worst site conditions during the life of the structure.

Criteria for Spillway Structures

- The principle spillway riser diameter should be 1.5 times the barrel diameter.
- The riser barrel requires a trash rack to prevent blockage of the pipe (See **Figure 12-11 Anti-Vortex Trash Rack Detail**).
- The riser must be secured by an anti-flotation device with a buoyant weight at least 1.1 times the water displaced by the riser (See **Figure 12-12 Anti-Flotation Detail for Sediment Basin**).
- Anti-seep collars are recommended along the barrel to reduce the potential for seepage through the embankment. (See **Figure 12-13 Anti-Seep Collar Detail**).
- The top of the riser must be a minimum of 1 foot below the crest of the emergency spillway.
- Dewatering holes in the riser are required to allow basin dewatering. Dewatering holes must be covered with a 2-foot layer of ½ to ¾-inch gravel or crushed stone.
- Emergency spillway must be constructed in natural ground. The side slopes must be 3:1 or flatter. The spillway channel must be protected against erosion with a suitable liner.
- Outlet protection is required if the discharge velocities exceed that allowable for the receiving area.
- The minimum top width of the embankment is 8-feet for embankments less than 10-feet high and 10-feet for embankments from 10-15 feet high.
- The embankment must be built from well compacted, clean fill material. Freeboard is created by ensuring that the crest of the settled embankment is at least 1 foot above the maximum designed water elevation.
- The side slopes of the embankment must be 2.5:1 or flatter, and the structure must be stabilized with erosion resistant material immediately following construction.

Top is 14 gauge corrugated metal Or 1/8 in. Steel plate.
Pressure relief holes may be omitted, if ends of corrugations are left fully open when the top is attached.

Cylinder is 16 gauge corrugated metal pipe, fabricated from 1/8 in. Steel plate.



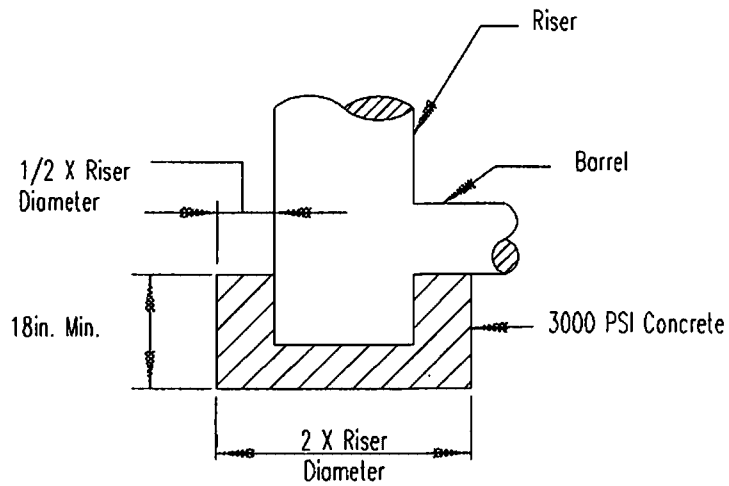
- NOTES:
1. The cylinder must be firmly fastened to the top of the riser.
 2. Support bars are welded to the top of the riser or attached by straps bolted to the top of the riser.

Plan

Section A-A

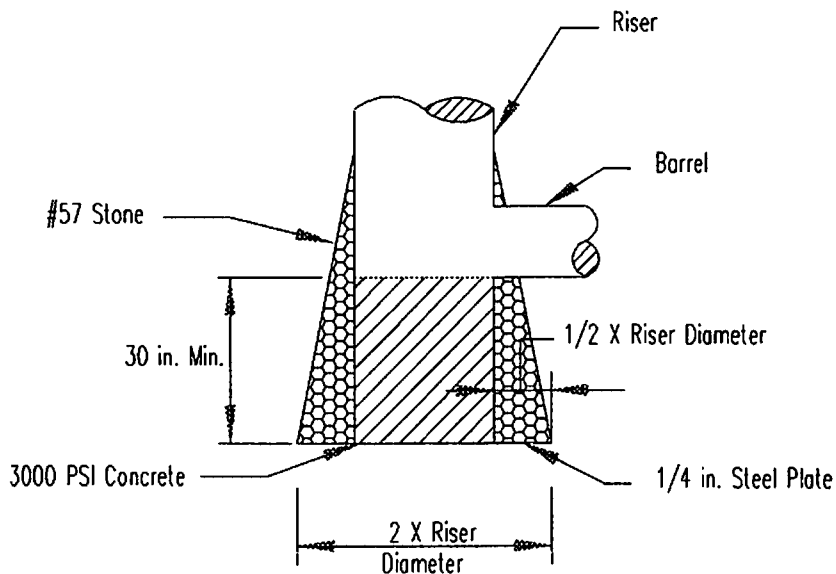
Not To Scale

Figure 12-11. Anti-Vortex Trash Rack Detail



Not To Scale

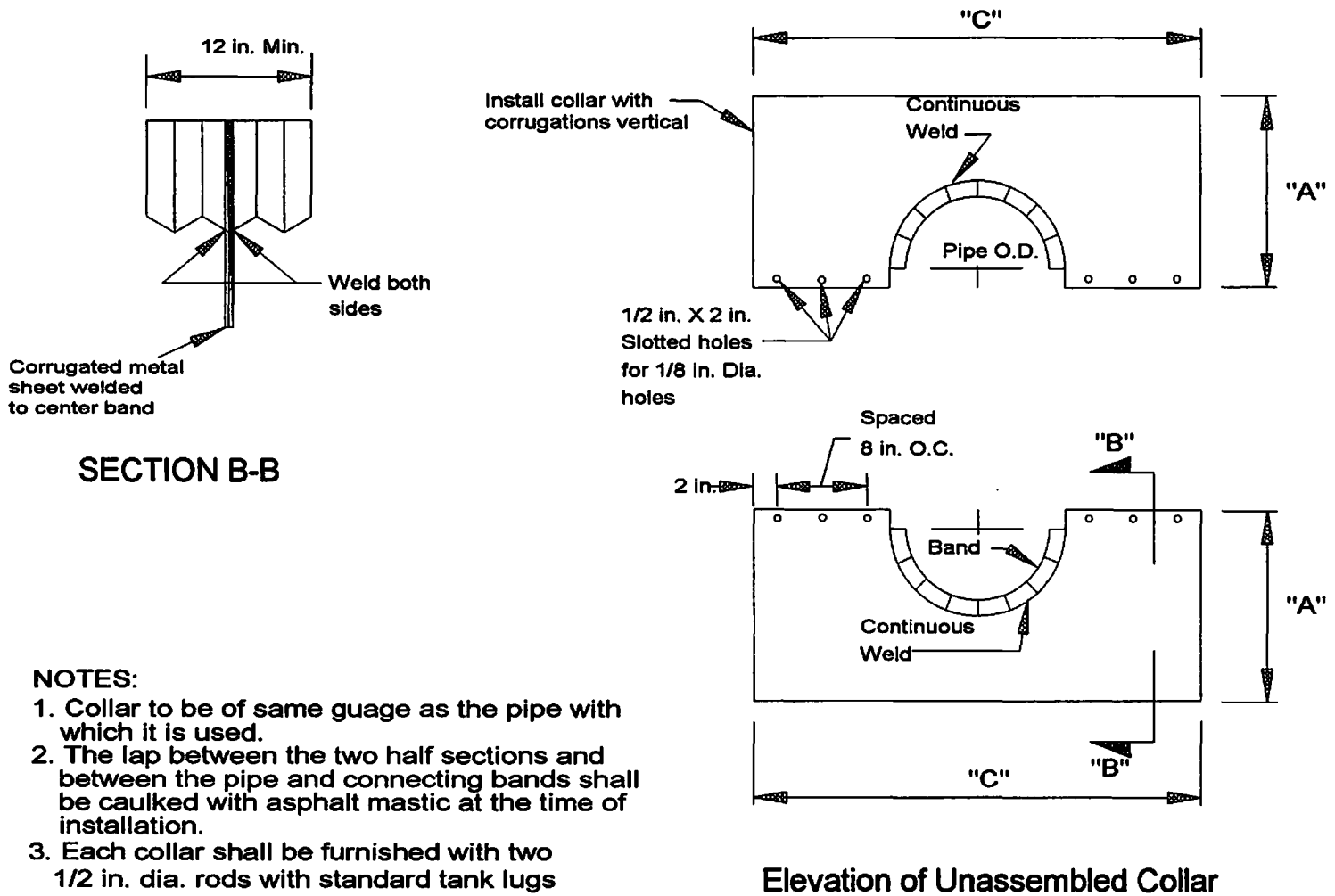
Concrete Base Anti-Flotation Detail



Not To Scale

Steel Base Anti-Flotation Detail

Figure 12-12. Anti-Flotation Detail for Sediment Basin (Concrete Base and Steel Base)



Not To Scale

- Sediment basins must be maintained after every period of significant rainfall.
- Gravel or crushed stone around the riser must be replaced when clogged with sediment.
- Trash and debris must be removed from the riser, sediment pool and emergency spillway.
- The sediment storage area must be cleaned out periodically.

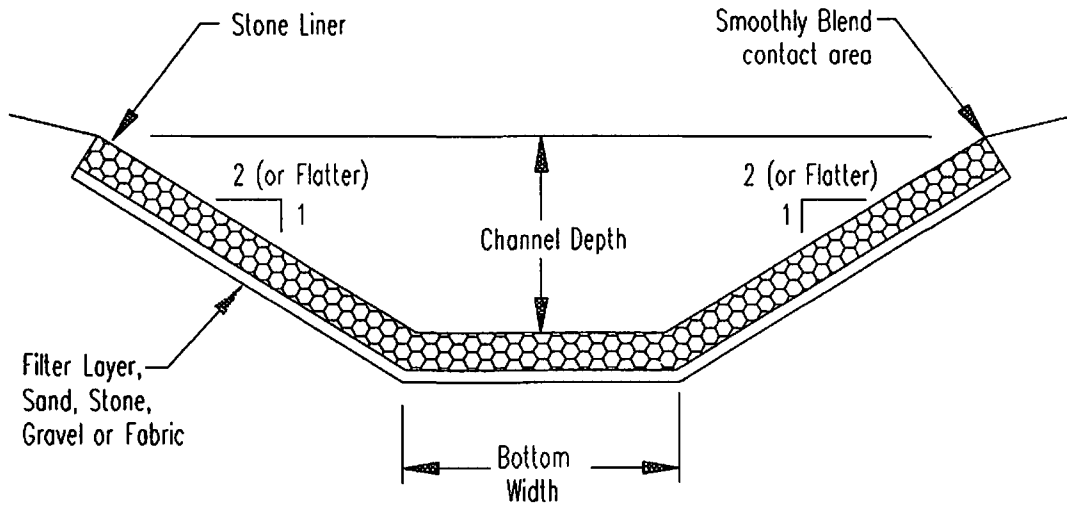
Permanent Ditches and Channels

Permanent ditches and channels are constructed to function for more than one year and to carry concentrated runoff non-erosively to a predetermined destination.

They must be permanently stabilized with either a vegetative lining or a structural lining.

- All permanent ditches and channels must be designed for the 25-year storm event for the total drainage area.
- Side slopes must be 2 horizontal to 1 vertical, or flatter.
- The receiving channel or outlet must be protected from erosion by ensuring that the outlet velocity is minimized.
- Outlet protection should be included if necessary.

Figure 12-14 Diversion Channel Detail, shows the typical construction of riprap-lined channels.



| Channel No. | Station | | Channel Depth | Bottom Width | Side Slope |
|-------------|---------|----|---------------|--------------|------------|
| | From | To | | | |
| | | | | | |

NOTES:

1. Provide channel depth(s), side slope(s) and bottom width(s) in tabular form on plans.
2. For stone classifications Class A and Class B, use NCDOT Standard Specifications for rip-rap and erosion aggregate sizes.
3. For filter layer, use No. 4, 57, 467, or equivalent aggregate gradations from NCDOT Standard Specifications.
4. Minimum stone bedding thickness:
 - NCDOT Class A - 9 in.
 - NCDOT Class B - 24 in.
 - NCDOT Class I - 24 in.
 - NCDOT Class II - 26 in.
 - NCDOT No. 4, 57, 467, or equivalent - 4 in.

Not To Scale

Figure 12-14. Diversion Channel Detail

Note: Channel must be undercut during grading process to allow placement of stone liner. Do not cut channel to final dimensions then backfill with stone.

- Grass-lined channels are generally used for slopes less than 5 percent.
- Velocities should not exceed 5-feet per second for established grass-lined channels.
- Sharp bends and turns should be avoided.
- Temporary liners such as straw and netting, geotextile fabrics or fiberglass roving, aid in the establishment of vegetation. Velocities of 2-feet per second or higher on bare soils require the installation of such a liner. Liners should be installed per the manufacturer's instructions.
- Velocities over the maximum allowable design velocity for grass-lined channels require a permanent structural lining such as riprap.
- In cases where velocity allows, riprap may be installed in the bottom of the channel with grass-lined side slopes to decrease the quantity of riprap needed. Filter fabric or a 6-inch-deep sand/gravel/crushed stone filter must be installed under the riprap to prevent undermining. The filter should extend under the entire area of the riprap lining.

Note: Refer to the North Carolina Erosion and Sediment Control Planning and Design Manual for detailed design information for temporary liners, design of permanent channel linings and for maximum allowable design velocities for your soil type.

- Channels must be stabilized as soon as possible after construction, and sediment-laden runoff diverted away from stabilized channels.
- Channels must be inspected after every major rainfall and appropriately repaired.

Permanent Stream Crossings

Permanent stream crossings are constructed to provide permanent construction access across waterways to protect the stream from degradation.

Permanent stream crossings remain in place for more than one year. Such crossings include large culverts with earth or rock fill or bridges.

The North Carolina Department of Transportation (NCDOT) standards set design requirements, considering design loads, flow capacities, etc.

The NCDOT can provide more information on their specifications.

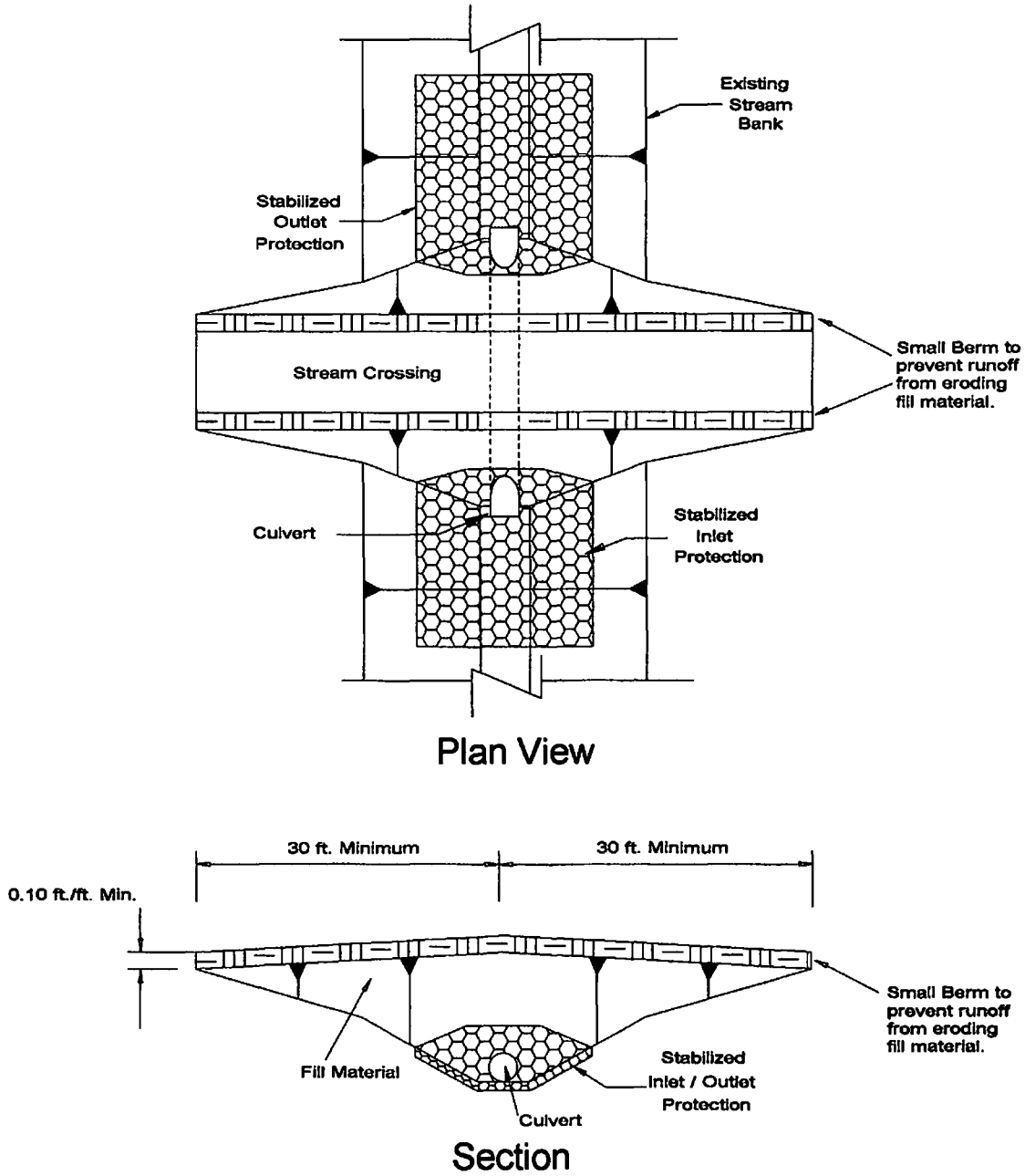
The design must allow the 25-year storm event to safely pass through the crossing.

A qualified engineer or consultant should be contacted to design a permanent crossing on large streams or rivers because of the volume of water.

Note: Prior to installing any stream obstruction or filling in any waterbody or wetland, contact the DEHNR Division of Environmental Management and the U.S. Army Corps of Engineers concerning permits required by their offices.

The stream crossing requires inspection after every major storm event. Obstructions must be removed and maintenance performed as needed.

See Figure 12-15 Permanent Stream Crossing Detail for proper installation of the crossing.



NOTES:

1. Design Permanent Stream Crossing in accordance with NCDOT Standards and Specifications.
2. Design culvert inlet/outlet stabilization to protect culvert crossing and receiving channel section from 25-YR. peak storm run-off velocities.
3. Keep clearing and excavation of existing stream bank and bed to a minimum.
4. Keep stream crossings at a right angle to the stream flow.
5. Install protective ground cover to provide permanent erosion protection and improve visual quality but not interfere with driver site distance from roadway.

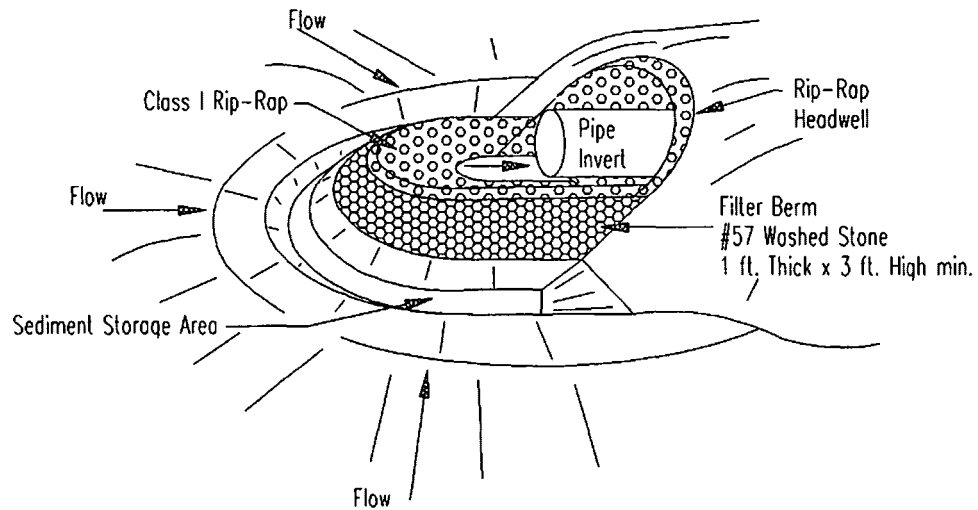
Not To Scale

Figure 12-15. Permanent Stream Crossing Detail

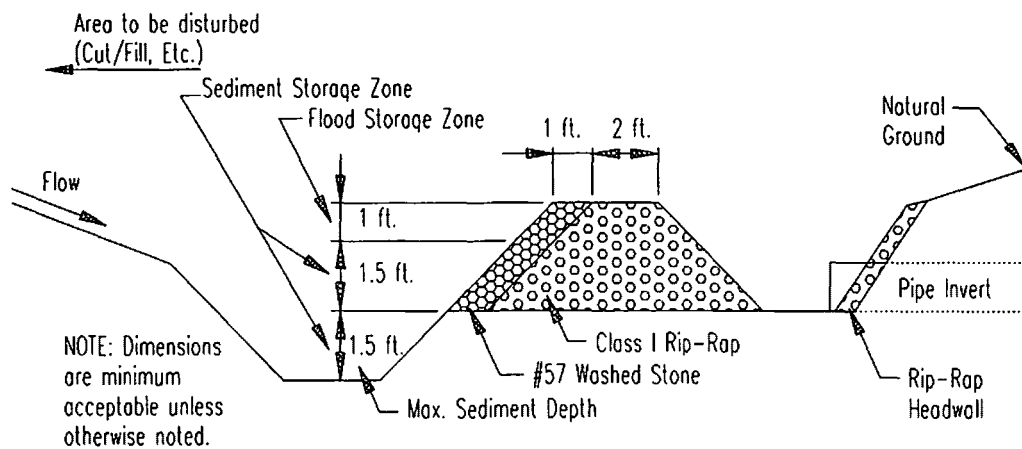
Pipes

Pipes must be designed for the 25-year design storm. Refer to the North Carolina Erosion and Sediment Control Planning and Design Manual for detailed design information.

To prevent sediment from entering the inlet end of a pipe, a horse shoe filter berm may be installed. See **Figure 12-16 Horse Shoe Filter Berm Detail**.



Perspective View



Section thru Basin, Filter, And Culvert Pipe

Not To Scale

Figure 12-16. Horse Shoe Filter Berm Detail

Pipe Outlet Protection

Outlet protection is needed for pipes where the outlet velocity is greater than the allowable erosive velocity for the receiving area. The most common type of outlet protection is a riprap apron.

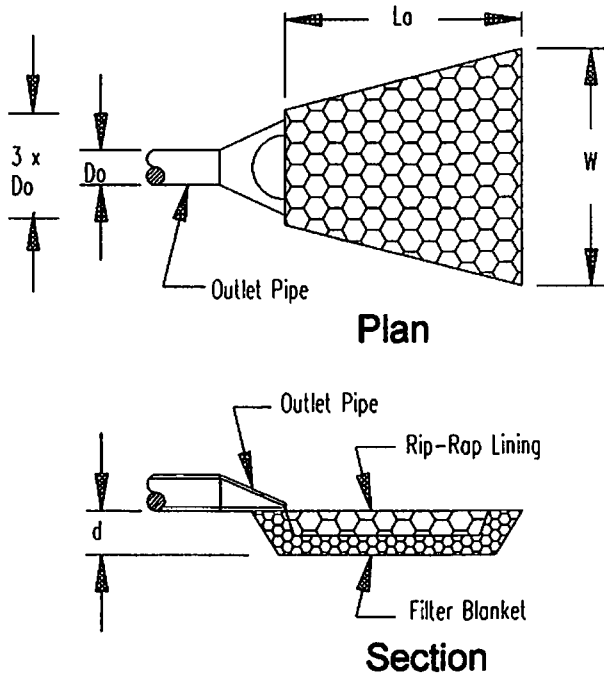
Figure 12-17 Riprap Pipe Outlet Protection, indicates the correct installation of a riprap apron and pipe outlet protection.

- Riprap aprons must be designed for the 25-year design storm as a minimum.
- The riprap must be underlined with filter fabric or a 6-inch deep sand and stone filter.
- If the outlet protection is to be installed in a defined channel, the riprap must extend up the sides of the channel to a height of at least 0.5 times the diameter of the pipe.
- The apron must dissipate the velocity to (or below) the allowable velocity of the receiving area.
- The design of the outlet protection requires supporting calculations.
- For appropriately sized pipes, **Table 12-2 Riprap Apron Energy Dissipater** may be used in lieu of calculations.

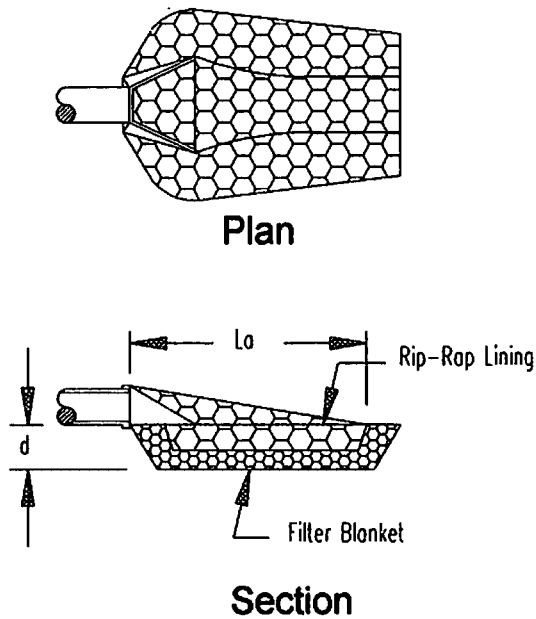
Note: When installing the riprap apron, the ground must be undercut at the outlet of the pipe to a sufficient depth to accommodate the riprap depth and the filter. The riprap must be placed flush with the surrounding ground to avoid bypassing the outlet.

- Other types of outlet protection (such as paving with energy dissipaters) may be acceptable with supporting calculations.
- Outlet protection requires inspection after every significant rainfall event. Any breached or bypassed sections must be repaired and any accumulated sediment and debris removed.

Pipe Outlet to Flat Area - No Well-Defined Channel



Pipe Outlet to Well-Defined Channel



NOTES:

1. L_o is the length of the rip-rap apron.
2. $d = 1.5$ times the maximum stone diameter but not less than 6 in.
3. In a well-defined channel, extend the apron up the channel banks to an elevation of 6 in. above the maximum tailwater depth or to the top of the bank, whichever is less.
4. A filter blanket or filter fabric should be installed between the rip-rap and soil foundation. When using No. 4, 57, 467, or equivalent aggregate for the filter layer, a minimum 4 in. thickness is recommended.
5. Inspect outlet protection after every significant rainfall event. Repair any breached or bypassed sections. Remove any accumulated sediment and debris.

Not To Scale

Figure 12-17. Riprap Pipe Outlet Protection

Table 12-2. Riprap Apron Energy Dissipater

| Pipe Diameter (in) | | Pipe Slope (%) | | | | |
|--------------------|-----------|----------------|------|------|------|------|
| | | 0.5 | 1.0 | 2.0 | 4.0 | 6.0 |
| 15 | L=(ft) | 5 | 5 | 7.5 | 7.5 | 10 |
| | W=(ft) | 4 | 4 | 5.5 | 5.5 | 6.5 |
| | D=(in) | 9 | 9 | 24 | 24 | 24 |
| | S=(class) | A | B | B | B | B/1 |
| 18 | L=(ft) | 6 | 9 | 9 | 12 | 12 |
| | W=(ft) | 4.5 | 6 | 6 | 7.5 | 7.5 |
| | D=(in) | 9 | 24 | 24 | 24 | 24 |
| | S=(class) | A | B | B | B/1 | B/1 |
| 21 | L=(ft) | 7 | 10.5 | 10.5 | 14 | 21 |
| | W=(ft) | 5 | 7 | 7 | 8.5 | 12 |
| | D=(in) | 9 | 24 | 24 | 24 | 24 |
| | S=(class) | A | B | B | B/1 | 1 |
| 24 | L=(ft) | 12 | 12 | 16 | 20 | 24 |
| | W=(ft) | 8 | 8 | 10 | 12 | 14 |
| | D=(in) | 24 | 24 | 24 | 24 | 24 |
| | S=(class) | B | B | B/1 | 1 | 1 |
| 27 | L=(ft) | 13.5 | 13.5 | 18 | 27 | 27 |
| | W=(ft) | 9.5 | 9.5 | 11.5 | 16 | 16 |
| | D=(in) | 24 | 24 | 24 | 24 | 24 |
| | S=(class) | B | B | B/1 | 1 | 1 |
| 30 | L=(ft) | 15 | 15 | 20 | 30 | 30 |
| | W=(ft) | 10 | 10 | 12.5 | 17.5 | 17.5 |
| | D=(in) | 24 | 24 | 24 | 24 | 24 |
| | S=(class) | B | B | B/1 | 1 | 1 |
| 33 | L=(ft) | 16.5 | 22 | 22 | 33 | |
| | W=(ft) | 11 | 13.5 | 13.5 | 19 | |
| | D=(in) | 24 | 24 | 24 | 24 | |
| | S=(class) | B | B/1 | B/1 | 1 | |
| 36 | L=(ft) | 18 | 24 | 30 | 36 | |
| | W=(ft) | 12 | 15 | 18 | 21 | |
| | D=(in) | 24 | 24 | 24 | 24 | |
| | S=(class) | B | B/1 | B/1 | 1 | |
| 42 | L=(ft) | 28 | 28 | 42 | | |
| | W=(ft) | 17.5 | 17.5 | 24.5 | | |
| | D=(in) | 24 | 24 | 24 | | |
| | S=(class) | B/1 | B/1 | B/1 | | |
| 48 | L=(ft) | 32 | 40 | 48 | | |
| | W=(ft) | 20 | 24 | 28 | | |
| | D=(in) | 24 | 24 | 24 | | |
| | S=(class) | B/1 | B/1 | 1 | | |
| 54 | L=(ft) | 36 | 45 | 54 | | |
| | W=(ft) | 22.5 | 27 | 31.5 | | |
| | D=(in) | 24 | 24 | 24 | | |
| | S=(class) | B/1 | 1 | 1 | | |
| 60 | L=(ft) | 40 | 50 | | | |
| | W=(ft) | 25 | 30 | | | |
| | D=(in) | 24 | 30 | | | |
| | S=(class) | 1 | 1/2 | | | |
| 66 | L=(ft) | 55 | 66 | | | |
| | W=(ft) | 33 | 38.5 | | | |
| | D=(in) | 30 | 30 | | | |
| | S=(class) | 1/2 | 1/2 | | | |
| 72 | L=(ft) | 60 | 72 | | | |
| | W=(ft) | 36 | 42 | | | |
| | D=(in) | 30 | 30 | | | |
| | S=(class) | 1/2 | 1/2 | | | |

L=length of apron (ft) W=width of apron (ft) D=thickness of stone (in) S=class of stone

- Recommendations only - Install as much of pad as space allows.
- Filter fabric should be used when soil conditions warrant.

Rock Dams

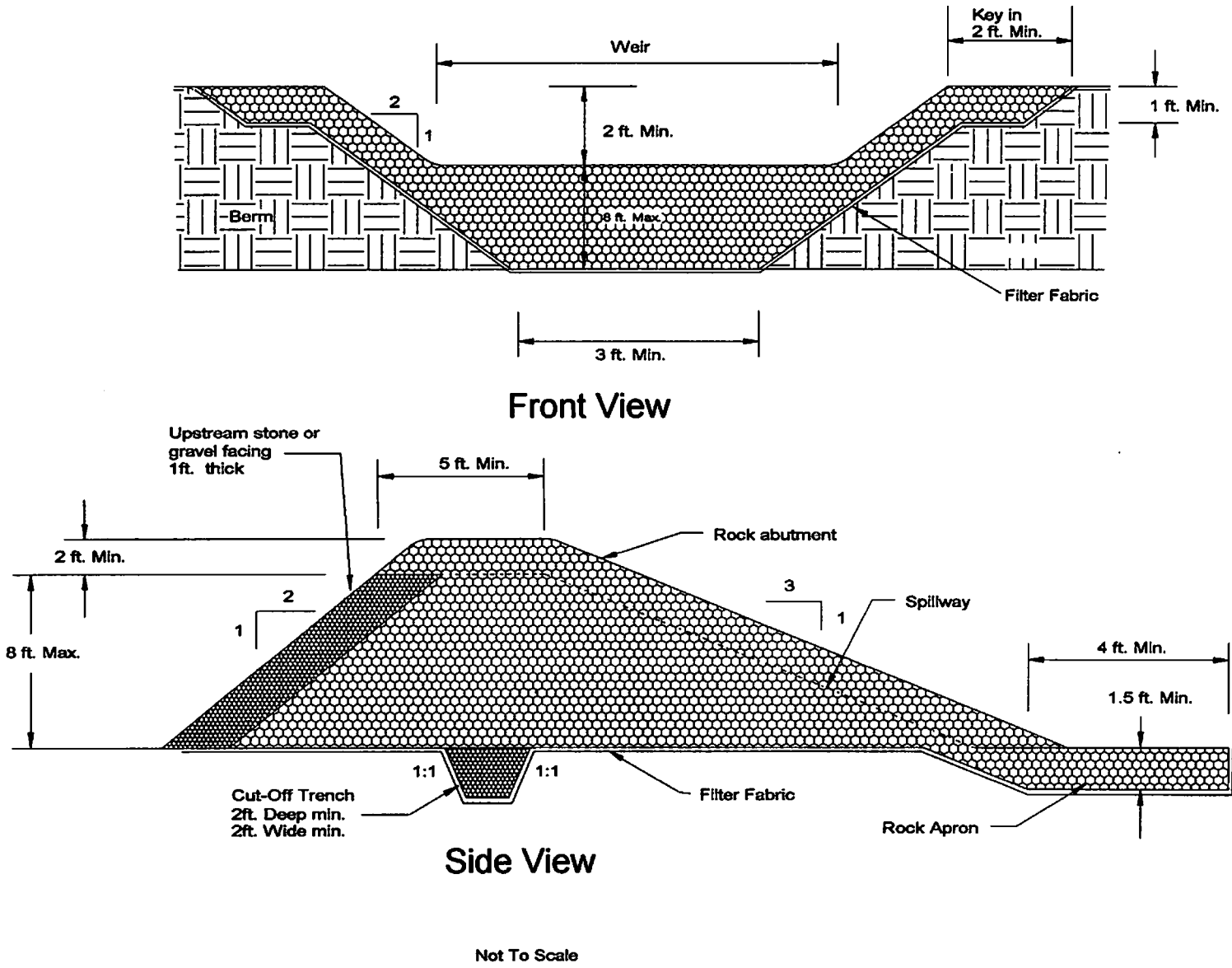
Rock dams are constructed as long-term sediment control measures, usually receiving more than 5 acres of drainage.

Rock dams are usually constructed where riprap and crushed stone or gravel are readily available and where earthen dams are difficult to construct.

Drainage areas must be limited to less than 50 acres, and may not be constructed in live streams. (See **Figure 12-18 Rock Dam Construction Detail** for the correct installation of a rock dam).

- The dam must be constructed to maximize the settling basin surface area and allow maintenance of the structure.
- Riprap with a d50 size of 9 inches or more is required depending upon the flow rate expected over the dam.
- The riprap must extend up the sides of the abutments. The top of the dam should serve as the overflow.
- The weir section must be long and wide to produce low outlet velocities. The weir section is constructed through the middle of the dam.
- The upstream side of the dam is faced with gravel or crushed stone to slow seepage through the riprap.
- A cutoff trench must be installed the entire length of the dam and filter fabric installed between the soil and riprap interface.
- The sediment storage area must provide 1,800 cubic feet of storage per disturbed acre, and the spillway must be designed for the 25-year storm event for the entire drainage area.
- The minimum top width for the dam is 5-feet. Side slopes should be 3 horizontal to 1 vertical or flatter. All dimensions of specific structures must appear on a construction detail.
- Rock dams must be inspected after every rainfall event. Settling area must be cleaned, and the filter stone replaced on the face of the dam when contaminated with sediment.

Figure 12-18. Rock Dam Construction Detail



Special Considerations

High Quality Waters

- High Quality Waters (HQWs) are streams and rivers with qualities higher than normal water quality standards (15A NCAC 2B.0101(e)(5)).
- To protect HQWs, more stringent erosion and sediment control design criteria must be applied to HQW Zones. (HQW Zones are defined in the *Definitions* section of Chapter 2 -Overview of the Mining Act of 1971.)
- If you are unsure about the classification of a particular stream or water body, contact the DEHNR Water Quality Section or the Land Quality Section serving your area. (See Chapter 21 - Agency Contacts).
- Sediment control measures, such as traps and basins, require a trapping efficiency of 70 percent of the 40-micron particle for the 2-year design storm.
- Spillway systems for sediment control measures must be capable of handling the 50-year storm event for the total drainage area.
- Erosion control measures, such as pipe outlet protection and channels linings, must be designed for the 25-year storm event.
- Refer to the North Carolina Erosion and Sediment Control Planning and Design Manual for additional design information. A qualified engineer or consultant should be contacted for more information.

Floodplains

Floodplains are areas adjacent to streams or rivers subject to frequent flooding.

Although no additional sediment and erosion control design criteria apply, caution should be exercised when disturbing areas in a floodplain.

Installing any measures, temporary or permanent, in a floodplain is to be avoided to the degree practical.

All fill slopes in the floodplain must be armored with riprap up to the 100-year flood elevation.

Because floodplains are frequently zoned, the local government with jurisdiction for the site should be contacted for floodplain maps and other information.

Wetlands

Wetlands are classified by the DEHNR Division of Environmental Management and the U.S. Army Corps of Engineers. State water quality certification and a Federal permit may be required for activities in wetlands.

Excavating and/or filling in wetlands may not occur without the required certification from the DEHNR Division of Environmental Management and a permit from the U.S. Army Corps of Engineers. These are required conditions of the mining permit.

When excavating and dewatering a pit near wetlands, the impact to the wetlands must be considered.

Note: Prior to discharging any pit water, all required permits must be obtained from the DEHNR Division of Environmental Management, the U.S. Army Corps of Engineers, and the Division of Coastal Management, where appropriate.

13 Operation Specific Issues

CONTENTS

| | |
|--|-------|
| Introduction | 13-3 |
| Compliance With Other Permits | 13-3 |
| Hard Rock Excavations | 13-4 |
| Crushed Stone Operations | 13-4 |
| Permit Conditions | 13-4 |
| Blasting | 13-5 |
| Highwall Protection | 13-5 |
| Safety Bench | 13-5 |
| Reclamation | 13-5 |
| Dimension Stone Operations | 13-6 |
| Permit Conditions | 13-6 |
| Blasting | 13-6 |
| Highwall Protection | 13-7 |
| Reclamation | 13-7 |
| Waste Rock Disposal | 13-7 |
| Industrial Mineral Operations | 13-8 |
| Permit Conditions | 13-8 |
| Sand, Gravel and Common Clay Mines | 13-9 |
| Sand and Gravel Mines | 13-9 |
| Permit Conditions | 13-9 |
| Reclamation for Tailings Ponds | 13-10 |
| Groundwater Monitoring | 13-10 |
| Clay Mines | 13-10 |
| Permit Conditions | 13-10 |
| Soil Contaminates and Reclamation | 13-11 |
| In-stream Mining Operations | 13-11 |
| Required Information | 13-12 |
| Dredge Operations | 13-13 |
| Dragline Operations | 13-13 |
| Reclamation | 13-13 |
| Dredge Operations | 13-13 |
| Permit Conditions | 13-13 |
| Dragline Operations | 13-14 |
| Permit Conditions | 13-14 |
| Gem Mines | 13-17 |
| Permit Conditions | 13-17 |

13 *Operation Specific Issues*

Introduction

Many different types of mining operations exist in North Carolina. For each type of mining operation, specific concerns are addressed in operating and reclamation conditions in the individual permit documents.

This chapter describes the specific operating and reclamation concerns of DEHNR for each type of mining operation.

For each type of mining operation, the permit conditions applicable to that type of operation are described.

These issues are covered by stipulations in the permit document to the extent allowed by the Act.

Compliance With Other Permits

All permits contain operating conditions that address public and environmental protection by stipulating compliance with other permits or existing regulations of other agencies. These conditions require that the operator comply with:

- Approved erosion and sediment control plans
- DEHNR Division of Environmental Management (DEM) Air Quality Section standards and/or permits
- DEM Water Quality Section standards and/or permits
- State accepted wetland delineations by the U.S. Army Corps of Engineers
- DEM Groundwater Section guidelines for dewatering excavations

Hard Rock Excavations

Hard rock quarries provide many different products for the consumer.

Crushed rock is used in building or making:

- Roadways
- Concrete
- Concrete blocks
- Ballast for railroads
- Paving materials

Dimension stone is used to make:

- Monuments
- Curbing
- Building facing

Many hard rock mining operations exist across North Carolina. These operations are typically characterized by:

- Overburden removal
- Excavations
- Processing areas, such as crushing, screening and washing

A mining permit, when issued for a hard rock quarry, stipulates operating and reclamation conditions to protect the surrounding environment and adjoining landowners from damage from the mining operation.

Crushed Stone Operations

Permit Conditions

Operating and reclamation conditions are stipulated within the permit to provide protection to the public and environment as required by the Act.

Blasting

Blasting conditions require the operator to monitor each blast with a seismograph and to keep detailed records for each blast. (See Chapter 14 - Blasting).

Limits are set for air blast overpressure and ground vibration caused by each blast.

- The **air blast** cannot exceed 128 dBL, measured at the closest off-site occupied structure.
- **Ground vibration** cannot exceed 1 inch per second, measured at the closest off-site occupied structure.

Highwall Protection

Hard rock excavations with highwalls are required to provide a barrier around the top of every highwall to prevent inadvertent entry along the wall.

Depending on the height of the highwall and the location of the site, the barrier may consist of:

- Boulders placed end-to-end
- Berms
- Fencing
- Any combination of these measures

Safety Bench

A safety bench at least 10-feet wide must be provided at the junction of the top of the rock and the toe of the overburden cut slope around the entire pit.

Reclamation

At reclamation, the operator must provide:

- A permanent access into and out of the pit
- A permanent barrier along any highwall

Dimension Stone Operations

Dimension stone quarries differ greatly from crushed stone quarries. The rock is extracted by blasting, burning, drilling, ripping, or sawing.

A small amount of explosives (usually black powder) may be used to bump the rock free from the rock outcrop.

The relative amount of waste rock created by dimension stone quarries is much greater than crushed stone operations because of the size and quality of stone required from dimension stone operations.

Waste rock is typically either pushed into an existing pit or is stockpiled and covered with soil and revegetated as part of reclamation.

An insufficient amount of on-site cover material for reclamation and stabilization of the waste rock may exist at the site.

Permit Conditions

In applying for a mining permit for a dimension stone quarry, the following items must be fully addressed:

- Blasting
- Highwall protection
- Pit reclamation
- Waste rock disposal

Blasting

Dimension stone operations do not use the amount of explosives that crushed stone operations do.

The intent in dimension stone operations is to carefully move the rock away from the pit walls without damaging it. However, such blasting procedures may produce loud air blasts.

Permit conditions for such operations require that:

- **Air blast overpressure** not exceed 128 dBL at the closest off-site occupied structure, and
- **Ground vibration** not exceed 1 inch per second at the closest off-site occupied structure.
- The operator **monitor each blast with a seismograph** and to keep detailed records concerning the conditions of the blast
- As an additional measure, wooded buffers and/or berms should be retained or constructed around the perimeter of the site to provide noise buffering.

Highwall Protection

Because of the vertical walls created by dimension stone quarries, highwall protection is required throughout the life of the permit and at final reclamation of the pit. Safety must be addressed around the pit as the pit walls are vertical and fairly smooth. The permit stipulates fencing or boulder barriers as highwall barriers to prevent inadvertent entry along a highwall.

Reclamation

At reclamation, the pits typically fill with water to a natural overflow level or remain as exposed rock faces. Permanent access must be provided into and out of the pit(s).

Waste Rock Disposal

Dimension stone quarries have waste rock that may be the size of small boulders or a typical block.

Disposal of this rock is of great concern, both environmentally and for safety reasons. Typically, dimension stone sites have very little soil overburden (as little as a few inches).

Covering waste rock for permanent disposal with an adequate amount of soil from the same site and revegetating it is not usually feasible.

The operator should fully investigate alternative methods for reclamation of waste rock. Hauling soil material from other sites to cover existing waste rock stockpiles may be required for final reclamation. The operator may prefer to crush and stockpile rock as a marketable product.

Many dimension stone sites push waste rock into the abandoned pits and allow water to fill the pits. In this case, the permit document will stipulate a safe water depth above the waste rock.

Industrial Mineral Operations

Different types of industrial mineral mines are present in North Carolina, including:

- Feldspar
- Mica
- Lithium
- Clay

Permit Conditions

Most industrial mineral operations are very much like crushed stone operations in that the same highwall barrier and blasting permit conditions are required.

However, industrial mineral operations typically have large overburden disposal areas. Because of the topography of western North Carolina, in particular, care must be exercised when constructing these disposal areas.

End-dumping, where an operator continuously backs up to an area and dumps the soil without compacting the soil in lifts, may cause slope stability problems.

Permit conditions may stipulate that overburden be brought up in compacted lifts and stabilized as each lift is completed.

Sand, Gravel and Common Clay Mines

Sand, gravel, and clay operations are scattered throughout North Carolina.

- Sand and gravel are used primarily in the construction industry.
- Common clay is used for brick.

These operations have many common attributes:

- Blasting is not typically used to extract the material. Instead, excavators, backhoes, pans, bulldozers, and other equipment, are used to extract the mined material.
- Crushers are not typically used at these sites.
- The depth of the excavation(s) is typically not as deep as crushed stone operations.
- Pit walls are unconsolidated material (soil), so benching is not needed. Pit walls are sloped back and seeded at reclamation and may not require permanent highwall barriers.

Sand and Gravel Mines

Permit Conditions

Sand and gravel operations are required to have the following public safety measures:

- Highwall protection when near vertical slopes are over 10 feet in vertical height
- Barriers may consist of fencing or berms but must be substantial enough to prevent inadvertent entry.
- Buffers are required along all permit boundaries to prevent slope failure from damaging unpermitted lands.
- All inactive slopes must be graded and stabilized as specified by the permit.

