3 Tees, LLC
1300 Jan Way
Kingsport, Tennessee

Horse Creek Quarry

Application and Plans

For

NPDES Mining Permit

October 16, 2023

PREPARED BY:

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CONTENTS

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October 16, 2023

Daniel Lawrence
Tennessee Department of Environment and Conservation
Mining Section
3711 Middlebrook Pike
Knoxville, TN 37921

Subject: NPDES Permit For Proposed Limestone Quarry

Dear Mr. Lawrence:

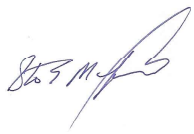
On behalf of my client, 3 Tees, LLC, we are requesting a NPDES permit for a limestone rock quarry to be located at 3725 Sullivan Gardens Parkway. 3 Tees has the option to purchase these properties if they can be rezoned and permitted.

3 Tees is proposing to develop a quarry would mine limestone rock, crush and screen the rock for aggregate, and stockpile the aggregate for sale for road construction and other uses. The actual quarry pit and processing facilities will be located approximately 1,200 ft from Sullivan Gardens Parkway and in so much as possible existing trees will be retained as a buffer and to screen the operations from the public.

The application forms, mine plans and design, and maps and drawings have been included in this submittal. Please review the included plan for compliance.

If you have any questions or require any additional information, please contact us.

Sincerely,



Stephen E. Maxfield, P. E.

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
Water-Based Systems
William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, TN 37243-1102

PERMIT CONTACT INFORMATION

Please complete all sections. If one person serves multiple functions, please repeat this information in each section.

PERMIT NUMBER: _____ **DATE:** October 10, 2023

PERMITTED FACILITY: Horse Creek Quarry **COUNTY:** Sullivan

OFFICIAL PERMIT CONTACT:

(The permit signatory authority, e.g. responsible corporate officer, principle executive officer or ranking elected official)

Official Contact: Vic Davis	Title or Position: Manager		
Mailing Address: 1300 Jan Way	City: Kingsport	State: TN	Zip: 37660
Phone number(s): 423-817-7300	E-mail: vicd@vdctn.com		

PERMIT BILLING ADDRESS (where invoices should be sent):

Billing Contact: Vic Davis	Title or Position: Manager		
Mailing Address: 1300 Jan Way	City: Kingsport	State: TN	Zip: 37660
Phone number(s): 423-817-7300	E-mail: vicd@vdctn.com		

FACILITY LOCATION (actual location of permit site and local contact for site activity):

Facility Location Contact: Vic Davis	Title or Position: Manager		
Facility Location (physical street address): 3725 Sullivan Gardens Parkway	City: Kingsport	State: TN	Zip: 37660
Phone number(s): 423-817-7300	E-mail: vicd@vdctn.com		

Alternate Contact (if desired):	Title or Position:		
Mailing Address:	City:	State:	Zip:
Phone number(s):	E-mail:		

FACILITY REPORTING (Discharge Monitoring Report (DMR) or other reporting):

Cognizant Official authorized for permit reporting: Vic Davis	Title or Position: Manager		
Mailing Address: 1300 Jan Way	City: Kingsport	State: TN	37660
Phone number(s): 423-817-7300	E-mail: vicd@vdctn.com		
Fax number for reporting: NA	Does the facility have interest in starting electronic DMR reporting? (Yes) ~~No~~		

Antidegradation Statement Guidance

To Be Used When Administering Tennessee's Antidegradation Statement as Associated with Obtaining a National Pollutant Discharge Elimination System (NPDES) Permit

The Antidegradation Statement Guidance document is to be used in accordance with the *Tennessee's Antidegradation Statement Rule 0400-40-03-.06* as it pertains to completing the application requirements for a NPDES permit. This document may be used as equivalent information for the EPA Worksheets (A, G, O, R, V, W, X, Y, Z, and AB for the private sector and O, P, Q, S, T, U, and AA for the public sector).

Specifically the document is divided into five parts. Parts 1 - 2 are general information regarding the facility and receiving water. Part 3 characterizes the level of degradation and the alternatives analysis (including social, economic, and environmental considerations of each alternative). Parts 4 – 5 detail the social and economic justification required to demonstrate that the degradation associated with the proposed discharge to an Exceptional Tennessee water (ETW) is justified. All permit applicants must complete, at a minimum, Parts 1-3 of this document. If you propose to discharge to an ETW, you must complete the document in its entirety.