Reclamation for Tailings Ponds

The operator must clearly indicate the method of reclamation of settling and tailings ponds. They must either be:

- Drained and revegetated ,or
- Made into acceptable water bodies.

Either way, the operator must ensure that the contained material is stable upon final reclamation.

Groundwater Monitoring

Some sand and gravel operations mine deep enough to encounter groundwater.

Dewatering allows the operator to mine **in the dry**. In eastern North Carolina, groundwater contamination from underlying saline groundwater or nearly saline ground water is a concern as an excavation is deepened and dewatered.

The mining permit stipulates that the operator:

- Comply with all state and federal regulations governing groundwater and surface water standards
- May be required to install groundwater monitoring wells in accordance with the rules and requirements of the Groundwater Section of DEM

Clay Mines

Permit Conditions

Clay operations having very steep side slopes are required to construct highwall barriers for all highwalls.

All inactive slopes must be graded and stabilized as specified by the permit.

Because of the soil particle size and the tendency for clayey particles to remain in suspension for long periods of time, the mining permit will require compliance with DEM Water Quality Section standards regarding the control of turbidity.

Soil Contaminates and Reclamation

Many clay operations accept petroleum-contaminated soils to be used in their brick-making process. The contaminants are burned off during the processing.

The mining permit stipulates compliance with the DEM Groundwater Section and its requirements regarding petroleum-contaminated soil.

Reclamation of contaminated soil storage areas consist of complete remediation.

The area must be considered uncontaminated before it will be considered reclaimed by the Land Quality Section.

In-stream Mining Operations

Many rivers and streams in North Carolina have in-stream mining operations. Typically, in-stream mining operations remove sand deposited in the river or stream beds.

In-stream mining operations are either:

- Dredge mines
- Dragline mines.

Dredge operations remove sand by pumping it from the river bed.

Dragline operations remove sand deposits with a crane fitted with a bucket. The bucket is swung out into the river or stream and dropped. The bucket is pulled back onto the river bank, and the sand is dumped onto the ground at the top of the river bank.

Because the deposits are sometimes located in bends, these operations may be hazardous to river traffic. Site distance is limited for any traffic in the river and for the equipment operator. Safety concerns for the operations are specifically addressed in the mining permit.

In-stream mining operations may disrupt fish spawning if operating during certain months of the year. If this is found to be true for a certain site, the North Carolina Wildlife Resources Commission recommends the months in which no mining activities are to occur in the river. The mining permit will usually reflect these recommendations.

Required Information

The Mining Permit Application form must be filled out completely for any in-stream mining operation permit action. The permitted and affected acreage must include:

- All stockpiles
- Haul roads
- Buffers as indicated in the application
- In-stream mining limits and acreage.

The mine maps must clearly indicate the following:

- Width of the river in the section to be mined
- Width of the mining operation into the river
- Length of the instream mining limits
- Locations of the earthen berms
- Stabilized outlet points (along with typical construction details) to address erosion and sedimentation concerns
- Widths and lengths of all undisturbed buffers along the river.

A typical cross sectional view through the river must be provided showing:

- The elevation of the banks
- Slope of the banks
- The normal water elevation

Dredge Operations

If the operation uses a dredge, indicate:

- The dimensions of the dredge
- The location of the settling pond
- Approximate cable locations

Dragline Operations

If the operation used a dragline, indicate:

- Locations of all access points to the river with undisturbed buffers parallel to the river on both sides of the access points
- Lengths of all access points

Reclamation

Reclamation of any denuded river banks must be addressed in the reclamation plan.

Contact the North Carolina Wildlife Resources Commission for assistance in preparing a reclamation plan for your particular site.

Dredge Operations

Permit Conditions

Dredging operations involve pumping sand from the river bed into a holding and dewatering area on the river bank.

The equipment used to remove the sand is cabled off in the river. The cables pose safety hazards to river traffic. Operating conditions in the mining permit stipulate the following:

- Signs must be posted upstream from the operation warning of the cables and dredging operation.
- The operation may only operate during the daylight.
- When river traffic approaches, the operator must cease pumping and idle. The operator must direct river traffic around the pontoon supporting the equipment in the river.

- Cables holding the equipment in the river must be at least eight feet above the water, clearly marked with visible markers, and out of the water at all times.
- If an anchoring system is used to anchor the pontoon to the middle of the river, a buoy must mark the location of the anchor.
- Dredging cannot take place when the water level is 3 or more feet above the normal water elevation.
- When the dredge is inactive and moored to the side of the river, all equipment in the river must be secured.
- To protect bridges and culverts, buffer restrictions are stipulated between the dredge operation and these structures.
- Reclamation conditions stipulate that all disturbed river banks must be revegetated with indigenous vegetation.

Dragline Operations

Currently, DEHNR is concerned with the degradation of river or stream banks produced by dragline mining.

While DEHNR continues to evaluate the effects of dragline mining in river systems, the Mining Commission has limited the mining permit life of all in-stream dragline operations to no more than 5 years.

Permit Conditions

Dragline operations are sometimes situated in a bend in the river or stream.

- Operating conditions in the mining permit stipulate that the operation must have signs clearly posted upstream and downstream from the operation warning of the potential danger with the operation.
- The equipment operator must cease operation of the dragline until river traffic passes safely by the operation.

The DEHNR Division of Parks and Recreation has designated some rivers as State River Trails. These rivers have access points for canoeists and other boaters.

Dragline operations cannot be located such that the operation would endanger the life of canoeists or other river users.

On State River Trails, dragline operations must be located away from access points in straight sections of the river so that sight distance will allow the boater enough time to safely maneuver away from the operation. The operator should stop operating before the boater reaches the dragline area.

If fish spawning sites are located near the mining operation, operating conditions in the permit may limit the season(s) in which mining may occur.

These limitations are based on the recommendations of the North Carolina Wildlife Resources Commission.

During the operation of the dragline equipment, the river or stream banks may be disturbed either by:

- Drippings from the bucket
- Actual scraping by the bucket

In either event, the vegetation sometimes fails, and the bank erodes.

In an effort to reduce the impact of such operations to the river system, a dragline mining permit stipulates that undisturbed buffers be left parallel to the river in between cut over access points.

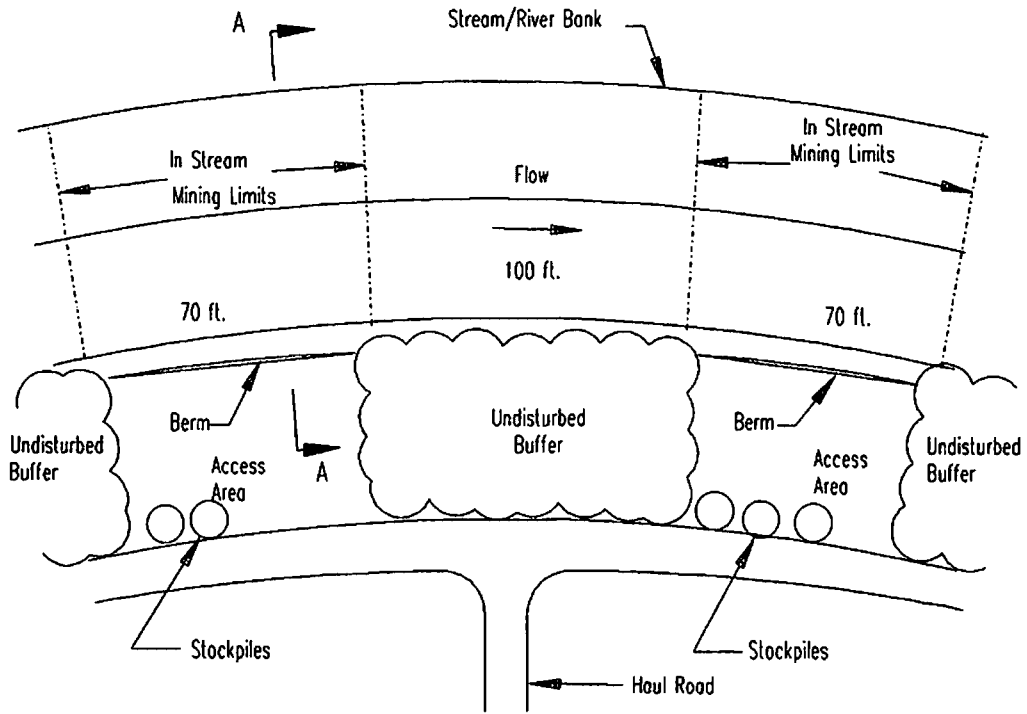
(See **Figure 13-1 - Dragline Operation Schematic** for a schematic view of the buffer requirements).

These restrictions allow the natural vegetation along the river bank to remain intact.

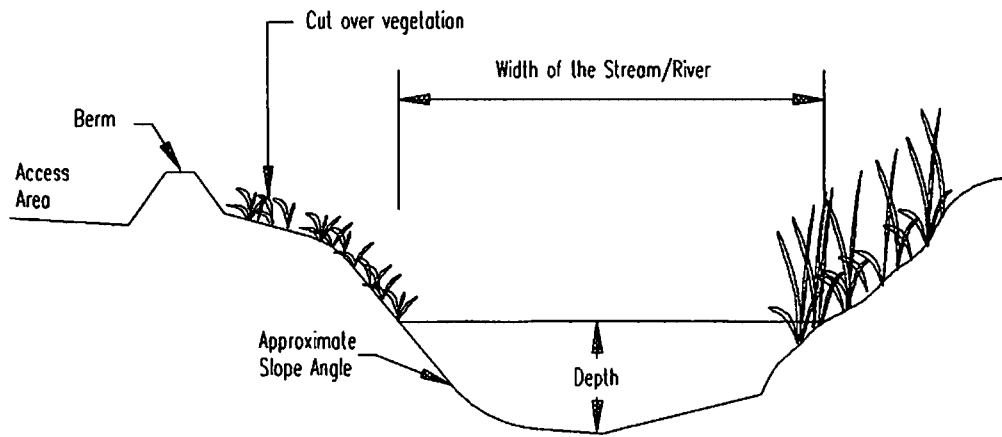
Access points may have trees and brush cut from the river banks but the stumps and root systems must remain intact.

A vegetated earthen berm with stabilized outlet points must be maintained at the top of the river bank to keep runoff from the stockpile area from washing into the river.

When a river bank has been disturbed by the mining operation, the operator is required to restabilize it. Restabilization may take several seasons, as storms may cause accelerated erosion along the banks.



PLAN VIEW



SECTION A

Figure 13-1. Dragline Operation Schematic

Gem Mines

Gem mines are scattered across the mountains and foothills of western North Carolina. Typically, they are small sites, similar to most borrow pits. However, most gem mines have a sluice for washing the mined material. The greatest concern at a gem mine operation is the potential for off-site sedimentation.

Permit Conditions

A typical gem mine mining permit stipulates that:

- An undisturbed buffer width be maintained along any streams or other bodies of water
- The discharge from the sluice must be in compliance with rules enforced by the DEM Water Quality Section

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14 Blasting

CONTENTS

| | |
|--|-------|
| Introduction | 14-3 |
| Definitions | 14-3 |
| Air Blast | 14-3 |
| Blast Area | 14-3 |
| Blast Site | 14-3 |
| Blasting Seismograph | 14-3 |
| Burden | 14-4 |
| Decibel (<i>dB</i> L) | 14-4 |
| Decking | 14-4 |
| Delay Interval | 14-4 |
| Detonator | 14-4 |
| Explosive Material | 14-4 |
| Flyrock | 14-4 |
| Millisecond (<i>ms</i>) | 14-4 |
| Particle Velocity | 14-4 |
| Peak Particle Velocity (<i>ppv</i>) | 14-5 |
| Powder Factor (<i>PF</i>) | 14-5 |
| Qualified Blaster | 14-5 |
| Scale Distance (<i>SD</i>) | 14-5 |
| Shot | 14-5 |
| Spacing | 14-5 |
| Stemming | 14-5 |
| Typical Blasting Conditions Required By Surface Mining Permits | 14-6 |
| Vibration | 14-7 |
| Scale Distance (<i>SD</i>) | 14-7 |
| Controlling Vibration | 14-8 |
| Air Blast | 14-9 |
| Causes of Excessive Air Blast | 14-9 |
| Insufficient or Improper Stemming | 14-9 |
| Inadequate Burden | 14-9 |
| Excessive Burden/Spacing | 14-10 |
| Weather | 14-10 |
| Improper Delay Interval | 14-10 |

Operation Considerations - Controlling Adverse Effects of Blasting 14-11

- Flyrock: Causes and Preventive Action 14-11
 - Improper Powder Factor 14-11
 - Overloading of Holes 14-11
 - Insufficient Stemming 14-12
 - Lack of Burden 14-12
 - Improper Delay Patterns 14-12
 - Weak Geological Rock Structures 14-13
 - Flyrock Investigative Report 14-13

Management of Complaints 14-19

Training 14-21

Recommended References 14-22

14 *Blasting*

Introduction

This chapter provides information about:

- Blasting definitions
- Surface mining permits and blasting conditions
- Controlling vibrations
- Air blasts
- Complaints
- Flyrock and adverse effects of blasting
- Training
- Recommended publications

Definitions

Air Blast

An air blast is an airborne shock wave resulting from the detonation of explosives; it may be caused by burden movement or the release of expanding gases into the air; it may or may not be audible.

Blast Area

This is an area within the influence of flying debris, gases and concussion from an explosion within which injury to property and persons may occur.

Blast Site

The blast site is the area where explosive material is handled during loading, including the perimeter formed by loaded blast holes and 50 feet in all directions from any loaded blast hole.

Blasting Seismograph

An instrument used in monitoring blasts to measure ground vibration and air blast.

Burden

The burden is the distance from the bore hole to the nearest open rock face.

Decibel (dBL)

A decibel (dBL) is a unit of air overpressure commonly used to measure air blast, on a low frequency linear or flat weighted scale.

Decking

Decking is a loading technique in which inert material (sand, clay, or crushed stone) is placed in a blast hole to separate a column of explosive material and is usually used to reduce explosive energy and loading density in a blast.

Delay Interval

Delay interval is the time interval between successive detonations within a blast.

Detonator

A detonator is a blasting cap, either electric or non-electric.

Explosive Material

Explosive material includes explosives, blasting agents, and caps.

Flyrock

Flyrock is rock that is displaced out of the blast area as the result of blasting which travels beyond the permitted boundaries and guarded area.

Millisecond (ms)

A millisecond is one thousandth of a second.

Particle Velocity

Particle velocity is a measurement used to describe in inches per second the speed or excitation of particles when a blast vibration passes through a specific point in a medium such as ground or rock.

Peak Particle Velocity (ppv)

Peak particle velocity is the highest measured particle velocity of any single component of three mutually perpendicular planes of motion:

- Longitudinal (radial)
- Transverse
- Vertical

Powder Factor (PF)

The powder factor (PF) is the ratio between the weight of shot rock (in tons) and the weight (in pounds) of the explosive material required to blast the rock.

Qualified Blaster

A qualified blaster is a person possessing the requisite and demonstrable skills necessary for the safe and effective design, loading, and firing of a blast.

Scale Distance (SD)

The scale distance (SD) is a ratio used to predict approximate ground vibration in blasting. SD equals the distance from the blast to an object of concern (measured in feet), divided by the square root of the maximum weight of explosives (measured in pounds), per delay period.

Shot

Shot is a term used to describe the actual blast, the specific site where explosive materials are loaded, or the muck pile produced by the blast.

Spacing

Spacing is the distance between boreholes, parallel to the open face and perpendicular to the burden of a bench.

Stemming

Stemming is inert material, such as drill cuttings or crushed stone, which is placed in a borehole after loading the explosives column; it is used for the purpose of confinement.

Typical Blasting Conditions Required By Surface Mining Permits

1. The primary concern is that all blasting should be conducted with the safety of involved personnel and citizenry.
2. **All blasting shall be conducted by a qualified blaster.**
3. All explosive materials shall be transported, stored, and used in strict accordance with all applicable local, State and Federal regulations and manufacturers' instructions.
4. Blasting shall be conducted in such a way as to pose no significant adverse effect to persons or property outside the permitted area.
 - **Flyrock should not occur outside the permit boundaries** and every effort should be taken to insure against such an incident. Any occurrence of flyrock beyond the permitted boundaries and guarded area shall be considered a permit violation.
 - **Each blast shall be monitored by a blasting seismograph**, preferably at the closest regularly occupied dwelling, public building, school, church, commercial, or institutional building outside the permit boundaries.
 - **Ground vibration** is not to exceed 1.00 inch per second peak particle velocity measured on any single component of motion. **Air blast** is not to exceed 128 decibels (linear scale).
 - Should flyrock occur or limits on vibration/air blast be exceeded, the operator shall report the incident(s) to DEHNR immediately and conduct a thorough investigation.
 - In the case of flyrock or excessive ground vibration readings, blasting shall be immediately suspended until a satisfactory report detailing the investigation is submitted within 10 days of the incident. The report shall meet with the approval of DEHNR and shall document causes and corrective courses of action to prevent further such incidents.

- If air blast limits are exceeded, the operator shall immediately report the event with causes and corrective actions to DEHNR. Use of explosives at the blast site that produced the excessive reading shall cease until the corrective actions have been approved by DEHNR. However, blasting may occur in other approved areas within the permitted boundary. Authorization to blast at the blast site may be granted at the time of the verbal reporting of the high air blast reading if the circumstances justify verbal approval. **Failure to report will constitute a permit violation.**
5. The operator shall document each blast event on a report form that fully describes all parameters of the shot. Records shall be maintained at the quarry office and shall be provided to DEHNR upon request. (See Figure 14-1 Sample Blast Report form in *Operation Considerations* section).
 6. The operator shall give 24 hours advance notice to the Land Quality Section, prior to any blast, during a period for which notice is requested.

Vibration

Scale Distance (SD)

Every effort should be made to monitor each blast with a seismograph located at the closest occupied structure outside the permit boundary (measured from the blast face). The following may be typical seismograph locations:

- Dwelling
- Public building
- School
- Church
- Commercial, or
- Industrial building

It may be necessary to use seismographs at multiple locations or to monitor at a site further away than the nearest structure in order to develop vibration data addressing a specific complaint.

If monitoring is not conducted at the nearest site off the permit boundary, a vibration prediction method known as Scale Distance may be used to predict particle velocities at the closest off site occupied structure.

Scale distance (SD) is a relationship between distance (D), in feet, from the blast to a point of concern, such as the nearest off site structure from the permit boundary, and the square root of the maximum charge weight (W) in pounds per 8 ms delay period, or:

$$SD = (D/\sqrt{W})$$

Controlling Vibration

The most significant factors affecting vibration are the following:

- Relationships of explosive weight
- Delay interval
- Distance from the blast

Vibration will be minimized if the blaster designs blasts to:

- Minimize pounds of explosive materials per delay
- Minimize wasted explosive energy

Other factors that could contribute to explosive vibrations are:

- Excessive burden and spacing
- Excessive subdrilling

Good blast design is dependent on:

- Proper hole layout
- Delay timing pattern.

An equation used to determine what weight of explosives per delay intervals would be suitable to insure against excessive vibration is:

$$W = (D/55)^2$$

A scaled distance (SD) of 55 or higher is recommended as a planning factor in blast design to control vibration at the nearest off site occupied structure.

It may ensure that projected peak particle velocities will not exceed 1.00 inch per second.

Air Blast

Air blast, or overpressure, may be described as the airborne shock wave resulting from the detonation of explosives and is monitored by a fourth channel and microphone on a blasting seismograph.

Air blast is primarily affected by factors such as blast design and weather.

Although frequently causing annoyance, air blast very rarely causes damage.

Causes of Excessive Air Blast

Insufficient or Improper Stemming

Drill cuttings, soil, or fine sediments do not make good stemming.

Crushed stone (3/8-inch to 3/4-inch) is the best stemming.

Equations for avoiding stemming ejection from the blast hole are:

$$S = 25 d \quad \text{or} \quad S = .7B$$

Where,

S = Length of stemming from top of explosives in the borehole to the top of borehole.

d = Diameter of borehole.

B = Width of burden.

Inadequate Burden

Inadequate burden usually occurs when too little rock exists in front of the borehole. Weak structural conditions in the rock, such as cavities, joints, cracks, and seams, also may cause air blast and flyrock.

These conditions may be corrected by decking through the critical zone or by simply not putting explosives in the blast hole adjacent to such conditions.

**Excessive
Burden/Spacing**

Air blast may occur if drill patterns are excessive and explosive energy is not sufficient to break and dislodge the rock.

If this condition exists, stemming ejection and cratering will occur around the top of each borehole producing excessive air blast and possible flyrock. Proper burden and spacing relationships will eliminate this problem.

Weather

Temperature inversions and high wind speed may greatly enhance air blast. Blasting should be avoided under such unfavorable weather conditions. Inversion information is available from the National Weather Service.

**Improper
Delay Interval**

An improper delay interval between each hole may cause excessive air blast. Typical millisecond(ms) timing between:

Holes in a Row = 1.5 to 3.0 ms X B

Rows of Holes = 3.0 to 8.0 ms X B

These values will help minimize air blast.

Operation Considerations - Controlling Adverse Effects of Blasting

Flyrock: Causes and Preventive Action

Fly rock is the major cause of death, injury, and property damage resulting from blasting.

The following are causes and subsequent courses of action to avoid the occurrence of such incidents.

Improper Powder Factor

The most important factor when considering flyrock is the ratio between the weight of shot rock, in tons, and the weight of explosive materials (powder) to blast the rock, in pounds.

- A reduced mass of rock burden adjacent to a borehole will require decreased explosive materials in order to maintain a consistent powder factor or mass/energy relationship.
- Most blasts are designed with a powder factor range of 1.5 to 3.0 that yields well-controlled and consistently acceptable fragmented rock.
- When the powder factor decreases toward 1.0, the likelihood increases for flyrock to occur.
- It is this relationship that a blaster must keep in mind in order not to over shoot the rock; therefore, the lower the powder factor, the higher the probability for flyrock to occur.

Overloading of Holes

This practice is especially dangerous and should never occur.

- The use of a measuring tape in every hole to measure column rise is essential.
- Drilling and blasting logs should be kept on each loaded blast hole to avoid loading too much explosive material.

Insufficient Stemming

Too little and/or poor quality stemming may lead to flyrock.

- Make certain that each hole is adequately filled.
- Crushed stone (3/8 inch to 3/4 inch) works best.

Lack of Burden

If the affected distance from a borehole to the free face is insufficient, flyrock may occur.

- Front row minimum burden distances should be carefully monitored.
- Measure front row burdens and decrease the explosive load in weak areas of the wall.

Excessive Burden

Excessive burden may lead to flyrock.

- Insufficient relief may create an excessive upward thrust of rock being blasted.
- Rock may follow the path of least resistance which may be straight up and back of the shot.
- Proper burden placement is essential.

Improper Delay Patterns

Out of sequence hole timing may render any shot dangerous and unpredictable.

- Proper delay sequences are essential for correct fragmentation and rock movement.
- Get to know which delay patterns work best and pay close attention to the delay design.

Weak Geological Rock Structures

Caves, fractures, faults, and mud seams are some of the hidden abnormalities that may occur.

- The blaster must compensate for such weak zones by not placing explosives in those areas or by reducing the size or amounts of explosive products in those areas of weakness.
- Decking is a loading method that may offer a measure of control to this condition.

Flyrock Investigative Report

Should flyrock travel beyond the permitted boundaries and guarded area, the following steps should be taken:

1. Damage and injury must be immediately assessed and appropriate control and first aid/medical measures implemented.
2. All blasting operations must cease and the Land Quality Section must be notified immediately.
3. An investigative report must be prepared by qualified personnel as to the causes of the flyrock and subsequent corrective measures that will be taken for future blasts.
4. Submit the report in duplicate within 10 days of the incident to the Land Quality Section.

Note: Blasting must not be resumed until an acceptable investigative report has been received and the proposed corrective and preventive measures to be implemented are approved by the Director.

An investigative report should include the following:

- **Blast Report (See Figure 14-1 -- Sample Blast Report)**
- **Seismograph Report (See Figure 14-2 - Example Seismograph Reading)**
- **Sample Blasting Complaint Form (See Figure 14-3 Sample Blasting Complaint Form)**
- Description of the incident detailing any injuries and/or damages
- Statement of the blaster
- Statement of the driller
- Drilling record
- Statement of witnesses
- Photographs of wall, muck pile and flyrock damages
- Map or aerial photograph showing blast site, path and distance the rock traveled and exact location of off-site damages
- Description as to size of largest flyrock (photo with scaled inset)
- Probable causes of flyrock
- Corrective and preventive actions

Plant No. _____ Year _____ Shot No. _____

SAMPLE BLAST REPORT

1. Quarry/Mine: _____ State: _____ Date: _____ Time of Blast: _____
2. Type of Material Blasted: _____ Purchase Order Number: _____
3. Weather Condition: Clear ___ Partly Cloudy ___ Overcast ___ Rain ___ Wind From/Speed ___ Temp Deg F ___
4. Location of Blast: _____
5. Direction/Distance from Blast to Nearest Non-Quarry Building: _____
6. Type of Blast: Production ___ Other(describe) _____
7. Number of Holes: _____ No. of Inclined Holes: _____ No. of Leveling Holes: _____
8. Hole Depth: _____ Hole Size: _____ Stemming Heights: _____ Type of Stemming: _____
9. Burden: _____ Spacing: _____ No. of Rows: _____ Depth of Sub Drilling: _____
10. Deck Loading: No ___ Yes ___ (diagram on reverse) Mats used: No ___ Yes _____
11. Type of Initiation: Electric ___ No. of Series/Circuits _____ Non-electric ___ Other _____
12. Blasting Machine Model: _____ Sequential Settings: _____
13. If sequential, was blast fully activated before first hole detonation occurred? Yes _____ No _____
14. Detonators used: Manufactured by: _____ Type: _____ Total Number: _____

| MS | Length | | MS | Length | | MS | Length | | Other: Higher Period, NONEL, Det. Cord (No. of feet, etc.) |
|----|--------|-----|-----|--------|-----|-----|--------|-----|--|
| | ft. | ft. | | ft. | ft. | | ft. | ft. | |
| #1 | | | #8 | | | #15 | | | |
| #2 | | | #9 | | | #16 | | | |
| #3 | | | #10 | | | #17 | | | |
| #4 | | | #11 | | | #18 | | | |
| #5 | | | #12 | | | #19 | | | |
| #6 | | | #13 | | | #20 | | | |
| #7 | | | #14 | | | | | | |

15. Explosive Materials and Services Used:

| Pounds/Units | Manufactured by: | Name/Trademark | Loading Density (Lbs./ft.) | Size |
|--------------|------------------|----------------|-------------------------------|------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Figure 14-1. Sample Blast Report, Page 1

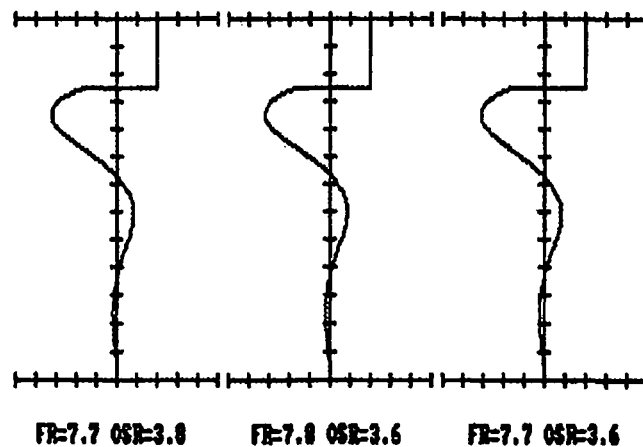
EVENT SUMMARY SHEET

Event Type Full Waveform.
Serial No. 2013 V5.3-677
Code D0135MSZ.ADI
Time & Date Mic. at 12:42:13 Jan. 17, 1996
Trigger Source Geo or Mic 0.050 in/sec 114.8 dB(L)
Record Time 1 sec. stored in Uncompressed

Location Lenoir N.C.
Client Smith Estate
User XYZ
Notes Jones Residence 1111 Mountain Road
 Lenoir N.C.
Scaled Distance N/A

Peak Vecotr Sum 0.050 in/sec at -223 ms
Microphone Linear Weighting
PK Air 116.6 dB(L) at 2 ms
ZC Freq 11 Hz
Battery Level 6.5 volts

| | TRAN | VERT | LONG | |
|-----------------------|--------|--------|--------|--------|
| PPV | 0.045 | 0.025 | 0.035 | in/sec |
| ZC Freq | 37 | 64 | 37 | Hz |
| FFT Freq | 43 | 10 | 27 | Hz |
| Time (Rel. toTrig) | -223 | -228 | -80 | ms |
| Accel | 0.03 | 0.03 | 0.03 | g |
| 1/4 Wave Disp | 0.0002 | 0.0001 | 0.0001 | in |
| Sensorcheck | Passed | Passed | Passed | |



Internal MIC Channel Test: Passed Freq = 2- Amp = 515
 Calibrated on Nov 12, 1995 by ABC Geophysics, Inc.

Figure 14-2. Example Seismograph Reading

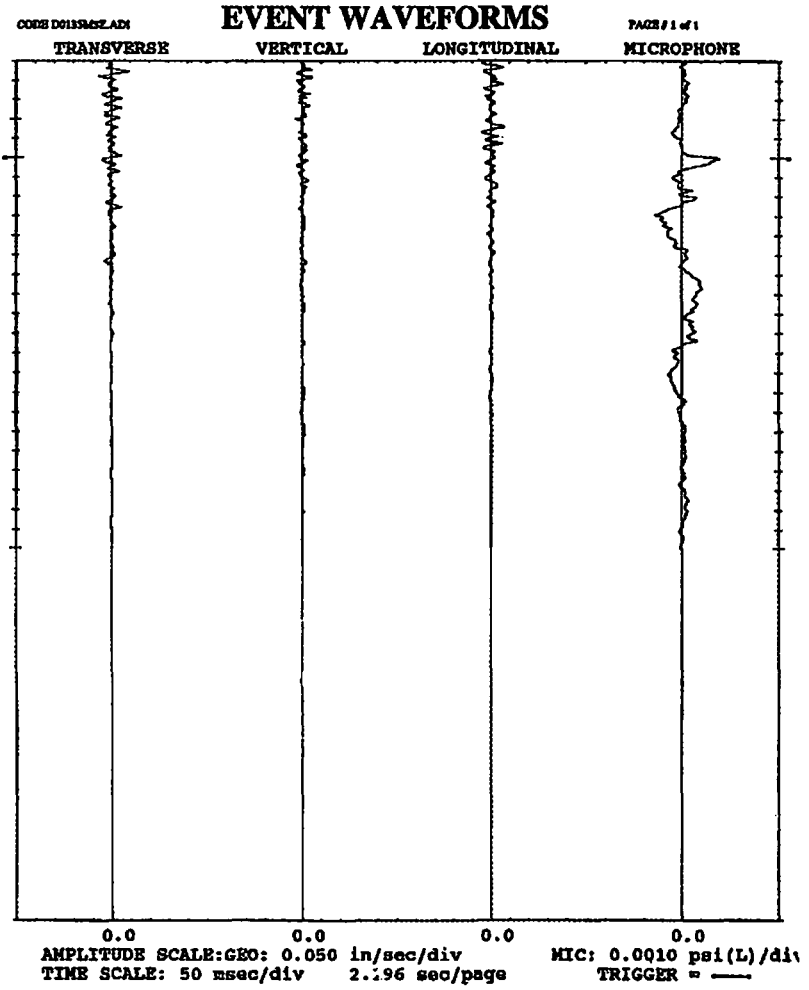


Figure 14-3. Example Seismograph Reading

Management of Complaints

Complaints resulting from blasting operations are an issue of serious concern. If unresolved, complaints may have negative impacts on the future extraction and use of mineral resources.

Follow up the complaint with a call or visit if the complainant appears to be dissatisfied with your response.

Always work toward being a good neighbor. Consider inviting neighbors to view a blast from a safe location.

The following guidelines may be used in handling complaints about blasting activities: (See Figure 14-3 Sample Blasting Complaint Form).

- Be courteous.
- Accept complainant's opinions as valid concerns.
- Encourage complainant to talk about the circumstances.
- Record complaints on a standard complaint form.
- Review the detailed blast report.
- Review the seismograph record.
- Request permission to monitor with a seismograph on complainant's property.
- If necessary to investigate site:
 - Observe all alleged damage
 - Observe all general conditions
 - Take notes, photographs
- Do not hesitate to seek an outside expert opinion in blasting or vibration.
- Follow up, visit, or conference with complainant to report results of investigation.

Sample Blasting Complaint Form

Quarry/Mine _____ Blast Report No.(must be attached) _____

Name of complainant _____ Phone number _____

Address _____

Date of complaint _____ Time of complaint _____

Date of blast _____ Time of blast _____

Complaint received by: _____ Via: Telephone ___ Person ___ Letter ___

Location/Description of property _____

Distance/Direction from blast _____

Was seismograph used? Yes ___ No ___ If yes, attach report or fill in readings on Blast Report.

Give distance/direction to complainant's property from seismograph _____

Complainant alleges: Vibration ___ Noise ___ Other _____

Has individual complained before? Yes ___ No ___ Was a pre-blast survey done on property? Yes ___ No ___

Did complainant request certain steps be taken, or make demands? Yes ___ No ___ Describe below.

Note important details of conversation: _____

| RESPONSE | DATE | ACTION TAKEN |
|----------|-------|--------------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

Figure 14-3. Sample Blasting Complaint Form

Training

Training in the proper use of explosives is the key to a successful blasting program.

Blasters should be given regular training in blasting that include instruction in:

- Transportation
- Storage
- Use
- Recordkeeping
- Seismic monitoring

Note: The procurement of contract blasting services does not relieve the operator of the responsibility for a safe blasting program.

Explosive training is available through any of the following sources:

- **North Carolina Department of Labor, Mine & Quarry Division.** This agency provides excellent blaster training at no charge several times annually at various locations throughout the State.

Mine Safety and Health Administration (MSHA), U. S. Department of Labor. This Federal agency has blaster training lesson plans available upon request and conducts an annual blasting seminar at the MSHA Academy in Beckley, West Virginia. Subject material includes new products, techniques, and updates on Federal regulations.
(919) 774-8113.
- **Explosive Manufacturers.** Many explosives companies provide on-the-job training in the form of technical service for a daily fee. An explosives company blaster can provide one-on-one training at the permittee's blast site.
- **Others.** Some private contractors provide blasting seminars for a fee. Vibration consulting firms also provide training that emphasizes seismograph use. These sources may be found in professional journals or through the **International Society of Explosives Engineers.**

Recommended References

Storage and Transportation

- *ATF - Explosives Law and Regulations*, Bureau of Alcohol, Tobacco, and Firearms, U.S. Department of the Treasury-ATF P 5400.7. Federal law on storage and transportation.

Use

- *Blasters Handbook*, International Society of Explosives Engineers, 1994, 29100 Aurora Road, Cleveland, Ohio 44139, (216) 349-4004. An easy-to-read, general primer on blasting (formerly the DuPont Handbook).

Vibration/Seismograph

- *Blasting Guidance Manual*, U. S. Department of Interior, Office of Surface Mining, Michael F. Rosenthal and Gregory L. Morlock, 1987. A technical manual on blasting seismology and seismographs.
- *Rock Blasting and Overbreak Control*, U. S. Department of Transportation, Federal Highway Administration. Publication No. FHWA-HI - 92-001, National Highway Institute. A technical manual on blasting seismology.

Vibration

- *Explosives and Rock Blasting*, ICI Explosives, USA (formerly Atlas Powder Co.), 1987, 15301 Dallas Parkway, Suite 1200, Dallas, Texas 75248. A detailed text book on blasting.

Federal Regulations

- *U.S. Bureau of Mines Report of Investigation 8507: Structure Response and Damage Produced by Ground Vibration from Surface Mine Blasting*, 1980, D. E. Siskind, M. S. Stagg, J. W. Kopp, C. H. Dowding. The defining standard in blast vibration research.
- *U.S. Bureau of Mines Report of Investigation 8485: Structure Response and Damage Produced by Airblast from Surface Mine Blasting*, 1980, D. E. Siskind, M. S. Stagg, V. J. Stachura, J. W. Kopp. The defining standard in air blast research.
- *Safety and Health Standards Applicable to Surface Metal and Non-Metal Mining and Milling Operations (MSHA Standards)* 30 CFR Part 56, Subpart E-Explosives. Federal regulations for surface blasting.
- *Safety Library Publications*, Institute of Makers of Explosives (IME), 1120 19th Street N. W., Suite 310, Washington, D. C. 20036-3605, (202) 429-9280. General use and safety information in pamphlet form.
- *The S.E.E.'s Explosive User's Reference Library*, 29100 Aurora Road, Cleveland, Ohio 44139, (216) 349-4004. A collection of explosive related publications from the International Society of Explosives Engineers. General information from technical and research publications.

N. C. Department of Labor

- *Mine and Quarry Division Rules and Regulations*: North Carolina safety regulations on explosive use at mine sites. Available on request through Mine and Quarry Division, (919) 733-7428.

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15 Groundwater Monitoring

CONTENTS

| | |
|---|------|
| Introduction | 15-3 |
| Observation/Monitoring Wells | 15-4 |
| Groundwater Protection Guidelines | 15-4 |
| Complaints | 15-5 |

15 Groundwater Monitoring

Introduction

During review of most permit applications by the Land Quality Section, other state and federal agencies may review application information for compliance with the regulations under their jurisdiction.

The Groundwater Section with DEM reviews permit applications to provide the Land Quality Section with guidance concerning groundwater issues.

Input from the Groundwater Section is provided on monitoring dewatering activities and/or possible sources of groundwater contamination.

This chapter does not attempt to cover all aspects of groundwater monitoring or well installation. It provides insight into the requirements that may be placed on an applicant when dealing with activities, such as dewatering and storing contaminated soils, within the mining permit boundaries.

Observation/Monitoring Wells

Observation wells are installed to monitor the groundwater fluctuations and/or the movement of any possible groundwater contamination.

Such wells are placed as close to the mining activity as feasible. Surficial groundwater barriers, such as streams, creeks, and other water bodies, should not be in between the monitoring wells and the source of contamination or the excavation being dewatered. The location(s) of monitoring wells is often recommended by the Groundwater Section.

Typically, for dewatering excavations, the Groundwater Section recommends installing one monitoring well directly up gradient and one directly down gradient from the excavation. However, each site is different.

The location of existing fresh water wells on adjacent properties may dictate the locations of monitoring wells.

Groundwater Protection Guidelines

The following groundwater protection guidelines are typical of operating conditions which may be placed in the mining permit:

- For new hard rock mining operations, the observation wells must be monitored at least 30 days prior to initiating any excavations of consolidated material (rock) in the initial pit area to allow for the determination of pre-existing (static) groundwater levels.
- For all other new mining operations involving dewatering, observation wells must be installed and monitored at least 30 days prior to initiating any excavation in the initial pit area to determine pre-existing (static) groundwater levels.
- Observation wells must be drilled wells cased to a specified depth and grouted to the surface.
- The bore holes must extend at least 50 feet below static groundwater level or at least 50 feet into unweathered rock, whichever is applicable.
- The wells must have a lockable cap to prevent unauthorized entry into the wells.

- Any necessary permits or guidelines to construct or abandon the wells should be obtained from the Groundwater Section.
- Observation wells must be monitored twice a month at the same date and time for the first 12 months after installation.
- The static water levels must be measured with an accuracy of ± 0.1 foot and must be referenced to a datum point.
- A record of the monitoring well water levels, bimonthly precipitation, and volume of pit water discharged must be maintained for the first 12 months after installation.
- Copies of these records should be provided to DEHNR on or about the end of each month. Static water level monitoring frequency may be increased or decreased following the initial monitoring period as deemed necessary by DEHNR.
- A map must be provided noting the locations of the wells when groundwater monitoring wells are proposed and/or required. The map may be attached to the permit and will be referred to in the operating conditions.

Complaints

- When the Land Quality Section receives a complaint from a landowner near a permitted mine site concerning groundwater drawdown, the Land Quality Section records all the information provided by the complainant.
- The approximate location of the complainant and the well or other structure possibly affected is noted on the mine map for the particular site.
- The complaint is then passed on to the Groundwater Section for investigation. The monitoring records are requested from the permittee and evaluated by both the Land Quality and Groundwater Sections.
- Based upon the results from the Groundwater and Land Quality Section's investigation, the permittee may be required to modify the mining permit, for example, to reduce the volume of pit water discharge.
- In any event, the permittee and the complainant will be notified by mail of the results of the investigation.

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16 Reclamation Plan Requirements

CONTENTS

| | |
|---|-------|
| Introduction | 16-3 |
| Reclamation Plan Requirements..... | 16-3 |
| Reclaiming as a Water Body | 16-5 |
| Construction Details..... | 16-5 |
| Outlet Structures..... | 16-5 |
| Slope Stabilization and Grading | 16-6 |
| Access | 16-6 |
| Habitat Consideration | 16-6 |
| Reclaiming As Upland Areas | 16-6 |
| Highwall Stabilization..... | 16-7 |
| Wildlife Considerations..... | 16-7 |
| Ground Cover..... | 16-7 |
| Reclaiming Mountain Region Floodplains..... | 16-13 |
| Reclaiming Uplands..... | 16-13 |
| Reclaiming Wetlands | 16-14 |
| Reclaiming Riparian Zones | 16-14 |
| Alternative Vegetation | 16-14 |
| Reforestation..... | 16-15 |
| Reclamation Agencies..... | 16-15 |
| Financial Incentives | 16-16 |
| Reclamation Awards | 16-16 |
| Submitting a Nomination | 16-17 |
| Judging Criteria | 16-17 |

16

Reclamation Plan Requirements

Introduction

Every permitted mine site must have an approved reclamation plan describing the intended method of reclamation for the disturbed areas at the site. The method of reclamation for a site is subject to the limitations of the site, the mining method, the depth of mining and the proposed use of the land after mining has ceased. As indicated in the Act, mined lands must be reclaimed to a useful purpose. Furthermore, reclamation must be carried out simultaneously with mining activities to the extent that is practical.

Note: Reclamation must be completed within two years after termination of mining on any permitted areas.

Additional information for reclamation issues for specific type of mines may be found in **Chapter 13 - Operation Specific Issues**.

Reclamation Plan Requirements

Section D of the Mining Permit Application form covers the intended reclamation of a mine site. Each reclamation plan is site-specific. The reclamation plan may consist of written information or a reclamation map separate from the mine map. The written information must address the issues noted in Section D of the Mining Permit Application form and provide clarification for the reclamation plan. If a reclamation map is used, the following information is required:

- Identity of areas to be reclaimed, including all areas previously affected by mining activities.

- Phases or sequence of reclamation. Reclamation must occur simultaneously with mining to the extent possible. Mined-out areas that will not be disturbed again should be reclaimed as soon as possible. A specific time outline for reclamation is not required. However, show the progression of reclamation activities on the reclamation map.
- Location of permanent water bodies and corresponding outlet structures. Outline and identify any ponds, lakes, etc., and outlet structures on the map.
- Location of permanent roadways, ditches, channels, buildings, berms and other structures not existing before mining activities began.
- Typical cross-sectional views through permanent water bodies and outlet structures, berms, roadways and ditches. Provide dimensions on the cross-sections.
- Cross-sectional view through any highwalls. Provide permanent highwall barricades along highwalls. A construction detail for the barricade must be provided, noting the installation of warning signs at specific intervals along the barricade.
- Erosion and sediment control measures required to complete reclamation. The design requirements are the same as those outlined in **Chapter 12 - Erosion and Sediment Control Design**.
- Standard mapping information, such as the preparer, date, telephone number, orientation of the site, location, legend, and scale.

As indicated previously, reclamation is dictated by many factors: the site characteristics, the method of mining, the mining depth and the proposed land use after mining has ceased. Reclamation of disturbed area can be completed as either a water body or as an upland area.

Reclaiming as a Water Body

Reclamation of excavations as permanent, productive water bodies is a practical method of reclamation. Productive water bodies may be created where the ground water table is high, the excavation is below the seasonably low groundwater table by at least four feet, and the excavation has primarily internal drainage.

Also, excavations may be reclaimed as lakes where the bottom of the excavation is sufficiently impervious and surface waters are directed into the pit at final reclamation.

Note: If streams or creeks will be diverted into the excavation as a part of final reclamation, the following is required before agency approval:

- **Primary approval of a detailed erosion and sediment control plan**
- **Accompanying narrative**
- **Copies of correspondence with other appropriate state agencies**

Excavations with water depths less than the minimum must either be backfilled to positively drain and then revegetated or developed into acceptable wetlands after gaining guidance from the N.C. Wildlife Resources Commission, the Land Quality Section, and the Water Quality section of DEM. In any event, the water body must be biologically productive.

Construction Details

Outlet Structures

All outlet structures for ponds and lakes must be accompanied by supporting calculations, regarding sufficient size and erosion resistance. Outlet structures to be installed in High Quality Water zones or in floodplains must be designed to pass at least the 50-year storm event for the total drainage area. All other outlet structures must be designed to pass the 25-year storm event.

Slope Stabilization and Grading

It is usually most economical for the operator to stabilize side slopes for water bodies while mining, as the excavation reaches the outer pit limits.

Slopes should be graded in unconsolidated material to 3 horizontal to 1 vertical or flatter **except** for hard rock excavations. In hard rock excavations, unconsolidated material above the soil-rock interface should be graded to 2 horizontal to 1 vertical, or flatter.

Back-filling in the wet is discouraged. Grading the cut slopes below water level as mining approaches the outer limits is more desirable. Consolidated material (hard rock) must be left in a stable condition, whether above the water level or below.

Access

Access into and out of the water body is required for all excavations with a water depth of ten feet or more. Truck ramps or flat side slopes along a side of the water body are possible alternatives for access points.

Habitat Consideration

To the extent possible, creating wildlife habitat in and around water bodies is very desirable. In unconsolidated material, one side slope of the pond or lake may be graded to 4 horizontal to 1 vertical or flatter to provide shallow fish breeding and bird wading areas. The N.C. Wildlife Resources Commission can provide more information about providing wildlife habitat areas.

Reclaiming As Upland Areas

Excavations that are above the groundwater table or that do not have a significant area of drainage internal to the pit are reclaimed as upland areas. Positive drainage throughout the site is required and all disturbed areas must be vegetated.

Highwall Stabilization

- Highwalls are left stabilized with regard to caving, slumping, or erosion.
- Slopes are graded in unconsolidated material to 2 horizontal to 1 vertical, or flatter.
- Highwalls require permanent barricades and warning signs.
- Slopes and highwalls are reclaimed as mining reaches outer pit limits.
- Cross-sectional views through the excavation, noting permanent gradients for side slopes, are required in the reclamation plan.

Wildlife Considerations

Creating wildlife habitat areas by planting wildlife seed is desirable. (see *Groundcover* in this chapter for more information on seeding specifications and wildlife seed). The N.C. Wildlife Resources Commission will provide more information about creating wildlife habitat areas.

Ground Cover

The minimum requirement for reclamation is that all disturbed areas must be stabilized with a permanent ground cover. Staged seeding is generally the most economical and efficient reclamation practice.

Ground Cover References in this Chapter

Three seeding tables are provided in this manual for guidance in preparing your revegetation schedule.

Figure 16-1 illustrates the three physiographic regions of North Carolina.

Tables 16-1 through 16-3 provide seeding specifications for the Mountain, Piedmont, and Coastal Plain regions.

A special section on floodplain sites in the Mountain region, is also provided.

These specifications are for poor soils and low maintenance. These basic specifications should be altered to fit your site.

Note: A qualified individual (as noted on page 14 of the Mining Permit Application form) should be consulted to verify that seeding specifications suit your site and soil conditions.

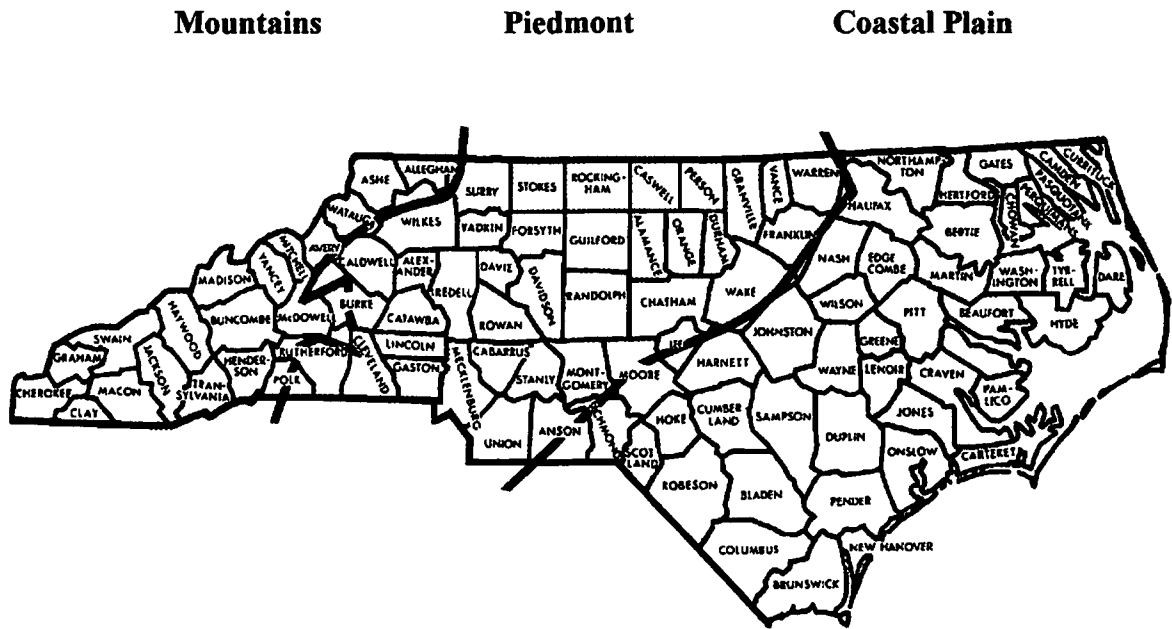


Figure 16-1. Major Physiographic Regions of North Carolina

Table 16-1. Seeding for Mountain Region, Steep Slopes, Low Maintenance*[from North Carolina Erosion and Sediment Control Planning and Design Manual]*

| Seeding Mixture | |
|---|--------------------|
| Species | (lbs/ac.) |
| Tall fescue | 100 |
| Sericea lespedeza | 20 |
| Korean lespedeza | 10 |
| Redtop | 5 |
| Kentucky bluegrass | 5 |
| Seeding notes: After August 1, use unscarified seed for Sericea lespedeza. | |
| Nurse Plants | |
| Between May 1 and August 15, add 10 lbs/ac. German millet or 15 lb/ac. Sudangrass. Between August 15 and May 1, add 40 lb/acre. Rye (grain). It may be beneficial to plant the grasses in late summer and overseed the lespedezas in March. | |
| Seeding Dates | |
| Best | Possible |
| Below 2500 ft | |
| Aug. 15 - Sept. 1 | July 25 - Sept. 15 |
| Mar. 1 - Apr. 1 | Mar. 1 - May 10 |
| Above 2500 ft. | |
| July 25 - Aug. 15 | July 15 - Aug. 30 |
| Mar. 20 - Apr. 20 | Mar. 5 - May 15 |
| Complete seeding earlier in fall, and start later in spring on north and east facing slopes. | |
| Soil Amendments | |
| Apply lime and fertilizer according to soil tests, or apply 4,000 lb/ac. ground agricultural limestone and 1,000 lb/ac. 5-10-10- fertilizer. | |
| Mulch | |
| Apply 4,000-5,000 lb/ac. grain straw or an equivalent cover of another suitable mulching material. Anchor mulch by tacking with asphalt, roving, or netting. Netting is preferred on steep slopes. | |
| Maintenance | |
| Mow no more than once a year. Reseed, fertilize and mulch damaged areas immediately. | |

Table 16-2. Seeding for Piedmont, Poor Soils, Low Maintenance
 [from North Carolina Erosion and Sediment Control Planning and Design Manual]

| Seeding Mixture | | |
|--|--------------------|-------------------|
| Species | (lbs/ac.) | |
| Tall fescue | 100 | |
| Sericea lespedeza | 30 | |
| Kobe lespedeza | 10 | |
| Seeding notes: | | |
| <ul style="list-style-type: none"> • In Eastern Piedmont, add 25 lb/ac. Pensacola bahiagrass or 10 lb/ac. Common bermudagrass. Use Common bermudagrass only where it is unlikely to become a pest. • After August 15 use Unscarified Sericea lespedeza seed. • Where a neat appearance is desired, omit Sericea lespedeza and substitute 40 lb/ac. Bahiagrass or 15 lb/ac. Bermudagrass. • To extend spring seeding dates into June, add 15 lb/ac. hulled Bermudagrass. However, it is preferable to seed temporary cover and seed Tall fescue in September. | | |
| Nurse Plants | | |
| Between May 1 and August 15 add 10 lbs/ac. German millet or 15 lb/ac. Sudangrass. Prior to May 1 or after August 15, add 40 lb/ac. Rye (grain). | | |
| Seeding Dates | | |
| | Best | Possible |
| Fall | Aug. 25 - Sept. 15 | Aug. 20 - Oct. 25 |
| Late winter | Feb. 15 - Mar. 21 | Feb. 1 - Apr. 15 |
| Fall is the best for Tall fescue and late winter for lespedezas. Overseeding of lespedeza over fall seeded Tall fescue is very effective. Use unhulled Bermudagrass seed in the fall. | | |
| Soil Amendments | | |
| Apply lime and fertilizer according to soil tests, or apply 4,000 lb/ac. ground agricultural limestone and 1,000 lb/ac. 5-10-10- fertilizer. | | |
| Mulch | | |
| Apply 4,000-5,000 lb/ac. grain straw or an equivalent cover of another suitable mulching material. Anchor mulch by tacking with asphalt, roving, or netting. Netting is preferred on steep slopes. | | |
| Maintenance | | |
| Refertilize in the second year unless growth is fully adequate. May be mowed once or twice a year, but mowing is unnecessary. Reseed, fertilize, and mulch damaged areas immediately. | | |

Table 16-3. Seeding for Coastal Region, Sandy Soils, Low Maintenance
[from North Carolina Erosion and Sediment Control Planning and Design Manual]

| Seeding Mixture | |
|------------------------|------------------|
| Species | (lbs/ac.) |
| Pensacola bahiagrass | 50 |
| Sericea lespedeza | 30 |
| Common bermudagrass | 10 |
| German millet | 10 |

Seeding notes:

- Where a neat appearance is desired, omit *Sericea lespedeza*.
- Use Common bermudagrass only in isolated areas where it cannot become a pest. Bermudagrass may be replaced with 5 lb/ac. Centipedegrass.

Nurse Plants
 Prior to May 1 or after August 15, add 40 lb/ac. Rye (grain).

Seeding Dates
 Apr. 1 - Aug. 15

Soil Amendments
 Apply lime and fertilizer according to soil tests, or apply 3,000 lb/ac. ground agricultural limestone and 500 lb/ac. 10-10-10 fertilizer.

Mulch
 Apply 4,000-5,000 lb/ac. grain straw or an equivalent cover of another suitable mulching material. Anchor mulch by tacking with asphalt, roving, or netting, or by crimping with a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
 Refertilize the following April with 50 lb/ac. nitrogen. Repeat as growth requires. May be mowed only once a year. Where a neat appearance is desired, omit *Sericea lespedeza* and mow as often as needed.

Reclaiming Mountain Region Floodplains

Following are general guidelines developed by DEHNR, but site-specific conditions may require additional considerations.

- Areas to be reclaimed as wetlands or uplands should be graded to a constant slope and covered with at least 12 inches of topsoil before planting vegetation.
- Native species of herbaceous and woody vegetation already occurring at a site should be planted for reclamation purposes whenever possible, rather than exotic species that do not occur at the site.
- Trees should be planted while dormant, usually mid-December through late February.

Reclaiming Uplands

Uplands should be reclaimed using a combination of VA-70 shrub lespedeza and Korean lespedeza at 40 lb/acre, rather than Fescue, which provides minimal wildlife value. These species should be planted in late winter or early spring. Rye grain or millet should be seeded as a nurse crop at least 60 lbs/acre. Fertilizer and lime should be applied at a rate determined by soil testing. Trees should be planted on 20-foot spacings. If no trees are nearby to assist in selecting species, some suggestions are:

- White Oak
- Willow Oak
- Cherrybark Oak
- Beech
- Black Gum
- Dogwood.

Note: Pines are not recommended because they have limited wildlife value.

Reclaiming Wetlands

Wetlands should be reclaimed by planting Reed Canary grass in the fall at a rate of 10-15 lbs/acre.

Fertilizer and lime should be applied at a rate determined by soil testing.

Trees should be planted on 20-foot spacings. If no trees are nearby to assist in selecting species, some suggestions are:

- Water Oak
- Beech
- Cherrybark Oak
- Willow Oak
- Black Gum
- Witch Hazel

Reclaiming Riparian Zones

Riparian zones should be reclaimed by planting Reed Canary grass in the fall at a rate of 10-15 lbs/acre.

Fertilizer and lime should be applied at a rate determined by soil testing.

Trees should be planted on the slope of stream banks and on top of stream banks. Small trees such as Willow, Alder and Dogwood should be spaced five feet apart. Larger trees, such as Red Maple and Sycamore, should be placed 8-10 feet apart.

Alternative Vegetation

As noted previously, the operator should strive to create wildlife habitat by planting alternative vegetation and tree species. Wildlife habitat areas may be created within the disturbed areas by planting vegetation beneficial for the surrounding wildlife. The Act does not require that such areas be created.

Many different grass species may be planted to enhance wildlife habitat. A mixture of different grass species performs better than a pure stand of one species of grass. Contact the Natural Resources Conservation Service or the Wildlife Resources Commission for a seeding mixture to suit your site and the local wildlife.

Reforestation

To reforest a site, trees must be planted along with grasses. Trees alone do not provide adequate erosion control for a denuded site. Once established, the list of benefits gained from tree plantings is long. Trees provide wildlife habitat, future income as timber for the landowner, and possible increased land value. Contact the Division of Forest Resources and the Wildlife Resources Commission for information and technical assistance.

Reclamation Agencies

Many agencies provide technical assistance in the preparation of reclamation plans. The operator must select the basics of the plan, such as the land use after mining. Guidance is available, however, for developing a complete wildlife, wetland, pond, timber or crop management plan. Depending on the size of the permitted area, a combination of uses may be possible.

The following agencies (offices or contacts) in North Carolina assist private landowners in establishing and maintaining forest land and wildlife habitat areas:

North Carolina Cooperative Extension Service
North Carolina State University
Box 8003
Raleigh, North Carolina 27695-8003
(919) 515-5636
FAX (919) 515-7231

North Carolina Wildlife Resources Commission
Department of Environment, Health and Natural Resources
P. O. Box 27687
Raleigh, North Carolina 27611
(919) 733-7291

Division of Forest Resources
Department of Environment, Health and Natural Resources
P. O. Box 27687
Raleigh, North Carolina 27611
(919) 733-2162

Regional Offices

Region I
Stallings Field
Route 7, Box 88
Kinston, North Carolina 28501-8946
(919) 522-4666

Region II
1225 Big Woods Road
Chapel Hill, North Carolina 27514-1225
(919) 542-1515

Region III
222 Sardis Road
Asheville, North Carolina 28806-0222
(704) 251-6509

Natural Resources Conservation Service
(Contact the local Soil and Water Conservation District Office)

Financial Incentives

Federal and state government have several financial incentive programs that may help offset the costs of reforestation. One such program is the Forestry Stewardship Program. Contact the Division of Forest Resources and the North Carolina Agricultural Extension Service for more information about this and other programs.

Reclamation Awards

DEHNR and several national organizations, such as the National Association of State Land Reclamationists (NASLR) and the Interstate Mining Compact Commission (IMCC), encourage and reward reclamation efforts above and beyond those required by law.

In North Carolina, the Mining Commission annually recognizes outstanding reclamation efforts by offering an award for two categories of mine sites. Categories include small mines, less than 10 acres, and large mines, greater than 10 acres. The awards recognize a company's reclamation achievements. They also encourage operators to use more innovative reclamation techniques and post-mining land uses.

Operators are encouraged to nominate their own mine site. Reclamation efforts for all or a portion of a site must be completed to be considered for the award. If the site has been under enforcement action any time in the previous two years, it is ineligible for the award.

Submitting a Nomination

To submit a nomination, the following information must be provided:

- Completed application (application form included in back of this manual)
- A narrative of the reclamation accomplished at the site, consisting of no more than three type-written pages, clearly addressing the judging criteria (see *Judging Criteria*).
- A series of 8 x 12-inch photographs or slides illustrating the work accomplished. Before and after shots are needed with locations and dates taken indicated clearly on a corresponding map. No more than 15 photographs or slides will be considered for each nomination.
- Site map with a legend

Judging Criteria

- Relative degree of difficulty of reclamation
- Innovative land use planning or reclamation techniques
- Innovative ground cover/revegetation
- Stability of the site on both a short and long term basis
- The permittee's enforcement history for the previous two year period

Note: Receiving a Notice of Violation and/or civil penalty during this period disqualifies an applicant.

The following information is required in the narrative:

- Date the site was permitted
- Number of acres disturbed and reclaimed
- Commodity mined
- Mining method(s)
- Depth of mining
- Status of site (active, inactive, reclaimed)
- Date mining terminated

Also explain specific techniques or technologies employed during reclamation efforts at the site. Note soil amendments and seeding mixtures with the application rates. Highlight the reason reclamation efforts are outstanding. Describe the planning and forethought needed to carry out reclamation at the onset and termination of mining.

Nomination packages should be submitted to the appropriate Regional Engineer by May 1 of each calendar year. The Regional Engineer will select one nominee for each category and then send the nominees to the State Mining Specialist for review and processing through the Awards Selection Committee.

Questions concerning the Reclamation Awards Program should be directed to the appropriate Regional Engineer serving your area, or to the State Mining Specialist.

17 Reclamation Bonds

CONTENTS

| | |
|--|-------|
| Introduction | 17-3 |
| Computing Reclamation Bond Amounts | 17-3 |
| Bond Substitutions (Decreases or Increases)..... | 17-3 |
| Types of Reclamation Bonds | 17-4 |
| Bond Cancellations | 17-17 |
| Release of Bond by the Department..... | 17-17 |

17 Reclamation Bonds

Introduction

The Act requires that a reclamation bond be posted with DEHNR for each mining permit. Reclamation bonds must be continuous in nature. **A lapse in bond coverage will result in the automatic revocation of the mining permit.**

Computing Reclamation Bond Amounts

The amount of the bond required for a particular operation is set forth in Title 15A 5B.0003. The range is from \$500.00 to \$5,000.00 per affected acre, based on the acreage to be affected during the life of the mining permit, as approved by DEHNR.

Figure 17-1 is a worksheet for computing the amount of the reclamation bond. This worksheet is also found in the application form. The bond calculation worksheet takes into consideration the size of the approved affected area, the type of mining operation and the approved reclamation plan. A blanket bond of \$500,000 may be posted with DEHNR to cover an operator's North Carolina mining permits if:

- The operator has a good operating record
- The Director of the Division of Land Resources finds the bond amount acceptable.

Bond Substitutions (Decreases or Increases)

Reclamation bonds may be decreased at any time if the amount of affected land has decreased because of completed reclamation on sections of previously affected land. If an operator wishes to reduce the reclamation bond, a written request is submitted to the Land Quality Section with a mine map outlining the areas that have been reclaimed. The site(s) will be inspected for approved reclamation. The bond amount will be reduced if reclamation efforts are found acceptable by DEHNR.

The bond must be increased if the amount of affected land increases. As bond substitutions constitute minor modifications, a permit modification must be requested by the permittee in the event that the bond increases or decreases. A \$50.00 minor modification processing fee will also be required.

Types of Reclamation Bonds

Unless otherwise approved in advance by DEHNR, only Departmental forms can be used to validate reclamation bonds. The different types of reclamation bonds are described in Table 17-1 with notes regarding concerns specific to each reclamation bond.

The original completed forms must be submitted to the Land Quality Section and will be held by DEHNR until the mine site has been formally released by DEHNR. See Figures 17-2, 17-3, and 17-4 for the Department's standard forms.

Note: The name on the reclamation bond appearing as the operator must be the same as the name of the applicant on page one of the Mining Permit Application form.

MINE RECLAMATION BOND CALCULATION WORKSHEET 10/16/95
(based upon 10-year mine/affected area plan)

Permit No. _____
 Permittee/Applicant: _____
 Mine Name: _____

| CATEGORY | AFFECTED ACREAGE | | RECLAMATION COST/ACRE | RECLAMATION COST |
|--------------------------------|---------------------|---|--------------------------|---------------------|
| Tailings/ Sediment Ponds | _____ Ac. | X | \$ _____ / Ac. | = \$ _____ |
| Stockpiles | _____ Ac. | X | \$ _____ / Ac. | = \$ _____ |
| Wastepiles | _____ Ac. | X | \$ _____ / Ac. | = \$ _____ |
| Processing Area/ Haul Roads | _____ Ac. | X | \$ _____ / Ac. | = \$ _____ |
| Mine Excavation | _____ Ac. | X | \$ _____ / Ac. | = \$ _____ |
| Other | _____ Ac. | X | \$ _____ / Ac. | = \$ _____ |
| TOTAL AFFECTED AC.: | _____ Ac. | | | |

Temporary & Permanent Sedimentation & Erosion Control Measures:

Divide the **TOTAL AFFECTED AC.** above into the following two categories: a) affected acres that drain into proposed/existing excavation and/or b) affected acres that will be graded for positive drainage, measures will be needed to prevent offsite sediment

a) Internal Drainage _____ Ac.
 b) Positive Drainage _____ Ac. X \$ 1500 / Ac. = \$ _____
SUBTOTAL COST: \$ _____

Inflation Factor:

0.02 X **SUBTOTAL COST:** \$ _____ X permit life: _____
 (1 to 10 years)

INFLATION COST: \$ _____

TOTAL COST = SUBTOTAL COST + INFLATION COST = \$ _____

| |
|--|
| <p>TOTAL RECLAMATION BOND COST: \$ _____ (round down to the nearest \$100)</p> |
|--|

Figure 17-1 - Bond Calculation Worksheet (Page 1)

Bond Based Upon: Annual Reclamation Report Form Acreage _____
 Approved 10-Year Mine/Reclamation Plan _____

Remarks: _____

Bond Calculated By: _____

Date of Bond Calculation: _____

***PLEASE REMIT THE REQUIRED BOND, ON ONE OF THE BOND FORMS APPROVED BY THE DEPARTMENT, AS SOON AS POSSIBLE TO OBTAIN YOUR NEW MINING PERMIT OR TO ENSURE THAT YOUR EXISTING MINING PERMIT REMAINS VALID**

IF YOU SHOULD HAVE ANY QUESTIONS ON THE ABOVE, PLEASE CONTACT THE INDIVIDUAL WHO CALCULATED YOUR BOND AT (919) 733-4574.

Figure 17-1. Bond Calculation Worksheet (Page 2)

Schedule of Reclamation Costs
(based upon range of \$500 - \$5,000 per affected acre)

COMMODITY CODES:

| | | | | | |
|--------|---|--------------------------------|----|---|---------------|
| SG | = | Sand and/or Gravel | GS | = | Gemstone |
| BORROW | = | Borrow/Fill Dirt | CS | = | Crushed Stone |
| DS | = | Dimension Stone | FS | = | Feldspar |
| MI | = | Mica | LI | = | Lithium |
| PF | = | Pyrophyllite | OL | = | Olivine |
| KY | = | Kyanite/Sillimanite/Andalusite | PH | = | Phosphate |
| CL | = | Clay/Shale | PE | = | Peat |
| AU | = | Gold | TI | = | Titanium |
| OT | = | Other | | | |

| Type | T/S Ponds | S. piles | W. piles | P. area/H.R. | Mine Excav. |
|-------------------------------------|-----------------------------------|------------|------------|--------------|-----------------------------------|
| SG,GS, BORROW | \$500/ac. (L) \$1500/ac. (FI) | \$1800/ac. | \$2000/ac. | \$1800/ac. | \$500/ac. (L) \$2000 (PD) |
| CS,DS, FS,MI, LI,PF, OL,KY | \$500/ac. (L) \$1500/ac. (FI) | \$1800/ac. | \$2000/ac. | \$2000/ac. | \$500 (L) \$2500 (PD) |
| PH,CL | \$1000/ac. (L) \$2500/ac. (FI) | \$2500/ac. | \$5000/ac. | \$5000/ac. | \$2000/ac. (L) \$5000/ac. (PD) |
| PE, AU, TI, OT | \$1000/ac. (L) \$2500/ac. (FI) | \$2500/ac. | \$3000/ac. | \$3500/ac. | \$2000/ac. (L) \$5000/ac. (PD) |

(L) = reclamation to a lake and revegetating sideslopes
 (FI) = reclamation by filling in and revegetating
 (PI) = reclamation by grading for positive drainage and revegetating

As per NCAC 15A 5B.0003, if you disagree with the bond amount determined by the bond calculation worksheet, you may submit an estimate of reclamation costs from a third party contractor. Said estimate must be provided to the following address within 30 days following your receipt of this bond calculation:

Mining Program
 Land Quality Section
 P.O. Box 27687
 Raleigh, North Carolina 27611

All estimates must include the following, as a minimum:

- Final grading costs per acre
- Lime and fertilizer costs per acre
- Year-round seeding mixture costs per acre (from approved revegetation plan in application/permit document)
- Mulch and anchoring costs per acre
- Any other reclamation costs necessary to comply with the approved reclamation plan for the site in question

You will be notified as soon as possible of the Director's final bond determination.

Figure 17-1 - Bond Calculation Worksheet (Page 3)

Table 17-1. Reclamation Bonds

| Bond Type | Comments |
|---|---|
| Assignment of Savings Account (Figure 17-2) | <ul style="list-style-type: none"> • A copy of the instrument of deposit such as the deposit slip, certificate of deposit, etc. must be attached. • Account numbers, the assignment amount and the name on the assignment must be the same as on the instrument of deposit. • Assignment forms must be signed and notarized. |
| Surety Bonds (Figure 17-3) | <ul style="list-style-type: none"> • Issued by an insurance company licensed to do business in North Carolina. • Surety Bond must be notarized. • Power of Attorney must accompany form to verify that the issuing agent has the authority to act on behalf of the insurance company |
| Irrevocable Standby Letter of Credit (Figure 17-4) | <ul style="list-style-type: none"> • Issued by a financial institution licensed to do business in North Carolina. • Irrevocable Standby Letter of Credit must be continuous in nature. |

ASSIGNMENT OF SAVINGS ACCOUNT

This Assignment, made and entered into the _____ day of _____, 19____, by and between _____, (operator) of _____, City of _____, (address) County of _____, State of North Carolina and the North Carolina Department of Environment, Health, and Natural Resources; and

WHEREAS, The undersigned _____ (operator) (hereinafter referred to as "Operator") is desirous of engaging in mining operations in the State of North Carolina and such mining operations are subject to the provisions of the Mining Act of 1971, Article 7, Chapter 74 of the General Statutes of North Carolina; and

WHEREAS, NCGS 74-50 requires that mine operators obtain a permit from the Department of Environment, Health, and Natural Resources (hereinafter referred to as "Department") before engaging in mining operations, and NCGS 74-54 requires that a surety bond in favor of the State be maintained or other security be filed with the Department, in connection with said permit; and

WHEREAS, Operator has a savings account in _____ (bank name) _____ at _____, City of _____ (address) _____ County of _____, State of North Carolina, Savings Account No. _____; and

WHEREAS, NCGS 74-54 authorizes the Department to accept from Operator an assignment of a savings account in a North Carolina bank, in lieu of a surety bond;

NOW, THEREFORE, in consideration of the premises and the Department accepting an assignment of said savings account in lieu of a surety bond, the undersigned Operator does hereby sell, assign, transfer, set over to the Department of Environment, Health, and Natural Resources

_____ dollars (\$ _____) of the sums on (dollar amount written) deposit in his name in _____, City of _____ (bank name) _____ County of _____, State of North Carolina, Savings Account No. _____ and further authorizes _____ to pay over to the (bank name)

Department of Environment, Health, and Natural Resources the above sum of _____ dollars (\$ _____) out of the above (dollar amount written) money deposit in the above account in his name.

Figure 17-2 - Assignment of Savings Account (Page 1)

The condition of the foregoing assignment is that if the assignor Operator conducts the mining operations faithfully, honestly, and lawfully and in compliance with the requirements of the Mining Act of 1971 and applicable Rules and Regulations adopted pursuant thereto, then this assignment shall be null and void; otherwise it shall remain in full force and effect. Compliance with the requirement of the Mining Act of 1971 and applicable Rules and Regulations shall be determined by the Department.

This assignment is made and the _____ (passbook, deposit book, etc)

is to be held by the Department as collateral security for all direct or indirect liabilities of the assignor Operator to the assignee Department that may arise by reason of the Mining Act 1971, Article 7, Chapter 74 of the General Statutes of North Carolina.

This assignment shall be direct authorization to _____ (bank name) _____ to pay said sum to Department on demand by Department.

(Signature of Operator)

Sworn to before me this _____

day of _____, 19 _____

Notary Public _____

My Commission Expires _____

(Affix Seal)

ACKNOWLEDGMENT BY BANK

The foregoing Assignment of Savings Account is hereby acknowledged this _____ day of _____, 19 _____. It is further acknowledged that funds in the above mentioned account shall not be disbursed except to the assignee, Department of EHNR while the assignment remains in effect.

This the _____ day of _____, 19 _____ by _____

(authorized agent for bank)

(mailing address of bank)

Sworn to before me this _____

day of, _____, 19 _____

Notary Public

My Commission Expires

(Affix Seal)

Figure 17-2 - Assignment of Savings Account (Page 2)

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT, HEALTH, AND NATURAL RESOURCES
 Land Quality Section
 Bond Pursuant to "The Mining Act of 1971"
 (G.S. 74-46 through G.S. 74-68)

KNOW ALL MEN BY THESE PRESENTS, That _____

_____ a _____ and having its principal office at _____

in the State of _____, as principal, and

_____ a corporation organized under the laws of the State of _____

and duly authorized by the Insurance Commissioner of North Carolina to do business in North Carolina, with an office located at _____

_____ in the City of _____, North

Carolina, as surety, are held and firmly bound unto the State of North

Carolina in the sum of _____ Bond No. _____

lawful money of the United States of America, to the payment of which will and truly be made, we bind ourselves, our heirs, administrators and successors jointly and severally, firmly by these presents.

Signed, sealed and delivered this _____ day of _____, 19____.

THE CONDITIONS OF THIS BOND ARE SUCH, That Whereas, the said

_____ conducts or will conduct mining operations in North Carolina as described

in the application for an operating permit which includes a Reclamation

Plan as provided in G.S. 74-53 and has obtained approval of this

application on the _____ day of _____, 19____,

from the Department of Environment, Health, and Natural Resources.

Figure 17-3- Surety Bond Form (Page 1)

NOW THEREFORE, if the said _____
 _____ shall comply with
 the requirements set forth in "The Mining Act of 1971" (G.S. 74-46
 through 74-68) and with the rules and regulations adopted pursuant
 thereto and faithfully perform all obligations under his approved
 Reclamation Plan then this obligation shall be null and void; otherwise
 to be and remain in full force and effect until released by the
 Department of Environment, Health, and Natural Resources in accordance
 with G.S. 74-56 or canceled by the surety. Cancellation by the surety
 shall be effectuated only upon 60 days written notice thereof to the
 Department of Environment, Health, and Natural Resources and the operator
 as provided in G.S. 74-54.

ATTEST:

 Secretary or
 Assistant Secretary

 Principal

(Attach)
 (Corporate Seal)
 (here of Corporation)

By _____
 President, Vice President,
 Partners, or Owner

 Surety

Countersigned at _____, North Carolina

 Resident Agent of N.C.

By _____
 Agent and Attorney in Fact

Figure 17-3- Surety Bond Form (Page 2)

IRREVOCABLE STANDBY LETTER OF CREDIT

LETTER OF CREDIT NO.: _____

EFFECTIVE DATE: _____

AMOUNT: _____

ISSUING INSTITUTION:

Name

Address

City State Zip Code

County

BENEFICIARY:

State of North Carolina
Department of Environment, Health and Natural Resources
Post Office Box 27687
Raleigh, North Carolina 27611-7687

APPLICANT/OPERATOR:

Name

Address

City State Zip Code

County

Dear Sir or Madam:

(1) The APPLICANT/OPERATOR desires to engage in mining operations within the State of North Carolina, under the provisions of the Mining Act of 1971, N. C. Gen. Stat. §74-46, et seq., and the administrative rules promulgated thereunder.

Figure 17-4 - Irrevocable Standby Letter of Credit (Page 1)

(2) N. C. Gen. Stat. §74-50 requires that operators engaged in mining shall first obtain an operating permit from the N. C. Department of Environment, Health and Natural Resources ("DEHNR") which covers the affected land and which has not terminated, been revoked, been suspended for the period in question, or otherwise become invalid. N. C. Gen. Stat. §74-54 requires that each applicant for an operating permit, or for the renewal thereof, shall file with DEHNR, and shall thereafter maintain in force, a bond in favor of the State of North Carolina in an amount as prescribed by Title 15A N.C. Administrative Code Subchapter 5B. 0003. N. C. Gen. Stat. §74-54 further provides that in lieu of the surety bond, an applicant or operator may file with DEHNR a cash deposit, negotiable securities, or an assignment of a savings account in a North Carolina bank.

(3) Thus, this IRREVOCABLE STANDBY LETTER OF CREDIT is issued to DEHNR, in lieu of the surety bond required to be filed by the APPLICANT/OPERATOR, as provided by N. C. Gen. Stat. §74-54.

(4) The undersigned hereby establishes its IRREVOCABLE STANDBY LETTER OF CREDIT in favor of DEHNR, for the account of

 APPLICANT/OPERATOR

for the amount of _____ dollars and no 100's (\$ _____), available by DEHNR's draft(s) drawn on sight.

(5) This IRREVOCABLE STANDBY LETTER OF CREDIT shall expire on

 (date at least one (1) year from effective date)

The expiration date shall be extended automatically for a period

of _____ on _____ and
 (one year or more) (expiration date)

on each successive expiration date, unless, at least sixty (60) days prior to the expiration date, the undersigned notifies DEHNR and the OPERATOR by certified mail, return receipt requested that the undersigned will not extend this letter of credit beyond the current expiration date. If the undersigned notifies DEHNR that this letter of credit will not be extended, any unused portion of the credit shall be available upon presentation of DEHNR's sight draft within sixty (60) days after DEHNR's or the OPERATOR's receipt of such notification, whichever is later.

(6) This IRREVOCABLE STANDBY LETTER OF CREDIT is non-transferable.

Figure 17-4 - Irrevocable Standby Letter of Credit (Page 2)

-3-

(7) Draft(s) shall be marked "Drawn Under _____
 _____ Credit No. _____
 (Issuing Institution)

and shall include the following documentation:

- (a) A signed certificate by DEHNR, referring to the effective date and Number of this IRREVOCABLE STANDBY LETTER OF CREDIT, and stating that:

"In accordance with N. C. Gen. Stat. §74-59, we have received a notice of forfeiture of part or all of the Bond Amount. The amount of our drawing does not exceed the amount of the forfeiture as set forth in such notice.";

-or-

- (b) A signed certificate by DEHNR, referring to the effective date and Number of this IRREVOCABLE STANDBY LETTER OF CREDIT, and stating that:

"We have received from _____
 (Issuing Institution)
 written notice stating (1) that this IRREVOCABLE STANDBY LETTER OF CREDIT has not been renewed; and, (2) that the amount of our drawing does not exceed the Bond Amount, less any previous forfeitures thereunder, pursuant to notices received in accordance with N.C. Gen. Stat. §74-59.";

-or-

- (c) A signed certificate by DEHNR, referring to the effective date and Number of this IRREVOCABLE STANDBY LETTER OF CREDIT, and stating that:

"We have received from _____
 (Issuing Institution)
 written notice stating (1) that there exists an Event of Default under the Credit Agreement (as defined in the IRREVOCABLE STANDBY LETTER OF CREDIT); (2) that a drawing should be made under this IRREVOCABLE STANDBY LETTER OF CREDIT; and, (3) that the amount of the drawing does not exceed the bond amount, less any previous forfeitures thereunder, pursuant to notices received in accordance with N. C. Gen. Stat. §74-59."

Figure 17-4 - Irrevocable Standby Letter of Credit (Page 3)

(8) This IRREVOCABLE STANDBY LETTER OF CREDIT is subject to the Uniform Customs and Practice for Documentary Credits (1993 Revision), International Chamber of Commerce Publication No. 500 and the laws of the State of North Carolina. In the event of any conflict, the laws of the State of North Carolina will control.

(9) _____ hereby agrees
(Issuing Institution)
with the drawers, endorsers, and bona fide holders that all drafts drawn under and in compliance with the terms of this IRREVOCABLE STANDBY LETTER OF CREDIT will be duly honored upon presentation to this bank/issuing institution.

Very truly yours,

(Issuing Institution)

BY: _____

TITLE: _____

DATE: _____

Sworn and subscribed to before me this
the _____ day of _____,
199 _____.

Notary Public

My Commission Expires: _____
Date

(SEAL)

Figure 17-4 - Irrevocable Standby Letter of Credit (Page 4)

Bond Cancellations

If a surety bond is to be canceled by an insurance company or an Irrevocable Standby Letter of Credit is to be canceled by a bank, DEHNR must be given a 60-day notice of the pending cancellation. The permittee will be requested in writing to replace the bond before the cancellation date of the existing bond. If the bond is not replaced before the cancellation date, the mining permit will be automatically revoked.

Release of Bond by the Department

Upon completion of mining activities and final reclamation at the site(s) covered by the reclamation bond, the operator must request in writing that the reclaimed area(s) be released from the conditions of the mining permit(s) and reclamation responsibilities under the Mining Act. (See **Chapter 7 - Mining Permit Release Requests**).

After inspecting the site to verify that final reclamation has been completed in accordance with the approved reclamation plan, DEHNR will:

- Release operators of their responsibilities with respect to the Act
- Return the reclamation bond, or the appropriate portion of the bond, to the operator.

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18 *Annual Reclamation Reports*

CONTENTS

| | |
|---|------|
| Introduction..... | 18-3 |
| Annual Reclamation Report Purpose..... | 18-3 |
| Submitting the Annual Reclamation Report..... | 18-3 |
| Maps..... | 18-4 |
| Inspections and Notification..... | 18-4 |

18 *Annual Reclamation Reports*

Introduction

Annually, DEHNR requires that the permittee complete an Annual Reclamation Report to document all mining and reclamation efforts in the previous year. (See **Figure 18-1 - Example Annual Reclamation Report form**).

Annual Reclamation Report Purpose

The Annual Reclamation Report form allows the Land Quality Section to track the permittee's progress of mining and reclamation efforts and to generate statistics on mining and reclamation efforts in North Carolina.

The report also allows the Land Quality Section to better prioritize its field inspection time by placing a higher priority on:

- Sites where release of previously mined acreage has been requested
- Sites where expansions are projected within approved areas
- Sites where the potential for off-site sedimentation is high

Submitting the Annual Reclamation Report

Two copies of the Annual Reclamation Report form are submitted, along with two copies of an updated mine map. If no significant changes have occurred in the operation, this map requirement may be waived.

On the back of the form, the permittee is provided an opportunity to request release of reclaimed areas within the permitted boundaries.

Maps

The map should clearly indicate existing features of the permitted area and the mining activities. The map should also indicate planned progression of mining for the next year.

The form allows the permittee to request release of areas within the permitted property. Any areas to be released must also be indicated on the map.

Inspections and Notification

After the forms and maps are received, a Land Quality Section representative will inspect the site and any areas to be released. The permittee will be notified as to whether any area(s) are releasable.

The Land Quality Section Regional Office serving your region or the Land Quality Section Central Office will answer any questions related to completing the Annual Reclamation Report form.

Note: The Annual Reclamation Report form is not to be used as an application for modification of a mining permit.

State of North Carolina
 Department of Environment, Health, and Natural Resources
 Division of Land Resources

ANNUAL RECLAMATION REPORT

North Carolina General Statutes 74-55 and the Mining Regulations require that "The mine operator shall, by February 1 of each year during the life of the permitted operation, and within 30 days of completion or termination of mining on an area under permit, file with the Department a mining reclamation report on a form prescribed by the Department."

PLEASE PRINT OR TYPE

Name of Mine _____ County _____ Mining Permit Number _____

Mining Permit Expiration Date _____

Name of Company/Owner on Permit Document _____

Official Mailing Address _____ Zip Code _____

Telephone () _____ Check if change of address or telephone _____

1. (a) If mine is now inactive, when did mining stop? Date _____
 (b) Is this stoppage permanent? _____ Yes _____ No.

2. List by category the total amount of new land affected by mining activities in the 1994 calendar year and locate each area on your updated mine map.

(A) TAILINGS PONDS: _____ acres. (D) MINE EXCAVATION: _____ acres.

(B) WASTE PILES: _____ acres. (E) PLANT AREA: _____ acres.

(C) STOCKPILES: _____ acres.

_____ Check here is no new acreage affected in 1994.

3. Estimate by category the amount of new acreage to be affected by mining activities in the 1995 calendar year and locate the outline of each area on your updated mine map.

(A) TAILINGS PONDS: _____ acres. (D) MINE EXCAVATION: _____ acres.

(B) WASTE PILES: _____ acres. (E) PLANT AREA: _____ acres.

(C) STOCKPILES: _____ acres.

_____ Check here if no new acreage is to be affected in 1995.

*4. List by category the total amount of disturbed and unreclaimed land present at this site at the end of the 1994 calendar year.

(A) TAILINGS PONDS: _____ acres. (D) MINE EXCAVATION: _____ acres.

(B) WASTE PILES: _____ acres. (E) PLANT AREA: _____ acres.

(C) STOCKPILES: _____ acres.

(CONTINUE ON REVERSE SIDE)

NOTE: WASTEPILES should include overburden storage/disposal areas and berms.

Figure 18-1. Example Annual Reclamation Report (Page 1)

5. List by category the amount of land that has been completely reclaimed in 1994 and is not subject to continued use in future mining related activities. Briefly describe the reclamation work conducted and indicate if you wish to have any of these areas released from your current bonding requirements. Accurately locate the outline of all such areas on your updated mine map.

_____ Release Requested: Yes _____
No _____

(B) WASTE PILES: _____ acres. Explain: _____
_____ Release Requested: Yes _____
No _____

(C) STOCKPILES: _____ acres. Explain _____
_____ Release Requested: Yes _____
No _____

(D) MINE EXCAVATION _____ acres. Explain _____
_____ Release Requested: Yes _____
No _____

(E) PLANT AREA: _____ acres. Explain _____
_____ Release Requested: Yes _____
No _____

_____ Check here if no reclamation completed in 1994.

Person responsible for reclamation (please print): _____

Signature of company officer or owner: _____

Title: _____

Date: _____

*Complete and return by February 1 two copies of this form along with two copies of an updated mine map for each permitted mining operation to:
Land Quality Section
DEHNR
P. O. Box 27687
Raleigh, NC 27611-7687

FAILURE TO FILE THIS FORM BY THE DATE SPECIFIED MAY RESULT IN THE ASSESSMENT OF CIVIL PENALTIES AND COULD EVEN RESULT IN THE REVOCATION OF YOUR MINING PERMIT. SHOULD YOU HAVE ANY QUESTIONS, PLEASE ADVISE AT (919) 733-4574.

Figure 18-1. Example Annual Reclamation Report (Page 2)

19 ***Inspections and Monitoring by Permittee***

C O N T E N T S

| | |
|---|------|
| Introduction | 19-3 |
| Off-Site Sedimentation..... | 19-3 |
| Safety..... | 19-4 |
| Compliance with Existing Permit Conditions..... | 19-4 |

19

Inspections and Monitoring by Permittees

Introduction

During the operation of any mine site, operators should conduct routine inspections of the permitted area to avoid any possible violations of their mining permit.

Off-site Sedimentation

The permittee should inspect all erosion and sediment control measures after any significant rainfall event. The measures must remain in good working order. Any damaged measures should be repaired as soon as possible. Sediment basins and other sediment control measures should be cleaned out when they become one-half full of sediment. Clogged pipe outlets should be unclogged.

Permittees should inspect the outer limits of all disturbances for signs of off-site sedimentation. Also, if the potential for off-site sedimentation can be significantly reduced by installing additional erosion and sediment control measures or stabilizing disturbed areas, the permittee/operator should take the initiative to consider completing such actions on a voluntary basis.

Safety

The permittee/operator should also inspect his site for potential safety hazards. The following checklist should be used as a guide:

- All highwall barriers must be in good condition.
- Warning signs should be visible and in good condition.
- All blasting materials should be locked in safe storage, according to MSHA standards.
- Entrance into the pit and processing areas should be controlled to prevent inadvertent entry by non-mining personnel.

Compliance with Existing Permit Conditions

The permittee should make it part of a daily routine to survey the mine site to ensure compliance with the existing mining permit conditions. The permittee should be thoroughly familiar with the mining permit conditions and should refer to the operating and reclamation conditions often. The permittee should make every effort to comply with the permit conditions and with the approved mining and reclamation plans.

If questions arise concerning the requirements of a mining permit, the permittee should contact the Land Quality Section to discuss the questions. The permittee should accompany Land Quality Section representatives during any field inspections conducted on his site.

If the permittee determines that compliance with existing permit conditions is not feasible, the permit may be modified to rectify the situation (See Chapter 5 - Mining Permit Modification Requests for more information on modifying an existing permit).

20 **Land Quality Section Inspection and Enforcement**

CONTENTS

| | |
|---|------|
| Introduction..... | 20-3 |
| Inspections..... | 20-4 |
| Objectives..... | 20-4 |
| Mine Inspection Reports..... | 20-4 |
| Enforcement | 20-6 |
| Notice of Deficiency | 20-6 |
| Notices of Violation..... | 20-6 |
| Permit Violations..... | 20-6 |
| Mining Without a Permit Violations..... | 20-6 |
| Appeals..... | 20-7 |

20

Land Quality Section Inspection and Enforcement

Introduction

The Act requires that all permitted mine sites greater than one acre in surface area be inspected annually. The Land Quality Section inspects mines, dams, and construction sites. Mine inspection priorities are set by the State Mining Specialist and the Regional Engineer. Response to complaints is given top priority.

Typically, inspections are performed as soon after receipt of the Annual Reclamation Report, as practical. The inspection is performed to verify the accuracy of the report as well as verify compliance with the Act.

The inspector verifies the site conditions by comparing the existing site conditions with any maps and additional information submitted for the most recently approved permit action, the permit document, and the reclamation plan.

A Mine Inspection Report is completed for each inspection performed. (See **Figure 20-1 - Example Mine Inspection Report**). As mine sites inherently have many safety hazards, it is DEHNR policy to check in with a representative of the mining company prior to conducting an on-site inspection to verify if someone is on the site and available to accompany the inspector. If there is no one on the site, the inspector will conduct the inspection and send a copy of the Mine Inspection Report to the mining company.

Inspections

Objectives

Inspections performed by the Land Quality Section inspectors help to ensure the following:

- Public safety
- Environmental protection
- Compliance with all mining permit conditions

Mine Inspection Reports

For each mine inspection, a Mine Inspection Report is completed (See Figure 20-1- Example Mine Inspection Report). If there is a mining company representative on the site, the inspector will give a copy of the report to the company representative. Otherwise, the report is mailed to the individual designated as the contact.

The report specifies any deficiencies and/or violations noted by the inspector. Corrective actions are also outlined in the report.