Part 1. Contact Information	
1. Company name:	3 Tees, LLC
2. NPDES No.: TN00	
3. Facility or mine name:	Horse Creek Quarry
4. County:	Sullivan

Part 2. Mine and Stream Information

1. Please select the type of mine.

   Noncoal

   ☒ Limestone
   ☐ Sand and gravel
   ☐ Ball Clay
   ☐ Industrial sand
   ☐ Zinc
   ☐ Marble
   ☐ Dimension stone
   ☐ Quartzite
   ☐ Other

Coal

☐ Reclamation
☐ Active mining
☐ Post mining
☐ Prep plants / associated areas
☐ Tipple / load out

2. Please select the type of permit activity requested.

☐ Renewal of permit based on currently approved plans
☐ Renewal and modification of permit
☐ Modification of permit
■ New permit

3. Please list each outfall number, the name of receiving stream(s) and the corresponding stream designation (either Outstanding National Resource Water (ONRW), Exceptional Tennessee Water (ETW), or Non Exceptional Tennessee Water (Non ETW). Use separate paper if necessary.

Outfall(s)	Receiving Stream(s)	Stream Designation		
		ONRW	ETW	NON ETW
001	Horse Creek	☐	☐	☑
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐

Part 3. Characterize the Level of Degradation in the Proposed Activity and Analysis of Alternatives.

Please select one of the following levels and support your conclusion in the space that follows. Finally, complete the Alternatives Analysis.

Part 3-A- Level of Degradation

☐ The proposed activity is to renew an existing permit.
No changes to the acreage size, the number or location of outfall(s), or the volume of the existing discharge are proposed at this time. Renewal of the permit does not cause degradation above what is already permitted. (If this applies, skip to Part 3-B.)

■ The proposed activity will cause no measurable degradation.
Activities causing no measurable degradation are defined as those activities that do not cause a measurable increase in levels of a given parameter in the receiving water.

☐ The proposed activity will cause de minimis degradation.
Activities causing de minimis degradation are defined as those activities that cause degradation of a small magnitude as described in *Rule 0400-40-03-.04 (4)(a).* De minimis activities are described as single discharges that use less than five percent of the available assimilative capacity of the substance being discharged.

*Note, this option is not applicable if the 7Q10 of the receiving water is zero or if the receiving water has unavailable parameters for the pollutant to be discharged.

☐ The proposed activity will cause **more** than de minimis degradation.
Applications for activities causing degradation above the level of de minimis must analyze all reasonable alternatives and describe the level of degradation caused by each of the feasible alternatives. Analysis of each of these alternatives should also discuss the social and economic consequences of each alternative. Applicants must also demonstrate that the proposed degradation will not violate the water quality criteria for existing uses in the receiving waters and is necessary to accommodate important economic and social development in the area.

Attach additional pages as needed

Part 3-B - Alternatives Analysis

The following are examples of alternatives relative to natural resource extraction that are to be considered by applicants under Tennessee's *Antidegradation Statement 0400-40-03-.06*. Please check which treatment option(s) are currently used or will be used at the facility.

☐ Connect to existing treatment system

☐ Use over-sized ponds to increase treatment ability and holding capacity beyond the 10yr/24hr design storm.
Design capacity of the pollution control system
Current capacity of the system (%)

☐ Divert drainage from non-disturbed areas away from treatment structures, separating storm water from mine wastewater – i.e. diversion berm, ditches, other BMPs.

■ Use pit as primary treatment and/or storage to increase ability to hold water on site during storm events.

☐ Use ponds in series, forebays, and/or baffles to increase treatment and retention time.

☐ Use chemical treatment for pH adjustment or treatment of solids.

☐ Reuse/recycle treated process water to reduce discharge frequency. What percentage is already or will be recycled?

☐ Create no-discharge system.

☐ Use concurrent reclamation with mining activity.

☐ Land application of treated wastewater.

If treatment option used is not listed, please describe in space below.

2) Based on the alternatives indicated above, describe the level of degradation caused by each, as well as the social and economic consequences of each alternative. Examples of social and economic consequences may include but are not limited to, improved infrastructure such as road projects, housing development, as well as increasing local tax revenue and employment opportunities.

3) Can the level of treatment achievable at the facility ensure that water quality criteria will not be violated? Please explain.

The majority of the drainage will be received to the pit which will be well in excess as necessary for sedimentation. A small pond will be used for limited areas not controlled by the pit.

4) Is there another discharge location that would have less impact on the watershed?

No

5) Evaluate the mining technique used at the site. Would another technique result in a reduction in quantity or improvement in quality of the discharge from the site?

No

6) Were other locations for the facility evaluated? Describe the reasons why other locations were selected or rejected.

Other areas considered but area selected is best suited to topographyt

7) If this is an existing site, how long has the company mined at this location? If the option to mine has been reserved through payments to the owner or lessor of the rights, how long has that option been reserved? What is the projected life of the mine?

NA

Part 4. Economic Justification

If you are applying for a new or expanded permit that discharges to Exceptional Tennessee Waters (ETW), complete Parts 4 and 5.

The following section shows economic/financial information for the facility. This information is necessary to determine if the applicant can afford to implement appropriate pollution control measures to protect water quality in the receiving water. Attach additional pages as needed.

1. Annual cost of operation and maintenance of pollution control project (including but not limited to monitoring, inspection, permitting fees, waste disposal charges, repair, administration, and replacement).	$
2. Annual earnings without pollution control project costs	$
3. Annual earnings with pollution control project costs	$

Part 5. Social Justification

The following section shows social justification of the proposed degradation within the community where the facility is located. Attach additional pages as needed.

1. Define the affected community in this case; what areas are included?	
2. What is the current unemployment rate in affected community (if available)?	
3. What is the current national unemployment rate?	

4. How many jobs will the facility provide in the affected community?	
5. What is the average salary of these jobs?	
6. What is the median household income in affected community?	$
7. What is the total number of households in affected community?	$
8. What are the current total tax revenues in the affected community?	
9. What amount of tax revenues will be paid by the private entity to the affected community?	$

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
		Horse Creek Quarry	

Form 1 NPDES

U.S. Environmental Protection Agency
Application for NPDES Permit to Discharge Wastewater

GENERAL INFORMATION

SECTION 1. ACTIVITIES REQUIRING AN NPDES PERMIT (40 CFR 122.21(f) and (f)(1))

Activities Requiring an NPDES Permit

1.1 Applicants *Not Required* to Submit Form 1

1.1.1	Is the facility a new or existing **publicly owned treatment works**? If yes, STOP. Do NOT complete Form 1. Complete Form 2A. ☒ No	1.1.2	Is the facility a new or existing **treatment works treating domestic sewage**? If yes, STOP. Do NOT complete Form 1. Complete Form 2S. ☒ No

1.2 Applicants *Required* to Submit Form 1

1.2.1	Is the facility a **concentrated animal feeding operation** or a **concentrated aquatic animal production facility?** ☐ Yes ➔ Complete Form 1 ***and*** Form 2B. ☒ No	1.2.2	Is the facility an **existing** manufacturing, commercial, mining, or silvicultural **facility** that **is currently discharging process wastewater**? ☐ Yes ➔ Complete Form 1 ***and*** Form 2C. ☒ No
1.2.3	Is the facility a **new** manufacturing, commercial, mining, or silvicultural **facility** that has **not yet commenced to discharge**? ☒ Yes ➔ Complete Form 1 ***and*** Form 2D. ☐ No	1.2.4	Is the facility a **new or existing** manufacturing, commercial, mining, or silvicultural **facility** that **discharges only nonprocess wastewater**? ☐ Yes ➔ Complete Form 1 ***and*** Form 2E. ☒ No
1.2.5	Is the facility a **new or existing facility** whose discharge is composed entirely of **stormwater associated with industrial activity** or whose discharge is composed of **both stormwater and non-stormwater**? ☒ Yes ➔ Complete Form 1 ***and*** Form 2F unless exempted by 40 CFR 122.26(b)(14)(x) or (b)(15). ☐ No		

SECTION 2. NAME, MAILING ADDRESS, AND LOCATION (40 CFR 122.21(f)(2))