Enforcement

Notice of Deficiency

In the event that deficiencies are noted during an inspection, a Notice of Deficiency may be sent to the operator by the Regional Engineer. A Notice of Deficiency outlines the violations noted at the site and the actions needed to correct the violations. A time frame for completing the necessary corrective actions is stated in the Notice.

If the violations have been corrected before the compliance inspection, no further action will be taken. If the site is still in violation, a Notice of Violation will be issued by the Director of the Division of Land Resources. If there are serious violations at a mine site, the Notice of Deficiency may be bypassed and a Notice of Violation issued.

Notices of Violation

Permit Violations

A Notice of Violation is issued by the Director when voluntary compliance has not been achieved through inspection reports or a Notice of Deficiency, or when the violations are severe. The Notice of Violation outlines the violations and corrective actions needed for gaining compliance and sets a deadline for the corrective actions to be completed.

If the violations have not been corrected by the compliance deadline, the permittee may be subject to enforcement action.

Such enforcement action may include the assessment of criminal and civil penalties, forfeiture of the reclamation bond, injunctive relief and/or suspension or revocation of the mining permit.

Mining Without a Permit Violations

When a site is determined to be mining without a mining permit, a Notice of Violation of the Act will be issued by the Regional Engineer. A Notice sent for mining without a mining permit will indicate that mining activities must cease and either the operator must apply for and receive a mining permit for the site or the site must be completely reclaimed. If the site is to be reclaimed, a reclamation plan must be filed with DEHNR. (See Appendix C - Application for a Mining Permit With Helpful Hints and Chapter 16 - Reclamation Plan Requirements)

The Notice will also state any other problems noted at the site, such as off-site sedimentation. Further enforcement action may be taken depending upon the environmental damage done and the willfulness of the violation. Such enforcement actions may include the assessment of criminal and civil penalties or injunctive relief against the operator.

Appeals

See G.S. 74-61 of the Mining Act of 1971 for administrative and judicial review of decisions.

21 Agency Contacts

CONTENTS

| | |
|---|------|
| Introduction | 21-3 |
| Department of Environment, Health and Natural Resources (DEHNR) | 21-3 |
| Wildlife Resources Commission | 21-3 |
| Department of Cultural Resources | 21-3 |
| Department of Labor | 21-4 |
| Federal Agencies | 21-4 |

21 Agency Contacts

Introduction

Applying for a mining permit often requires the applicant to contact other state and federal agencies to determine their permit requirements. This chapter lists those agencies most often contacted to determine regulatory requirements or for technical assistance.

Department of Environment, Health and Natural Resources (DEHNR)

Figures 21-1, 21-2, and 21-3 show Regional Offices, Coastal Management Field Offices, and Organization Chart.

Wildlife Resources Commission

512 North Salisbury Street
Raleigh, North Carolina 27604-1188
Telephone (919) 733-3391

Department of Cultural Resources

Division of Archives and History
109 East Jones Street
Raleigh, North Carolina 27601-2807
Telephone (919) 733-7305
FAX (919) 733-1564

Department of Labor

Mine and Quarry Division
4 West Edenton Street
Raleigh, North Carolina 27601-1092
Telephone (919) 733-7428
FAX (919) 733-6197

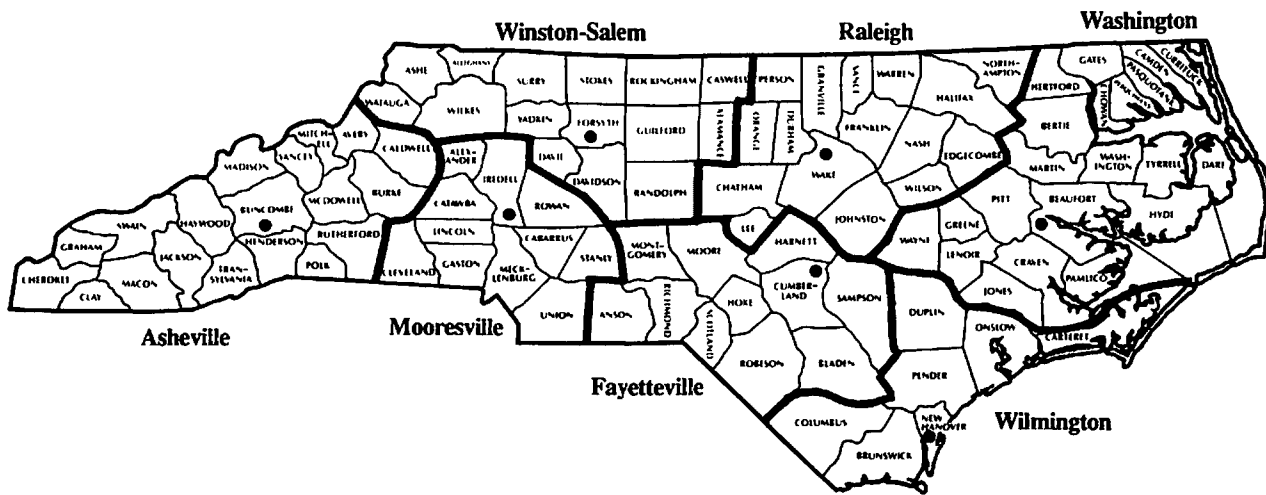
Federal Agencies

U. S. Army Corps of Engineers
Wilmington District
Post Office Box 1890
Wilmington, North Carolina 28406
Telephone (910) 251-4631

Natural Resources Conservation Service
4405 Bland Road
Raleigh, North Carolina 27609
Telephone (919) 790-2888

Agricultural Extension Service
Refer to County Government Directory for Local Service

ENVIRONMENT, HEALTH AND NATURAL RESOURCES REGIONAL OFFICES AND SATELLITE HEALTH OFFICES



Asheville Regional Office
59 Woodfin Street
Post Office Box 379
Asheville, NC 28801
(Courier 06-78-16)
704-251-6452
FAX 704-251-6452

Mooresville Regional Office
919 North Main Street
Post Office Box 950
Mooresville, NC 28115
(Courier 13-21-07)
704-663-1699
FAX 704-663-6040

Winston-Salem Regional Office
585 Waughtown Street
Winston-Salem, NC 27107-2241
(Courier 09-55-01)
910/771-4600
Main FAX 910-771-4631
Groundwater and Air Quality
FAX 910-771-4632

Black Mountain Health Office
Moore Wing, Third Floor
Black Mountain Center
Black Mountain, NC 28711
(Courier 08-84-06)
704-669-3349
FAX 704-669-9457

Raleigh Regional Office
3800 Barrett Drive
Post Office Box 27687
Raleigh, NC 27611
(Courier 52-01-00)
910-571-4700
FAX 919-571-4718

Winston-Salem Health Office
585 Waughtown Street
Winston-Salem, NC 27107-2241
(Courier 09-55-01)
910-770-4600
FAX 910-771-4633

Fayetteville Regional Office
Wachovia Building,
225 Green St., Suite 714
Fayetteville, NC 28301-5098
(Courier 04-06-25)
910-486-1541
FAX 910-486-0707

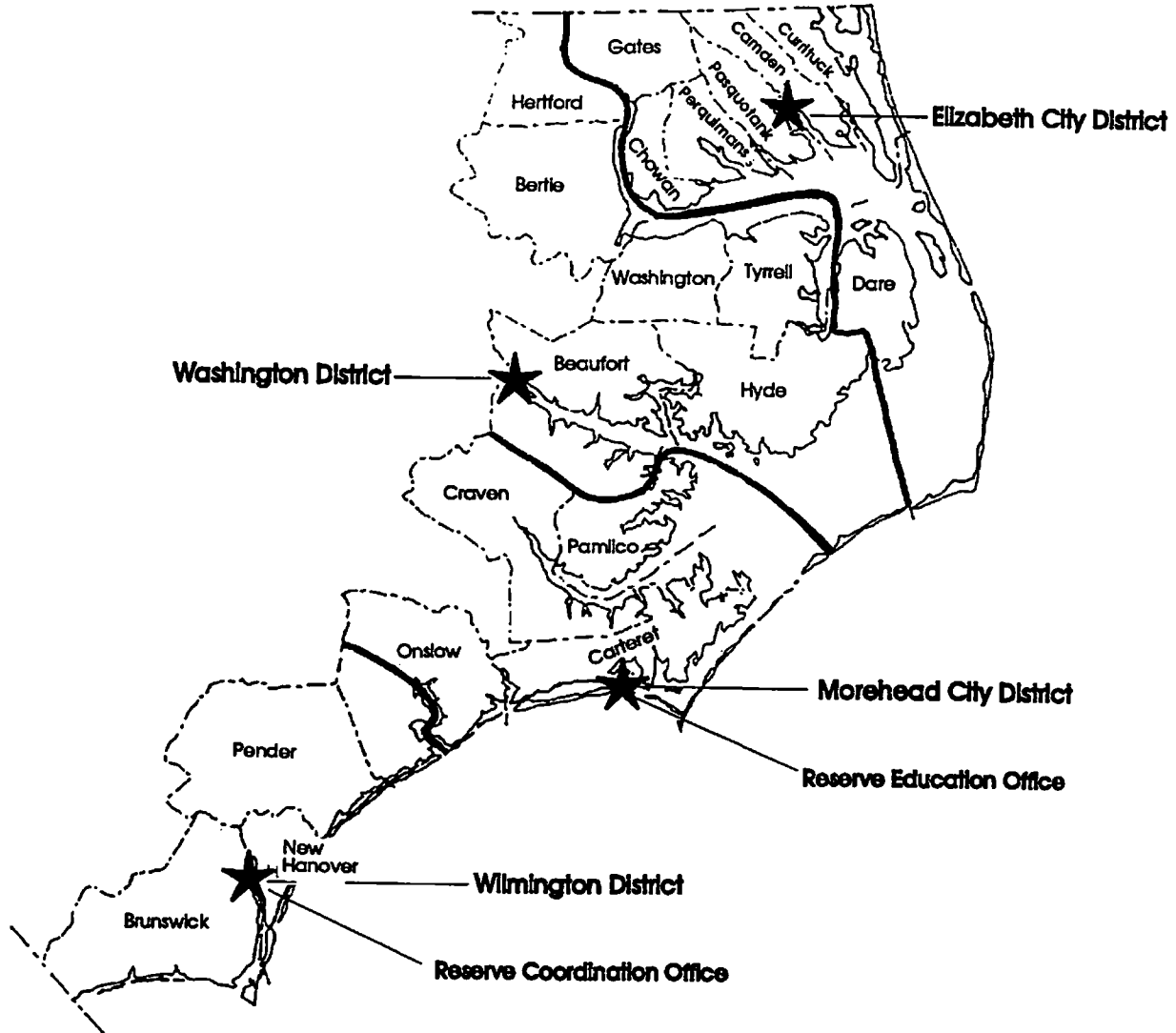
Washington Regional Office
1424 Carolina Avenue
Washington, NC 27889-3314
(Courier 01-74-29)
919-946-6481
FAX 919-975-3716

Fayetteville Health Office
Wachovia Bank Building
225 Green Street, Suite 506
Fayetteville, NC 28301
(Courier 04-56-47)
910-486-1191
FAX 910-486-1791

Wilmington Regional Office
127 Cardinal Drive Extension
Wilmington, NC 28405-3845
(Courier 04-16-33)
910-395-3900
FAX 910-350-2004

Figure 21-1. DEHNR Regional Offices

NORTH CAROLINA DIVISION OF COASTAL MANAGEMENT



Raleigh Headquarters - P.O. Box 27687 - Raleigh, NC 27611-7687 - Phone (919) 733-2293 - FAX (919) 733-1496

Field Offices

Elizabeth City District
1367 U.S. 17 South
Elizabeth City, NC 27909
(919) 264-3901
FAX: (919) 265-3723

Morehead City District
P.O. Box 769
3441 Arendell Street
Morehead City, NC 28557
(919) 726-7021 or 1-800-682-2632
FAX: (919) 247-3330

Wilmington District
127 Cardinal Drive Ext.
Wilmington, NC 28405-3845
(910) 395-3900
FAX: (910) 350-2004

Washington District
P.O. Box 2188
1424 Carolina Ave.
Washington, NC 27889-2188
(919) 946-6481
FAX: (919) 975-3716

Reserve Education
P.O. Drawer 1040
Beaufort, NC 28516
(919) 728-2170
FAX: (919) 728-8273

Reserve Coordination
7205 Wrightsville Ave.
Wilmington, NC 28403
(910) 256-3721
FAX: (910) 256-8856

Figure 21-2. Division of Coastal Management Field Offices

NORTH CAROLINA DEPARTMENT OF ENVIRONMENT, HEALTH AND NATURAL RESOURCES

ORGANIZATION CHART

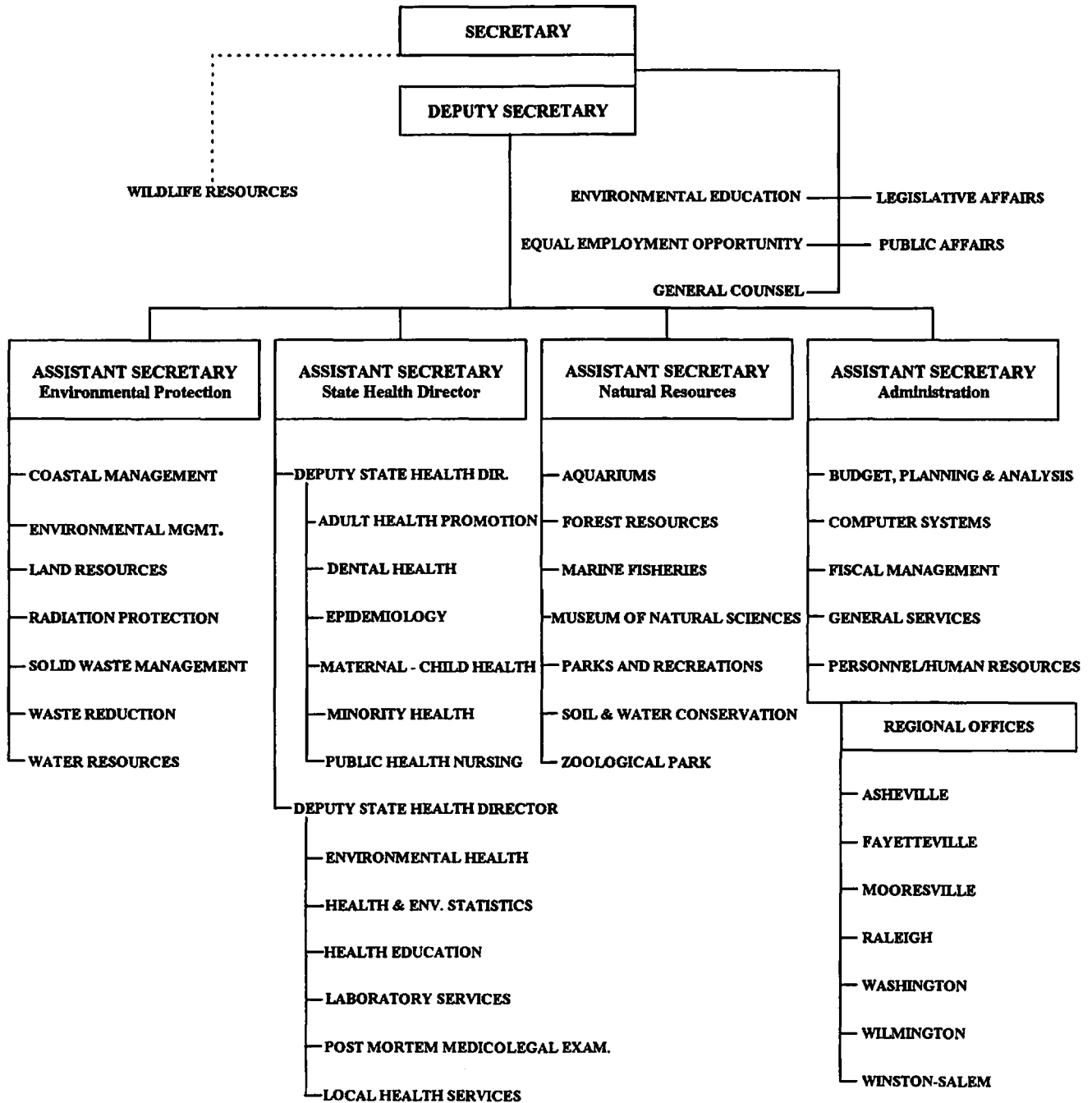


Figure 21-3. DEHNR Organization Chart

Appendix A: Mining Act of 1971

THE MINING ACT OF 1971.

[As amended through 1993]

NORTH CAROLINA GENERAL STATUTES

CHAPTER 74

ARTICLE 7

§ 74-46. Title.

This Article may be known and cited as "The Mining Act of 1971." (1971, c. 545, s. 1.)

§ 74-47. Findings.

The General Assembly finds that the extraction of minerals by mining is a basic and essential activity making an important contribution to the economic well-being of North Carolina and the nation. Furthermore, it is not practical to extract minerals required by our society without disturbing the surface of the earth and producing waste materials, and the very character of certain surface mining operations precludes complete restoration of the land to its original condition. However, it is possible to conduct mining in such a way as to minimize its effects on the surrounding environment. Furthermore, proper reclamation of mined land is necessary to prevent undesirable land and water conditions that would be detrimental to the general welfare, health, safety, beauty, and property rights of the citizens of the State. The General Assembly finds that the conduct of mining and reclamation of mined lands as provided by this Article will allow the mining of valuable minerals and will provide for the protection of the State's environment and for the subsequent beneficial use of the mined and reclaimed land. (1971, c. 545, s. 2.)

§ 74-48. Purposes.

The purposes of this Article are to provide:

- (1) That the usefulness, productivity, and scenic values of all lands and waters involved in mining within the State will receive the greatest practical degree of protection and restoration.
- (2) That from June 11, 1971, no mining shall be carried on in the State unless plans for such mining include reasonable provisions for protection of the surrounding environment and for reclamation of the area of land affected by mining. (1971, c. 545, s. 3.)

§ 74-49. Definitions.

Wherever used or referred to in this Article, unless a different meaning clearly appears from the context:

- (1) "Affected land" means the surface area of land that is mined, the surface area of land associated with a mining activity so that soil is exposed to accelerated erosion, the surface area of land on which overburden and waste is deposited, and the surface area of land used for

processing or treatment plant, stockpiles, nonpublic roads, and settling ponds.

- (1a) "Affiliate" has the same meaning as in 17 Code of Federal Regulations § 240.12(b)-2 (1 April 1992 Edition), which defines "affiliate" as a person that directly, or indirectly through one or more intermediaries, controls, is controlled by, or is under common control of another person.
- (2) "Borrow pit" means an area from which soil or other unconsolidated materials are removed to be used, without further processing, for highway construction and maintenance.
- (3) "Commission" means the Mining Commission created by G.S. 143B-290.
- (4) "Department" means the Department of Environment, Health, and Natural Resources. Whenever in this Article the Department is assigned duties, they may be performed by the Secretary or an employee of the Department designated by the Secretary.
- (5) "Land" shall include submerged lands underlying any river, stream, lake, sound, or other body of water and shall specifically include, among others, estuarine and tidal lands.
- (6) "Minerals" means soil, clay, coal, stone, gravel, sand, phosphate, rock, metallic ore, and any other solid material or substance of commercial value found in natural deposits on or in the earth.
- (7) "Mining" means:
 - a. The breaking of the surface soil in order to facilitate or accomplish the extraction or removal of minerals, ores, or other solid matter.
 - b. Any activity or process constituting all or part of a process for the extraction or removal of minerals, ores, soils, and other solid matter from their original location.
 - c. The preparation, washing, cleaning, or other treatment of minerals, ores, or other solid matter so as to make them suitable for commercial, industrial, or construction use.

"Mining" does not include:

 - a. Those aspects of deep mining not having significant effect on the surface, where the affected land does not exceed one acre in area.
 - b. Mining operations where the affected land does not exceed one acre in area.
 - c. Plants engaged in processing minerals produced elsewhere and whose refuse does not affect more than one acre of land.
 - d. Excavation or grading when conducted solely in aid of on-site farming or of on-site construction for purposes other than mining.
 - e. Removal of overburden and mining of limited amounts of any ores or mineral solids when done only for the purpose and to the extent necessary to determine the location, quantity, or quality of any natural deposit,

- provided that no ores or mineral solids removed during exploratory excavation or mining are sold, processed for sale, or consumed in the regular operation of a business, and provided further that the affected land resulting from any exploratory excavation does not exceed one acre in area.
- (8) "Neighboring" means in close proximity, in the immediate vicinity, or in actual contact.
 - (9) "Operator" means any person or persons, any partnership, limited partnership, or corporation, or any association of persons, engaged in mining operations, whether individually, jointly, or through subsidiaries, agents, employees, or contractors.
 - (10) "Overburden" means the earth, rock, and other materials that lie above the natural deposit of minerals.
 - (10a) "Parent" has the same meaning as in 17 Code of Federal Regulations § 240.12(b)-2 (1 April 1992 Edition), which defines "parent" as an affiliate that directly, or indirectly through one or more intermediaries, controls another person.
 - (11) "Peak" means overburden removed from its natural position and deposited elsewhere in the shape of conical piles or projecting points.
 - (12) "Reclamation" means the reasonable rehabilitation of the affected land for useful purposes, and the protection of the natural resources of the surrounding area. Although both the need for and the practicability of reclamation will control the type and degree of reclamation in any specific instance, the basic objective will be to establish on a continuing basis the vegetative cover, soil stability, water conditions and safety conditions appropriate to the area.
 - (13) "Reclamation plan" means the operator's written proposal as required and approved by the Department for reclamation of the affected land, which shall include but not be limited to:
 - a. Proposed practices to protect adjacent surface resources;
 - b. Specifications for surface gradient restoration to a surface suitable for the proposed subsequent use of the land after reclamation is completed, and proposed method of accomplishment;
 - c. Manner and type of revegetation or other surface treatment of the affected areas;
 - d. Method of prevention or elimination of conditions that will be hazardous to animal or fish life in or adjacent to the area;
 - e. Method of compliance with State air and water pollution laws;
 - f. Method of rehabilitation of settling ponds;
 - g. Method of control of contaminants and disposal of mining refuse;
 - h. Method of restoration or establishment of stream channels and stream banks to a condition minimizing erosion, siltation, and other pollution;

- i. Maps and other supporting documents as may be reasonably required by the Department; and
- j. A time schedule that meets the requirements of G.S. 74-53.
- (14) "Refuse" means all waste soil, rock, mineral, scrap, tailings, slimes, and other material directly connected with the mining, cleaning, and preparation of substances mined and shall include all waste materials deposited on or in the permit area from other sources.
- (15) "Ridge" means overburden removed from its natural position and deposited elsewhere in the shape of a long, narrow elevation.
- (16) "Spoil bank" means a deposit of excavated overburden or refuse.
- (16a) "Subsidiary" has the same meaning as in 17 Code of Federal Regulations § 240.12(b)-2 (1 April 1992 Edition), which defines "subsidiary" as an affiliate that is directly, or indirectly through one or more intermediaries, controlled by another person.
- (17) "Termination of mining" means cessation of mining operations with intent not to resume, or cessation of mining operations as a result of expiration or revocation of the permit of the operator. Whenever the Department shall have reason to believe that a mining operation has terminated, the Department shall give the operator written notice of its intention to declare the operation terminated, and the operator shall have an opportunity to appear within 30 days and present evidence that the operation is continuing; where the Department finds that the evidence is satisfactory, the Department shall not declare the mining operation terminated. (1971, c. 545, s. 4; 1973, c. 1262, ss. 33, 86; 1977, c. 771, s. 4; c. 845, s. 1; 1989, c. 727, s. 218(13); 1993 (Reg. Sess., 1994), c. 568, s. 1.)

§ 74-50. Permits -- General.

(a) No operator shall engage in mining without having first obtained from the Department an operating permit that covers the affected land and that has not been terminated, revoked, suspended for the period in question, or otherwise become invalid. An operating permit may be modified from time to time to include land neighboring the affected land, in accordance with procedures set forth in G.S. 74-52. A separate permit shall be required for each mining operation that is not on land neighboring a mining operation for which the operator has a valid permit.

(b) At the time of the application for a new mining permit or permit modifications that add owners of record of lands adjoining the permit boundaries, the operator shall make a reasonable effort, satisfactory to the Department, to notify all owners of record of land adjoining the proposed site, and to notify the chief administrative officer of the county or municipality in which the site is located that the operator intends to conduct a mining operation on the site in question. The notice shall inform the owners of record and chief administrative officers of the

opportunity to submit written comments to the Department regarding the proposed mining operation and the opportunity to request a public hearing regarding the proposed mining operation. Requests for public hearing shall be made within 30 days of issuance of the notice.

(c) No permit shall become effective until the operator has deposited with the Department an acceptable performance bond or other security pursuant to G.S. 74-54. If at any time the bond or other security, or any part thereof, shall lapse for any reason other than a release by the Department, and the lapsed bond or security is not replaced by the operator within 30 days after notice of the lapse, the permit to which the lapsed bond or security pertains shall be automatically revoked.

(d) An operating permit shall be granted for a period not exceeding 10 years. If the mining operation terminates and the reclamation required under the approved reclamation plan is completed prior to the end of the period, the permit shall terminate. Termination of a permit shall not have the effect of relieving the operator of any obligations that the operator has incurred under an approved reclamation plan or otherwise. Where the mining operation itself has terminated, no permit shall be required in order to carry out reclamation measures under the reclamation plan. (1971, c. 545, s. 5; 1973, c. 1262, s. 33; 1981, c. 787, s. 1; 1993 (Reg. Sess., 1994), c. 568, s. 2.)

§ 74--51. Permits -- Application, granting, conditions.

(a) Any operator desiring to engage in mining shall make written application to the Department for a permit. The application shall be upon a form furnished by the Department and shall fully state the information called for; in addition, the applicant may be required to furnish any other information as may be deemed necessary by the Department in order adequately to enforce this Article. The application shall be accompanied by a reclamation plan that meets the requirements of G.S. 74-53. No permit shall be issued until a reclamation plan has been approved by the Department. The application shall be accompanied by a signed agreement, in a form specified by the Department, that in the event a bond forfeiture is ordered pursuant to G.S. 74-59, the Department and its representatives and contractors shall have the right to make whatever entries on the land and to take whatever actions may be necessary in order to carry out reclamation that the operator has failed to complete.

(b) Before deciding whether to grant a new permit, the Department shall circulate copies of a notice of application for review and comment as it deems advisable. The Department shall grant or deny the permit requested as expeditiously as possible, but in no event later than 60 days after the application form and any relevant and material supplemental information reasonably required shall have been filed with the Department, or if a public hearing is held, within 30 days following the hearing and the filing of any relevant and material supplemental information reasonably required by the Department. Priority consideration shall be given to applicants who submit evidence that the mining

proposed will be for the purpose of supplying materials to the Board of Transportation.

(c) If the Department determines, based on public comment relevant to the provisions of this Article, that significant public interest exists, the Department shall conduct a public hearing on any application for a new mining permit or for permit modifications that add owners of record of lands adjoining the permit boundaries. The hearing shall be held before the Department reaches a final decision on the application, and in making its determination, the Department shall give full consideration to all comments submitted at the public hearing. The public hearing shall be held within 60 days of the end of the 30-day period within which any requests for the public hearing shall be made.

(d) The Department may deny the permit upon finding:

- (1) That any requirement of this Article or any rule promulgated hereunder will be violated by the proposed operation;
- (2) That the operation will have unduly adverse effects on potable groundwater supplies, wildlife, or fresh water, estuarine, or marine fisheries;
- (3) That the operation will violate standards of air quality, surface water quality, or groundwater quality that have been promulgated by the Department;
- (4) That the operation will constitute a direct and substantial physical hazard to public health and safety or to a neighboring dwelling house, school, church, hospital, commercial or industrial building, public road or other public property, excluding matters relating to use of a public road;
- (5) That the operation will have a significantly adverse effect on the purposes of a publicly owned park, forest or recreation area;
- (6) That previous experience with similar operations indicates a substantial possibility that the operation will result in substantial deposits of sediment in stream beds or lakes, landslides, or acid water pollution; or
- (7) That the applicant or any parent, subsidiary, or other affiliate of the applicant or parent has not been in substantial compliance with this Article, rules adopted under this Article, or other laws or rules of this State for the protection of the environment or has not corrected all violations that the applicant or any parent, subsidiary, or other affiliate of the applicant or parent may have committed under this Article or rules adopted under this Article and that resulted in:
 - a. Revocation of a permit,
 - b. Forfeiture of part or all of a bond or other security,
 - c. Conviction of a misdemeanor under G.S. 74-64,
 - d. Any other court order issued under G.S. 74-64, or
 - e. Final assessment of a civil penalty under G.S. 74-64.

(e) In the absence of any finding set out in subsection (d) of this section, or if adverse effects are mitigated by the applicant

as determined necessary by the Department, a permit shall be granted.

(f) Any permit issued shall be expressly conditioned upon compliance with all requirements of the approved reclamation plan for the operation and with any other reasonable and appropriate requirements and safeguards that the Department determines are necessary to assure that the operation will comply fully with the requirements and objectives of this Article. These conditions may, among vegetative or otherwise, so as to screen the view of the operation from public highways, public parks, or residential areas, where the Department finds screening to be feasible and desirable.

Violation of any conditions of the permit shall be treated as a violation of this Article and shall constitute a basis for suspension or revocation of the permit.

(g) If the Department denies an application for a permit, the Department shall notify the operator in writing, stating the reasons for the denial and any modifications in the application that would make the application acceptable. The operator may thereupon modify and resubmit the application, or file an appeal as provided in G.S. 74-61.

(h) Upon approval of an application, the Department shall set the amount of the performance bond or other security that is to be required pursuant to G.S. 74-54. The operator shall have 60 days after the Department mails a notice of the required bond to the operator in which to deposit the required bond or security with the Department. The operating permit shall not be issued until receipt of this deposit.

(i) When one operator succeeds to the interest of another in any uncompleted mining operation by virtue of a sale, lease, assignment, or otherwise, the Department may release the first operator from the duties imposed upon the operator by this Article with reference to the mining operation and transfer the permit to the successor operator; provided, that both operators have complied with the requirements of this Article and that the successor operator assumes the duties of the first operator with reference to reclamation of the land and posts a suitable bond or other security. (1971, c. 545, s. 6; 1973, c. 507, s. 5; 1977, c. 771, s. 4; c. 845, s. 2; 1981, c. 787, ss. 2, 3; 1987, c. 827, c. 82; 1989, c. 727, s. 11; 1993 (Reg. Sess., 1994), c. 568, s. 3.)

§ 74-52. Permits -- Modification, renewal.

(a) Any operator engaged in mining under an operating permit may apply at any time for modification of the permit. A permittee may apply for renewal of the permit at any time during the two years prior to the expiration of the permit. The application shall be in writing upon forms furnished by the Department and shall fully state the information called for. The applicant must provide the Department with any additional information necessary to satisfy application requirements. The applicant is not required to resubmit information that remains unchanged since the time of the prior application. In addition, the applicant may be required to furnish any other information as may be deemed necessary by the Department in order adequately to enforce the Article.

(b) The procedure to be followed and standards to be applied in renewing a permit shall be the same as those for issuing a permit; provided, however, that in the absence of any changes in legal requirements for issuance of a permit since the date on which the prior permit was issued, the only basis for denying a renewal permit shall be an uncorrected violation of the type listed in G.S. 74-51(7), or failure to submit an adequate reclamation plan in light of conditions then existing.

(c) A modification under this section may affect the land area covered by the permit, the approved reclamation plan coupled with the permit, or other terms and conditions of the permit. A permit may be modified to include land neighboring the affected land, but not other lands. The reclamation plan may be modified in any manner, so long as the Department determines that the modified plan fully meets the standards set forth in G.S. 74-53 and that the modifications would be generally consistent with the bases for issuance of the original permit. Other terms and conditions may be modified only where the Department determines that the permit as modified would meet all requirements of G.S. 74-50 and 74-51. No modification shall extend the expiration date of any permit issued under this Article.

(d) No modification or renewal of a permit shall become effective until any required changes have been made in the performance bond or other security posted under the provisions of G.S. 74-54, so as to assure the performance of obligations assumed by the operator under the permit and reclamation plan. (1971, c. 545, s. 7; 1993 (Reg. Sess., 1994), c. 568, s. 4.)

§ 74-53. Reclamation plan.

The operator shall submit with his application for an operating permit a proposed reclamation plan. Said plan shall include as a minimum, each of the elements specified in the definition of "reclamation plan" in G.S. 74-49, plus such other information as may be reasonably required by the Department. The reclamation plan shall provide that reclamation activities, particularly those relating to control of erosion, shall to the extent feasible be conducted simultaneously with mining operations and in any event be initiated at the earliest practicable time after completion or termination of mining on any segment of the permit area. The plan shall provide that reclamation activities shall be completed within two years after completion or termination of mining on each segment of the area for which a permit is requested unless a longer period is specifically permitted by the Department.

The Department may approve, approve subject to stated modifications, or reject the plan which is proposed. The Department shall approve a reclamation plan (as submitted or as modified) only where it finds that it adequately provides for those actions necessary to achieve the purposes and requirements of this Article, and that in addition, the plan meets the following minimum standards:

- (1) The final slopes in all excavations in soil, sand, gravel and other unconsolidated materials shall be at such an angle as to minimize the possibility of slides and be consistent with the future use of the land.

- (2) Provisions for safety to persons and to adjoining property must be provided in all excavations in rock.
- (3) At open pit mining operations, all overburden and spoil shall be left in a configuration which is in accordance with accepted conservation practices and which is suitable for the proposed subsequent use of the land.
- (4) In no event shall any provision of this section be construed to allow small pools of water that are, or are likely to become, noxious, odious, or foul to collect or remain on the mined area. Suitable drainage ditches or conduits shall be constructed or installed to avoid such conditions. Lakes, ponds, and marsh lands shall be considered adequately reclaimed lands when approved by the Department.
- (5) The type of vegetative cover and methods of its establishment shall be specified, and in every case shall conform to accepted and recommended agronomic and reforestation restoration practices as established by the North Carolina Agricultural Experiment Station and Department of Environment, Health, and Natural Resources. Advice and technical assistance may be obtained through the State soil and water conservation districts.

The Department shall be authorized to approve a reclamation plan despite the fact that such plan does not provide for reclamation treatment of every portion of the affected land, where the Department finds that because of special conditions such treatment would not be feasible for particular areas and that the plan takes all practical steps to minimize the extent of such areas. (1971, c. 545, s. 8; 1973, c. 1262, s. 86; 1977, c. 771, s. 4; 1989, c. 727, s. 218(14); 1991, c. 342, s. 1.)

§ 74-54. Bonds.

(a) Each applicant for an operating permit, or for the renewal of a permit shall, following the approval of the application, file and maintain in force a bond in favor of the State of North Carolina, executed by a surety approved by the Commissioner of Insurance, in the amount set forth below. The bond herein provided for must be continuous in nature and shall remain in force until cancelled by the surety. Cancellation by the surety shall be effectuated only upon 60 days written notice thereof to the Department and to the operator.

(b) The applicant shall have the option of filing a separate bond for each operating permit or of filing a blanket bond covering all mining operations within the State for which the applicant holds a permit. The amount of each bond shall be based upon the area of affected land to be reclaimed under the approved reclamation plan or plans to which the bond pertains, less any area where reclamation has been completed and released from coverage by the Department, pursuant to G.S. 74-56, or based on any other criteria established by the Mining Commission. The Department shall set the amount of the required bond in all cases, based upon a schedule established by the Mining Commission.

(c) The bond shall be conditioned upon the faithful performance of the requirements set forth in this Article and of the rules

adopted under this Article. Upon filing the bond with the Department, the operator shall lose all right, title, and interest in the bond while the bond is held by the Department. Liability under the bond shall be maintained as long as reclamation is not completed in compliance with the approved reclamation plan unless released only upon written notification from the Department. Notification shall be given upon completion of compliance or acceptance by the Department of a substitute bond. In no event shall the liability of the surety exceed the amount of the surety bond required by this section.

(d) In lieu of the surety bond required by this section, the operator may file with the Department a cash deposit, an irrevocable letter of credit, a guaranty of payment from an acceptable bank, an assignment of a savings account in an acceptable bank on an assignment form prescribed by the Department, or other security acceptable to the Department. Security shall be subject to the release provisions of G.S. 74-56.

(e) If the license to do business in North Carolina of any surety upon a bond filed pursuant to this Article should be suspended or revoked, the operator shall, within 60 days after receiving notice thereof, substitute for the surety a good and sufficient corporate surety authorized to do business in this State. Upon failure of the operator to substitute sufficient surety within the time specified, the operator's permit shall be automatically revoked. (1971, c. 545, s. 9; 1981, c. 787, s. 4; 1987, c. 827, s. 85; 1993 (Reg. Sess. 1994), c. 568, s. 5.)

§ 74-54.1. Permit fees.

(a) The Commission may establish a fee schedule for the processing of permit applications and permit renewals and modifications. The fees may vary on the basis of the acreage, size, and nature of the proposed or permitted operations or modifications. In establishing the fee schedule, the Commission shall consider the administrative and personnel costs incurred by the Department for processing applications for permits and permit renewals and modifications and for related compliance activities and safeguards to prevent unusual fee assessments that would impose a serious economic burden on an individual applicant or a class of applicants.

(b) The total amount of permit fees collected for any fiscal year may not exceed one-third of the total personnel and administrative costs incurred by the Department for processing applications for permits and permit renewals and modifications and for related compliance costs in the prior fiscal year. A fee for an application for a new permit may not exceed two thousand five hundred dollars (\$2,500), and a fee for an application to renew or modify a permit may not exceed five hundred dollars (\$500.00). The Mining Account is established as a nonreverting account within the Department. Fees collected under this section shall be credited to the Mining Account and shall be applied to the costs of administering this Article.

(c) The Department shall annually report on or before 1 September to the Environmental Review Commission on the cost of implementing this Article. The report shall include the fees

established, collected, and disbursed under this section and any other information requested by the General Assembly or the Commission. (1989 (Reg. Sess., 1990), c. 944, s. 1; 1991 (Reg. Sess., 1992), c. 1039, s. 16; 1993, c. 513, s. 3; 1993 (Reg. Sess., 1994), c. 568 s. 6.)

§ 74-55. Reclamation report.

Within 30 days after completion or termination of mining on an area under permit or within 30 days after each anniversary of the issuance of the operating permit, whichever is earlier, or at such later date as may be provided by rules of the Department, and each year thereafter until reclamation is completed and approved, the operator shall file a report of activities completed during the preceding year on a form prescribed by the Department, which shall:

- (1) Identify the mine, the operator and the permit number;
- (2) State acreage disturbed by mining in the last 12-month period;
- (3) State and describe amount and type of reclamation carried out in the last 12-month period;
- (4) Estimate acreage to be newly disturbed by mining in the next 12-month period;
- (5) Provide such maps as may be specifically requested by the Department. (1971, c. 545, s. 10; 1987, c. 827, s. 85.)

**§ 74-56. Inspection and approval of reclamation;
bond release or forfeiture.**

(a) The Department may direct investigations as it may reasonably deem necessary to carry out its duties as prescribed by this Article, and for this purpose to enter at reasonable times upon any mining operation for the purpose of determining compliance with this Article and any rules adopted under this Article and for determining compliance with the terms and conditions of a mining permit, but for no other purpose. No person shall refuse entry or access to any authorized representative of the Department who enters the mining operation for purposes of inspection or other official duties and who presents appropriate credentials; nor shall any person obstruct, hamper, or interfere with the representative while the representative is carrying out official duties. Upon arriving at the site, the representative of the Department shall make every reasonable effort to notify the operator or the operator's agent that the representative of the Department intends to inspect the site. Upon receipt of the operator's annual report or report of completion of reclamation and at any other reasonable time the Department may elect, the Department shall cause the permit area to be inspected to determine whether the operator has complied with the reclamation plan, the requirements of this Article, any rules adopted under this Article, and the terms and conditions of the permit.

(b) The operator shall proceed with reclamation as scheduled in the approved reclamation plan. The Department shall conduct an inspection and give written notice to the operator of any deficiencies noted. The operator shall thereupon commence action

within 30 days to rectify these deficiencies and shall diligently proceed until they have been corrected. The Department may extend performance periods referred to in this section and in G.S. 74-53 for delays clearly beyond the operator's control, but only in cases where the Department finds that the operator is making every reasonable effort to comply.

(c) Upon completion of reclamation of an area of affected land, the operator shall notify the Department. The Department shall make an inspection of the area, and if it finds that reclamation has been properly completed, it shall notify the operator in writing and release the operator from further obligations regarding the affected land. At the same time the Department shall release all or the appropriate portion of any performance bond or other security that the operator has posted under G.S. 74-54.

(d) If at any time the Department finds that reclamation of the permit area is not proceeding in accordance with the reclamation plan and that the operator has failed within 30 days after notice to commence corrective action, or if the Department finds that reclamation has not been properly completed in conformance with the reclamation plan within two years, or longer if authorized by the Department, after termination of mining on any segment of the permit area, the Department shall initiate forfeiture proceedings against the bond or other security filed by the operator under G.S. 74-59. In addition, failure to implement the reclamation plan shall constitute grounds for suspension or revocation of the operator's permit, as provided in G.S. 74-58. (1971, c. 545, s. 11; 1987, c. 827, s. 85; 1993 (Reg. Sess., 1994), c. 568, s. 7.)

§ 74-57. Departmental modification of permit or reclamation plan.

If at any time it appears to the Department from its inspection of the affected land that the activities under the reclamation plan and other terms and conditions of the permit are failing to achieve the purposes and requirements of this Article, it shall give the operator written notice of that fact, of its intention to modify the reclamation plan and other terms and conditions of the permit in a stated manner, and of the operator's right to a hearing on the proposed modification at a stated time and place. The date for such hearing shall be not less than 30 nor more than 60 days after the date of the notice unless the Department and the operator shall mutually agree on another date. Following the hearing the Department shall have the right to modify the reclamation plan and other terms and conditions of the permit in the manner stated in the notice or in such other manner as it deems appropriate in view of the evidence submitted at the hearing. (1971, c. 545, s. 12.)

§ 74-58. Suspension or revocation of permit.

(a) Whenever the Department shall have reason to believe that a violation of (i) this Article, (ii) any rules adopted under this Article, or (iii) the terms and conditions of a permit, including the approved reclamation plan, has taken place, it shall serve

written notice of the apparent violation upon the operator, specifying the facts constituting the apparent violation and informing the operator of the operator's right to an informal conference with the Department. The date for an informal conference shall be not less than 15 nor more than 30 days after the date of the notice, unless the Department and the operator mutually agree on another date. If the operator or the operator's representative does not appear at the informal conference, or if the Department following the informal conference finds that there has been a violation, the Department may suspend the permit until the violation is corrected or may revoke the permit where the violation appears to be willful.

(b) The effective date of any suspension or revocation shall be 30 days following the date of the decision. The filing of a petition for a contested case under G.S. 74-61 shall stay the effective date until the Commission makes a final decision. If the Department finds at the time of its initial decision that any delay in correcting a violation would result in imminent peril to life or danger to property or to the environment, it shall promptly initiate a proceeding for injunctive relief under G.S. 74-64 hereof and Rule 65 of the Rules of Civil Procedure. The pendency of any appeal from a suspension or revocation of a permit shall have no effect upon an action for injunctive relief.

(c) Any operator whose permit has been suspended or revoked shall be denied a new permit or a renewal of an existing permit to engage in mining until the operator gives evidence satisfactory to the Department of the operator's ability and intent to fully comply with the provisions of this Article, and rules adopted under this Article, and the terms and conditions of the permit, including the approved reclamation plan, and that the operator has satisfactorily corrected all previous violations. (1971, c. 545, s. 13; 1973, c. 1262, s. 33; 1979, c. 252, s. 1; 1987, c. 827, s. 82A; 1993 (Reg. Sess., 1994), c. 568, s. 8.)

§ 74-59. Bond forfeiture proceedings.

Whenever the Department determines the necessity of a bond forfeiture under the provisions of G.S. 74-56, or whenever it revokes an operating permit under the provisions of G.S. 74-58, it shall request the Attorney General to initiate forfeiture proceedings against the bond or other security filed by the operator under G.S. 74-54; provided, however, that no such request shall be made for forfeiture of a bond until the surety has been given written notice of the violation and a reasonable opportunity to take corrective action. Such proceedings shall be brought in the name of the State of North Carolina. In such proceedings, the face amount of the bond or other security, less any amount released by the Department pursuant to G.S. 74-56, shall be treated as liquidated damages and subject to forfeiture. All funds collected as a result of such proceedings shall be placed in a special fund and used by the Department to carry out, to the extent possible, the reclamation measures which the operator has failed to complete. If the amount of the bond or other security filed pursuant to this section proves to be insufficient to complete the required reclamation pursuant to the approved

reclamation plan, the operator shall be liable to the Department for any excess above the amount of the bond or other security which may be required to defray the cost of completing the required reclamation. (1971, c. 545, s. 14.)

§ 74-60. Notice.

Whenever in this Article written notice is required to be given by the Department, such notice shall be mailed by registered or certified mail to the permanent address of the operator set forth in his most recent application for an operating permit or for a modification or renewal of such permit. No other notice shall be required. (1971, c. 545, s. 15.)

§ 74-61. Administrative and judicial review of decisions.

An applicant, permittee, or affected person may contest a decision of the Department to deny, suspend, modify, or revoke a permit or a reclamation plan, to refuse to release part or all of a bond or other security, or to assess a civil penalty by filing a petition for a contested case under G.S. 150B-23 within 30 days after the Department makes the decision. The Commission shall make the final decision in a contested case under this section. Article 4 of Chapter 150B of the General Statutes governs judicial review of a decision of the Commission. (1971, c. 545, s. 16; 1973, c. 1262, s. 33; 1977, c. 771, s. 4; 1979, c. 252, s. 3; 1987, c. 827, s. 86; 1993 (Reg. Sess., 1994), c. 568, s. 9.)

§ 74-62. Repealed by Session Laws 1987, c. 827, s. 83, effective August 13, 1987.

§ 74-63. Rules.

The Commission may adopt rules necessary to administer this Article. (1971, c. 545, s. 18; 1973, c. 1262, s. 33; c. 1331, s. 3; 1987, c. 827, s. 84.)

§ 74-64. Penalties for violations.

(a) Civil Penalties.

- (1) a. A civil penalty of not more than five thousand dollars (\$5,000) may be assessed by the Department against any person who fails to secure a valid operating permit prior to engaging in mining, as required by G.S. 74-50. No civil penalty shall be assessed until the operator has been given notice of the violation pursuant to G.S. 74-60. Each day of a continuing violation shall constitute a separate violation and a civil penalty of not more than five thousand dollars (\$5,000) per day may be assessed for each day the violation continues.
- b. Any permitted operator who violates any of the provisions of this Article, any rules adopted under this Article, or any of the terms and

conditions of the mining permit shall be subject to a civil penalty of not more than five hundred dollars (\$500.00). Each day of a continuing violation shall constitute a separate violation.

Prior to the assessment of any civil penalty, written notice of the violation shall be given. The notice shall describe the violation with reasonable particularity, shall specify a time period reasonably calculated to permit the violator to complete actions to correct the violation, and shall state that failure to correct the violation within that period may result in the assessment of a civil penalty.

- c. In determining the amount of the penalty, the Department shall consider the degree and extent of harm caused by the violation, the cost of rectifying the damage, the amount of money the violator saved by the noncompliance, whether the violation was committed willfully, and the prior record of the violator in complying or failing to comply with this Article.
- (2) The Department shall determine the amount of the civil penalty to be assessed pursuant to G.S. 74-64(a)(1) and shall give notice to the operator of the assessment of the civil penalty pursuant to G.S. 74-60, or by any means authorized by G.S. 1A-1, Rule 4. The notice shall set forth in detail the violation or violations for which the civil penalty has been assessed. The operator may appeal the assessment of any civil penalty assessed pursuant to this section in accordance with the procedures set forth in G.S. 74-61.
 - (3) The notice of assessment shall direct the violator to pay the assessment or contest the assessment as provided in G.S. 74-61. If the violator does not pay the assessment within 30 days after receipt of the notice of assessment or within 30 days after receipt of the final agency decision, where the assessment has been contested, the Department shall request the Attorney General to institute a civil action in superior court to recover the amount of the penalty. A civil action under this section shall be filed within three years of the date the final agency decision was served on the violator.
 - (4) All funds collected pursuant to this section shall be credited to the General Fund as nontax revenue.
 - (5) In addition to other remedies, the Department may request the Attorney General to institute any appropriate action or proceedings to prevent, restrain, correct or abate any violation of this Article or any rules adopted under this Article, or the obstruction, hampering, or interference with an authorized representative of the Department while the representative is carrying out official duties pursuant to this Article.

(b) **(Effective until January 1, 1995) Criminal Penalties.** -- In addition to other penalties provided by this Article, any operator who engages in mining in willful violation of the provisions of this Article or of any rules promulgated hereunder or who willfully misrepresents any fact in any action taken pursuant to this Article or willfully gives false information in any application or report required by this Article shall be guilty of a misdemeanor and, upon conviction thereof, shall be fined not less than one hundred dollars (\$100.00) nor more than one thousand dollars (\$1,000) for each offense. Each day of continued violation after written notification shall be considered a separate offense.

(Effective January 1, 1995) Criminal Penalties -- In addition to other penalties provided by this Article, any operator who engages in mining in willful violation of the provisions of this Article or of any rules promulgated hereunder or who willfully misrepresents any fact in any action taken pursuant to this Article or willfully gives false information in any application or report required by this Article shall be guilty of a Class 3 misdemeanor and, upon conviction thereof, shall only be fined not less than one hundred dollars (\$100.00) nor more than one thousand dollars (\$1,000) for each offense. Each day of continued violation after written notification shall be considered a separate offense. (1971, c. 545, s. 19; 1979, c. 252, s. 2; 1981, c. 787, ss. 7, 8; 1987, c. 246, s. 1; c. 827, s. 85; 1989 (Reg. Sess., 1990), c. 1024, s. 16; 1993, c. 539, s. 555; 1993 (Reg. Sess., 1994), c. 568, s. 10.)

§ 74-65. Effect on local zoning regulations.

No provision of this Article shall be construed to supersede or otherwise affect or prevent the enforcement of any zoning regulation or ordinance duly adopted by an incorporated city or county or by any agency or department of the State of North Carolina, except insofar as a provision of said regulation or ordinance is in direct conflict with this Article. (1971, c. 545, s. 20.)

§ 74-66. Private relief against nuisance or hazard.

No provision of this Article shall be construed to restrict or impair the right of any private or public person, association, corporation, partnership, officer, or agency to bring any legal or equitable action for redress against nuisances or hazards. (1971, c. 545, s. 21.)

§ 74-67. Exemptions.

The provisions of this Article shall not apply to those activities of the Department of Transportation, nor of any person, firm, or corporation acting under contract with said Department of Transportation, on highway rights-of-way or borrow pits maintained solely in connection with the construction, repair, and maintenance of the public road systems of North Carolina; provided, that this exemption shall not become effective until the Department of Transportation shall have adopted reclamation standards applying to

such activities and such standards have been approved by the Mining Commission. The provisions of this Article shall not apply to mining on federal lands under a valid permit from the U.S. Forest Service or the U.S. Bureau of Land Management. (1971, c. 545, s. 22; 1973, c. 507, s. 5; c. 1262, s. 33; 1977, c. 464, s. 34.)

§ 74-68. Cooperation with other agencies; contracts and grants.

The Department, with the approval of the Governor, and in order to accomplish any of the purposes of the Department, may apply for, accept, and expend grants from the federal government and its agencies and from any foundation, corporation, association, or individual; may enter into contracts relating to such grants; and may comply with the terms, conditions, and limitations of any such grant or contract. The Department may engage in such research as may be appropriate to further its ability to accomplish its purposes under this Article, and may contract for such research to be done by others. The Department may cooperate with any federal, state, or local government or agency, of this or any other state, in mutual programs to improve the enforcement of this Article or to accomplish its purposes more successfully. (1971, c. 545, s. 23.)

§§ 74-69 to 74-74. Reserved for future codification purposes.

Appendix B: North Carolina Administrative Code

Title 15 A

Department of Environment, Health and Natural Resources

CHAPTER 5

MINING

NORTH CAROLINA ADMINISTRATIVE CODE

**TITLE 15A
DEPARTMENT OF ENVIRONMENT, HEALTH, AND NATURAL RESOURCES**

**CHAPTER 5
MINING: MINERAL RESOURCES**

SUBCHAPTER 5A - ORGANIZATION AND ADMINISTRATION

SECTION .0100 - MINING COMMISSION

- .0101 NAME AND ADDRESS
- .0102 GENERAL PURPOSES (REPEALED)
- .0103 STRUCTURE (REPEALED)

SECTION .0200 - ADMINISTRATION

- .0201 DEPARTMENT NATURAL RESOURCES & COMMUNITY DEVELOPMENT (REPEALED)
- .0202 DELEGATION

SUBCHAPTER 5B - PERMITTING AND REPORTING

- .0001 PURPOSE (REPEALED)
- .0002 ACTIVITIES REQUIRING PERMITS (REPEALED)
- .0003 BONDING REQUIREMENTS
- .0004 INFORMATION REQUIRED IN PERMIT APPLICATION
- .0005 CONDITIONS WHICH MAY BE INCLUDED IN PERMIT
- .0006 STANDARDS FOR DENYING AN APPLICATION
- .0007 MODIFICATION OF MINING PERMIT (REPEALED)
- .0008 RENEWAL OF MINING PERMIT (REPEALED)
- .0009 STANDARDS/SUSPENDING OR REVOKING/MINING PERMIT (REPEALED)
- .0010 MINING RECLAMATION REPORTS
- .0011 PUBLIC HEARINGS
- .0012 PERMIT APPLICATION PROCESSING FEES
- .0013 RESPONSE DEADLINE TO DEPARTMENT'S REQUEST(S)

SUBCHAPTER 5F - CIVIL PENALTIES

- .0001 PURPOSE AND SCOPE
- .0002 DEFINITIONS
- .0003 WHO MAY ASSESS
- .0004 WHEN ASSESSABLE (REPEALED)
- .0005 CIVIL PENALTY FOR MINING WITHOUT A PERMIT
- .0006 CIVIL PENALTY FOR VIOLATING OPERATING PERMIT
- .0007 CRITERIA FOR DETERMINING AMOUNT OF PENALTY
- .0008 ADMINISTRATIVE REMEDIES
- .0009 HEARING PROCEDURES
- .0010 TENDERS OF PAYMENT
- .0011 REFERRAL TO ATTORNEY GENERA
- .0012 FURTHER REMEDIES

CHAPTER 5 - MINING: MINERAL RESOURCES

This Chapter 5 of Title 15A of the North Carolina Administrative Code (T15A.05); MINING: MINERAL RESOURCES; has been transferred and recodified from Chapter 5 of Title 15 of the North Carolina Administrative Code (T15.05), effective November 1, 1989. The recodification was pursuant to G.S. 143B-279.1.

SUBCHAPTER 5A - ORGANIZATION AND ADMINISTRATION**SECTION .0100 - MINING COMMISSION****.0101 NAME AND ADDRESS**

The name of this agency shall be the North Carolina Mining Commission. Its address is Department of Environment, Health, and Natural Resources, P.O. Box 27687, Raleigh, North Carolina 27611.

*History Note: Statutory Authority G.S. 143B-290;
Eff. February 1, 1976;
Amended Eff. January 31, 1979;
Readopted Eff. August 1, 1982;
Amended Eff. April 1, 1990.*

.0102 GENERAL PURPOSES

*History Note: Statutory Authority G.S. 74-38; 74-61; 74-84; 74-86; 143B-290;
Eff. February 1, 1976;
Readopted Eff. August 1, 1982;
Amended Eff. November 1, 1984; December 1, 1983;
Repealed Eff. August 1, 1988.*

.0103 STRUCTURE

*History Note: Statutory Authority G.S. 143B-291;
Eff. February 1, 1976;
Readopted Eff. August 1, 1982;
Repealed Eff. November 1, 1984.*

SECTION .0200 - ADMINISTRATION

.0201 DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT

History Note: Statutory Authority G.S. 74-50 through 74-60; 74-64; 74-68; 74-77 through 74-85; 74-87; Eff. February 1, 1976; Readopted Eff. August 1, 1982; Amended Eff. December 1, 1983; Repealed Eff. November 1, 1984.

.0202 DELEGATION

(a) The Director, Division of Land Resources, Department of Environment, Health, and Natural Resources, shall have the following powers and duties with regard to the administration of the Mining Act of 1971:

- (1) the issuance, denial, modification, renewal, suspension and revocation of permits;
- (2) the approval of reclamation plans;
- (3) the initiation of forfeiture proceedings;
- (4) the giving of notices, setting of hearings and taking of action upon findings of violations; and
- (5) the institution of all criminal and civil actions.

(b) The Director, Division of Land Resources, Department of Environment, Health, and Natural Resources, shall have the following powers and duties with regard to the administration of the Control of Exploration for Uranium in North Carolina Act of 1983:

- (1) the issuance, denial, modification, renewal, suspension and revocation of permits;
- (2) the initiation and approval of the abandonment of affected land;
- (3) the inspection and approval of the abandonment of affected land;
- (4) the giving of notices, setting of hearings, and taking of action upon findings of violations; and
- (5) the institution of all criminal and civil actions.

History Note: Statutory Authority G.S. 74-50 through 74-53; 74-56 to 74-59; 74-77 through 74-85; 74-87; 143B-290; Eff. February 1, 1976; Amended Eff. January 31, 1979; September 3, 1976; Readopted Eff. August 1, 1982; Amended Eff. April 1, 1990; December 1, 1983.

SUBCHAPTER 5B - PERMITTING AND REPORTING**.0001 PURPOSE****.0002 ACTIVITIES REQUIRING PERMITS**

*History Note: Statutory Authority G.S. 74-50; 74-63; 74-67; 143B-290(1)(d);
Eff. February 1, 1976;
Amended Eff. January 31, 1979;
Repealed Eff. November 1, 1984.*

.0003 BONDING REQUIREMENTS

(a) After an application for a new mining permit or permit renewal, modification, or transfer is considered approvable by the Department, an applicant or permittee must file a bond with the Department in an amount to be determined by the Director.

(b) If the applicant or permittee disagrees with the bond amount determined by the Director, the applicant or permittee may submit to the Director for his consideration, an estimate of reclamation costs from a third party contractor to be used as the bond amount. The estimate shall be provided to the Director within 30 days following the receipt of the Director's initial bond determination. After considering the estimate and recommendations provided by his staff, the Director shall notify the applicant or permittee of his bond determination and the process and conditions used to set the bond amount.

(c) The Director may invite the applicant or permittee to submit to the Department an estimate of reclamation costs from a third party contractor for the Director's use in determining the required bond amount. After considering the estimate and the recommendations provided by his staff, the Director shall notify the applicant or permittee of his bond determination and the process and conditions used to set the bond amount.

(d) The amount of the bond shall be based on the costs to reclaim the affected land as determined by the reclamation plan approved pursuant to G.S. 74-53 and 15A NCAC 5B 0004(b). The bond amount shall be based on a range of five hundred dollars (\$500.00) to five thousand dollars (\$5,000) per acre of land approved by the Department to be affected. If the mining permit is modified to increase the total affected land, the bond shall be increased accordingly. The Director shall consider the method and extent of the required reclamation for a particular site in determining the bond amount. As areas at a site are reclaimed and formally released by the Department, the permittee may substitute a bond in an amount covering the remaining affected land at the site for the bond previously filed with the Department; otherwise, without such bond substitution, the Department shall retain the previously filed bond until all reclamation has been completed and approved by the Department.

(e) If an applicant or permittee has multiple sites, the applicant or permittee may file a separate bond with the Department for each site or the applicant or permittee may submit one blanket bond covering all sites in the aggregate amount of all bond totals. Once the total amount of all bonds for separate sites or the total of blanket bond(s) for all sites reaches five hundred thousand dollars (\$500,000):

- (1) the applicant or permittee with separate bonds may substitute a five hundred thousand dollar (\$500,000) blanket bond to be used for all future sites, or
- (2) the applicant or permittee with the five hundred thousand dollar (\$500,000) blanket bond covering all sites may use that blanket bond for all future sites,

if the Director finds that the applicant or permittee, in either case, has a good operating record, that the five hundred thousand dollars (\$500,000) is sufficient to reclaim all sites and that no additional reclamation bond money is needed. If the Director finds that the applicant or permittee does not have a good operating record, that the five hundred thousand dollars (\$500,000) is not sufficient to reclaim all sites, or that additional reclamation money is needed, the Director shall require per acreage bonding for future sites as provided in Paragraph (d) of this Rule.

(f) For the purposes of this Rule, a good operating record is defined as two consecutive years of operation within the State of North Carolina without final assessment of a civil penalty or other enforcement action pursuant to G.S. 74-64, or having a permit suspended or revoked under G.S. 74-58, or having a bond or other surety forfeited under G.S. 74-59. For the purposes of this Rule, a bond shall include any and all types of

security allowed under G.S. 74-54.

*History Note: Statutory Authority G.S. 74-51; 74-54; 143B-290;
Eff. February 1, 1976;
Amended Eff. January 1, 1994; April 1, 1990; November 1, 1985; November 1, 1984.*

.0004 INFORMATION REQUIRED IN PERMIT APPLICATION

(a) The completed application for the mining permit shall include information concerning the mining operation and a reclamation plan for the restoration of all affected land. Information required concerning the mining operation shall include:

- (1) materials to be mined;
- (2) method of mining;
- (3) expected depth of mine;
- (4) size of the mine, including:
 - (A) acreage for tailings ponds,
 - (B) acreage for stockpiles,
 - (C) acreage for waste piles,
 - (D) acreage for processing plants,
 - (E) acreage for mine excavation,
 - (F) acreage for annual disturbance;
- (5) anticipated effect on wildlife, freshwater, estuarine or marine fisheries;
- (6) whether or not the operation will have a waste water discharge or air contaminant emission which will require a permit from the division of environmental management;
- (7) method to prevent physical hazard to any neighboring dwelling house, school, church, hospital, commercial or industrial building, or public road if the mining excavation will come within 300 feet thereof;
- (8) measures to be taken to insure against landslides and acid water pollution;
- (9) measures to be taken to minimize siltation of streams, lakes, or adjacent properties during the mining operation;
- (10) measures to be taken to screen the operation from public view.

(b) Information required in the reclamation plan shall include:

- (1) intended plan for overall mine reclamation, subsequent land use and the general methods to be used in reclaiming;
- (2) intended practices to be taken to protect adjacent surface resources;
- (3) intended methods to prevent or eliminate conditions hazardous to animal or fish life in or adjacent to the affected areas;
- (4) intended methods of rehabilitation of settling ponds;
- (5) intended methods of restoration or establishment of stream channels and stream beds to a condition minimizing erosion, siltation and other pollution;
- (6) intended measures to stabilize slopes;
- (7) intended measures to provide for safety to persons and adjoining property in excavation in rock;
- (8) intended measures of disposal of mining refuse and control of contaminants;
- (9) provisions to prevent collection of noxious, odious or foul water in mined areas;
- (10) plan for revegetation and reforestation or other surface treatment of the affected areas which plan must be approved in writing by one of the following prior to submission of the application:
 - (A) Authorized representatives of the local soil and water conservation district having jurisdiction over lands in question;
 - (B) Authorized representatives of the division of forest resources, Department of Environment, Health, and Natural Resources;
 - (C) County agricultural extension chairmen or research and extension personnel headquartered at North Carolina State University in the school of agriculture and life sciences;
 - (D) North Carolina licensed landscape architects;
 - (E) Private consulting foresters referred by the division of forest resources, Department of Environment, Health, and Natural Resources;
 - (F) Others as may be approved by the department; Provided that areas expected to be in use beyond

the maximum permissible permit period, such as processing plants or stockpiles, do not require a specific revegetation plan;

- (11) time schedule of reclamation that provides that reclamation activities be conducted simultaneously with mining operations whenever feasible and in any event be initiated at the earliest practicable time after completion or termination of mining on any segment and completed within two years.

(c) In addition to the application form, the operator shall also submit two copies of a county map showing the mine location and two copies of a mine map. Mine maps should be accurate drawings, aerial photographs or enlarged topographic maps of the mine area and must clearly show the following:

- (1) property lines or affected area of mining operation;
- (2) outline of pits;
- (3) outline of stockpile areas;
- (4) outline of overburden disposal areas;
- (5) location of processing plants (Processing plants may be described as to location and distance from mine if sufficiently far removed.);
- (6) location and name of streams and lakes;
- (7) outline of settling ponds;
- (8) location of access roads;
- (9) map legend:
 - (A) name of company,
 - (B) name of mine,
 - (C) north arrow,
 - (D) county,
 - (E) scale,
 - (F) date prepared,
 - (G) name and title of person preparing map; and
- (10) names of owners of record, both public and private, of all adjoining land.

The mine maps should be correlated with the reclamation plan. The approximate areas to be mined during the life of the permit should be clearly marked.

If reclamation is to be accomplished concurrently with mining, then show segments that are to be mined and reclaimed during each year of the permit.

Add drawings showing typical sections or cross sections and layout of proposed reclamation where such drawings will assist in describing reclamation.

(d) An application for a mining permit shall include:

- (1) The name and address of all known owners, both private and public of all land adjoining the proposed mining site as determined by a diligent search of the tax records or other sources of information about property ownership in a manner reasonable calculated to identify the owners of all adjoining land and approved by the department. The proposed mining site means all land to be included within the proposed permitted area;
- (2) The name of the chief administrative officer of the county or municipality in which the proposed mining site is located together with the officer's mailing address; and
- (3) Proof satisfactory to the department that the applicant has made a reasonable effort to notify all owners of record of all adjoining land and the chief administrative officer of the county or municipality of the pending application. Proof satisfactory to the department shall include an affidavit by the applicant that he has caused a notice of the pending application to be sent by certified or registered mail to all known adjoining owners and to the chief administrative officer of the county or municipality. Other means of notice shall be satisfactory if approved in advance by the department.

History Note: Statutory Authority G.S. 74-63; 74-51; 74-53;

Eff. February 1, 1976;

Amended Eff. April 1, 1990; May 1, 1982; September 1, 1979; January 31, 1979.

.0005 CONDITIONS WHICH MAY BE INCLUDED IN PERMIT

To assure that the operation will comply fully with the requirements and objectives of the Mining Act of 1971, the director may approve an application or reclamation plan subject to certain conditions. Such

conditions of application approval may include:

- (1) additional erosion control measures to be installed during the mining operation;
- (2) a natural buffer to be left between any stream and the affected land;
- (3) visual screening such as existing natural vegetation, vegetated earthen berms, tree plantings at staggered spacing, etc. to be installed and maintained as feasible between any affected land and any adjoining property containing occupied buildings or public access within view of the affected land;
- (4) erosion control measures to be taken during the construction and operation of all haul roads or access roads to minimize off-site damage from sediment;
- (5) other conditions necessary to safeguard the adjacent surface resources or wildlife.

*History Note: Statutory Authority G.S. 74-63; 74-51;
Eff. February 1, 1976;
Amended Eff. May 1, 1992; November 1, 1984.*

.0006 STANDARDS FOR DENYING AN APPLICATION

An application for a mining permit including new permits, modified permits and renewal permits, may be denied when the operation will have an unduly adverse effect on wildlife or fisheries by:

- (1) substantial siltation of streams or lake beds, increasing the average water temperature of adjacent waterways to a temperature detrimental to the pre-existing aquatic wildlife; or
- (2) other conditions designated by the North Carolina Wildlife Resources Commission as being unduly detrimental to wildlife.

*History Note: Statutory Authority G.S. 74-51; 74-58; 74-63;
Eff. February 1, 1976;
Amended Eff. November 1, 1984.*

.0007 MODIFICATION OF MINING PERMIT

.0008 RENEWAL OF MINING PERMIT

.0009 STANDARDS FOR SUSPENDING OR REVOKING A MINING PERMIT

*History Note: Statutory Authority G.S. 74-52; 74-57; 74-58;
Eff. February 1, 1976;
Repealed Eff. November 1, 1984.*

.0010 MINING RECLAMATION REPORTS

The mine operator shall, by February 1 of each year during the life of the permitted operation, and within 30 days of completion or termination of mining on an area under permit, file with the department a mining reclamation report on a form prescribed by the department.

*History Note: Statutory Authority G.S. 74-55; 143B-290;
Eff. March 30, 1978;
Amended Eff. November 1, 1984.*

.0011 PUBLIC HEARINGS

(a) If the department determines that there exists a significant public interest in an application for a new mining permit, the director shall appoint a hearing officer to conduct a public hearing on the application which shall be held no sooner than 20 or later than 60 days of the filing of the application and before the department makes its final decision regarding the application.

(b) At least ten days prior to the public hearing, the department shall publish notice thereof in a newspaper of general circulation in the county in which the proposed mine is located. The department may also give notice to the public by other means. In addition, the department shall cause written notice of the hearing to be sent by certified or registered mail to the applicant and to the known owners of all adjoining land.

(c) Any person may appear at the public hearing and give oral or written comments on the proposed application. The hearing officer may impose reasonable limitations on the length of time that any person may speak and may summarize comments rather than recording them in full. The hearing officer may allow

additional written comments to be submitted after the hearing within a period of time he deems appropriate which shall not exceed ten days.

(d) Within ten days after the hearing or time for additional comment, the hearing officer shall prepare a written report summarizing the comments that were submitted regarding the application. The report shall include copies of all written comments that were submitted. Copies of the report shall be made available to the applicant or members of the public upon request. The department shall give full consideration to all comments contained in the hearing record in making its final determination on the application.

*History Note: Statutory Authority G.S. 74-51; 74-63;
Eff. May 1, 1982.*

.0012 PERMIT APPLICATION PROCESSING FEES

(a) A non-refundable permit application processing fee, in the amounts stated in Paragraphs (b), (c) and (d) of this Rule, shall be paid when an application for a new mining permit, a permit modification or a renewal permit, is filed in accordance with G.S. 74-51 or G.S. 74-52 and 15A NCAC 5B .0003, .0004, and .0005.

(b) A non-refundable fifty dollar (\$50.00) permit application processing fee is required for minor permit modifications. Minor permit modifications include administrative changes such as ownership transfers, name changes, and bond substitutions. A minor permit modification also includes lands added to a permitted area, outside of the minimum permit buffer zone requirements, where no plans for mining related disturbance of the added lands have been approved. All other changes to the permit are major modifications. No fee is required for administrative changes initiated by the Director to correct processing errors, to change permit conditions or to implement new standards.

(c) A non-refundable fifty dollar (\$50.00) permit application processing fee is required for permit renewal of an inactive site, provided that any previously disturbed areas have been reclaimed in a manner acceptable to the Department. Once renewed, prior to initiating any mining related disturbance, an application for a major modification and a processing fee shall be submitted to and approved by the Department. For purposes of this Paragraph, and notwithstanding Paragraph (d) of this Rule, the acreage for a major modification shall be the total acreage at the site. All other modifications to the renewed permit shall be governed by Paragraphs (b) and (d) of this Rule.

(d) For the purposes of this Rule, acres for new permits and renewal permits means the total acreage at the site; and acres for major modification of permits means that area of land affected by the modification within the permitted mine area, or any additional land that is to be disturbed and added to an existing permitted area, or both. Each permit application shall be deemed incomplete until the permit application processing fee is paid. Schedule of Fees:

| TYPE | ACRES | NEW PERMIT | MAJOR MODIFICATION | RENEWAL |
|---|---------------------|------------|--------------------|---------|
| CLAY | 1 but less than 25 | \$ 500 | \$ 250 | \$ 250 |
| | 25 but less than 50 | 1000 | 500 | 500 |
| | 50 or more | 1500 | 500 | 500 |
| SAND & GRAVEL, GEMSTONE AND BORROW PITS | 1 but less than 5 | 150 | 100 | 100 |
| | 5 but less than 25 | 250 | 100 | 100 |
| | 25 but less than 50 | 500 | 250 | 500 |
| | 50 or more | 1000 | 500 | 500 |
| QUARRY, INDUSTRIAL | 1 but less than 10 | 250 | 100 | 100 |

| | | | | |
|---|------------------------|------|-----|-----|
| MINERALS, DIMENSION STONE | 10 but less than 25 | 1000 | 250 | 500 |
| | 25 but less than 50 | 1500 | 500 | 500 |
| | 50 or more | 2500 | 500 | 500 |
| PEAT & PHOSPHATE | 1 or more | 2500 | 500 | 500 |
| GOLD (HEAP LEACH), TITANIUM & OTHERS | 1 or more | 2500 | 500 | 500 |

(e) Payment of the permit application processing fee shall be by check or money order made payable to the "N.C. Department of Environment, Health, and Natural Resources". The payment shall refer to the new permit, permit modification or permit renewal.

(f) In order to comply with the limit on fees set forth in G.S. 143B-290(4)b, the Director shall, in the first half of each state fiscal year, project revenues for the fiscal year from fees collected pursuant to this Rule. If this projection shows that the statutory limit will be exceeded, the Director shall order a pro rata reduction in the fee schedule for the remainder of the fiscal year to avoid revenue collection in excess of the statutory limits.

*History Note: Filed as a Temporary Rule Eff. November 1, 1990, for a Period of 180 Days to Expire on April 29, 1991;
Statutory Authority G.S. 143B-290;
ARRC Objection Lodged November 14, 1990;
ARRC Objection Removed December 20, 1990;
Eff. January 1, 1991;
Amended Eff. December 1, 1991.*

.0013 RESPONSE DEADLINE TO DEPARTMENT'S REQUEST(S)

An applicant or permittee shall submit to the Department supplemental information regarding an application for a new permit, modified permit, or permit renewal within 180 days after the date of receipt of the Department's written request(s) for such information. Upon written request of the applicant or permittee to the Director, an additional reasonable specified period of time not to exceed one year shall be granted upon determination of good cause by the Director. Additional time may be granted by the Mining Commission, provided written request is made by the applicant or permittee before the expiration of the one-year period.

*History Note: Statutory Authority G.S. 74-51; 74-52; 74-63; 143B-290;
RRC Objection Eff. September 15, 1994 due to lack of statutory authority;
Eff. November 1, 1994.*

SUBCHAPTER 5F - CIVIL PENALTIES**.0001 PURPOSE AND SCOPE**

These Rules set forth the procedures and standards to be followed by the director in assessing civil penalties and by the Mining Commission in hearing appeals from the assessment of such penalties.

*History Note: Statutory Authority G.S. 74-61; 74-62; 74-63; 74-64; 143B-10;
Eff. May 1, 1982;
Amended Eff. November 1, 1984.*

.0002 DEFINITIONS

The terms used herein shall be as defined in G.S. 74-49 as follows:

- (1) "Director" means the Director, Division of Land Resources;
- (2) "Regional Engineer", means any regional engineer of the Land Quality Section, Division of Land Resources; and
- (3) "Mining Commission", means that body created by N.C.G.S. 143B-290.

*History Note: Statutory Authority G.S. 74-61; 74-62; 74-63; 74-64; 143B-10;
Eff. May 1, 1982.*

.0003 WHO MAY ASSESS

Civil penalties may be assessed by the director.

*History Note: Statutory Authority G.S. 74-61; 74-62; 74-63; 74-64; 143B-10;
Eff. May 1, 1982.*

.0004 WHEN ASSESSABLE

*History Note: Statutory Authority G.S. 74-61; 74-62; 74-63; 74-64; 143B-10;
Eff. May 1, 1982;
Repealed Eff. November 1, 1984.*

.0005 CIVIL PENALTY FOR MINING WITHOUT A PERMIT

(a) Prior to the assessment of any civil penalty for mining without a permit, the alleged violator shall be given notice by registered or certified mail, return receipt requested, signed by the regional engineer in the region in which the violation occurred. The notice shall describe the violation with reasonable particularity, order the violator immediately to cease mining until a valid operating permit has been obtained, and specify a time period reasonably calculated to permit the restoration of any disturbed area as deemed necessary by the regional engineer. The notice shall also state that a civil penalty may be assessed for any violation.

(b) In determining whether to assess a civil penalty for any violation committed prior or subsequent to receipt of the notice of violation, the director shall consider whether the violator ceased mining, restored the affected area, or otherwise complied with the requirements of the notice of violation and shall also consider the various criteria in Rule 5F .0007. The civil penalty assessment shall specify with reasonable particularity the violation(s) for which the penalty has been assessed and shall be transmitted to the violator by certified or registered mail, return receipt requested.

*History Note: Statutory Authority G.S. 74-60; 74-61; 74-63; 74-64; 143B-10;
Eff. May 1, 1982;
Amended Eff. December 1, 1988; November 1, 1984.*

.0006 CIVIL PENALTY FOR VIOLATING OPERATING PERMIT

(a) Prior to the assessment of a civil penalty against a permitted operator for violating any provisions of the Mining Act of 1971, or any rules promulgated thereunder, or any conditions of his mining permit, the alleged

violation or his agent shall be given notice by registered or certified mail, return receipt requested, signed by the director. The notice shall describe the violation with reasonable particularity and specify a time period reasonably calculated to permit the violator to correct the violation. The notice shall also state that civil penalties may be assessed against the alleged violator if he fails to correct the violation within the specified time.

(b) If the violator does not comply with the requirements of the notice of violation within the time period specified in the notice, the director may assess a civil penalty for any violation(s) committed after the date of receipt of the notice of violation. The civil penalty assessment shall specify with reasonable particularity the violation(s) for which the penalty has been assessed and shall be transmitted to the violator by certified or registered mail, return receipt requested.

*History Note: Statutory Authority G.S. 74-60; 74-61; 74-62; 74-63; 74-64; 143B-10;
Eff. May 1, 1982;
Amended Eff. November 1, 1984.*

.0007 CRITERIA FOR DETERMINING AMOUNT OF PENALTY

In determining the amount of a civil penalty assessment, the director shall consider the following criteria insofar as they are appropriate to the violation:

- (1) nature of the violation;
- (2) degree and extent of the harm, including off-site damage;
- (3) duration of the violation;
- (4) cause of the violation;
- (5) cost of compliance and rectifying any harm or damage;
- (6) violator's previous record of compliance with the Mining Act, or any rules promulgated thereunder, or any mining permit issued to the violator;
- (7) staff investigative costs; and
- (8) effectiveness of any action taken by the operator.

*History Note: Statutory Authority G.S. 74-61; 74-62; 74-63; 74-64; 143B-10;
Eff. May 1, 1982.*

.0008 ADMINISTRATIVE REMEDIES

Within 60 days after receipt of notification of any civil penalty assessment, the person against whom the civil penalty is assessed may contest the decision of the department by filing a petition as described in G.S. 74-61 and G.S. 150B-23.

*History Note: Statutory Authority G.S. 74-61; 74-62; 74-63; 74-64; 143B-10;
Eff. May 1, 1982;
Amended Eff. August 1, 1988.*

.0009 HEARING PROCEDURES

(a) The final decision for purposes of judicial review under G.S. 74-61 shall be made by a majority vote of a quorum of the Mining Commission.

(b) All hearings shall be conducted in accordance with the departmental hearing procedures in 15A NCAC 1B .0200 et seq., and Chapter 150B of the General Statutes.

*History Note: Statutory Authority G.S. 74-61; 74-62; 74-63; 143B-10; 150B-23;
Eff. May 1, 1982;
Amended Eff. August 1, 1988.*

.0010 TENDERS OF PAYMENT

The director shall accept and acknowledge all tenders of payment.

History Note: Statutory Authority G.S. 74-61; 74-62; 74-63; 74-64; 143B-10; Eff. May 1, 1982.

.0011 REFERRAL TO ATTORNEY GENERAL

(a) If the person against whom a civil penalty is assessed, fails to respond within 60 days as provided in Rule .0008, the director shall refer the matter to the Attorney General to recover the amount of the civil penalty.

(b) If payment of any civil penalty assessed pursuant to the rules of this Subchapter is not received by the director within 30 days following denial of any appeal pursuant to G. S. 74-61 and G. S. 74-62, the director shall refer the matter to the Attorney General to recover the amount of the civil penalty.

*History Note: Statutory Authority G.S. 74-61; 74-62; 74-63; 74-64; 143B-10;
Eff. May 1, 1982.*

.0012 FURTHER REMEDIES

No provision of this Subchapter shall be construed to restrict or impair the right of the director or the Mining Commission to pursue any other remedy provided by law for violations of the Mining Act of 1971 or the rules of this Chapter.

*History Note: Statutory Authority G.S. 74-61; 74-62; 74-63; 74-64; 143B-10;
Eff. May 1, 1982.*

APPENDIX C

Application for a Mining Permit With Helpful Hints

Instructions:

This appendix is an Application for a Mining Permit With Helpful Hints. It is provided as a sample, with instructions, to assist you in filling out your North Carolina Mining Permit Application.

Note that the information displayed in *italics* should be information that you include on your mine map.

The information displayed over a grayed background, within horizontal rules, represents special instructions to assist you in answering the questions on your application.

Contents

| | |
|--|------|
| APPLICANT INFORMATION..... | C-5 |
| APPLICATION FOR A MINING PERMIT | C-6 |
| A. GENERAL CHARACTERISTICS OF THE MINE..... | C-6 |
| B. MAPS..... | C-8 |
| C. PROTECTION OF NATURAL RESOURCES..... | C-11 |
| D. RECLAMATION PLAN | C-29 |
| E. DETERMINATION OF AFFECTED ACREAGE AND BOND..... | C-33 |
| F. NOTIFICATION OF ADJOINING LANDOWNERS..... | C-34 |
| NOTICE..... | C-35 |
| AFFIDAVIT OF NOTIFICATION | C-36 |
| G. LAND ENTRY AGREEMENT | C-37 |

NORTH CAROLINA DEPARTMENT OF ENVIRONMENT, HEALTH AND NATURAL RESOURCES

LAND QUALITY SECTION

APPLICATION FOR A MINING PERMIT

(PLEASE PRINT OR TYPE)

APPLICANT INFORMATION

1. Name of Mine _____ County _____

2. Name of Applicant * _____

3. Permanent address for receipt of official mail ** _____

_____ Telephone _____

4. Mine Office Address _____

_____ Telephone _____

5. Mine Manager _____

We hereby certify that all details contained in this Permit Application are true and correct to the best of our knowledge. We fully understand that any willful misrepresentation of facts will be cause for permit revocation.

***Signature _____ Date _____

Print Name _____

Title _____

* This will be the name that the mining permit will be issued to and the name that must be indicated on the reclamation bond or other security that corresponds to this site.

** The Land Quality Section must be notified of any changes in the permanent address or telephone number.

*** Signature of company officer required.

G.S. 74-51 provides that the Department shall grant or deny an application for a permit within 60 days of receipt of a complete application or, if a public hearing is held, within 30 days following the hearing and the filing of any supplemental information required by the Department. **All questions must be addressed and all required maps provided before this application can be considered complete. Attach additional sheets as needed.**

APPLICATION FOR A MINING PERMIT

NOTE: All of the following questions must be thoroughly answered with regard to your mining operation for the intended life of the mine. All responses must be clearly conveyed on a corresponding, detailed mine map.

A. GENERAL CHARACTERISTICS OF THE MINE

Answer all of the following that apply:

1. a. If this is an application for a **NEW** permit, indicate the total acreage at the site to be covered by the permit (this is the acreage that the "new permit" fee will be based upon): _____

Of this acreage, how much is owned and how much is leased? Acres owned: _____ Acres leased: _____ Property owner if leased: _____

If all of the acreage in a tract is to be permitted, then the total tract acreage should be entered here. In some cases, only a portion of a larger tract is to be permitted. Then only the actual acreage to be permitted should be listed in section A.1.a. If the acreage listed in A.1.a. is owned by someone other than the proposed permittee, the Land Entry Agreement must be signed by the landowner as well as the permittee to clarify the Department's right to enter the land.

- b. If this is an application for **RENEWAL** of a mining permit, indicate the mining permit number and the total (overall) acreage covered by the existing permit: Mining Permit No.: _____ Total permitted acreage (this is the acreage that the "renewal" fee will be based upon): _____

Note that should the total permitted acreage noted in A.1.b. exceed the currently permitted acreage, a modification will also be required to add the additional acreage. (See A.1.c. for modification information).

- c. If this is an application for a **MODIFICATION** to a mining permit, indicate the mining permit number and the total (overall) acreage covered by the existing permit: Mining Permit No.: _____ Total permitted acreage: _____

Does the modification involve acreage within the previously approved permitted boundary? Yes ___ No ___. If yes, indicate the acreage to be covered by this modification (this is the acreage that the "major modification" fee will be based upon): _____

Does the modification involve acreage outside the previously approved permitted boundary? Yes ___ No ___. If yes, indicate the additional acreage to be covered by this modification: _____ (NOTE: you must complete all of Section F. of this application form entitled Notification of Adjoining Landowners).

APPLICATION FOR A MINING PERMIT

Of this acreage to be added to the permit, will any portion of this acreage be affected (disturbed, ground cover removed) by the mining operation? Yes ___ No ___ (if no, a "minor modification" fee of \$50.00 is required, despite the "undisturbed" acreage to be added). If yes, indicate the acreage to be affected within the acreage to be added to the permit (the total acreage to be added to the permit is the acreage that the "major modification" fee will be based upon): _____

d. If this is an application for **TRANSFER** of a mining permit, indicate the mining permit number and the total (overall) acreage covered by the existing permit: Mining Permit No.: _____ Total permitted acreage: _____

• **SEE THE FEE SCHEDULE AT THE END OF THIS FORM FOR THE PROPER FEE AMOUNT TO BE PAID FOR THE REQUESTED PERMIT ACTION(S) AND CORRESPONDING ACREAGE NOTED ABOVE.**

2. Indicate the approximate longitude and latitude, in degrees-minutes-seconds, of the center of the mine site:

LONGITUDE (dd-mm-ss): _____--_____-__ Quadrangle: _____
 LATITUDE (dd-mm-ss): _____--_____-__

3. Name of all materials mined: _____

4. Mining method: Hydraulic Dredge ___ Front-end Loader & Truck ___ Shovel & Truck ___ Dragline & Truck ___ Self-loading Scraper ___
 Other(explain) _____

5. a. Expected maximum depth of mine (feet) _____ Reference elevation: _____
 b. Expected average depth of mine (feet) _____

6. Has any area(s) at this site been mined in the past? Yes ___ No ___ If no, proceed to Question 7.

a. Acreage of previously affected land(s) at present site that has not been reclaimed: _____ acres (*identify all areas on your mine map(s)*).

b. When and by whom was this activity conducted? _____

c. Acreage of previously affected land at present site that has been reclaimed: _____ acres (*identify all areas on your mine map(s)*).

d. When and by whom was this activity conducted _____

e. Do you wish to exclude any areas noted in 6a or c from this permit application? Yes ___ No ___ If yes, how much? _____ acres (*identify all areas on your mine map(s)*).

Any acreage listed in this section must be either reclaimed or be pre-law areas that are exempt from the Act. These areas must be clearly located, outlined and labeled on the mine map if they are to be excluded from the permit. Corresponding acreage for such areas must also be provided.

APPLICATION FOR A MINING PERMIT

7. Present (pre-mining) use of the land (estimate acreage for each):
 Cropland _____ acres Pasture _____ acres Forestry _____ acres Fish/Wildlife _____ acres
 Recreation _____ acres Other _____ acres (Specify use: _____)
8. Proposed land use after mining and reclamation has been completed (estimate acreage for each): Cropland _____ acres Pasture _____ acres Forestry _____ acres
 Fish/Wildlife _____ acres Recreation _____ acres Other _____ acres (Specify use: _____)

Note that the acreage in A.7 and A.8 must each add up to the total acreage to be permitted.

9. Number of years for which the permit is requested (10 years maximum): _____

B. MAPS

1. **Four (4) copies** of the county highway maps and **four (4) copies** of all mine maps and reclamation maps shall be submitted with each permit application.

County highway maps may be obtained from:

Location Department
 State Highway Commission
 Raleigh, North Carolina 27602
 (919) 733-7600

Clearly label and mark the location of your mining operation on the county highway maps.

APPLICATION FOR A MINING PERMIT

2. Mine maps must be accurate and appropriately scaled drawings, aerial photographs or enlarged topographic maps of the entire mine site. **All aspects of the mine site must be clearly labeled on the maps along with their corresponding (approximate) acreage. As a reminder, mining permits can only be issued for up to 10 years; thus, all mine and reclamation maps must only denote those activities that are intended to be conducted during the life of the mining permit.** All maps must be of a scale sufficient (see minimum requirements listed below) to clearly illustrate the following, **at a minimum**:
 - a. Property lines of the tract or tracts of land on which the proposed mining activity is to be located including easements and rights-of-way.
 - b. Existing or proposed permit boundaries.
 - c. Initial and ultimate limits of clearing and grading.
 - d. Outline and width of all buffer zones (both undisturbed and unexcavated).
 - e. Outline and acreage of all pits/excavations.
 - f. Outline and acreage of all stockpile areas.
 - g. Outline and acreage of all temporary and/or permanent overburden disposal areas.
 - h. Location and acreage of all processing plants (processing plants may be described as to location and distance from mine if sufficiently far removed).
 - i. Locations and names of all streams, rivers and lakes.
 - j. Outline and acreage of all settling and/or processing wastewater ponds.
 - k. Location and acreage of all planned and existing access roads and on-site haul roads.
 - l. Location of planned and existing on-site buildings.
 - m. Location and dimensions of all proposed sediment and erosion control measures.
 - n. Location of 100 year floodplain limits and wetland boundaries.
 - o. Names of owners of record, both public and private, of all adjoining land.
 - p. Map Legend:
 1. Name of applicant
 2. Name of mine
 3. North arrow
 4. County
 5. Scale
 6. Symbols used and corresponding names
 7. Date prepared and revised
 8. Name and title of person preparing map

Map scales must, at a minimum, meet the following guidelines:

| PERMITTED ACREAGE | MAP SCALE |
|-------------------|-------------------|
| 0-99 Acres | 1 inch = 50 feet |
| 100-499 Acres | 1 inch = 100 feet |
| 500+ Acres | 1 inch = 200 feet |

APPLICATION FOR A MINING PERMIT

A table/chart must be provided on the mine map that clearly lists the approximate acreage of tailings/sediment ponds, stockpiles, wastepiles, processing area/haul roads, mine excavation and any other major aspect of the mining operation that is proposed to be affected/disturbed during the life of the mining permit. A table/chart similar to the following will be acceptable:

| CATEGORY | AFFECTED ACREAGE |
|----------------------------|------------------|
| Tailings/Sediment Ponds | |
| Stockpiles | |
| Wastepiles | |
| Processing Area/Haul Roads | |
| Mine Excavation | |
| Other | |

This table and the corresponding acreage are used to calculate the reclamation bond required to cover this site and to facilitate site inspections. The acreage must be as accurate as possible.

NOTE: IN ADDITION TO THE ABOVE, THE MAPS MUST ALSO INCLUDE ANY SITE-SPECIFIC INFORMATION THAT IS PROVIDED IN THE ANSWERS TO THE FOLLOWING QUESTIONS IN THIS APPLICATION FORM (PLEASE NOTE THE ITALICIZED QUESTIONS/STATEMENTS THROUGHOUT THE FORM). THIS APPLICATION WILL NOT BE CONSIDERED COMPLETE WITHOUT ALL RELEVANT ITEMS BEING ADEQUATELY ADDRESSED ON THE MINE MAPS.

For more information on mapping requirements, see Chapter 11 - Mapping Requirements.

APPLICATION FOR A MINING PERMIT**C. PROTECTION OF NATURAL RESOURCES**

1. a. Will the operation involve washing the material mined, recycling process water, or other waste water handling? Yes ___ No ___. If yes, briefly describe all such processes including any chemicals to be used.

- b. Will the operation involve discharging fresh or waste water from the mine or plant? Yes ___ No ___. If yes, briefly describe the nature of the discharge and locate all proposed discharge points (along with their method of stabilization) on your mine map(s).

See Figure C-1 - Point of Discharge Detail for an example of how to show this information on the mine map.