Name, Mailing Address, and Location

2.1 Facility Name

Horse Creek Quarry

2.2 EPA Identification Number

2.3 Facility Contact

Name (first and last)	Title	Phone number
Vic Davis	Manager	423-817-7300

Email address: vicd@vdctn.com

2.4 Facility Mailing Address

Street or P.O. box: 1300 Jan Way

City or town	State	ZIP code
Kingsport	TN	37660

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004

Name, Mailing Address, and Location Continued

2.5 **Facility Location**

Street, route number, or other specific identifier: 3725 Sullivan Gardens Parkway

County name	County code (if known)	
Sullivan		

City or town	State	ZIP code
Kingsport	TN	37660

SECTION 3. SIC AND NAICS CODES (40 CFR 122.21(f)(3))

SIC and NAICS Codes

3.1

SIC Code(s)	Description (optional)
1422	Limestone Quarry

3.2

NAICS Code(s)	Description (optional)
212312	Limestone Quarry

SECTION 4. OPERATOR INFORMATION (40 CFR 122.21(f)(4))

Operator Information

4.1 **Name of Operator**

3 Tees, LLC

4.2 Is the name you listed in Item 4.1 also the owner?

☒ Yes ☐ No

4.3 **Operator Status**

☐ Public—federal ☐ Public—state ☐ Other public (specify)_____

☒ Private ☐ Other (specify) _____

4.4 **Phone Number of Operator**

423-817-7300

Operator Information Continued

4.5 **Operator Address**

Street or P.O. Box: 1300 Jan Way

City or town	State	ZIP code
Kingsportt	TN	37660

Email address of operator: vicd@vdctn.com

SECTION 5. INDIAN LAND (40 CFR 122.21(f)(5))

Indian Land

5.1 Is the facility located on Indian Land?

☐ Yes ☒ No

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004

SECTION 6. EXISTING ENVIRONMENTAL PERMITS (40 CFR 122.21(f)(6))

Existing Environmental Permits

6.1 **Existing Environmental Permits** (check all that apply and print or type the corresponding permit number for each)

☐ NPDES (discharges to surface water)	☐ RCRA (hazardous wastes)	☐ UIC (underground injection of fluids)
☐ PSD (air emissions)	☐ Nonattainment program (CAA)	☐ NESHAPs (CAA)
☐ Ocean dumping (MPRSA)	☐ Dredge or fill (CWA Section 404)	☐ Other (specify)

SECTION 7. MAP (40 CFR 122.21(f)(7))

Map

7.1 Have you attached a topographic map containing all required information to this application? (See instructions for specific requirements.)

☒ Yes ☐ No ☐ CAFO—Not Applicable (See requirements in Form 2B.)

SECTION 8. NATURE OF BUSINESS (40 CFR 122.21(f)(8))

Nature of Business

8.1 Describe the nature of your business.

Limestone quarrying, crushing, screening

SECTION 9. COOLING WATER INTAKE STRUCTURES (40 CFR 122.21(f)(9))

Cooling Water Intake Structures

9.1 Does your facility use cooling water?

☐ Yes ☒ No ➔ SKIP to Item 10.1.

9.2 Identify the source of cooling water. (Note that facilities that use a cooling water intake structure as described at 40 CFR 125, Subparts I and J may have additional application requirements at 40 CFR 122.21(r). Consult with your NPDES permitting authority to determine what specific information needs to be submitted and when.)

SECTION 10. VARIANCE REQUESTS (40 CFR 122.21(f)(10))

Variance Requests

10.1 Do you intend to request or renew one or more of the variances authorized at 40 CFR 122.21(m)? (Check all that apply. Consult with your NPDES permitting authority to determine what information needs to be submitted and when.)

- ☐ Fundamentally different factors (CWA Section 301(n))
- ☐ Non-conventional pollutants (CWA Section 301(c) and (g))
- ☐ Not applicable
- ☐ Water quality related effluent limitations (CWA Section 302(b)(2))
- ☐ Thermal discharges (CWA Section 316(a))

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004

SECTION 11. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement

11.1 In Column 1 below, mark the sections of Form 1 that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.

Column 1	Column 2
☒ Section 1: Activities Requiring an NPDES Permit	☐ w/ attachments
☒ Section 2: Name, Mailing Address, and Location	☐ w/ attachments
☒ Section 3: SIC Codes	☐ w/ attachments
☒ Section 4: Operator Information	☐ w/ attachments
☐ Section 5: Indian Land	☐ w/ attachments
☐ Section 6: Existing Environmental Permits	☐ w/ attachments
☒ Section 7: Map	☒ w/ topographic map ☐ w/ additional attachments
☒ Section 8: Nature of Business	☐ w/ attachments
☐ Section 9: Cooling Water Intake Structures	☐ w/ attachments
☐ Section 10: Variance Requests	☐ w/ attachments
☒ Section 11: Checklist and Certification Statement	☐ w/ attachments