- c. Will any part of the proposed mine excavation(s) extend below the water table? Yes ___ No ___. If yes, do you intend to dewater the excavation(s)? Yes ___ No ___. If yes, what impact, if any, will mine dewatering have on neighboring wells? *Locate all existing wells on the mine map(s) that lie within 500 feet of the proposed excavation area.* Provide data to support any conclusions or statements made. Indicate whether the proposed mine locale is served by a public water system or private wells.

- d. If the mine will extend below the water table, what is the pre-mining depth (in feet) to the seasonal high and low ground water tables? High ___ ft. Low ___ ft. What is the source of this information?

- e. If you answered yes to any of the above questions, provide evidence that you have applied for or obtained the appropriate water quality permit(s) (i.e., non-discharge, NPDES, etc.) from the Division of Environmental Management, Water Quality Section.

APPLICATION FOR A MINING PERMIT

Dewatering and handling processing water on site may require a permit(s) from the Water Quality Section with the Division of Environmental Management with this Department. If you are unsure whether your operation will need a permit from the Water Quality Section, contact them directly. (See Chapter 21 - Agency Contacts for the regional office to contact for more information.) The mining permit, if issued, will stipulate compliance with the rules and regulations promulgated by the Environmental Management Commission, which delegates its authority to the Division of Environmental Management. Therefore, any violations of the regulations enforced by the Water Quality Section may also constitute a violation of the mining permit.

To provide evidence that you have applied for or obtained a permit from the Water Quality Section, a copy of the completed application form, approval letter, cover page of the permit or the permit number can be submitted with the mining permit application.

2. a. Will the operation involve crushing or any other air contaminant emissions? Yes ___ No ___. If yes, indicate evidence that you have applied for or obtained an air quality permit issued by the Division of Environmental Management, Air Quality Section, or local governing body.

If you are unsure whether your operation will require an air quality permit, contact the appropriate DEHNR Regional Office. If an air quality permit is required, submit a copy of the completed application form, approval letter, cover page of the permit or the permit number with the mining permit application for verification. Any violations of Air Quality Section rules may also constitute a violation of your mining permit.

- b. How will dust from stockpiles, haul roads, etc., be controlled?

To control dust on site, haul roads can be wetted, stabilized with rock or paved. In any event, prevent dust from leaving the permitted area. For most sites, the air quality permit will set limitations for fugitive dust emissions. These guidelines must be followed.

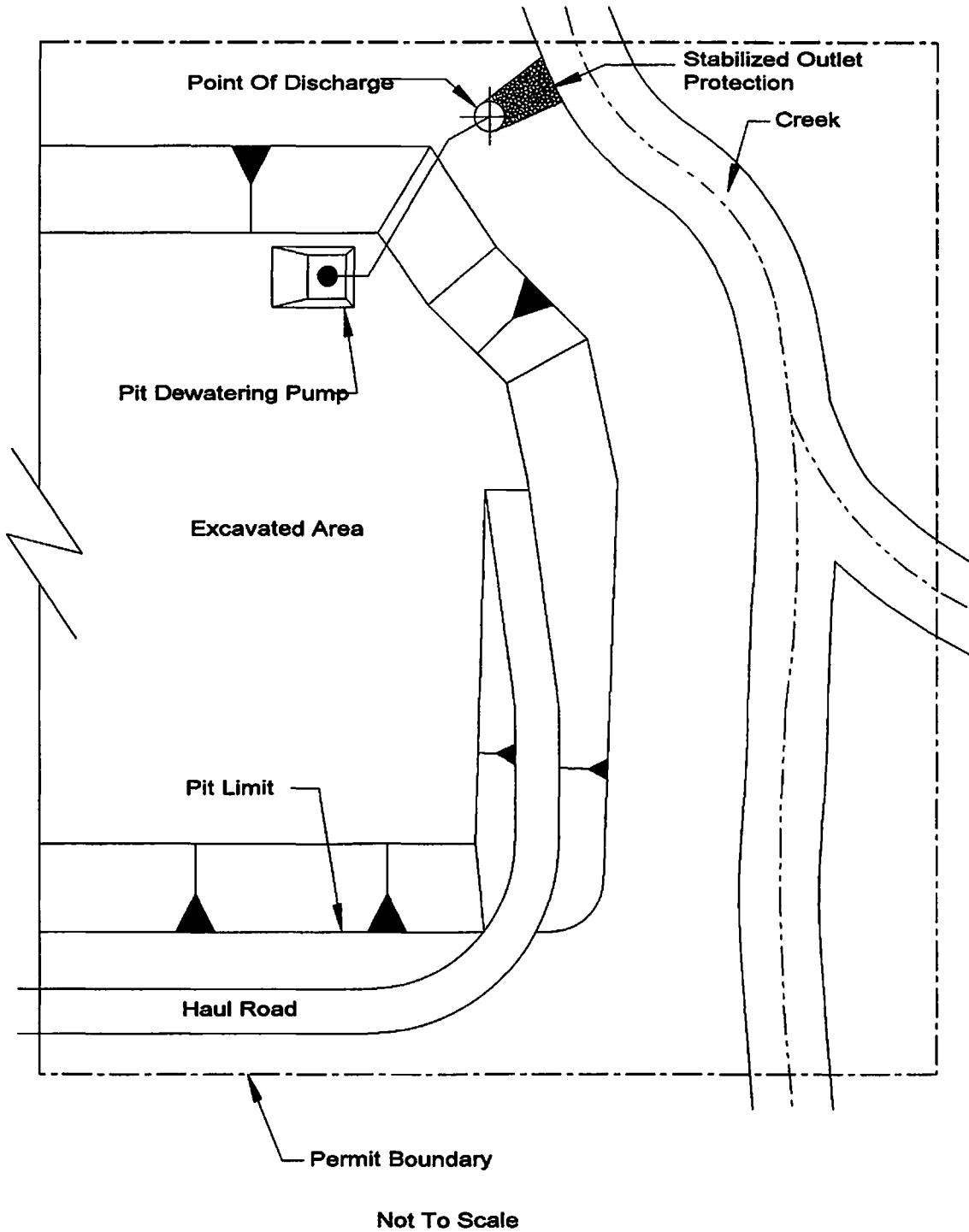


Figure C-1. Point of Discharge Detail

APPLICATION FOR A MINING PERMIT

3. Describe in detail the chronological sequence of land disturbing activities and *reference the sequence to the mine map(s)*. Attach additional sheets as needed.

The chronological sequence can refer to different phases of land-disturbing activity. For example, "Phase I, consisting of Areas A-C, will be completed before Phase II, Areas D-F, begins." A specific time line does not have to accompany the sequence of land-disturbing activities.

Note that as areas are completely reclaimed and released from your permit, your reclamation bond can be reduced accordingly. Keep the acreage approved to be affected as low as possible so the reclamation bond can also be as low as possible.

4. Describe specific erosion control measures to be installed prior to land disturbing activities and during mining to prevent offsite sedimentation (*include specific plans for sediment and erosion control for mine excavation(s), waste piles, access/mine roads and process areas*), and give a detailed sequence of installation and schedule for maintenance of the measures. *Locate and label all sediment and erosion control measures on the mine map(s) and provide typical cross-sections/construction details of each measure.* Engineering designs and calculations shall be required when needed to justify the adequacy of any proposed measures.

Refer to Chapter 12 - Erosion and Sediment Control for information concerning the design criteria for erosion and sediment control measures.

For renewal and modification requests, supporting design calculations are not required for measures that are currently in place and functioning adequately. For new measures, calculations must be provided. A typical construction detail is required for each type of measure to be installed or existing on-site. Clearly locate and label all existing and proposed measures on the mine map. Number or label measures if there are several of the same type measure specified on the mine maps (such as sediment basins). Charts are helpful when many of one type of measure are specified (such as outlet protections), noting all necessary dimensions.

For all sites, the erosion and sediment control measures must be installed prior to initiating any land-disturbing activities.

APPLICATION FOR A MINING PERMIT

5. a. How wide a buffer will be maintained between any mining activity and any adjoining permit boundary or right-of-way? Buffers must be located within the permit boundaries. Buffers along permit boundaries must be, at a minimum, unexcavated buffers. *Show all buffer locations and widths on the mine map(s).*

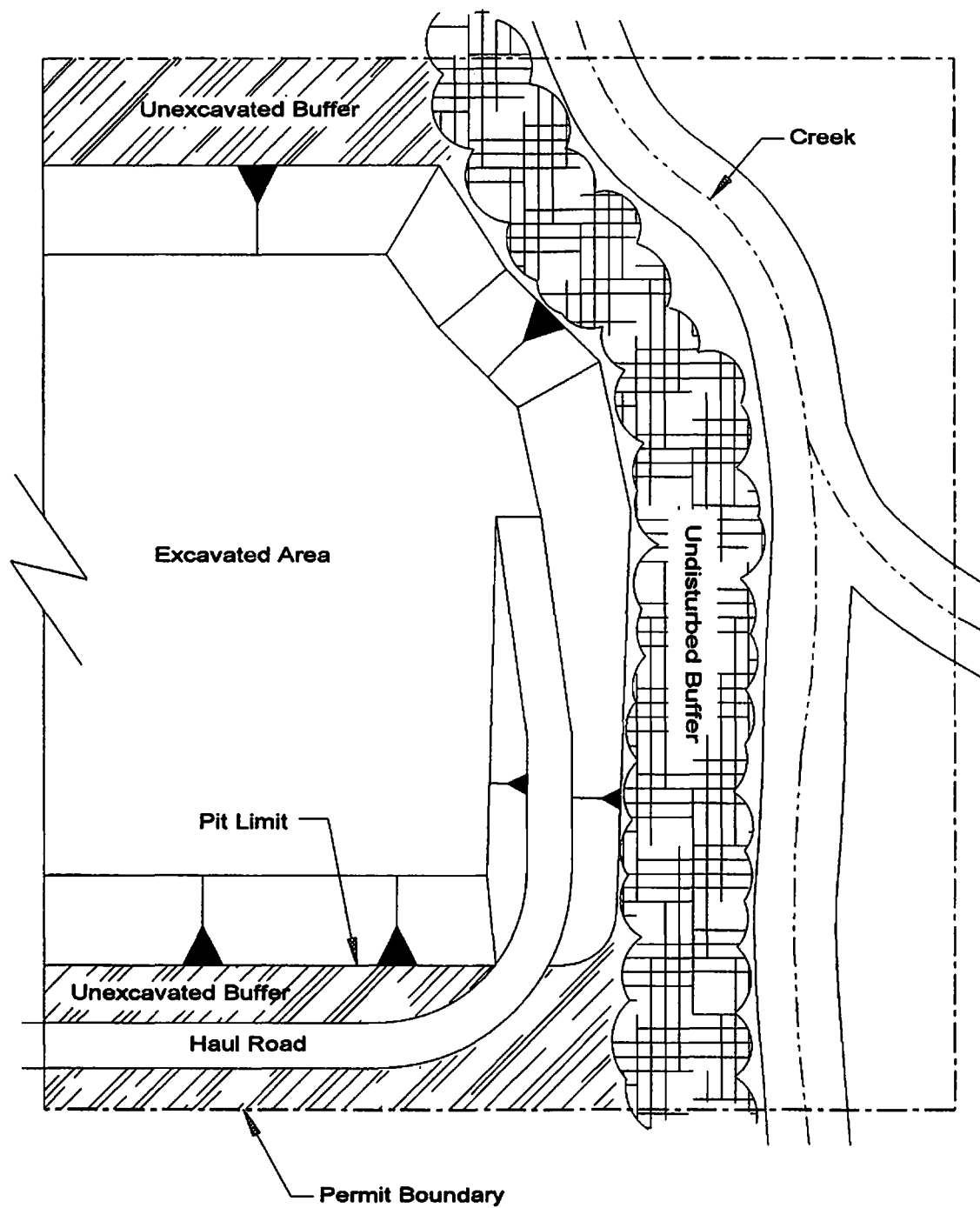
- b. How wide a buffer will be maintained between any land disturbing activities within the permit boundaries and any natural watercourses and wetlands? Buffers along natural watercourses and wetlands must be undisturbed. *Show all buffer locations and widths on the mine map(s).*

The acreage within buffers, whether undisturbed or unexcavated, must be included in your permit acreage. For the definitions of undisturbed and unexcavated buffers, see Chapter 2 - Overview of the Mining Act of 1971. See Figure C-2 - Buffer Description Detail for examples of both types of buffers.

6. a. Describe methods to prevent landslide or slope instability adjacent to adjoining permit boundaries during mining.

Some possible methods of protecting adjoining lands are buffers, benching, sloping and stabilizing unconsolidated material, and minimizing the depth of the excavation. Each site will be evaluated separately.

- b. Describe other methods to be taken during mining to prevent physical hazard to any neighboring dwelling house, public road, public, commercial or industrial building from any mine excavation. *Locate all such structures on the mine map if they are within 300 feet of any proposed excavation.*



Not To Scale

Figure C-2. Buffer Description Detail

APPLICATION FOR A MINING PERMIT

- c. Describe what kind of barricade will be used to prevent inadvertent public access along any high wall area and when it will be implemented. Vegetated earthen berms, appropriate fencing and adequate boulder barriers may be acceptable high wall barricades. *A construction detail/cross-section and location of each type of barricade to be used must be indicated on the mine map(s).*

See Figure C-3 - Boulder Barrier Berm Detail, Figure C-4 - Typical Chain Link Fence Detail, Figure C-5 - Typical Barbed Wire Fence Detail, and Figure C-6 - Typical Earthen Berm Detail, for examples of highwall barriers.

- d. *Provide a cross-section on the mine map(s) for all fill slopes (berms, wastepiles, overburden disposal areas, etc.), clearly indicating the intended side slope gradient, installation of any benches and/or slope drains (with supporting design information) if needed, and the method of final stabilization.*

Provide benches and slope drains for any fill slopes over 30 feet in vertical height for stabilization. Backfilling in the wet (under water) is undesirable, as such slopes are difficult to stabilize. For guidance concerning fill slope gradients, see Chapter 16 - Reclamation Plan Requirements, and Chapter 13 - Operation Specific Issues.

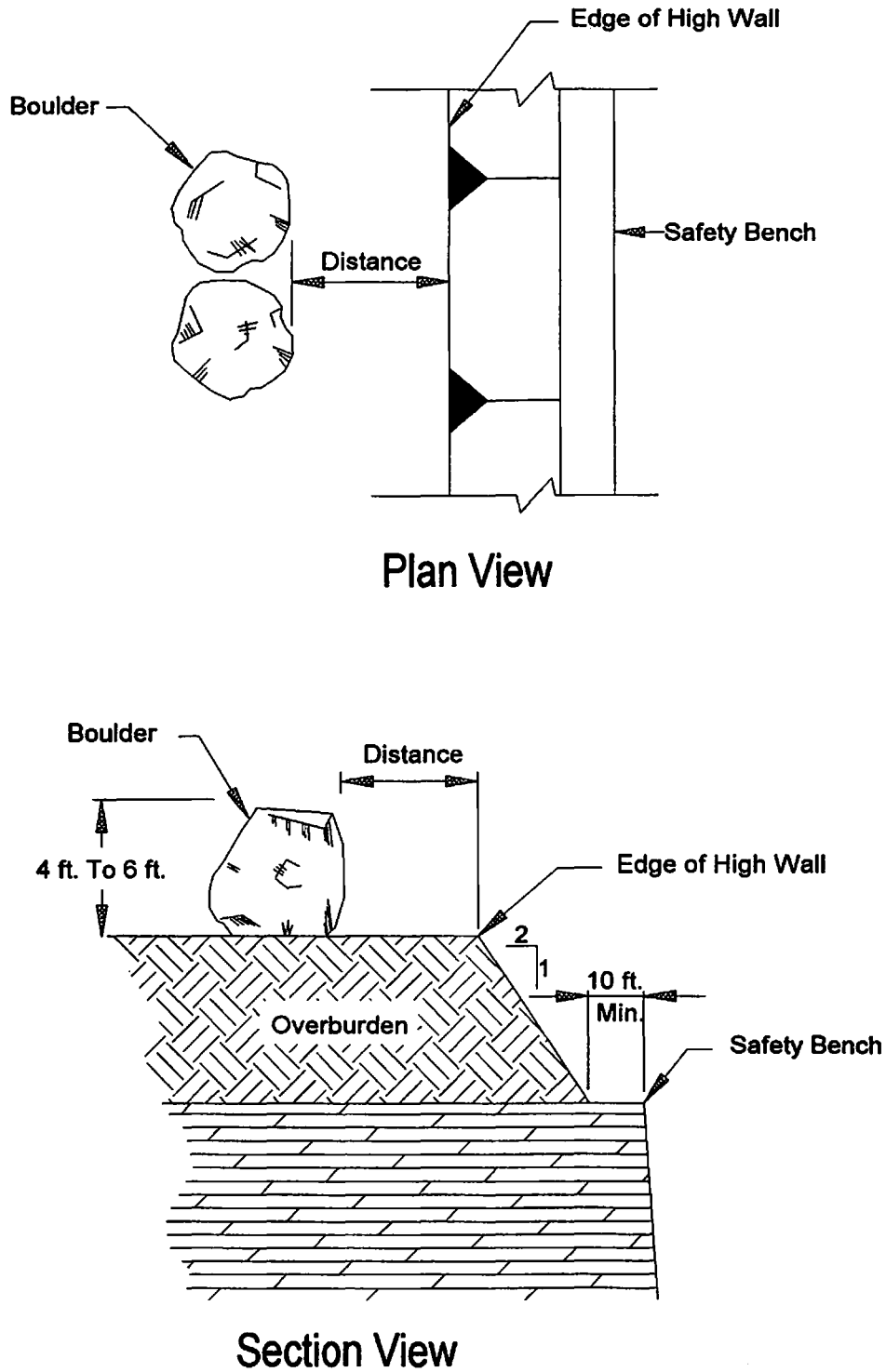
- e. *In excavation(s) of unconsolidated (non-rock) materials, specify the angle of all cut slopes including specifications for benching and sloping. Cross-sections for all cut slopes must be provided on the mine map(s).*

Cut slopes must be stable. Slopes under water must be cut slopes, as opposed to fill slopes, for stability. For guidance concerning cut slope gradients, refer to Chapter 16 - Reclamation Plan Requirements, and Chapter 13 - Operation Specific Issues.

- f. *In hardrock excavations, specify proposed bench widths and heights in feet. Provide cross-sections of the mine excavation clearly noting the angles of the cut slopes, widths of all safety benches and mine benches, and the expected maximum depth of the excavation.*

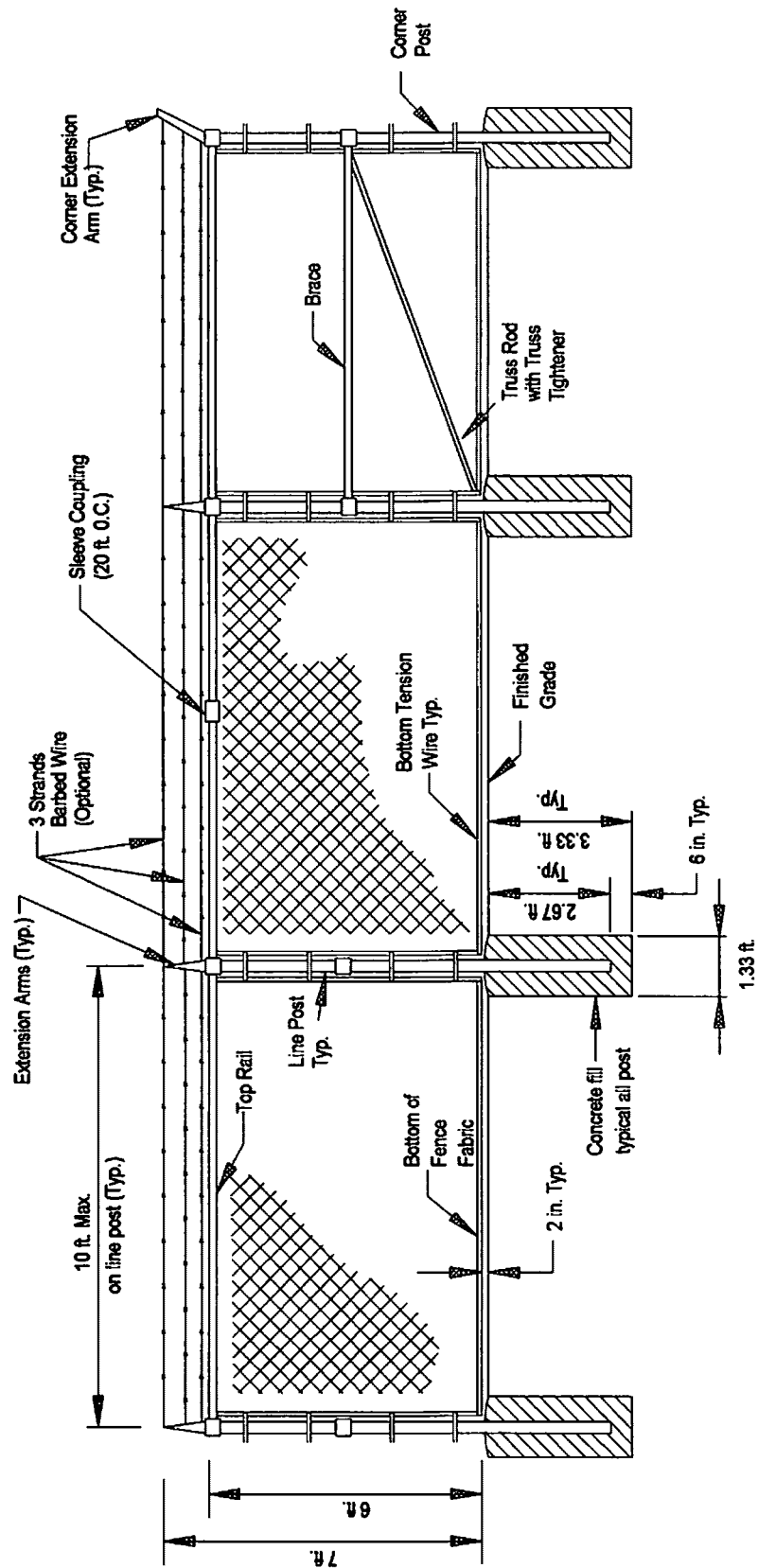
See the hardrock excavation section within Chapter 13 - Operation Specific Issues for guidance concerning benches for hard rock excavations. See Figure C-7 - Pit Cross-Section Detail for an example.

7. Are acid producing minerals or soils present? Yes ___ No ___ . How will acid water pollution from the excavation, stockpiles, and waste areas be controlled?



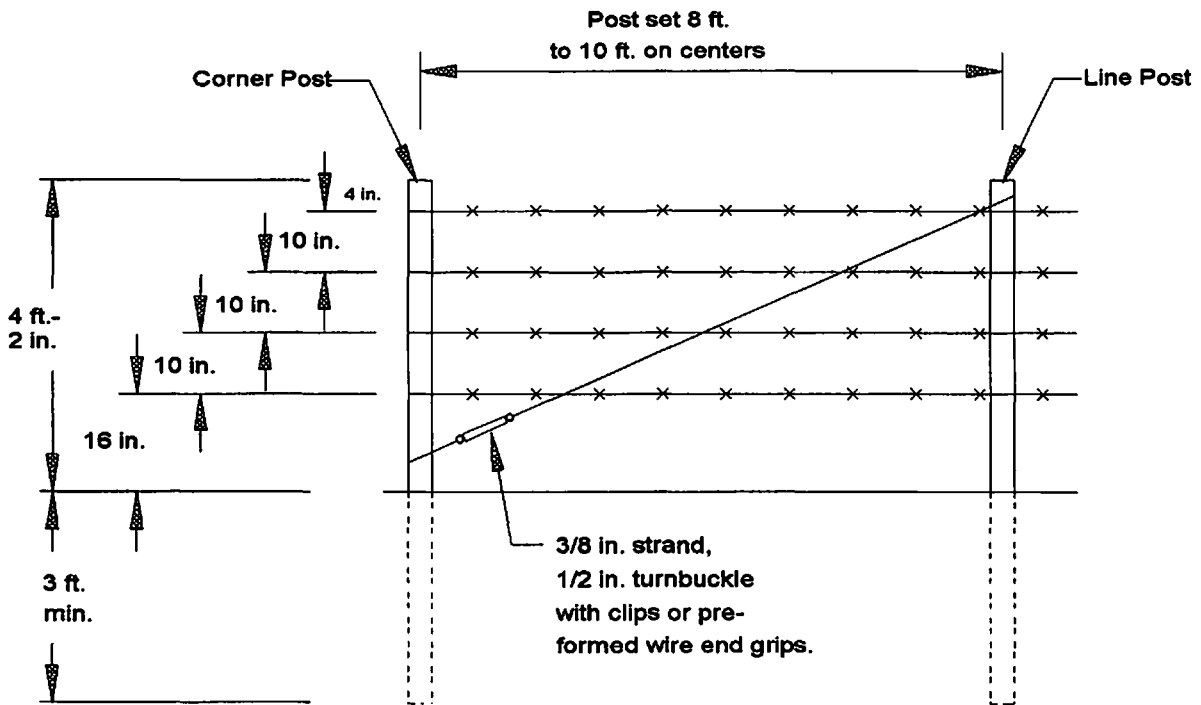
Not To Scale

Figure C-3. Boulder Barrier Berm Detail



Not To Scale

Figure C-4. Typical Chain Link Fence Detail



NOTES:

1. For temporary, movable fence, fence post shall be steel "silt fence" posts.
2. For permanent fence installation, fence post shall be 4X4 treated wood posts.

Not To Scale

Figure C-5. Typical Barbed Wire Fence Detail

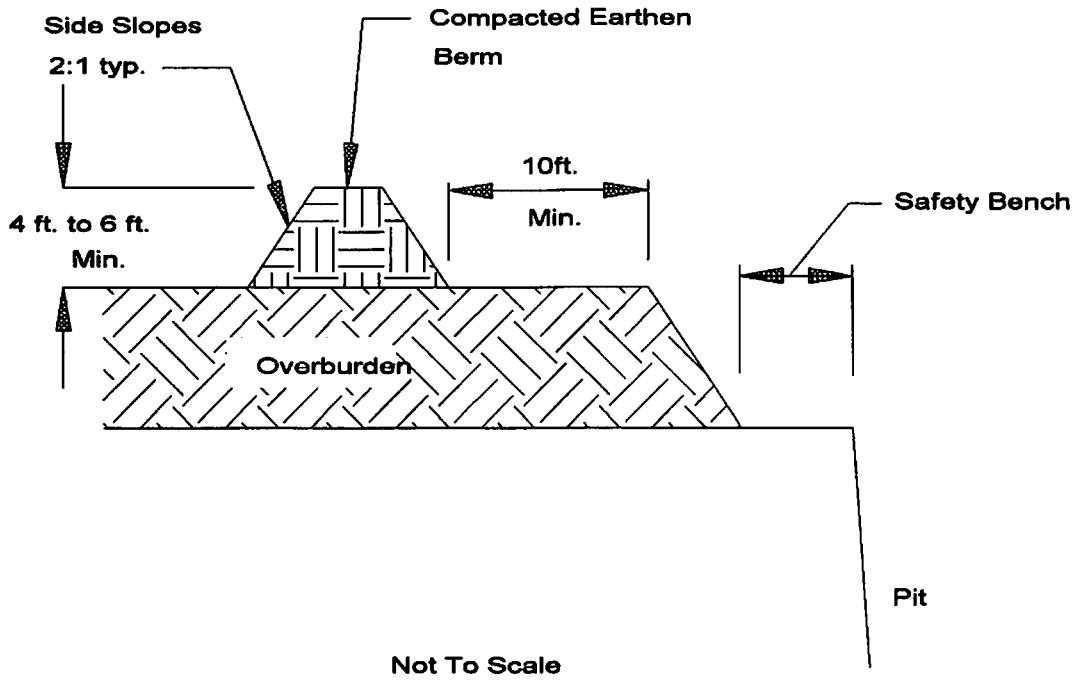


Figure C-6. Typical Earthen Berm Detail

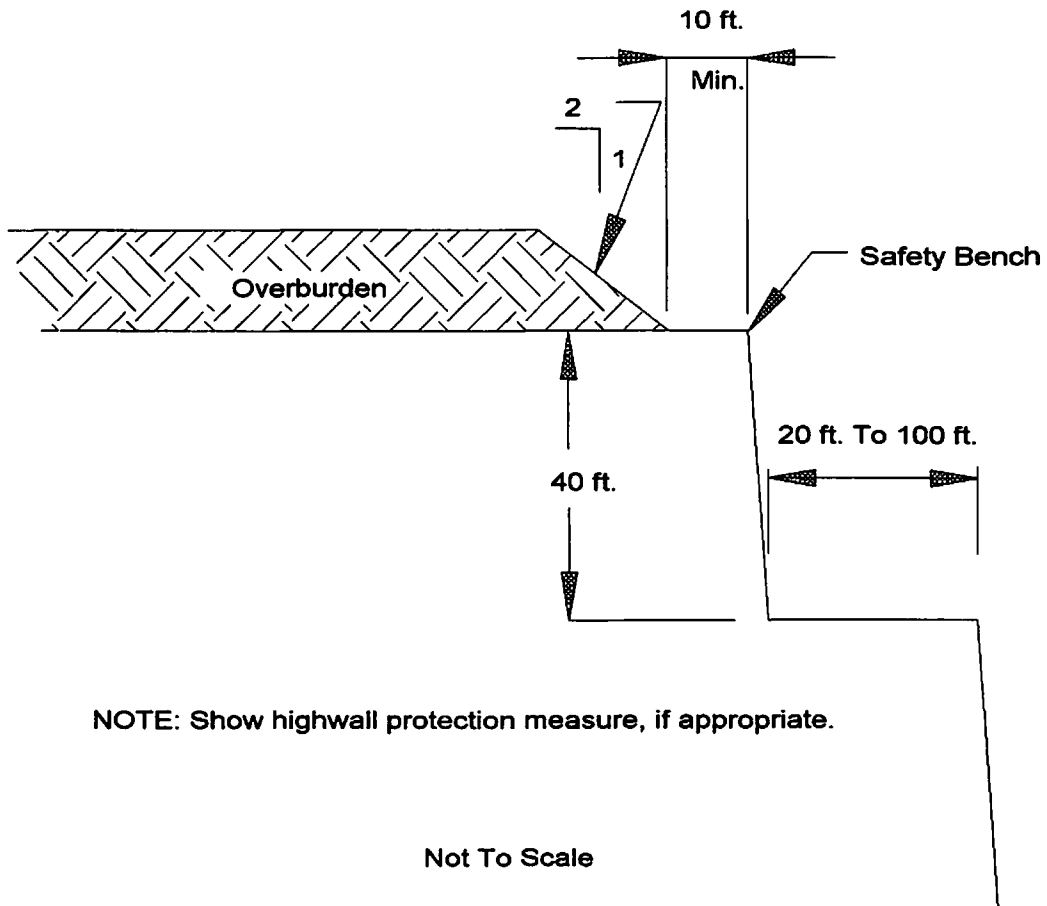


Figure C-7. Pit Cross-Section Detail

APPLICATION FOR A MINING PERMIT

8. Describe specific plans (including a schedule of implementation) for screening the operation from public view such as maintaining or planting trees, bushes or other vegetation, building berms or other measures. *Show the location of all visual screening on the mine map(s) and provide cross-sections through all proposed berms or proposed spacings, sizes and species for tree plantings.*

Where feasible and desirable, visual screening can be required by DEHNR to screen the operation from public view. Different types of screens are noted below:

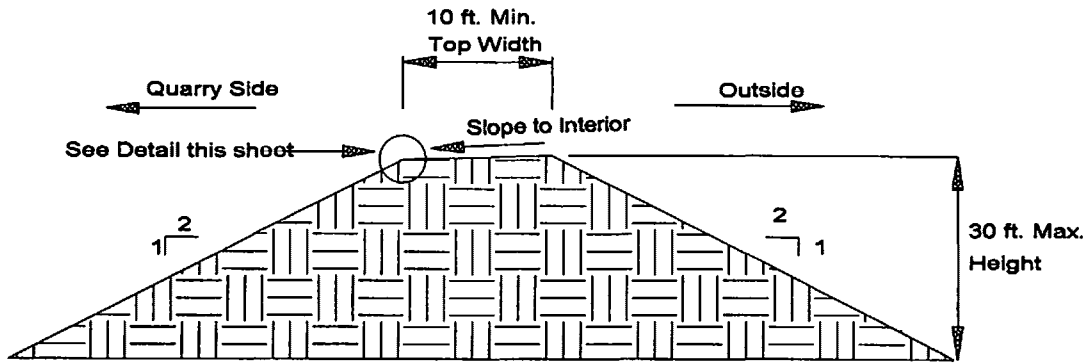
- **Dense stand of trees and undergrowth, such as might be found within an undisturbed buffer.**
- **Trees planted in several rows on staggered spacing.**
- **Vegetated earthen berms. Earthen berms must have 2 horizontal to 1 vertical or flatter side slopes. The top of the berm should be graded to drain towards the inside of the site. Sediment and erosion control measures may be required for the installation of the berm. A typical cross section of the berm will be required. For additional screening, trees and other vegetation (in addition to grass) can be planted on the berm. Earthen berms can also act as a noise buffer for the surrounding neighbors. See Figure C-8 - Visual Barrier Berm Detail Without Slope Drain, Figure C-9 - Visual Barrier Berm Detail with Slope Drain, and Figure C-10 - Combination Tree Plantings and Berm Detail for examples.**
- **Screening fence. Chain link fencing with lattice strips woven through the fence openings can be constructed as a screen in areas where space is restricted. Provide a typical construction detail. See Figure C-11 - Visual Barrier Chain Link Fence Detail for an example.**

All proposed methods for visually screening a site from the public must be indicated on the mine map. DEHNR recognizes that because of topographic restrictions screening may not be feasible for every site. The applicant should strive to situate a new site so it can be feasibly screened from public view.

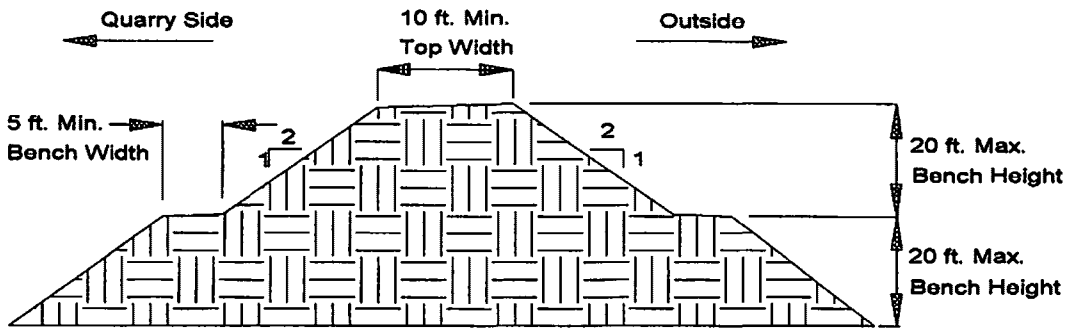
9. Will explosives be used? Yes No . If yes, specify the types of explosive(s) and describe what precaution(s) will be used to prevent physical hazard to persons or neighboring property from flying rocks or excessive air blasts or ground vibrations. *Locate the nearest offsite occupied structure(s) to the proposed excavation(s) on the mine map and indicate its approximate distance to the proposed excavation.*

It is advisable to locate a seismograph at the closest off-site occupied structure to each blast. When blasting records are requested and evaluated by the Land Quality Section, the air blasts and ground vibrations will be checked for compliance at the closest off-site occupied structure. If the seismograph is located at that structure, calculations will not be relied upon as heavily. For more detailed information concerning blasting, see Chapter 14 - Blasting.

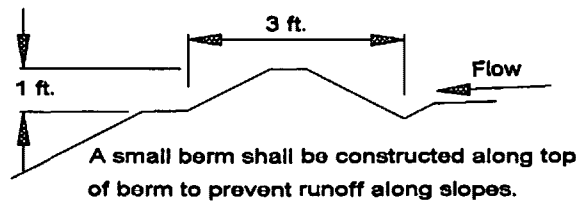
Also, the mining permit will stipulate that each blast be monitored with a seismograph.



Section Thru Berm Less than 30 ft. in Height



Section Thru Berm More than 30 ft. in Height



Detail

NOTES:

1. Slopes shall be tracked with a dozer during construction to aid in the establishment of vegetative cover.
2. All exposed areas shall be stabilized by establishing perennial vegetative cover with seed.

Not To Scale

Figure C-8. Visual Barrier Berm Detail Without Slope Drain

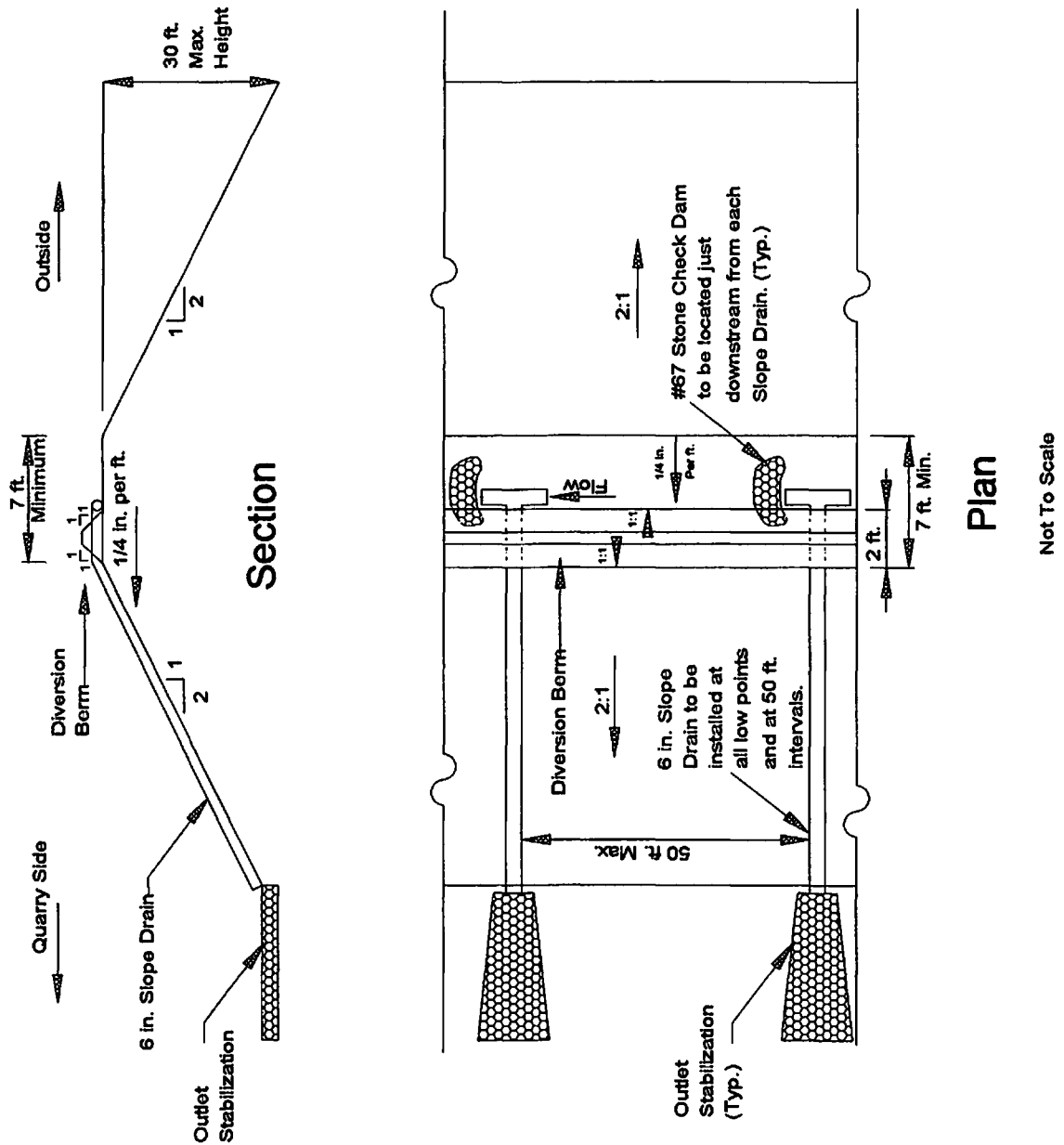
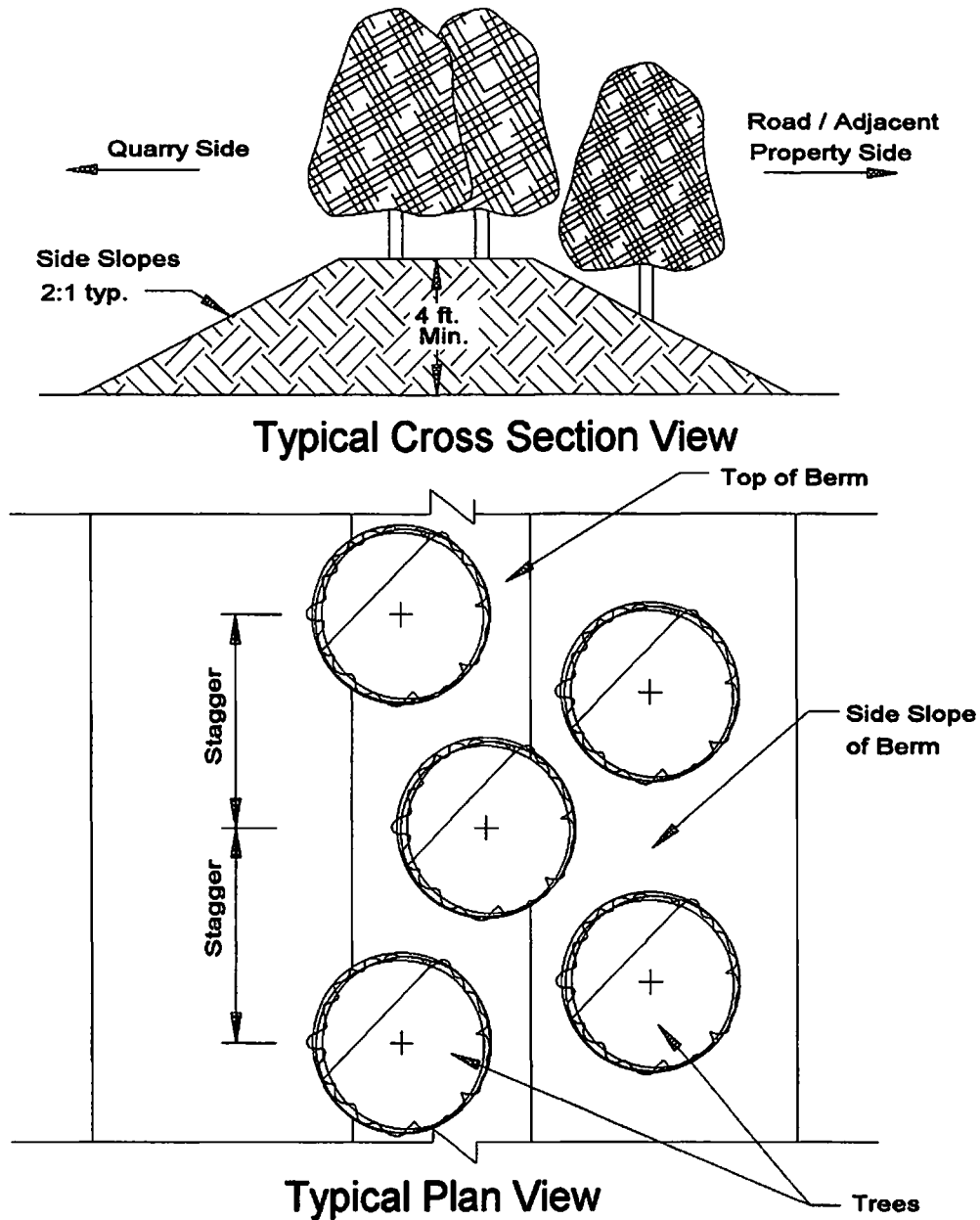


Figure C-9. Visual Barrier Berm Detail With Slope Drain

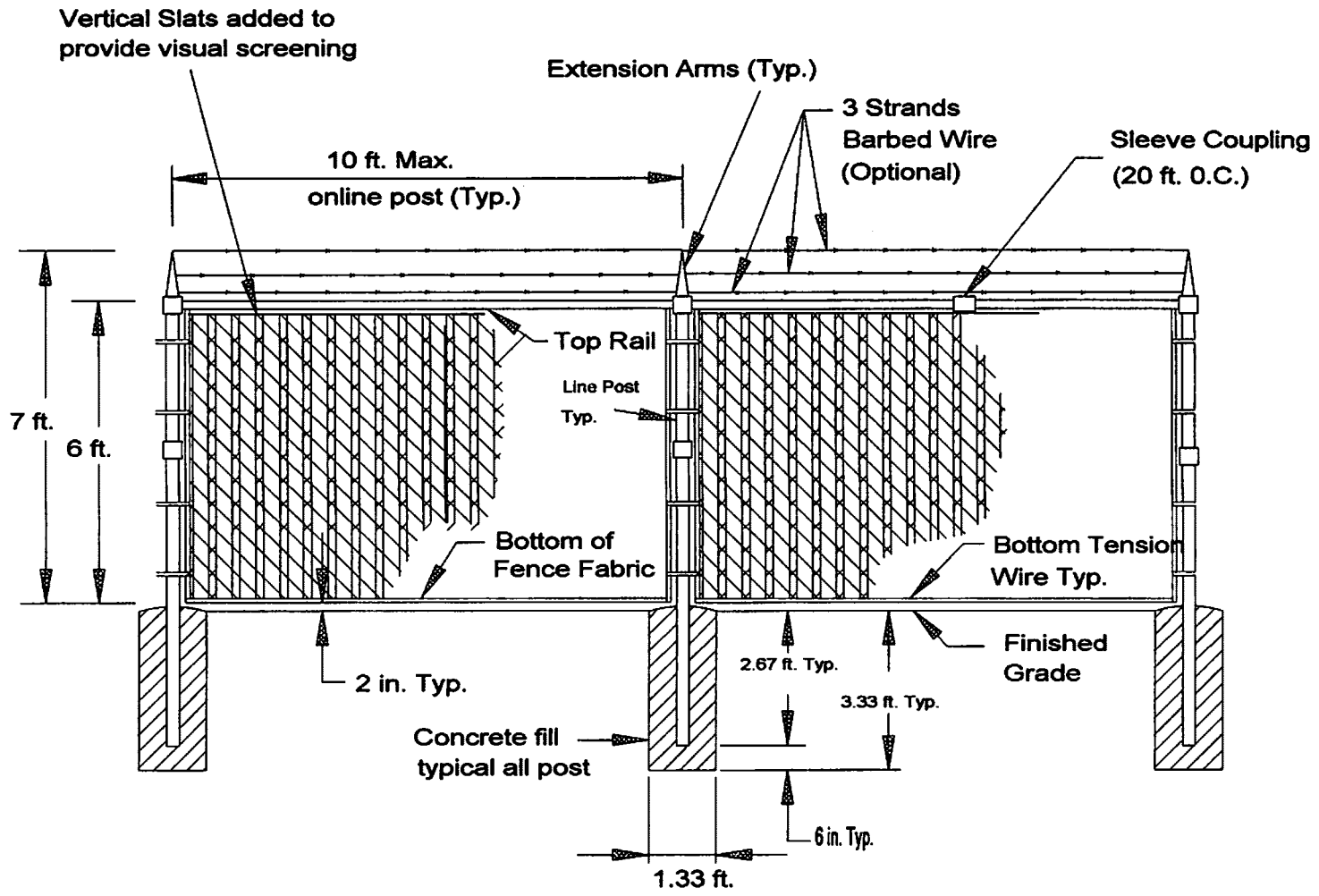


NOTE: Indicate tree species, height/size of plantings, and spacing intervals.

Not To Scale

Figure C-10. Combination Tree Plantings and Berm Detail

Figure C-11. Visual Barrier Chain Link Fence



Not To Scale

APPLICATION FOR A MINING PERMIT

10. Will fuel tanks, solvents, or other chemical reagents be stored on-site? Yes No . *If yes, describe these materials, how they will be stored and method of containment in case of spill. Indicate the location(s) of all storage facilities on the mine map(s).*
11. Are any processing waste, overburden, or other such mine wastes to be disposed of off-site? Yes No . *If yes, describe in detail what these wastes are and how they will be disposed. Attach a separate site map(s) showing the location(s) of the disposal area(s). Include all specifications for erosion and sediment control.*

Waste disposal sites may be approvable under the *Sedimentation Pollution Control Act of 1973* if the following criteria are met:

- 1. No processing or stockpiling of any material is being/has been/will be carried out on the same tract as the waste disposal site.**
- 2. No mining is being/has been/will be carried out on the same tract as the waste disposal site.**
- 3. The waste disposal site is well removed from mining and processing facilities.**

Contact the regional engineer of the Land Quality Section Regional Office serving your area.

Approval under the *Sedimentation Pollution Control Act* must be verified before any waste disposal sites can be excluded from your permit boundaries.

APPLICATION FOR A MINING PERMIT**D. RECLAMATION PLAN**

1. Describe your intended plan for the final reclamation and subsequent use of all affected lands and indicate the general methods to be used in reclaiming this land. *This information must be illustrated on a reclamation map and must correspond directly with the information provided on the mine map(s).*

See Chapter 16 - Reclamation Plan Requirements for more information on the requirements for the reclamation plan(s) or map(s). Also, remember that the reclamation plan or map must show the anticipated reclamation for the 10-year mining plan.

2.
 - a. Is an excavated or impounded body of water to be left as a part of the reclamation? Yes ___ No ___. *If yes, illustrate the location of the body(s) of water on the reclamation map and provide a scaled cross-section(s) through the proposed body(s) of water. The minimum average water depth must be at least 4 feet unless information is provided to indicate that a more shallow water body will be productive and beneficial at this site. Will the body(s) of water be stocked with fish? Yes ___ No ___. If yes, specify species.*
 - b. Describe provisions for prevention of noxious, odious or foul water collecting or remaining in mined areas. *Provide details and locations of any permanent water outlets on the reclamation map.*

The ability to create a body of water as a means of final reclamation is directly related to the method of mining, the depth of the excavation, the groundwater level, and the existence of streams within the mining area. Refer to questions A4, A5 and C1 in the application form.

Cross-sections through water bodies must include the side slope gradients, approximate water depth, depth of the excavation, locations of access points, location of water outlets, streams, and height of water over any waste material left in the excavation. Furthermore, the approximate locations of the water bodies must be indicated on the reclamation map.

If you intend to create a wetland, prior approval from the Wildlife Resources Commission is needed before submitting the plan to the Land Quality Section.

APPLICATION FOR A MINING PERMIT

3. Describe provisions for safety to persons and to adjoining property in all completed excavations in rock including what kind of permanent barricade will be left.
Construction details and locations of all permanent barricades must be shown on the reclamation map.

The permanent barricade must be maintenance free and substantial enough to prevent inadvertent entry into the pit area.

4. Indicate the method(s) of reclamation of overburden, refuse, spoil banks or other such on-site mine waste areas, including specifications for benching and sloping.
Final cross-sections and locations for such areas must be provided on the reclamation map.
5. a. Describe reclamation of processing facilities, stockpile areas, and on-site roadways.
- b. Will any on-site roadways be left as part of the reclamation? Yes No
If yes, identify such roadways on the reclamation map and provide details on permanent ditch line stabilization.
6. Describe the method of reclamation of settling ponds and/or sediment control basins.

Settling ponds and/or sediment control basins must either be cleaned out and made into acceptable water bodies (See Question D2) or backfilled and revegetated. A detailed reclamation plan is required for settling ponds filled with tailings or slimes, outlining the draining of the pond(s) and stabilization of the soils.

APPLICATION FOR A MINING PERMIT

7. Describe the method of control of contaminants and disposal of scrap metal, junk machinery, cables, or other such waste products of mining. (Note definition of refuse in The Mining Act of 1971). **No off-site generated waste shall be disposed of on the mine site without prior written approval from the NC Department of Environment, Health, and Natural Resources, Land Quality Section and either the Division of Solid Waste Management (DSWM) or local governing body. If a disposal permit has been issued by DSWM for the site, a copy of said permit must be attached to this application. All temporary and permanent refuse disposal areas must be clearly delineated on the mine map(s) and reclamation map, along with a list of items to be disposed in said areas.**

8. Indicate the method of restoration or establishment of any permanent drainage channels to a condition minimizing erosion, siltation and other pollution. *Provide design information, including typical cross-sections, of any permanent channels to be constructed as part of the reclamation plan. Indicate the location(s) of all permanent channels on the reclamation map.*

See Chapter 12 - Erosion and Sediment Control for guidance in designing any permanent channels. The channels must be designed for the 25-year storm as a minimum.

9. Provide a schedule of reclamation that indicates the sequence of reclamation and approximate time frame. *If reclamation is to be accomplished concurrently with mining, then clearly indicate on the mine map(s) and reclamation map each segment that is to be mined and reclaimed during each year of the permit. Add drawings showing typical cross-sections and final features of the proposed reclamation.*

Cross-sections through all water bodies must show the approximate depths of the excavation and water, location of outlet points, side slopes, and depth of water over any spoil piles left in the water bodies.

Cross-sections through hard-rock excavations must indicate the approximate depths of the excavation and water (if applicable) and benching, including the safety bench.

The reclamation map must clearly show the approximate locations of permanent water bodies with outlets and any permanent roadways.

See Chapter 16 - Reclamation Plan Requirements, for additional information.

APPLICATION FOR A MINING PERMIT

10. Describe your plan for revegetation or other surface treatment of the affected areas. This plan must include recommendations for **year-round seeding**, including the time of seeding and the amount and type of seed, fertilizer, lime and mulch per acre. The recommendations must include general seeding instructions for permanent revegetation and, if necessary, temporary revegetation. Revegetation utilizing only tree plantings is not acceptable. **NOTE: The Revegetation Plan must be approved and signed by one of the following:**
- Authorized representatives of the local Soil and Water Conservation District;
 - Authorized representatives of the Division of Forest Resources, Department of Environment, Health, and Natural Resources;
 - Authorized county representatives of the North Carolina Cooperative Extension Service, specialists and research faculty with the Colleges of Agriculture and Life Sciences and Forest Resources at North Carolina State University;
 - North Carolina licensed landscape architects;
 - Private consulting foresters referred by the Division of Forest Resources, Department of Environment, Health, and Natural Resources;
 - Others as may be approved by the Department.

LIME - RATE OF APPLICATION (tons/acre):

FERTILIZER - ANALYSIS AND RATE OF APPLICATION. (pounds/acre):

SEED - TYPE(S) AND RATES(S) OF APPLICATION INCLUDING YEAR-ROUND SEEDING SCHEDULE (pounds/acre):

MULCH - TYPE AND RATE OF APPLICATION (pounds/acre) AND METHOD OF ANCHORING:

OTHER VEGETATIVE COVERS -TYPE(S) AND RATE(S) OF APPLICATION INCLUDING SEEDING SCHEDULE (pounds/acre, trees/acre, spacing of trees/shrubs, etc.).

Revegetation and/or reforestation plan approved by:

Signature _____ Date _____

Print Name _____

Title _____

Agency _____

See Chapter 16 - Reclamation Plan Requirements for 3 basic seeding specifications for North Carolina. Note that these specifications are minimum requirements. The seeding specifications for your site must be approved by one of the individuals listed above and should be expanded to include additional seeding recommendations to suit your site.

APPLICATION FOR A MINING PERMIT

E. DETERMINATION OF AFFECTED ACREAGE AND BOND

The following bond calculation worksheet is to be used to establish an appropriate bond (based upon a range of \$500 to \$5,000 per affected acre) for each permitted mine site based upon the acreage approved by the Department to be affected during the life of the mining permit.

Please insert the approximate acreage, for each aspect of the mining operation, that you intend to affect during the life of this mining permit (in addition, please insert the appropriate reclamation cost/acre for each category from the Schedule of Reclamation Costs provided with this application form):

| CATEGORY | AFFECTED ACREAGE | | RECLAMATION COST/ACRE | RECLAMATION COST |
|--------------------------------|---------------------|---|--------------------------|---------------------|
| Tailings/ Sediment Ponds | _____ Ac. | X | \$ _____ / Ac. | = \$ _____ |
| Stockpiles | _____ Ac. | X | \$ _____ / Ac. | = \$ _____ |
| Wastepiles | _____ Ac. | X | \$ _____ / Ac. | = \$ _____ |
| Processing Area/ Haul Roads | _____ Ac. | X | \$ _____ / Ac. | = \$ _____ |
| Mine Excavation | _____ Ac. | X | \$ _____ / Ac. | = \$ _____ |
| Other | _____ Ac. | X | \$ _____ / Ac. | = \$ _____ |
| TOTAL AFFECTED AC.: | _____ Ac. | | | |

Temporary & Permanent Sedimentation & Erosion Control Measures:

Divide the **TOTAL AFFECTED AC.** above into the following two categories: a) affected acres that drain into proposed/existing excavation and/or b) affected acres that will be graded for positive drainage, measures will be needed to prevent offsite sediment

a) Internal Drainage _____ Ac.

b) Positive Drainage _____ Ac. X \$ 1500 / Ac. = \$ _____

SUBTOTAL COST: \$ _____

Inflation Factor:

0.02 X **SUBTOTAL COST:** \$ _____ X permit life: _____
(1 to 10 years)

INFLATION COST: \$ _____

TOTAL COST = SUBTOTAL COST + INFLATION COST = \$ _____

TOTAL RECLAMATION BOND COST: \$ _____
(round down to the nearest \$100)

APPLICATION FOR A MINING PERMIT

F. NOTIFICATION OF ADJOINING LANDOWNERS

The "Notice" form, or a facsimile thereof, attached to this application must be sent certified or registered mail to **all landowners who are adjoining (contiguous to) the permit boundaries as indicated on the mine map(s)**. The only exception to the above is if another means of notice is approved in advance by the Director, Division of Land Resources.

A copy of a tax map (or other alternative acceptable to the Department) must be mailed with the completed "Notice" form **(the proposed overall permit boundaries and the names and locations of all owners of record of land adjoining said boundaries must be clearly denoted on the tax map)**.

The "Affidavit of Notification" attached to this application must be completed, notarized and submitted to the Department, with the remainder of the completed application form, before the application will be considered complete.

Keep the original certified mail receipts and send a copy to the Land Quality Section to verify that the adjoining landowners received the Notice.

NOTE: THIS SECTION MUST BE COMPLETED FOR ALL APPLICATIONS FOR NEW MINING PERMITS AND FOR PERMIT MODIFICATIONS THAT ADD ADJACENT LAND TO A MINING PERMIT.

- **SEE THE NEXT TWO PAGES FOR THE "NOTICE" FORM AND THE "AFFIDAVIT OF NOTIFICATION"**

NOTICE

Pursuant to provisions G.S. 74-50 of The Mining Act of 1971, Notice is hereby given that
 _____ has applied on _____
 (Applicant Name) (Date)

to the Land Quality Section, Division of Land Resources, North Carolina Department of Environment, Health and Natural Resources, P. O. Box 27687, Raleigh, North Carolina 27611, for (check one):

- (a) a new surface mining permit
- (b) a modification to add adjacent land to an existing surface mining permit

The applicant proposes to mine _____ on _____ acres located
 (Mineral, Ore) (Number)

_____ of _____
 (Miles) (Direction) (Nearest Town)

off/near road _____ in _____
 (Road Number/Name) (Name of County)

SEE ATTACHED MAP FOR PROPOSED PERMIT BOUNDARIES AND CORRESPONDING ADJOINING LANDOWNER NAMES AND LOCATIONS

In accordance with G.S. 74-50, the mine operator is required to make a reasonable effort to notify all owners of record of land **adjoining (contiguous)** to the proposed mine site (permit boundaries), and to notify the chief administrative officer of the county or municipality in which the site is located. Any person may file written comment(s) to the Department at the above address within thirty (30) days of the issuance of this Notice or the filing of the application for a permit, whichever is later. Should the Department determine that a significant public interest exists relative to G.S. 74-51, a public hearing will be held within 60 days of the end of the 30-day comment period specified above.

A copy of the permit application materials are on file and available for public review during normal business hours at the above listed address as well as at the appropriate regional office. For further information call (919) 733-4574. Please note that the Department will consider any relevant written comments/documentation within the provisions of the Mining Act of 1971 throughout the application review process until a final decision is made on the application.

 (Addressee's Name and Address)

 (Date of Issuance of this Notice/Mailed to Addressee)

 (Name of Applicant)

 (Address of Applicant)

AFFIDAVIT OF NOTIFICATION

I, _____, an applicant, or an agent, or employee of an applicant, for a new Mining Permit, or a modification of an existing Mining Permit that adds adjacent land to the Mining Permit, from the N.C. Department of Environment, Health, and Natural Resources, being first duly sworn, do hereby attest that the following are known owners of record, both private and public, of the land adjoining the proposed mining permit boundaries and that notice of the pending application has been caused to be mailed, by certified or registered mail, to said owners of record at their addresses shown below, such notice being given on a form provided by the Department:

| | |
|----------------------------|-----------|
| (Adjoining Landowner Name) | (Address) |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

(Attach additional list if necessary)

I do also attest that the following individual is the chief administrative officer of the county or municipality in which the proposed mining site is located and that notice of the pending application has been caused to be mailed, by certified or registered mail, to said office at the following address:

| | |
|-------------------------------------|-----------|
| (Chief Administrative Officer Name) | (Address) |
| _____ | _____ |

The above attestation was made by me while under oath to provide proof satisfactory to the Department that a reasonable effort has been made to notify the owners of record of the adjoining land and the chief administrative officer of the county or municipality in compliance with N.C.G.S. 74-50 and 15A N.C.A.C. 5B .0004(d). I understand that it is the responsibility of the applicant to retain the receipts of mailing showing that the above notices were caused to be mailed and to provide them to the Department upon request.

| | |
|-------|------------------------|
| Date | Signature of Applicant |
| _____ | _____ |

If person executing Affidavit is an agent or employee of an applicant, provide the following information: (Name of applicant) _____, (title of person executing Affidavit) _____

I, _____, a Notary Public of the County of _____,

State of North Carolina, do hereby certify that _____ personally appeared before me this day and under oath acknowledged that the above Affidavit was made by him/her.

Witness my hand and notarial seal, this _____ day of _____, 19____.

Notary

My Commission expires: _____

The list of adjoining landowners on the Affidavit of Notification must correspond with the adjoining landowners noted on the mine maps.

APPLICATION FOR A MINING PERMIT

G. LAND ENTRY AGREEMENT

We hereby grant to the Department or its appointed representatives the right of entry and travel upon our lands or operation during regular business hours for the purpose of making necessary field inspections or investigations as may be reasonably required in the administration of the Mining Act of 1971.

We further grant to the Department or its appointed representatives the right to make whatever entries on the land as may be reasonably necessary and to take whatever actions as may be reasonably necessary in order to carry out reclamation which the operator has failed to complete in the event a bond forfeiture is ordered pursuant to G.S. 74-59.

LANDOWNER:

APPLICANT

Signature _____

Signature * _____

Print Name: _____

Print Name: _____

Address: _____

Title: _____

Company: _____

Telephone: _____

Mine Name: _____

*Signature must be the same as the individual who signed Page 1 of this application.

If several landowners own land within the permit boundaries, each landowner must sign a Land Entry Agreement to clarify DEHNR's right to enter the land.

Four (4) copies of the completed application, four (4) copies of all mine maps and reclamation maps, and the appropriate processing fee (see next page for fee schedule) in the form a check or money order payable to the North Carolina Department of Environment, Health, and Natural Resources must be sent to the Land Quality Section Central Office at the address listed on the front cover of this application form.

Inquiries regarding the status of the review of this application should be directed to the Mining Program staff at (919) 733-4574.

Mining

- * A nonrefundable permit application fee when filing for a new mining permit, a major permit modification or a renewal permit as follows:

| TYPE | ACRES** | NEW PERMIT | MAJOR MODIFICATION | RENEWAL |
|--|---------------------|------------|--------------------|---------|
| Clay | 1 but less than 25 | \$500 | \$250 | \$250 |
| | 25 but less than 50 | 1000 | 500 | 500 |
| | 50 or more | 1500 | 500 | 500 |
| Sand & Gravel, Gemstone, and Borrow Pits | 1 but less than 5 | 150 | 100 | 100 |
| | 5 but less than 25 | 250 | 100 | 100 |
| | 25 but less than 50 | 500 | 250 | 500 |
| | 50 or more | 1000 | 500 | 500 |
| Quarry, Industrial Minerals, Dimension Stone | 1 but less than 10 | 250 | 100 | 100 |
| | 10 but less than 25 | 1000 | 250 | 500 |
| | 25 but less than 50 | 1500 | 500 | 500 |
| | 50 or more | 2500 | 500 | 500 |
| Peat & Phosphate | 1 or more | 2500 | 500 | 500 |
| Gold (Heap Leach), Titanium, & Others | 1 or more | 2500 | 500 | 500 |

- * A nonrefundable \$50.00 permit application processing fee is required for minor permit modifications. Minor permit modifications include ownership transfers, name changes and bond substitutions. A minor permit modification also includes lands to be added to a permitted area, outside of the minimum permit buffer zone requirements, where no plans for mining related disturbance of the added lands have been approved. All other changes are considered major modifications.

- ** Acres for new permits and renewal permits means the total acreage at the site. Acres for major modification of permits means that area of land affected by the modification within the permitted mine area, or any additional land that is to be disturbed and added to an existing permitted area, or both.

LAND QUALITY SECTION HEADQUARTERS

| | | | |
|--|--|--|---|
| <p>Francis M. Nevils, Jr., P.E. Section Chief 512 N. Salisbury Street P.O. Box 27687 Raleigh, NC 27611</p> | <p>James D. Simons, P.E. - Chief Engineer S. Craig Deal, P.E. - State Sediment Specialist David H. Ward - Assistant State Sediment Specialist Tracy E. Davis, P.E. - State Mining Specialist Judy Wehner - Assistant State Mining Specialist Tony L. Sample - Assistant State Mining Specialist James K. Leumas, P.E. - State Dam Safety Engineer Jack H. Palmer, E.I.T. - Assist. State Dam Safety Eng.</p> | <p>William (Toby) Vinson - Sediment Education Specialist Secretaries Roxanna Evans - Lead Secretary Stephanie Lane - Sediment & Dams Susan Edwards - Mining</p> | <p>Courier - 52-01-00 (919) 733 - 4574 FAX # (919) 733 - 2876</p> |
|--|--|--|---|

LAND QUALITY SECTION REGIONAL OFFICES

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------------|-------------|------------|----------|----------|------|--------|---------|-----------|---------|-------|---------|----------|----------|------|------------|-------|-------------|--------|--|--|-------|------------|----------|--------|-------|--|------------|----------|--|---------|---------|--|------|---------|--|--|-----------|---------|----------|-------------|---------|-------|-----------|--------|--------|-------|---------|--|-----------|-------------|----------|--------|----------|--------|--------|--|---|----------|-----------|------|---------|----------|-------|---------|----------|------------|----------|--------|------|---------|--------|--------|----------|--------|--------|--------|--------|-----------|------|-------|--------|----------|------|-------|--------|--------|---------|------------|------------|------|---------|--|------------|-------|--|--|---|---------|--------|-----------|----------|-----------|---------|----------|-----|------|-------------|--------|--------|-------|------|--|--------|--------|--|
| <p style="text-align: center;">ASHEVILLE</p> <p>RICHARD PHILLIPS, P.E. Interchange Bldg. 59 Woodfin Place Asheville, NC 28801</p> <p>COURIER - 06-78-16 (704) 251 - 6208 - (52) FAX # (704) 251 - 6452</p> <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Avery</td> <td style="border: none;">Buncombe</td> <td style="border: none;">Burke</td> </tr> <tr> <td style="border: none;">Caldwell</td> <td style="border: none;">Cherokee</td> <td style="border: none;">Clay</td> </tr> <tr> <td style="border: none;">Graham</td> <td style="border: none;">Haywood</td> <td style="border: none;">Henderson</td> </tr> <tr> <td style="border: none;">Jackson</td> <td style="border: none;">Macon</td> <td style="border: none;">Madison</td> </tr> <tr> <td style="border: none;">McDowell</td> <td style="border: none;">Mitchell</td> <td style="border: none;">Polk</td> </tr> <tr> <td style="border: none;">Rutherford</td> <td style="border: none;">Swain</td> <td style="border: none;">Tansylvania</td> </tr> <tr> <td style="border: none;">Yancey</td> <td></td> <td></td> </tr> </table> <p style="text-align: center;">FAYETTEVILLE</p> <p>JOE GLASS, P.E. Wachovia Bldg. Suite 714 Fayetteville, NC 28301</p> <p>COURIER - 14-56-25 (910) 486 1541 (53) FAX # (910) 486 - 0707</p> <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Anson</td> <td style="border: none;">Montgomery</td> <td style="border: none;">Scotland</td> </tr> <tr> <td style="border: none;">Bladen</td> <td style="border: none;">Moore</td> <td></td> </tr> <tr> <td style="border: none;">Cumberland</td> <td style="border: none;">Richmond</td> <td></td> </tr> <tr> <td style="border: none;">Harnett</td> <td style="border: none;">Robeson</td> <td></td> </tr> <tr> <td style="border: none;">Hoke</td> <td style="border: none;">Sampson</td> <td></td> </tr> </table> | Avery | Buncombe | Burke | Caldwell | Cherokee | Clay | Graham | Haywood | Henderson | Jackson | Macon | Madison | McDowell | Mitchell | Polk | Rutherford | Swain | Tansylvania | Yancey | | | Anson | Montgomery | Scotland | Bladen | Moore | | Cumberland | Richmond | | Harnett | Robeson | | Hoke | Sampson | | <p style="text-align: center;">MOORESVILLE</p> <p>JERRY COOK, P.E. 919 North Main Street Mooresville, NC 28115</p> <p>COURIER - 13-21-08 (704) 663 - 1699 - (54) FAX # (704) 663 - 6040</p> <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Alexander</td> <td style="border: none;">Lincoln</td> </tr> <tr> <td style="border: none;">Cabarrus</td> <td style="border: none;">Mecklenburg</td> </tr> <tr> <td style="border: none;">Catawba</td> <td style="border: none;">Rowan</td> </tr> <tr> <td style="border: none;">Cleveland</td> <td style="border: none;">Stanly</td> </tr> <tr> <td style="border: none;">Gaston</td> <td style="border: none;">Union</td> </tr> <tr> <td style="border: none;">Iredell</td> <td></td> </tr> </table> <p style="text-align: center;">WILMINGTON</p> <p>DAN SAMS, P.E. 127 Cardinal Drive, Ext. Wilmington, NC 28405 - 3845</p> <p>COURIER - 04-16-33 (910) 395 - 3900 (57) FAX # (910) 350 - 2004</p> <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Brunswick</td> <td style="border: none;">New Hanover</td> </tr> <tr> <td style="border: none;">Carteret</td> <td style="border: none;">Onslow</td> </tr> <tr> <td style="border: none;">Columbus</td> <td style="border: none;">Pender</td> </tr> <tr> <td style="border: none;">Duplin</td> <td></td> </tr> </table> | Alexander | Lincoln | Cabarrus | Mecklenburg | Catawba | Rowan | Cleveland | Stanly | Gaston | Union | Iredell | | Brunswick | New Hanover | Carteret | Onslow | Columbus | Pender | Duplin | | <p style="text-align: center;">WINSTON - SALEM</p> <p>DOUG MILLER, P.E. 585 Waightown Street Winston - Salem, NC 27107</p> <p>COURIER - 09-55-01 (910) 771-4600 FAX # (910) 771 - 4631</p> <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Alamance</td> <td style="border: none;">Alleghany</td> <td style="border: none;">Ashe</td> </tr> <tr> <td style="border: none;">Caswell</td> <td style="border: none;">Davidson</td> <td style="border: none;">Davie</td> </tr> <tr> <td style="border: none;">Forsyth</td> <td style="border: none;">Guilford</td> <td style="border: none;">Rockingham</td> </tr> <tr> <td style="border: none;">Randolph</td> <td style="border: none;">Stokes</td> <td style="border: none;">Sury</td> </tr> <tr> <td style="border: none;">Watauga</td> <td style="border: none;">Wilkes</td> <td style="border: none;">Yadkin</td> </tr> </table> <p style="text-align: center;">WASHINGTON</p> <p>FLOYD WILLIAMS, P.G. 1424 Carolina Avenue Washington, NC 27889</p> <p>COURIER - 16-04-01 (919) 946 - 6481 (56) FAX # (919) 975 - 3716</p> <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Beaufort</td> <td style="border: none;">Bertie</td> <td style="border: none;">Camden</td> <td style="border: none;">Chowan</td> </tr> <tr> <td style="border: none;">Craven</td> <td style="border: none;">Currituck</td> <td style="border: none;">Dare</td> <td style="border: none;">Gates</td> </tr> <tr> <td style="border: none;">Greene</td> <td style="border: none;">Hertford</td> <td style="border: none;">Hyde</td> <td style="border: none;">Jones</td> </tr> <tr> <td style="border: none;">Lenoir</td> <td style="border: none;">Martin</td> <td style="border: none;">Pamlico</td> <td style="border: none;">Pasquotank</td> </tr> <tr> <td style="border: none;">Perquimans</td> <td style="border: none;">Pitt</td> <td style="border: none;">Tyrrell</td> <td></td> </tr> <tr> <td style="border: none;">Washington</td> <td style="border: none;">Wayne</td> <td></td> <td></td> </tr> </table> | Alamance | Alleghany | Ashe | Caswell | Davidson | Davie | Forsyth | Guilford | Rockingham | Randolph | Stokes | Sury | Watauga | Wilkes | Yadkin | Beaufort | Bertie | Camden | Chowan | Craven | Currituck | Dare | Gates | Greene | Hertford | Hyde | Jones | Lenoir | Martin | Pamlico | Pasquotank | Perquimans | Pitt | Tyrrell | | Washington | Wayne | | | <p style="text-align: center;">RALEIGH</p> <p>JOHN HOLLEY, P.E. 3800 Barrett Drive P.O. Box 27687 Raleigh, NC 27611</p> <p>INTEROFFICE (919) 571 - 4700 - (55) FAX # (919) 571 - 4718</p> <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Chatham</td> <td style="border: none;">Durham</td> <td style="border: none;">Edgecombe</td> </tr> <tr> <td style="border: none;">Franklin</td> <td style="border: none;">Granville</td> <td style="border: none;">Halifax</td> </tr> <tr> <td style="border: none;">Johnston</td> <td style="border: none;">Lee</td> <td style="border: none;">Nash</td> </tr> <tr> <td style="border: none;">Northampton</td> <td style="border: none;">Orange</td> <td style="border: none;">Person</td> </tr> <tr> <td style="border: none;">Vance</td> <td style="border: none;">Wake</td> <td></td> </tr> <tr> <td style="border: none;">Warren</td> <td style="border: none;">Wilson</td> <td></td> </tr> </table> | Chatham | Durham | Edgecombe | Franklin | Granville | Halifax | Johnston | Lee | Nash | Northampton | Orange | Person | Vance | Wake | | Warren | Wilson | |
| Avery | Buncombe | Burke | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Caldwell | Cherokee | Clay | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Graham | Haywood | Henderson | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Jackson | Macon | Madison | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| McDowell | Mitchell | Polk | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rutherford | Swain | Tansylvania | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Yancey | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Anson | Montgomery | Scotland | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bladen | Moore | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cumberland | Richmond | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Harnett | Robeson | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hoke | Sampson | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Alexander | Lincoln | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cabarrus | Mecklenburg | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Catawba | Rowan | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cleveland | Stanly | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gaston | Union | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Iredell | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Brunswick | New Hanover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Carteret | Onslow | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Columbus | Pender | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Duplin | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Alamance | Alleghany | Ashe | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Caswell | Davidson | Davie | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Forsyth | Guilford | Rockingham | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Randolph | Stokes | Sury | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Watauga | Wilkes | Yadkin | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Beaufort | Bertie | Camden | Chowan | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Craven | Currituck | Dare | Gates | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Greene | Hertford | Hyde | Jones | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lenoir | Martin | Pamlico | Pasquotank | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Perquimans | Pitt | Tyrrell | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Washington | Wayne | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chatham | Durham | Edgecombe | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Franklin | Granville | Halifax | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Johnston | Lee | Nash | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Northampton | Orange | Person | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vance | Wake | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Warren | Wilson | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Revised 10/95

SCHEDULE OF RECLAMATION COSTS
(based upon range of \$500 - \$5,000 per affected acre)

COMMODITY CODES: SG = Sand and/or Gravel, GS = Gemstone, Borrow = Borrow/fill dirt, CS = Crushed Stone, DS = Dimension Stone, FS = Feldspar, MI = Mica, LI = Lithium, PF = Pyrophyllite, OL = Olivine, KY = Kyanite/Sillimanite/Andalusite, PH = Phosphate, CL = Clay/Shale, PE = Peat, AU = Gold, TI = Titanium, and OT = Other

| Type | T/S Ponds | S.piles | W.piles | P.area/H.R. | Mine Excav. |
|---|----------------------------|------------|------------|-------------|----------------------------|
| SG, GS Borrow | \$500/ac. (L) 1500 (FI) | \$1800/ac. | \$2000/ac. | \$1800/ac. | \$500/ac. (L) 2000 (PD) |
| CS, DS, FS, MI, LI, PF, OL, KY | 500 (L) 1500 (FI) | 1800 | 2000 | 2000 | 500 (L) 2500 (PD) |
| PH, CL | 1000 (L) 2500 (FI) | 2500 | 5000 | 5000 | 2000 (L) 5000 (PD) |
| PE, AU, TI, OT | 1000 (L) 2500 (FI) | 2500 | 3000 | 3500 | 2000 (L) 5000 (PD) |

(L) = reclamation to a lake and revegetating sideslopes
(FI) = reclamation by filling in and revegetation
(PD) = reclamation by grading for positive drainage and revegetating

AS PER NCAC 15A 5B.0003, IF YOU DISAGREE WITH THE BOND AMOUNT DETERMINED BY THE BOND CALCULATION WORKSHEET, YOU MAY SUBMIT AN ESTIMATE OF RECLAMATION COSTS FROM A THIRD PARTY CONTRACTOR. SAID ESTIMATE MUST BE PROVIDED TO THE FOLLOWING ADDRESS WITHIN 30 DAYS FOLLOWING YOUR RECEIPT OF THIS BOND CALCULATION:

Mining Program
Land Quality Section
P.O. Box 27687
Raleigh, North Carolina 27611

ALL ESTIMATES MUST INCLUDE THE FOLLOWING, AS A MINIMUM:

- FINAL GRADING COSTS PER ACRE
- LIME AND FERTILIZER COSTS PER ACRE
- YEAR-ROUND SEEDING MIXTURE COSTS PER ACRE (FROM APPROVED REVEGETATION PLAN IN APPLICATION/PERMIT DOCUMENT)
- MULCH AND ANCHORING COSTS PER ACRE
- ANY OTHER RECLAMATION COSTS NECESSARY TO COMPLY WITH THE APPROVED RECLAMATION PLAN FOR THE SITE IN QUESTION

YOU WILL BE NOTIFIED AS SOON AS POSSIBLE OF THE DIRECTOR'S FINAL BOND DETERMINATION.

10/16/95

APPENDIX D

Blank Mining Permit Application Form

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NORTH CAROLINA DEPARTMENT OF ENVIRONMENT, HEALTH
AND NATURAL RESOURCES

LAND QUALITY SECTION

APPLICATION FOR A MINING PERMIT

(PLEASE PRINT OR TYPE)

APPLICANT INFORMATION

1. Name of Mine _____ County _____
2. Name of Applicant * _____
3. Permanent address for receipt of official mail ** _____

_____ Telephone _____
4. Mine Office Address _____
_____ Telephone _____
5. Mine Manager _____

We hereby certify that all details contained in this Permit Application are true and correct to the best of our knowledge. We fully understand that any willful misrepresentation of facts will be cause for permit revocation.

***Signature _____ Date _____

Print Name _____

Title _____

* This will be the name that the mining permit will be issued to and the name that must be indicated on the reclamation bond or other security that corresponds to this site.

** The Land Quality Section must be notified of any changes in the permanent address or telephone number.

*** Signature of company officer required.

G.S. 74-51 provides that the Department shall grant or deny an application for a permit within 60 days of receipt of a complete application or, if a public hearing is held, within 30 days following the hearing and the filing of any supplemental information required by the Department. All questions must be addressed and all required maps provided before this application can be considered complete. Attach additional sheets as needed.

APPLICATION FOR A MINING PERMIT

NOTE: All of the following questions must be thoroughly answered with regard to your mining operation for the intended life of the mine. All responses must be clearly conveyed on a corresponding, detailed mine map.

A. GENERAL CHARACTERISTICS OF THE MINE

Answer all of the following that apply:

1. a. If this is an application for a **NEW** permit, indicate the total acreage at the site to be covered by the permit (this is the acreage that the "new permit" fee will be based upon): _____

Of this acreage, how much is owned and how much is leased? Acres owned: _____ Acres leased: _____ Property owner if leased: _____

b. If this is an application for **RENEWAL** of a mining permit, indicate the mining permit number and the total (overall) acreage covered by the existing permit: Mining Permit No.: _____ Total permitted acreage (this is the acreage that the "renewal" fee will be based upon): _____

c. If this is an application for a **MODIFICATION** to a mining permit, indicate the mining permit number and the total (overall) acreage covered by the existing permit: Mining Permit No.: _____ Total permitted acreage: _____

Does the modification involve acreage within the previously approved permitted boundary? Yes ___ No ___. If yes, indicate the acreage to be covered by this modification (this is the acreage that the "major modification" fee will be based upon): _____

Does the modification involve acreage outside the previously approved permitted boundary? Yes ___ No ___. If yes, indicate the additional acreage to be covered by this modification: _____ (NOTE: you must complete all of Section F. of this application form entitled Notification of Adjoining Landowners).

Of this acreage to be added to the permit, will any portion of this acreage be affected (disturbed, ground cover removed) by the mining operation? Yes ___ No ___ (if no, a "minor modification" fee of \$50.00 is required, despite the "undisturbed" acreage to be added). If yes, indicate the acreage to be affected within the acreage to be added to the permit (the total acreage to be added to the permit is the acreage that the "major modification" fee will be based upon): _____

d. If this is an application for **TRANSFER** of a mining permit, indicate the mining permit number and the total (overall) acreage covered by the existing permit: Mining Permit No.: _____ Total permitted acreage: _____

• **SEE THE FEE SCHEDULE AT THE END OF THIS FORM FOR THE PROPER FEE AMOUNT TO BE PAID FOR THE REQUESTED PERMIT ACTION(S) AND CORRESPONDING ACREAGE NOTED ABOVE.**

2. Indicate the approximate longitude and latitude, in degrees-minutes-seconds, of the center of the mine site:

LONGITUDE (dd-mm-ss): _____--_____-_____- Quadrangle: _____
LATITUDE (dd-mm-ss): _____--_____-_____-

3. Name of all materials mined: _____

APPLICATION FOR A MINING PERMIT

4. Mining method: Hydraulic Dredge ___ Front-end Loader & Truck ___ Shovel & Truck ___
Dragline & Truck ___ Self-loading Scraper ___ Other(explain) _____
5. a. Expected maximum depth of mine (feet) _____ Reference elevation: _____
b. Expected average depth of mine (feet) _____
6. Has any area(s) at this site been mined in the past? Yes ___ No ___ If no, proceed to Question 7.
 - a. Acreage of previously affected land(s) at present site that has not been reclaimed: _____ acres (*identify all areas on your mine map(s)*).
 - b. When and by whom was this activity conducted? _____
 - c. Acreage of previously affected land at present site that has been reclaimed: _____ acres (*identify all areas on your mine map(s)*).
 - d. When and by whom was this activity conducted _____
 - e. Do you wish to exclude any areas noted in 6a or c from this permit application? Yes ___ No ___. If yes, how much? _____ acres (*identify all areas on your mine map(s)*).
7. Present (pre-mining) use of the land (estimate acreage for each):
Cropland ___ acres Pasture ___ acres Forestry ___ acres Fish/Wildlife ___ acres
Recreation ___ acres Other ___ acres (Specify use: _____)
8. Proposed land use after mining and reclamation has been completed (estimate acreage for each):
Cropland ___ acres Pasture ___ acres Forestry ___ acres
Fish/Wildlife ___ acres Recreation ___ acres Other ___ acres (Specify use: _____)
9. Number of years for which the permit is requested (10 years maximum): _____

B. MAPS

1. **Four (4) copies** of the county highway maps and **four (4) copies** of all mine maps and reclamation maps shall be submitted with each permit application.

County highway maps may be obtained from:

Location Department
State Highway Commission
Raleigh, North Carolina 27602
(919) 733-7600

Clearly label and mark the location of your mining operation on the county highway maps.

APPLICATION FOR A MINING PERMIT

2. Mine maps must be accurate and appropriately scaled drawings, aerial photographs or enlarged topographic maps of the entire mine site. **All aspects of the mine site must be clearly labeled on the maps along with their corresponding (approximate) acreage. As a reminder, mining permits can only be issued for up to 10 years; thus, all mine and reclamation maps must only denote those activities that are intended to be conducted during the life of the mining permit.** All maps must be of a scale sufficient (see minimum requirements listed below) to clearly illustrate the following, **at a minimum**:
 - a. Property lines of the tract or tracts of land on which the proposed mining activity is to be located including easements and rights-of-way.
 - b. Existing or proposed permit boundaries.
 - c. Initial and ultimate limits of clearing and grading.
 - d. Outline and width of all buffer zones (both undisturbed and unexcavated).
 - e. Outline and acreage of all pits/excavations.
 - f. Outline and acreage of all stockpile areas.
 - g. Outline and acreage of all temporary and/or permanent overburden disposal areas.
 - h. Location and acreage of all processing plants (processing plants may be described as to location and distance from mine if sufficiently far removed).
 - i. Locations and names of all streams, rivers and lakes.
 - j. Outline and acreage of all settling and/or processing wastewater ponds.
 - k. Location and acreage of all planned and existing access roads and on-site haul roads.
 - l. Location of planned and existing on-site buildings.
 - m. Location and dimensions of all proposed sediment and erosion control measures.
 - n. Location of 100 year floodplain limits and wetland boundaries.
 - o. Names of owners of record, both public and private, of all adjoining land.
 - p. Map Legend Requires:
 1. Name of applicant
 2. Name of mine
 3. North arrow
 4. County
 5. Scale
 6. Symbols used and corresponding names
 7. Date prepared and revised
 8. Name and title of person preparing map

Map scales must, at a minimum, meet the following guidelines:

| PERMITTED ACREAGE | MAP SCALE |
|-------------------|-------------------|
| 0-99 Acres | 1 inch = 50 feet |
| 100-499 Acres | 1 inch = 100 feet |
| 500+ Acres | 1 inch = 200 feet |

APPLICATION FOR A MINING PERMIT

A table/chart must be provided on the mine map that clearly lists the approximate acreage of tailings/sediment ponds, stockpiles, wastepiles, processing area/haul roads, mine excavation and any other major aspect of the mining operation that is proposed to be affected/disturbed during the life of the mining permit. A table/chart similar to the following will be acceptable:

| CATEGORY | AFFECTED ACREAGE |
|----------------------------|------------------|
| Tailings/Sediment Ponds | |
| Stockpiles | |
| Wastepiles | |
| Processing Area/Haul Roads | |
| Mine Excavation | |
| Other | |

NOTE: IN ADDITION TO THE ABOVE, THE MAPS MUST ALSO INCLUDE ANY SITE-SPECIFIC INFORMATION THAT IS PROVIDED IN THE ANSWERS TO THE FOLLOWING QUESTIONS IN THIS APPLICATION FORM (PLEASE NOTE THE ITALICIZED QUESTIONS/STATEMENTS THROUGHOUT THE FORM). THIS APPLICATION WILL NOT BE CONSIDERED COMPLETE WITHOUT ALL RELEVANT ITEMS BEING ADEQUATELY ADDRESSED ON THE MINE MAPS.

APPLICATION FOR A MINING PERMIT

C. PROTECTION OF NATURAL RESOURCES

1. a. Will the operation involve washing the material mined, recycling process water, or other waste water handling? Yes ___ No ___. If yes, briefly describe all such processes including any chemicals to be used.

- b. Will the operation involve discharging fresh or waste water from the mine or plant? Yes ___ No ___. *If yes, briefly describe the nature of the discharge and locate all proposed discharge points (along with their method of stabilization) on your mine map(s).*

- c. Will any part of the proposed mine excavation(s) extend below the water table? Yes ___ No ___. If yes, do you intend to dewater the excavation(s)? Yes ___ No ___. If yes, what impact, if any, will mine dewatering have on neighboring wells? *Locate all existing wells on the mine map(s) that lie within 500 feet of the proposed excavation area.* Provide data to support any conclusions or statements made. Indicate whether the proposed mine locale is served by a public water system or private wells.

- d. If the mine will extend below the water table, what is the pre-mining depth (in feet) to the seasonal high and low ground water tables? High ___ ft. Low ___ ft. What is the source of this information?

- e. If you answered yes to any of the above questions, provide evidence that you have applied for or obtained the appropriate water quality permit(s) (i.e., non-discharge, NPDES, etc.) from the Division of Environmental Management, Water Quality Section.

APPLICATION FOR A MINING PERMIT

2. a. Will the operation involve crushing or any other air contaminant emissions? Yes ___ No ___. If yes, indicate evidence that you have applied for or obtained an air quality permit issued by the Division of Environmental Management, Air Quality Section, or local governing body.

b. How will dust from stockpiles, haul roads, etc., be controlled?

3. Describe in detail the chronological sequence of land disturbing activities and *reference the sequence to the mine map(s)*. Attach additional sheets as needed.

4. Describe specific erosion control measures to be installed prior to land disturbing activities and during mining to prevent offsite sedimentation (*include specific plans for sediment and erosion control for mine excavation(s), waste piles, access/mine roads and process areas*), and give a detailed sequence of installation and schedule for maintenance of the measures. *Locate and label all sediment and erosion control measures on the mine map(s) and provide typical cross-sections/construction details of each measure.* Engineering designs and calculations shall be required when needed to justify the adequacy of any proposed measures.

APPLICATION FOR A MINING PERMIT

5.
 - a. How wide a buffer will be maintained between any mining activity and any adjoining permit boundary or right-of-way? Buffers must be located within the permit boundaries. Buffers along permit boundaries must be, at a minimum, unexcavated buffers. *Show all buffer locations and widths on the mine map(s).*
 - b. How wide a buffer will be maintained between any land disturbing activities within the permit boundaries and any natural watercourses and wetlands? Buffers along natural watercourses and wetlands must be undisturbed. *Show all buffer locations and widths on the mine map(s).*
6.
 - a. Describe methods to prevent landslide or slope instability adjacent to adjoining permit boundaries during mining.
 - b. Describe other methods to be taken during mining to prevent physical hazard to any neighboring dwelling house, public road, public, commercial or industrial building from any mine excavation. *Locate all such structures on the mine map if they are within 300 feet of any proposed excavation.*

APPLICATION FOR A MINING PERMIT

- c. Describe what kind of barricade will be used to prevent inadvertent public access along any high wall area and when it will be implemented. Vegetated earthen berms, appropriate fencing and adequate boulder barriers may be acceptable high wall barricades. *A construction detail/cross-section and location of each type of barricade to be used must be indicated on the mine map(s).*
- d. *Provide a cross-section on the mine map(s) for all fill slopes (berms, wastepiles, overburden disposal areas, etc.), clearly indicating the intended side slope gradient, installation of any benches and/or slope drains (with supporting design information) if needed, and the method of final stabilization.*
- e. *In excavation(s) of unconsolidated (non-rock) materials, specify the angle of all cut slopes including specifications for benching and sloping. Cross-sections for all cut slopes must be provided on the mine map(s).*
- f. *In hardrock excavations, specify proposed bench widths and heights in feet. Provide cross-sections of the mine excavation clearly noting the angles of the cut slopes, widths of all safety benches and mine benches, and the expected maximum depth of the excavation.*
7. Are acid producing minerals or soils present? Yes ___ No ___. How will acid water pollution from the excavation, stockpiles, and waste areas be controlled?