11.2 **Certification Statement**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name (print or type first and last name)	Official title
Vic Davis	Manager
Signature	Date signed
	10/16/23

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004

Form 2D NPDES

U.S. Environmental Protection Agency
Application for NPDES Permit to Discharge Wastewater

NEW MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL OPERATIONS THAT HAVE NOT YET COMMENCED DISCHARGE OF PROCESS WASTEWATER

SECTION 1. EXPECTED OUTFALL LOCATION (40 CFR 122.21(k)(1))

Outfall Location

1.1 Provide information on each of the facility's outfalls in the table below.

Outfall Number	Receiving Water Name	Latitude	Longitude
001	Horse Creek	36 ° 28 ′ 50 ″	82 ° 34 ′ 49 ″
		° ′ ″	° ′ ″
		° ′ ″	° ′ ″

SECTION 2. EXPECTED DISCHARGE DATE (40 CFR 122.21(k)(2))

Expected Discharge Date

2.1

Month	Day	Year

SECTION 3. AVERAGE FLOWS AND TREATMENT (40 CFR 122.21(k)(3)(i))

Average Flows and Treatment

3.1 For each outfall identified under Item 1.1, provide average flow and treatment information. Add additional sheets as necessary.

****Outfall Number**** _____

Operations Contributing to Flow

Operation	Average Flow
June 1, 2024	0.007 mgd
	mgd
	mgd
	mgd
	mgd

Treatment Units

Description (include size, flow rate through each treatment unit, retention time, etc.)	Code from Exhibit 2D-1	Final Disposal of Solid or Liquid Wastes Other Than by Discharge
Pond 1, 1 ac-ft	1-U	Sediment removed, dried, and placed
		in on site fill

Average Flows and Treatment Continued

3.1 Cont.

****Outfall Number**** _____

Operations Contributing to Flow

Operation	Average Flow
	mgd
	mgd
	mgd
	mgd
	mgd

Treatment Units

Description (include size, flow rate through each treatment unit, retention time, etc.)	Code from Exhibit 2D-1	Final Disposal of Solid or Liquid Wastes Other Than by Discharge

****Outfall Number**** _____

Operations Contributing to Flow

Operation	Average Flow
	mgd
	mgd
	mgd
	mgd
	mgd

Treatment Units

Description (include size, flow rate through each treatment unit, retention time, etc.)	Code from Exhibit 2D-1	Final Disposal of Solid or Liquid Wastes Other Than by Discharge

SECTION 4. LINE DRAWING (40 CFR 122.21(k)(3)(ii))

Line Drawing

4.1 Have you attached a line drawing to this application that shows the water flow through your facility with a water balance? (See instructions for drawing requirements. See Exhibit 2D–2 at end of instructions for example.)

☒ Yes ☐ No

SECTION 5. INTERMITTENT OR SEASONAL FLOWS (40 CFR 122.21(k)(3)(iii))

Intermittent or Seasonal Flows

5.1 Except for stormwater runoff, leaks, or spills, are any expected discharges described in Sections 1 and 3 intermittent or seasonal?

☐ Yes ☒ No ➔ SKIP to Section 6.

5.2 Provide information on intermittent or seasonal flows for each applicable outfall. Attach additional pages, if necessary.

Outfall Number	Operations (list)	Frequency		Rate and Volume		Duration
		Average Days/Week	Average Months/Year	Maximum Daily Discharge	Maximum Total Volume	
		days/week	months/year	mgd	gallons	days
		days/week	months/year	mgd	gallons	days
		days/week	months/year	mgd	gallons	days

Outfall Number	Operations (list)	Frequency		Rate and Volume		Duration
		Average Days/Week	Average Months/Year	Maximum Daily Discharge	Maximum Total Volume	
		days/week	months/year	mgd	gallons	days
		days/week	months/year	mgd	gallons	days
		days/week	months/year	mgd	gallons	days

Outfall Number	Operations (list)	Frequency		Rate and Volume		Duration
		Average Days/Week	Average Months/Year	Maximum Daily Discharge	Maximum Total Volume	
		days/week	months/year	mgd	gallons	days
		days/week	months/year	mgd	gallons	days
		days/week	months/year	mgd	gallons	days

SECTION 6. PRODUCTION (40 CFR 122.21(k)(4))

Production

6.1 Do any effluent limitation guidelines (ELGs) promulgated by EPA under CWA Section 304 apply to your facility?

☒ Yes ☐ No ➔ SKIP to Section 7.

6.2 Provide the following information on applicable ELGs.

ELG Category	ELG Subcategory	Regulatory Citation
Mineral Mining and Processing	Crushed Stone	40 CFR Section: 436.22.a.1,2

Production Continued

6.3 Are the limitations in the applicable ELGs expressed in terms of production (or other measure of operation)?

☐ Yes ☒ No ➔ SKIP to Section 7.

6.4 Provide an expected measure of average daily production expressed in terms and units of applicable ELGs.

Expected Actual Average Daily Production for First Three Years

Outfall Number	Year	Operation, Product, or Material	Quantity per Day (note basis if applicable)	Unit of Measure
	Year 1			
	Year 2			
	Year 3			
	Year 1			
	Year 2			
	Year 3			
	Year 1			
	Year 2			
	Year 3			

SECTION 7. EFFLUENT CHARACTERISTICS (40 CFR 122.21(k)(5))

Effluent Characteristics

See the instructions to determine the parameters and pollutants you are required to monitor and, in turn, the tables you must complete. Note that not all applicants need to complete each table.

Table A. Conventional and Non-Conventional Parameters

7.1 Are you requesting a waiver from your NPDES permitting authority for one or more of the Table A parameters for any of your outfalls?

☐ Yes ☒ No ➔SKIP to Item 7.3.

7.2 If yes, indicate the applicable outfalls below. Attach waiver request and other required information to the application.

Outfall number _____ Outfall number _____ Outfall number _____

7.3 Have you have provided estimates or actual data for all Table A parameters for each of your outfalls for which a waiver has not been requested and attached the results to this application package?

☒ Yes ☐ No; a waiver has been requested from my NPDES permitting authority for all parameters at all outfalls.

Table B. Certain Conventional and Non-Conventional Pollutants

7.4 Have you checked "Believed Present" for all pollutants listed in Table B that are limited directly or indirectly by an applicable ELG?

☒ Yes ☐ No

7.5 Have you checked "Believed Present" or "Believed Absent" for all remaining pollutants listed in Table B?

☒ Yes ☐ No

7.6 Have you provided estimated data for those Table B pollutants for which you have indicated are "Believed Present" in your discharge?

☒ Yes ☐ No

Effluent Characteristics Continued

Table C. Toxic Metals, Total Cyanide, and Total Phenols

7.7 Have you indicated whether pollutants are "Believed Present" or "Believed Absent" for all pollutants listed on Table C for all outfalls?

☑ Yes ☐ No

7.8 Have you completed Table C by providing estimated data for pollutants you indicated are "Believed Present," including the source of the information, for each applicable outfall?

☐ Yes ☑ No

Table D. Organic Toxic Pollutants (GC/MS Fractions)

7.9 Do you qualify for a small business exemption under the criteria specified in the Instructions?

☐ Yes ➔ Note that you qualify at the top of Table D, then SKIP to Item 7.12. ☑ No

7.10 Have you indicated whether pollutants are "Believed Present" or "Believed Absent" for all pollutants listed on Table D for all outfalls?

☑ Yes ☐ No

7.11 Have you completed Table D by providing estimated data for pollutants you indicated are "Believed Present," including the source of the information, for each applicable outfall?

☐ Yes ☑ No

2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD)

7.12 Does the facility use or manufacture one or more of the 2,3,7,8-TCDD congeners listed in the Instructions, or do you know or have reason to believe that TCDD is or may be present in effluent from any of your outfalls?

☐ Yes ☑ No

Table E. Certain Hazardous Substances and Asbestos

7.13 Have you indicated whether pollutants are "Believed Present" or "Believed Absent" for all pollutants listed in Table E for all outfalls?

☑ Yes ☑ No

7.14 Have you completed Table E by reporting the reason the pollutants are expected to be present and available quantitative data for pollutants you indicated are "Believed Present" for each applicable outfall?