APPLICATION FOR A MINING PERMIT

8. Describe specific plans (including a schedule of implementation) for screening the operation from public view such as maintaining or planting trees, bushes or other vegetation, building berms or other measures. *Show the location of all visual screening on the mine map(s) and provide cross-sections through all proposed berms or proposed spacings, sizes and species for tree plantings.*

9. Will explosives be used? Yes ___ No ___. If yes, specify the types of explosive(s) and describe what precaution(s) will be used to prevent physical hazard to persons or neighboring property from flying rocks or excessive air blasts or ground vibrations. *Locate the nearest offsite occupied structure(s) to the proposed excavation(s) on the mine map and indicate its approximate distance to the proposed excavation.*

10. Will fuel tanks, solvents, or other chemical reagents be stored on-site? Yes ___ No ___. *If yes, describe these materials, how they will be stored and method of containment in case of spill. Indicate the location(s) of all storage facilities on the mine map(s).*

11. Are any processing waste, overburden, or other such mine wastes to be disposed of off-site? Yes ___ No ___. *If yes, describe in detail what these wastes are and how they will be disposed. Attach a separate site map(s) showing the location(s) of the disposal area(s). Include all specifications for erosion and sediment control.*

APPLICATION FOR A MINING PERMIT

D. RECLAMATION PLAN

1. Describe your intended plan for the final reclamation and subsequent use of all affected lands and indicate the general methods to be used in reclaiming this land. *This information must be illustrated on a reclamation map and must correspond directly with the information provided on the mine map(s).*

2.
 - a. Is an excavated or impounded body of water to be left as a part of the reclamation? Yes ___ No ___. *If yes, illustrate the location of the body(s) of water on the reclamation map and provide a scaled cross-section(s) through the proposed body(s) of water. The minimum average water depth must be at least 4 feet unless information is provided to indicate that a more shallow water body will be productive and beneficial at this site. Will the body(s) of water be stocked with fish? Yes ___ No ___. If yes, specify species.*

 - b. Describe provisions for prevention of noxious, odious or foul water collecting or remaining in mined areas. *Provide details and locations of any permanent water outlets on the reclamation map.*

APPLICATION FOR A MINING PERMIT

6. Describe the method of reclamation of settling ponds and/or sediment control basins.

7. Describe the method of control of contaminants and disposal of scrap metal, junk machinery, cables, or other such waste products of mining. (Note definition of refuse in The Mining Act of 1971). **No off-site generated waste shall be disposed of on the mine site without prior written approval from the NC Department of Environment, Health, and Natural Resources, Land Quality Section and either the Division of Solid Waste Management (DSWM) or local governing body. If a disposal permit has been issued by DSWM for the site, a copy of said permit must be attached to this application. All temporary and permanent refuse disposal areas must be clearly delineated on the mine map(s) and reclamation map, along with a list of items to be disposed in said areas.**

8. Indicate the method of restoration or establishment of any permanent drainage channels to a condition minimizing erosion, siltation and other pollution. *Provide design information, including typical cross-sections, of any permanent channels to be constructed as part of the reclamation plan. Indicate the location(s) of all permanent channels on the reclamation map.*

9. Provide a schedule of reclamation that indicates the sequence of reclamation and approximate time frame. *If reclamation is to be accomplished concurrently with mining, then clearly indicate on the mine map(s) and reclamation map each segment that is to be mined and reclaimed during each year of the permit. Add drawings showing typical cross-sections and final features of the proposed reclamation.*

APPLICATION FOR A MINING PERMIT

10. Describe your plan for revegetation or other surface treatment of the affected areas. This plan must include recommendations for **year-round seeding**, including the time of seeding and the amount and type of seed, fertilizer, lime and mulch per acre. The recommendations must include general seeding instructions for permanent revegetation and, if necessary, temporary revegetation. Revegetation utilizing only tree plantings is not acceptable. **NOTE: The Revegetation Plan must be approved and signed by one of the following:**

- a. Authorized representatives of the local Soil and Water Conservation District;
- b. Authorized representatives of the Division of Forest Resources, Department of Environment, Health, and Natural Resources;
- c. Authorized county representatives of the North Carolina Cooperative Extension Service, specialists and research faculty with the Colleges of Agriculture and Life Sciences and Forest Resources at North Carolina State University;
- d. North Carolina licensed landscape architects;
- e. Private consulting foresters referred by the Division of Forest Resources, Department of Environment, Health, and Natural Resources;
- f. Others as may be approved by the Department.

LIME - RATE OF APPLICATION (tons/acre):

FERTILIZER - ANALYSIS AND RATE OF APPLICATION. (pounds/acre):

SEED - TYPE(S) AND RATES(S) OF APPLICATION INCLUDING YEAR-ROUND SEEDING SCHEDULE (pounds/acre):

MULCH - TYPE AND RATE OF APPLICATION (pounds/acre) AND METHOD OF ANCHORING:

OTHER VEGETATIVE COVERS -TYPE(S) AND RATE(S) OF APPLICATION INCLUDING SEEDING SCHEDULE (pounds/acre, trees/acre, spacing of trees/shrubs, etc.).

Revegetation and/or reforestation plan approved by:

Signature _____ Date _____

Print Name _____

Title _____

Agency _____

APPLICATION FOR A MINING PERMIT

E. DETERMINATION OF AFFECTED ACREAGE AND BOND

The following bond calculation worksheet is to be used to establish an appropriate bond (based upon a range of \$500 to \$5,000 per affected acre) for each permitted mine site based upon the acreage approved by the Department to be affected during the life of the mining permit.

Please insert the approximate acreage, for each aspect of the mining operation, that you intend to affect during the life of this mining permit (in addition, please insert the appropriate reclamation cost/acre for each category from the Schedule of Reclamation Costs provided with this application form):

| CATEGORY | AFFECTED ACREAGE | | RECLAMATION COST/ACRE | | RECLAMATION COST |
|----------------------------|------------------|---|-----------------------|---|------------------|
| Tailings/Sediment Ponds | _____ Ac. | X | \$ _____ / Ac. | = | \$ _____ |
| Stockpiles | _____ Ac. | X | \$ _____ / Ac. | = | \$ _____ |
| Wastepiles | _____ Ac. | X | \$ _____ / Ac. | = | \$ _____ |
| Processing Area/Haul Roads | _____ Ac. | X | \$ _____ / Ac. | = | \$ _____ |
| Mine Excavation | _____ Ac. | X | \$ _____ / Ac. | = | \$ _____ |
| Other | _____ Ac. | X | \$ _____ / Ac. | = | \$ _____ |
| TOTAL AFFECTED AC.: | _____ Ac. | | | | |

Temporary & Permanent Sedimentation & Erosion Control Measures:

Divide the **TOTAL AFFECTED AC.** above into the following two categories: a) affected acres that drain into proposed/existing excavation and/or b) affected acres that will be graded for positive drainage, measures will be needed to prevent offsite sediment

- a) Internal Drainage _____ Ac.
- b) Positive Drainage _____ Ac X \$ 1500 / Ac. = \$ _____

SUBTOTAL COST: \$ _____

Inflation Factor:

0.02 X **SUBTOTAL COST: \$ _____** X permit life: _____
 (1 to 10 years)

INFLATION COST: \$ _____

TOTAL COST = SUBTOTAL COST + INFLATION COST = \$ _____

TOTAL RECLAMATION BOND COST: \$ _____
 (round down to the nearest \$100)

APPLICATION FOR A MINING PERMIT

F. NOTIFICATION OF ADJOINING LANDOWNERS

The "Notice" form, or a facsimile thereof, attached to this application must be sent certified or registered mail to **all landowners who are adjoining (contiguous to) the permit boundaries as indicated on the mine map(s)**. The only exception to the above is if another means of notice is approved in advance by the Director, Division of Land Resources.

A copy of a tax map (or other alternative acceptable to the Department) must be mailed with the completed "Notice" form (**the proposed overall permit boundaries and the names and locations of all owners of record of land adjoining said boundaries must be clearly denoted on the tax map**).

The "Affidavit of Notification" attached to this application must be completed, notarized and submitted to the Department, with the remainder of the completed application form, before the application will be considered complete.

NOTE: THIS SECTION MUST BE COMPLETED FOR ALL APPLICATIONS FOR NEW MINING PERMITS AND FOR PERMIT MODIFICATIONS THAT ADD ADJACENT LAND TO A MINING PERMIT.

- **SEE THE NEXT TWO PAGES FOR THE "NOTICE" FORM AND THE "AFFIDAVIT OF NOTIFICATION"**

NOTICE

Pursuant to provisions G.S. 74-50 of The Mining Act of 1971, Notice is hereby given that

_____ has applied on _____
(Applicant Name) (Date)

to the Land Quality Section, Division of Land Resources, North Carolina Department of Environment, Health and Natural Resources, P. O. Box 27687, Raleigh, North Carolina 27611, for (check one):

- (a) a new surface mining permit
- (b) a modification to add adjacent land to an existing surface mining permit

The applicant proposes to mine _____ on _____ acres located
(Mineral, Ore) (Number)

_____ of _____
(Miles) (Direction) (Nearest Town)

off/near road _____ in _____
(Road Number/Name) (Name of County)

SEE ATTACHED MAP FOR PROPOSED PERMIT BOUNDARIES AND CORRESPONDING ADJOINING LANDOWNER NAMES AND LOCATIONS

In accordance with G.S. 74-50, the mine operator is required to make a reasonable effort to notify all owners of record of land **adjoining (contiguous)** to the proposed mine site (permit boundaries), and to notify the chief administrative officer of the county or municipality in which the site is located. Any person may file written comment(s) to the Department at the above address within thirty (30) days of the issuance of this Notice or the filing of the application for a permit, whichever is later. Should the Department determine that a significant public interest exists relative to G.S. 74-51, a public hearing will be held within 60 days of the end of the 30-day comment period specified above.

A copy of the permit application materials are on file and available for public review during normal business hours at the above listed address as well as at the appropriate regional office. For further information call (919) 733-4574. Please note that the Department will consider any relevant written comments/documentation within the provisions of the Mining Act of 1971 throughout the application review process until a final decision is made on the application.

(Addressee's Name and Address)

(Date of Issuance of this Notice/Mailed to Addressee)

(Name of Applicant)

(Address of Applicant)

APPLICATION FOR A MINING PERMIT

AFFIDAVIT OF NOTIFICATION

I, _____, an applicant, or an agent, or employee of an applicant, for a new Mining Permit, or a modification of an existing Mining Permit that adds adjacent land to the Mining Permit, from the N.C. Department of Environment, Health, and Natural Resources, being first duly sworn, do hereby attest that the following are known owners of record, both private and public, of the land adjoining the proposed mining permit boundaries and that notice of the pending application has been caused to be mailed, by certified or registered mail, to said owners of record at their addresses shown below, such notice being given on a form provided by the Department:

| | |
|----------------------------|-----------|
| (Adjoining Landowner Name) | (Address) |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

(Attach additional list if necessary)

I do also attest that the following individual is the chief administrative officer of the county or municipality in which the proposed mining site is located and that notice of the pending application has been caused to be mailed, by certified or registered mail, to said office at the following address:

| | |
|-------------------------------------|-----------|
| (Chief Administrative Officer Name) | (Address) |
| _____ | _____ |

The above attestation was made by me while under oath to provide proof satisfactory to the Department that a reasonable effort has been made to notify the owners of record of the adjoining land and the chief administrative officer of the county or municipality in compliance with N.C.G.S. 74-50 and 15A N.C.A.C. 5B .0004(d). I understand that it is the responsibility of the applicant to retain the receipts of mailing showing that the above notices were caused to be mailed and to provide them to the Department upon request.

| | |
|-------|------------------------|
| _____ | _____ |
| Date | Signature of Applicant |

If person executing Affidavit is an agent or employee of an applicant, provide the following information: (Name of applicant) _____
(title of person executing Affidavit) _____

I, _____, a Notary Public of the County of _____,
State of North Carolina, do hereby certify that _____

personally appeared before me this day and under oath acknowledged that the above Affidavit was made by him/her.

Witness my hand and notarial seal, this _____ day of _____, 19____.

Notary

My Commission expires: _____

APPLICATION FOR A MINING PERMIT

G. LAND ENTRY AGREEMENT

We hereby grant to the Department or its appointed representatives the right of entry and travel upon our lands or operation during regular business hours for the purpose of making necessary field inspections or investigations as may be reasonably required in the administration of the Mining Act of 1971.

We further grant to the Department or its appointed representatives the right to make whatever entries on the land as may be reasonably necessary and to take whatever actions as may be reasonably necessary in order to carry out reclamation which the operator has failed to complete in the event a bond forfeiture is ordered pursuant to G.S. 74-59.

LANDOWNER:

APPLICANT

Signature _____

Signature * _____

Print Name: _____

Print Name: _____

Address: _____

Title: _____

Company: _____

Telephone: _____

Mine Name: _____

*Signature must be the same as the individual who signed Page 1 of this application.

If several landowners own land within the permit boundaries, each landowner must sign a Land Entry Agreement to clarify the Department's right to enter the land.

Four (4) copies of the completed application, four (4) copies of all mine maps and reclamation maps, and the appropriate processing fee (see next page for fee schedule) in the form a check or money order payable to the North Carolina Department of Environment, Health, and Natural Resources must be sent to the Land Quality Section Central Office at the address listed on the front cover of this application form.

Inquiries regarding the status of the review of this application should be directed to the Mining Program staff at (919) 733-4574.

Mining

- * A nonrefundable permit application fee when filing for a new mining permit, a major permit modification or a renewal permit as follows:

| TYPE | ACRES** | NEW PERMIT | MAJOR MODIFICATION | RENEWAL |
|--|---------------------|------------|--------------------|---------|
| Clay | 1 but less than 25 | \$500 | \$250 | \$250 |
| | 25 but less than 50 | 1000 | 500 | 500 |
| | 50 or more | 1500 | 500 | 500 |
| Sand & Gravel, Gemstone, and Borrow Pits | 1 but less than 5 | 150 | 100 | 100 |
| | 5 but less than 25 | 250 | 100 | 100 |
| | 25 but less than 50 | 500 | 250 | 500 |
| | 50 or more | 1000 | 500 | 500 |
| Quarry, Industrial Minerals, Dimension Stone | 1 but less than 10 | 250 | 100 | 100 |
| | 10 but less than 25 | 1000 | 250 | 500 |
| | 25 but less than 50 | 1500 | 500 | 500 |
| | 50 or more | 2500 | 500 | 500 |
| Peat & Phosphate | 1 or more | 2500 | 500 | 500 |
| Gold (Heap Leach), Titanium, & Others | 1 or more | 2500 | 500 | 500 |

- * A nonrefundable \$50.00 permit application processing fee is required for minor permit modifications. Minor permit modifications include ownership transfers, name changes and bond substitutions. A minor permit modification also includes lands to be added to a permitted area, outside of the minimum permit buffer zone requirements, where no plans for mining related disturbance of the added lands have been approved. All other changes are considered major modifications.

- ** Acres for new permits and renewal permits means the total acreage at the site. Acres for major modification of permits means that area of land affected by the modification within the permitted mine area, or any additional land that is to be disturbed and added to an existing permitted area, or both.

LAND QUALITY SECTION HEADQUARTERS

| | | | |
|--|--|--|---|
| <p>Francis M. Nevils, Jr., P.E. Section Chief 512 N. Salisbury Street P.O. Box 27687 Raleigh, NC 27611</p> | <p>James D. Simons, P.E. - Chief Engineer S. Craig Deal, P.E. - State Sediment Specialist David H. Ward - Assistant State Sediment Specialist Tracy E. Davis, P.E. - State Mining Specialist Judy Wehner - Assistant State Mining Specialist Tony L. Sample - Assistant State Mining Specialist James K. Leumas, P.E. - State Dam Safety Engineer Jack H. Palmer, E.I.T. - Assist. State Dam Safety Eng.</p> | <p>William (Toby) Vinson - Sediment Education Specialist</p> <p style="text-align: center;">Secretaries</p> <p>Roxanna Evans - Lead Secretary Stephanie Lane - Sediment & Dams Susan Edwards - Mining</p> | <p>Courier - 52-01-00 (919) 733 - 4574 FAX # (919) 733 - 2876</p> |
|--|--|--|---|

LAND QUALITY SECTION REGIONAL OFFICES

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <p style="text-align: center;">ASHEVILLE</p> <p>RICHARD PHILLIPS, P.E. Interchange Bldg. 59 Woodfin Place Asheville, NC 28801</p> <p>COURIER - 06-78-16 (704) 251 - 6208 - (52) FAX # (704) 251 - 6452</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">Avery</td> <td style="width: 33%;">Buncombe</td> <td style="width: 33%;">Burke</td> </tr> <tr> <td>Caldwell</td> <td>Cherokee</td> <td>Clay</td> </tr> <tr> <td>Graham</td> <td>Haywood</td> <td>Henderson</td> </tr> <tr> <td>Jackson</td> <td>Macon</td> <td>Madison</td> </tr> <tr> <td>McDowell</td> <td>Mitchell</td> <td>Polk</td> </tr> <tr> <td>Rutherford</td> <td>Swain</td> <td>Tennessee</td> </tr> <tr> <td>Yancey</td> <td></td> <td></td> </tr> </table> <p style="text-align: center;">FAYETTEVILLE</p> <p>JOE GLASS, P.E. Wachovia Bldg. Suite 714 Fayetteville, NC 28301</p> <p>COURIER - 14-56-25 (910) 486 1541 (53) FAX # (910) 486 - 0707</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">Anson</td> <td style="width: 33%;">Montgomery</td> <td style="width: 33%;">Scotland</td> </tr> <tr> <td>Bladen</td> <td>Moore</td> <td></td> </tr> <tr> <td>Cumberland</td> <td>Richmond</td> <td></td> </tr> <tr> <td>Harnett</td> <td>Robeson</td> <td></td> </tr> <tr> <td>Hoke</td> <td>Sampson</td> <td></td> </tr> </table> | Avery | Buncombe | Burke | Caldwell | Cherokee | Clay | Graham | Haywood | Henderson | Jackson | Macon | Madison | McDowell | Mitchell | Polk | Rutherford | Swain | Tennessee | Yancey | | | Anson | Montgomery | Scotland | Bladen | Moore | | Cumberland | Richmond | | Harnett | Robeson | | Hoke | Sampson | | <p style="text-align: center;">MOORESVILLE</p> <p>JERRY COOK, P.E. 919 North Main Street Mooresville, NC 28115</p> <p>COURIER - 13-21-08 (704) 663 - 1699 - (54) FAX # (704) 663 - 6040</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Alexander</td> <td style="width: 50%;">Lincoln</td> </tr> <tr> <td>Cabarrus</td> <td>Mecklenburg</td> </tr> <tr> <td>Catawba</td> <td>Rowan</td> </tr> <tr> <td>Cleveland</td> <td>Stanly</td> </tr> <tr> <td>Gaston</td> <td>Union</td> </tr> <tr> <td>Iredell</td> <td></td> </tr> </table> <p style="text-align: center;">WILMINGTON</p> <p>DAN SAMS, P.E. 127 Cardinal Drive, Ext. Wilmington, NC 28405 - 3845</p> <p>COURIER - 04-16-33 (910) 395 - 3900 (57) FAX # (910) 350 - 2004</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Brunswick</td> <td style="width: 50%;">New Hanover</td> </tr> <tr> <td>Carteret</td> <td>Onslow</td> </tr> <tr> <td>Columbus</td> <td>Pender</td> </tr> <tr> <td>Duplin</td> <td></td> </tr> </table> | Alexander | Lincoln | Cabarrus | Mecklenburg | Catawba | Rowan | Cleveland | Stanly | Gaston | Union | Iredell | | Brunswick | New Hanover | Carteret | Onslow | Columbus | Pender | Duplin | | <p style="text-align: center;">WINSTON - SALEM</p> <p>DOUG MILLER, P.E. 585 Woughtown Street Winston - Salem, NC 27107</p> <p>COURIER - 09-55-01 (910) 771-4600 FAX # (910) 771 - 4631</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">Alamance</td> <td style="width: 33%;">Alleghany</td> <td style="width: 33%;">Ashe</td> </tr> <tr> <td>Caswell</td> <td>Davidson</td> <td>Davie</td> </tr> <tr> <td>Forsyth</td> <td>Guilford</td> <td>Rockingham</td> </tr> <tr> <td>Randolph</td> <td>Stokes</td> <td>Surry</td> </tr> <tr> <td>Watauga</td> <td>Wilkes</td> <td>Yadkin</td> </tr> </table> <p style="text-align: center;">WASHINGTON</p> <p>FLOYD WILLIAMS, P.G. 1424 Carolina Avenue Washington, NC 27889</p> <p>COURIER - 16-04-01 (919) 946 - 6481 (56) FAX # (919) 975 - 3716</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">Beaufort</td> <td style="width: 25%;">Bertie</td> <td style="width: 25%;">Camden</td> <td style="width: 25%;">Chowan</td> </tr> <tr> <td>Craven</td> <td>Currituck</td> <td>Dare</td> <td>Gates</td> </tr> <tr> <td>Greene</td> <td>Hertford</td> <td>Hyde</td> <td>Jones</td> </tr> <tr> <td>Lenoir</td> <td>Martin</td> <td>Pamlico</td> <td>Pasquotank</td> </tr> <tr> <td>Perquimans</td> <td>Pitt</td> <td>Tyrrell</td> <td></td> </tr> <tr> <td>Washington</td> <td>Wayne</td> <td></td> <td></td> </tr> </table> | Alamance | Alleghany | Ashe | Caswell | Davidson | Davie | Forsyth | Guilford | Rockingham | Randolph | Stokes | Surry | Watauga | Wilkes | Yadkin | Beaufort | Bertie | Camden | Chowan | Craven | Currituck | Dare | Gates | Greene | Hertford | Hyde | Jones | Lenoir | Martin | Pamlico | Pasquotank | Perquimans | Pitt | Tyrrell | | Washington | Wayne | | | <p style="text-align: center;">RALEIGH</p> <p>JOHN HOLLEY, P.E. 3800 Barrett Drive P.O. Box 27687 Raleigh, NC 27611</p> <p>INTEROFFICE (919) 571 - 4700 - (55) FAX # (919) 571 - 4718</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">Chatham</td> <td style="width: 33%;">Durham</td> <td style="width: 33%;">Edgecombe</td> </tr> <tr> <td>Franklin</td> <td>Granville</td> <td>Halifax</td> </tr> <tr> <td>Johnston</td> <td>Lee</td> <td>Nash</td> </tr> <tr> <td>Northampton</td> <td>Orange</td> <td>Person</td> </tr> <tr> <td>Vance</td> <td>Wake</td> <td></td> </tr> <tr> <td>Warren</td> <td>Wilson</td> <td></td> </tr> </table> | Chatham | Durham | Edgecombe | Franklin | Granville | Halifax | Johnston | Lee | Nash | Northampton | Orange | Person | Vance | Wake | | Warren | Wilson | |
| Avery | Buncombe | Burke | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| McDowell | Mitchell | Polk | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rutherford | Swain | Tennessee | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Anson | Montgomery | Scotland | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bladen | Moore | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cumberland | Richmond | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Harnett | Robeson | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hoke | Sampson | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Alexander | Lincoln | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cabarrus | Mecklenburg | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Catawba | Rowan | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cleveland | Stanly | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gaston | Union | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Iredell | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Brunswick | New Hanover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Carteret | Onslow | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Columbus | Pender | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Duplin | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Alamance | Alleghany | Ashe | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Caswell | Davidson | Davie | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Randolph | Stokes | Surry | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Craven | Currituck | Dare | Gates | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Greene | Hertford | Hyde | Jones | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lenoir | Martin | Pamlico | Pasquotank | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Perquimans | Pitt | Tyrrell | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Washington | Wayne | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chatham | Durham | Edgecombe | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Franklin | Granville | Halifax | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Johnston | Lee | Nash | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Northampton | Orange | Person | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vance | Wake | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Warren | Wilson | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SCHEDULE OF RECLAMATION COSTS
(based upon range of \$500 - \$5,000 per affected acre)

COMMODITY CODES: SG = Sand and/or Gravel, GS = Gemstone, Borrow = Borrow/fill dirt, CS = Crushed Stone, DS = Dimension Stone, FS = Feldspar, MI = Mica, LI = Lithium, PF = Pyrophyllite, OL = Olivine, KY = Kyanite/Sillimanite/Andalusite, PH = Phosphate, CL = Clay/Shale, PE = Peat, AU = Gold, TI = Titanium, and OT = Other

| Type | T/S Ponds | S.piles | W.piles | P.area/H.R. | Mine Excav. |
|---|----------------------------|------------|------------|-------------|----------------------------|
| SG, GS Borrow | \$500/ac. (L) 1500 (FI) | \$1800/ac. | \$2000/ac. | \$1800/ac. | \$500/ac. (L) 2000 (PD) |
| CS, DS, FS, MI, LI, PF, OL, KY | 500 (L) 1500 (FI) | 1800 | 2000 | 2000 | 500 (L) 2500 (PD) |
| PH, CL | 1000 (L) 2500 (FI) | 2500 | 5000 | 5000 | 2000 (L) 5000 (PD) |
| PE, AU, TI, OT | 1000 (L) 2500 (FI) | 2500 | 3000 | 3500 | 2000 (L) 5000 (PD) |

(L) = reclamation to a lake and revegetating sideslopes
(FI) = reclamation by filling in and revegetation
(PD) = reclamation by grading for positive drainage and revegetating

AS PER NCAC 15A 5B.0003, IF YOU DISAGREE WITH THE BOND AMOUNT DETERMINED BY THE BOND CALCULATION WORKSHEET, YOU MAY SUBMIT AN ESTIMATE OF RECLAMATION COSTS FROM A THIRD PARTY CONTRACTOR. SAID ESTIMATE MUST BE PROVIDED TO THE FOLLOWING ADDRESS WITHIN 30 DAYS FOLLOWING YOUR RECEIPT OF THIS BOND CALCULATION:

Mining Program
Land Quality Section
P.O. Box 27687
Raleigh, North Carolina 27611

ALL ESTIMATES MUST INCLUDE THE FOLLOWING, AS A MINIMUM:

- FINAL GRADING COSTS PER ACRE
- LIME AND FERTILIZER COSTS PER ACRE
- YEAR-ROUND SEEDING MIXTURE COSTS PER ACRE (FROM APPROVED REVEGETATION PLAN IN APPLICATION/PERMIT DOCUMENT)
- MULCH AND ANCHORING COSTS PER ACRE
- ANY OTHER RECLAMATION COSTS NECESSARY TO COMPLY WITH THE APPROVED RECLAMATION PLAN FOR THE SITE IN QUESTION

YOU WILL BE NOTIFIED AS SOON AS POSSIBLE OF THE DIRECTOR'S FINAL BOND DETERMINATION.

10/16/95

APPENDIX E

**Reclamation Bond Release
Request Form**

Sample Copy Only

Reclamation Bond Release Request Form

Instructions: Fill out this form if all mining has ceased, you have *completed* all of the required reclamation work, and you wish to be released from the conditions of your permit. Retain the pink copy for your records and return the yellow and white copies to the Land Quality Section Regional Office serving your area or to:

N.C. Department of Environment, Health and Natural Resources
Land Quality Section
P.O. Box 27687
Raleigh, North Carolina 27611-7687

Operator: _____

Address: _____

Mine Name: _____

Permit Number: _____

County: _____

Total Acres Reclaimed:

Tailing Ponds: _____ Stockpiles: _____ Wastepiles: _____

Processing Plant: _____ Active Mine Area: _____

I have completed all of the required reclamation work at the above referenced site. I am hereby requesting to be released from the conditions of this mining permit and that the posted bond be returned to my attention.

Signed: _____

Title: _____

Date: _____

Appendix F

Access EPA -- EPA on the INTERNET

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ACCESS EPA -- EPA ON THE INTERNET

Re:Sources

One cannot dispute the growth in popularity and volume of information being delivered on the Internet, the major expressway of the Information Highway. Monitoring various list services covering environmental, safety, and health topics can soon put you in a new world of information overload. It is hoped that this installment of Re:Sources will continue to guide you on your trek.

Environmental Waste Information

The EPA's Office of Solid Waste announced that an Internet Public Access Pilot designed to provide increased public understanding of, and additional access to, public information maintained by the Office of Solid Waste. Toward that end, EPA has provided a select set of information through the *EPA Public Access Server*.

Environmental News Sources

It is becoming easier to stay abreast of the most current environmental news, thanks to the Internet. News services are making their way on the information highway and can be tapped as convenient sources of timely information. The following is a listing of several news services that has surfaced on the internet in recent months.

EnviroNews Daily

A daily environmental news service has been established from the Washington, D.C. office of the EnviroLink Network. Now named the ***EnviroNews Daily Bulletin***, the 3-page bulletin will include information on:

- Breaking Environmental News
- Legislative and Executive action from Washington
- Environmental Non-Profit News
- Regional Environmental News
- Environmental Activism
- New studies and results

The Bulletin will be sent via Listserv to every e-mail address on the EnviroLink Network mailing list at no cost.

To subscribe just send an e-mail message to:

listserv@envirolink.org

with a single line in the body of the message with the command:

subscribe environews <your full name>

Please forward this message to colleagues and associates that are interested in environmental issues. If you have any questions or comments please direct them to:

dgarret@envirolink.org

Internet Video

The U.S. Geological Survey has produced a video titled *Connecting to the Internet*, by Elliott J. Christian. It is released as a USGS Open File Report and all material contained in the videotape is in the public domain.

This 45-minute video provides information on how to get connected to the international network of networks called "the Internet." The video is intended to make viewer aware of the complexities involved in shopping for the hardware and software products and services needed to connect to the Internet. Training is oriented toward the occasional user with a personal computer, a dial-up telephone lines, and an inexpensive modem.

To order Open-File Report 94-570, Price: \$20.00

Book and Open-File Report Sales
U.S. Geological Survey - Federal Center
Box 25286, MS 306
Denver, Colorado 80225

Access EPA - EPA on the Internet

Access EPA is a directory of Environmental Protection Agency and other public sector environmental information resources. The most recent third edition provides revised access to the myriad of sources of environmental information resources. The directory is provided in these sections:

- A listing of public information tools
- Major EPA dockets (booklets, pamphlets, and other official rulemaking documents reflecting EPA's consideration and promulgation of specific regulations or rules
- Clearinghouses and hotlines
- Records management programs
- Agency records management policy
- Means of access to EPA and other information
- EPA library and information services
- State environmental libraries

Supplemental information provided includes alternative state environmental; contacts, EPA scientific models. More than 300 individual sources are described in this directory.

Access EPA is also available online through the EPA Online Library System (OLS), with updating currently in progress. Simply dial (919) 549-0720; "IBMPSI"/OLS/"A"; (300-960-BAUD; even parity; 1/2 duplex; 7 databits; 1 stop).

Internet access is gained by EPAIBM.RTPNC.EPA.GOV;
"Public Access"/"OLS"/"a"

EPA publishes the *EPA Journal*, a quarterly magazine devoted to discussing current topics. Each issue is devoted to one theme with authors espousing a wide variety of viewpoints, both inside and outside of EPA, are solicited to contribute articles to the magazine.

To obtain your copy of *ACCESS EPA* or to subscribe to the *EPA Journal*:

ACCESS EPA: S/N 055-000-00437 at \$24 (\$30 foreign)

EPA Journal: \$4.25 single issues or \$7.50 per year

To: Superintendent of Documents
U.S. Government Printing Office
P.O. Box 371954
Pittsburgh, PA 15250-7954
(202) 512-2250 FAX

Environmental News and Events from EPA

EPA's Office of Pollution Prevention and Toxics (OPPT) Library provides a daily review of news events, press conferences, and hearings in the Washington, D.C. area, and synopses from U.S. newspapers. To subscribe to this service, send a message to:

LIBRARY-TSCA@epamail.epa.gov and write:

Subscribe <Your Name>

For additional information about this daily news and D.C. events, contact the OPPT Library at EPA Headquarters at (202) 260-3944.

EPA on the Internet

EPA has open a ListServe Network to distribute selected Federal Register documents automatically on the day of publication. Documents will be extracted directly from the **Government Printing Office (GPO) WASI** database to establish an electronic Federal government-wide "Environmental Sub-Set."

This effort is part of the EPA's paperless information initiative. The ListServes provide ASCII files with graphic notes. Both ASCII files and the corresponding TIFF graphics will also be accessible via the EPA public access gopher (gopher.epa.gov). The ListServes are described as follows:

| | |
|-----------------------|--|
| EPAFR-CONTENTS | This will contain the full-text table of contents with page number citations. |
| EPA-MEETINGS | This will contain all meeting notices. |
| EPA-SAB | Science Advisory Board. |
| EPA-IMPACT | Environmental impact statements. |
| EPA-SPECIES | Endangered species documents. |
| EPA-GENERAL | All general EPA documents, Presidential documents related to environmental issues, EPA environmental documents other than environmental impact and endangered species actions. |
| EPA-AIR | Air and Radiation documents. |
| EPA-PEST | Pesticide Programs documents. |
| EPA-TOX | Office of Pollution Prevention and Toxic Substances excluding Community-Right-To-Know (Toxic Release Inventory) documents. |
| EPA-TRI | Community-Right-To-Know toxic Release Inventory documents. |
| EPA-WASTE | Hazardous and Solid Waste documents. |
| EPA-WATER | Office of Water documents. |

To subscribe to any of the above ListServes, address your messages to:

Listserver@unixmail.rtpnc.epa.gov.

The message should read:

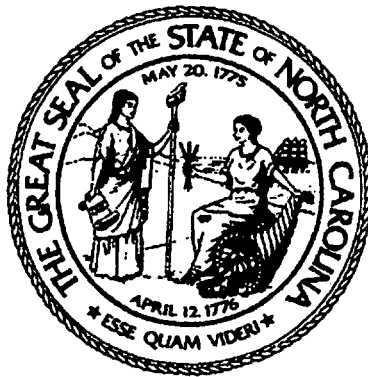
Subscribe <ListServe name> <your first name> <your last name>

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Appendix G

State of North Carolina - Public Information

How to Access State Government Information Over the Internet

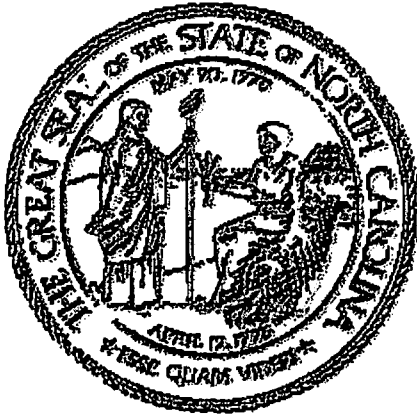


Note: Not all DEHNR information is currently available over the Internet, but is expected to be in the future. Look for announcements about the online version of the Surface Mining Manual and other DEHNR information.

The following pages show examples from the State of North Carolina Public Information Home Page and the Department of Environment, Health and Natural Resources Home Page accessed from the Internet at www@sips.state.nc.us

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State of North Carolina - Public Information



Last Updated February 28, 1996

Welcome to the North Carolina State Government World Wide Web Server for public agencies. This page is the entry point into our collection of information provided by state agencies and related projects such as the North Carolina Information Highway (NCIH) and bill status information from the North Carolina General Assembly. Our Frequently Asked Questions document is designed to aid North Carolina government employees and citizens in using our services. As we explore new and improved ways to provide access to North Carolina public information, we encourage you to try some of the Internet search sites that are currently available.



North Carolina State Capitol Area Telephone Directory

North Carolina State Government Information

- Commission on Workforce Preparedness
 - NC Literacy Resource Center (NC LRC)
- Department of Administration
 - Division of Purchase and Contract
 - State Courier Service
- Department of Agriculture
- Department of Commerce
 - Division of Travel and Tourism (press release)
 - Employment Security Commission (ESC)
 - Industrial Commission - Workers' Compensation
 - North Carolina Alliance for Competitive Technologies (NC ACTs)
- Department of Correction
- Department of Crime Control & Public Safety (CC&PS)
 - Alcohol Law Enforcement
 - Butner Public Safety
 - Civil Air Patrol
 - Crime Prevention
 - Emergency Management
 - Governor's Crime Commission
 - North Carolina National Guard
 - North Carolina State Highway Patrol
 - Victim & Justice Services (V&JS)
 - Community Service Work Program (CSWP)
 - Crime Victims Compensation Program and Commission (CVCP)
 - Rape Victims Assistance Program (RVAP)

- Department of Cultural Resources (DCR)
 - Archives and History
 - Office of State Archaeology
 - State Library
- Department of Environment, Health, and Natural Resources (DEHNR)
- Department of Human Resources (DHR)
 - North Carolina Health Care Reform Commission
- Department of Insurance (DOI)
- Department of Labor (DOL)
- Department of Public Instruction (DPI)
- Department of Revenue (DOR)
- Department of Transportation (DOT)
- Department of the Secretary of State
- North Carolina General Assembly
- Office of State Personnel Job Vacancies (provided by NCSU)
- Office of the Governor
 - Office of State Budget and Management (OSBM)
 - Office of State Planning (OSPL)
 - Center for Geographic Information and Analysis (CGIA)
- Office of the State Auditor
- Office of the State Controller (OSC)
 - Information Resource Management Commission (IRMC)
 - State Information Processing Services (SIPS)
- State Board of Elections

North Carolina Education Information Services

- NC Community College System
- University of North Carolina System
- Private Colleges and Universities
- K-12 Schools

Outreach, Extension, & Continuing Education Services

- Outreach, Extension and Continuing Education at NCSU
 - Industrial Extension Service at NCSU
 - NC Cooperative Extension Service at NCSU
- Institute of Government at UNC (contains the N.C. City and County sites)
- School of Public Health's Office of Continuing Education at UNC

Other Government Resources

- Federal Government Information (University at Buffalo)
- The Federal Web Locator (Villanova Center for Information Law and Policy)
- FindLaw (Directory of Legal Resources)
- The United Nations
- USA CityLink - (North Carolina CityLink)
- City.Net - (North Carolina City.Net)
- The Regulatory Resource Center (RRC) - (North Carolina Regulatory Activities)
- StateSearch (NASIRE)
- Government Management Information Sciences (GMIS)

Sensitive map of other North Carolina information services

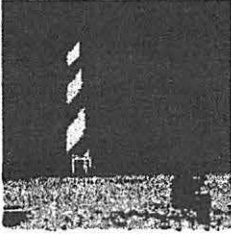
Internet Association of the Carolinas

Additional information about network access and services in North Carolina is available from the North Carolina Network Information Center (NCNIC).

General information about the "Web"

For new Internet users, we encourage you to familiarize yourself with the following: *Entering the World-Wide Web: A Guide to Cyberspace* , *Internic InfoGuide* , *Internet Web Text*. We have also produced our own *New Internet User's Top 10 Reading List*.

Web users may also be interested in how the Internet was created. The *Internet Time Line* details the history and growth of the Internet.

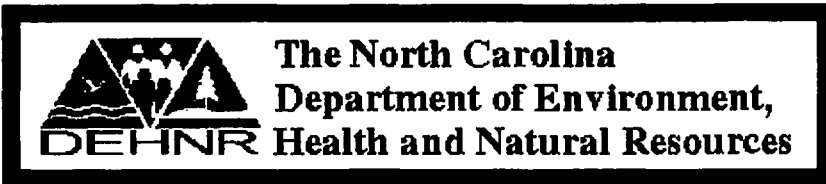


Please send comments and suggestions to

www@sips.state.nc.us



This page has been accessed 275,425 times since July 1, 1995.



Jonathan B. Howes, Secretary

Last Updated: February 29, 1996

ALERT!

Safe Drinking Water Act in Jeopardy

- *Who we are and what we do*
- DEHNR Division Home Pages
- DEHNR Regional Offices
- News Releases
- Calendar of Events
- DEHNR Contact People
- Telephone Numbers

■ DEHNR Documents

■ *Do you need information from another state?*

Travel electronically to the state government home page of your choice.

■ Links to information about the environment, health issues or natural resources?

Questions? Comments?

We would like to hear from you. We welcome your questions and/or comments. We now have a form you can use to send questions or comments. If you have a browser that handles forms, click here. Otherwise, click here. Please include a daytime telephone number.

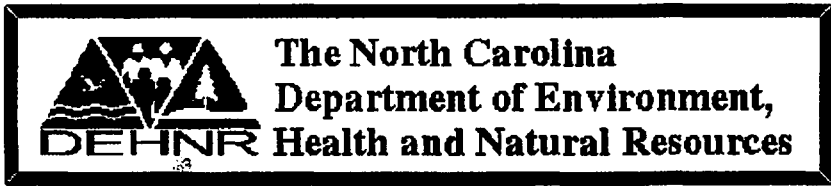
Who maintains this page?

The DEHNR pages are maintained by Bryan Bass in Office of Public Affairs. The Director of Public Affairs is Debbie Crane.

This page has been accessed 12,753 times.



Go to North Carolina State Government Home Page



Environmental Divisions

Division of Water Resources

Division of Environmental Management

Division of Solid Waste Management

Water Supply Watershed Protection

Office of Waste Reduction

Division of Marine Fisheries

Division of Land Resources

Office of Environmental Education

Office of the Small Business Ombudsman

Health Divisions

NC Public Health Home Page

Division of Environmental Health

Office of the Chief Medical Examiner

State Center for Health Statistics

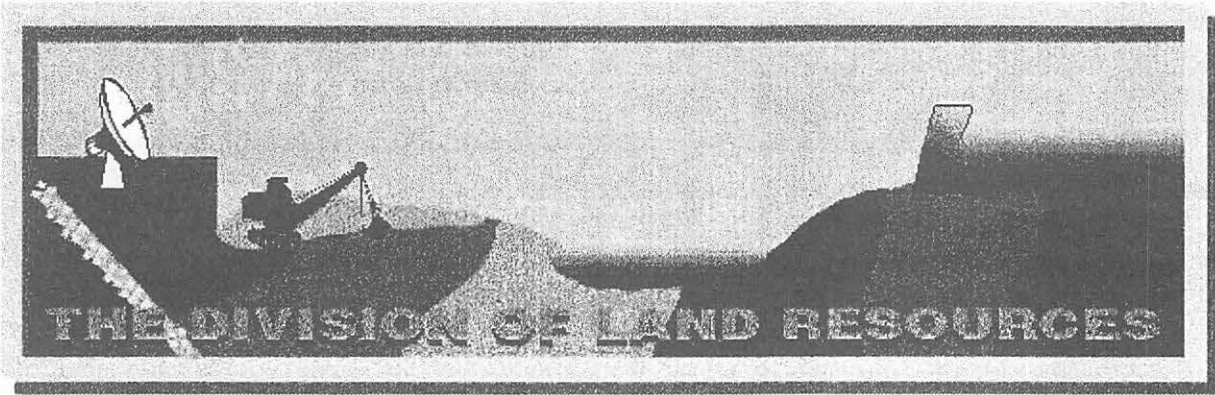
Natural Resources Divisions

Division of Forest Resources

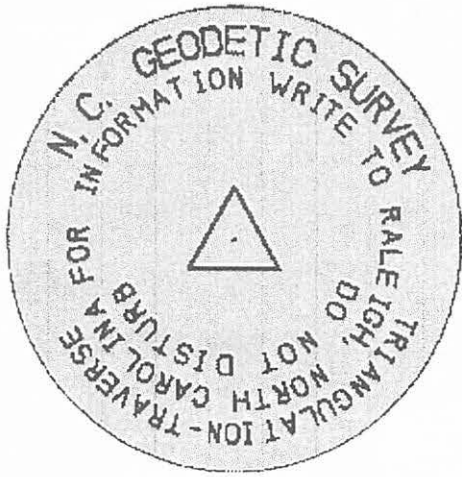
Division of Parks & Recreation



[Return to DEHNR Home Page.](#)



Surveys, maps, studies and protects the state's land and mineral resources through the programs and services of three sections.



N.C. GEODETIC SURVEY



LAND QUALITY SECTION



N.C. GEOLOGICAL SURVEY

Appendix H

Change of Address

State of North Carolina DEHNR

Division of Land Resources, Land Quality Section, *Surface Mining Manual*
First Edition, First Printing February 1996

Instructions: Please use this form to indicate changes to your address. When this form is complete, fold on the dotted lines, tape or staple edges, affix postage and mail.

Current Address

Name:

Street or P.O. Box:

City, State, Zip Code:

Telephone:

Address Change(s)

Name:

Street or P.O. Box:

City, State, Zip Code:

Telephone:

Comments

Place Postage
Stamp Here

From

To:
State of North Carolina
Department of Environment,
Health, and Natural Resources
Division of Land Resources
Land Quality Section
P.O. Box 27687
Raleigh, North Carolina 27611-7687

Attention: Land Quality Section
Surface Mining Manual
Manual No. _____

Appendix I

Comment Form

State of North Carolina DEHNR

Division of Land Resources, Land Quality Section, *Surface Mining Manual*,
First Edition, First Printing, February 1996

Instructions: Please use this form to comment on the usefulness of this manual. We encourage your comments and suggestions. Fold on two lines, tape edges, or staple, and mail.

On a scale of 1 to 5 (5 is the highest rating), rate this manual in these categories:

| | 1 | 2 | 3 | 4 | 5 |
|--------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Accuracy | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Thoroughness | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Organization | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Please list any additions or omissions in this manual. Be sure to include page numbers and figure numbers, if applicable.

Other comments and suggestions:

Please include the following information. Check here if this is a new address:

List the numbered copy of your Surface Mining Manual: Manual No. _____

Name _____ Title _____

Address _____

Telephone No. _____

May we call to discuss your comments? Yes No

From

Place Postage
Stamp Here

To:
State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Land Resources
Land Quality Section
P.O. Box 27687
Raleigh, North Carolina 27611-7687

**Attention: Land Quality Section
Surface Mining Manual**