☐ Yes ☑ No

Intake Credits, Tables A through E

7.15 Are you applying for net credits for the presence of any of the pollutants on Tables A through E for any of your outfalls?

☐ Yes ➔ Consult with your NPDES permitting authority. ☑ No

SECTION 8. ENGINEERING REPORT (40 CFR 122.21(k)(6))

Engineering Report

8.1 Do you have any technical evaluations of your wastewater treatment, including engineering reports or pilot plant studies?

☐ Yes ☑ No ➔ SKIP to Item 8.3.

8.2 Have you provided the technical evaluation and all related documents to this application package?

☑ Yes ☐ No

8.3 Are you aware of any existing plant(s) that resemble production processes, wastewater constituents, or wastewater treatment at your facility?

☐ Yes ☑ No ➔ SKIP to Section 9.

Engineering Report Continued

8.4 Provide the name and location of the similar plants.

Name of Similar Plants	Location of Similar Plants

SECTION 9. OTHER INFORMATION (40 CFR 122.21(k)(7))

Other Information

9.1 Have you attached any optional information that you would like considered as part of the application review process (i.e., material beyond that which you have already noted in the application as being attached)?

☐ Yes ☑ No ➔ SKIP to Section 10.

9.2 List the additional items and briefly note why you have included them.

1.

2.

3.

4.

5.

SECTION 10. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement

10.1 In Column 1 below, mark the sections of Form 2D that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to complete all sections or tables, or provide attachments.

Column 1	Column 2
☑ Section 1: Expected Outfall Location	☐ w/ attachments (e.g., responses for additional outfalls)
☑ Section 2: Expected Discharge Date	☐ w/ attachments
☑ Section 3: Average Flows and Treatment	☐ w/ attachments
☑ Section 4: Line Drawing	☐ w/ line drawing ☐ w/ additional attachments
☐ Section 5: Intermittent or Seasonal Flows	☐ w/ attachments
☐ Section 6: Production	☐ w/ attachments
☑ Section 7: Effluent Characteristics	☐ w/ Table A waiver request or approval ☑ Table A ☑ Table B ☑ Table C ☑ Table D ☑ Table E ☐ w/ other attachments
☐ Section 8: Engineering Report	☐ w/ technical evaluations and related attachments
☐ Section 9: Other Information	☐ w/ optional information
☑ Section 10: Checklist and Certification Statement	☐ w/ attachments

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Checklist and Certification Statement Continued

10.2 **Certification Statement**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name (print or type first and last name)	Official title
Vic Davis	Manager
Signature	**Date signed**
	10/16/23

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EPA Identification Number	Facility Name	Outfall Number	Form Approved 03/05/19 OMB No. 2040-0004

TABLE A. CONVENTIONAL AND NON CONVENTIONAL PARAMETER ESTIMATES (40 CFR 122.21(k)(5)(i))[1]

	Pollutant	Waiver Requested (if applicable)	Units		Effluent Data: Maximum Daily Discharge (required)	Effluent Data: Average Daily Discharge (if available)	Effluent Data: Source of Information (use codes in instructions)	Intake Water: Believed Present? (check only one response per parameter)	
☑	Check here if you have applied to your NPDES authority for a waiver for *all* of the pollutants listed on this table for the noted outfall.								
1.	Biochemical oxygen demand (BOD_5)	☐	Concentration					☐ Yes	☐ No
			Mass						
2.	Chemical oxygen demand (COD)	☐	Concentration					☐ Yes	☐ No
			Mass						
3.	Total organic carbon (TOC)	☐	Concentration					☐ Yes	☐ No
			Mass						
4.	Total suspended solids (TSS)	☐	Concentration					☐ Yes	☐ No
			Mass						
5.	Ammonia (as N)	☐	Concentration					☐ Yes	☐ No
			Mass						
6.	Flow	☐	Rate					☐ Yes	☐ No
7.	Temperature (winter)	☐	°C	°C				☐ Yes	☐ No
	Temperature (summer)	☐	°C	°C					
8.	pH (minimum)	☐	Standard units	s.u.				☐ Yes	☐ No
	pH (maximum)	☐	Standard units	s.u.					

[1] Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE B. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(k)(5)(ii))[1]

Pollutant		Presence or Absence (check one)		Estimated Data for Pollutants Expected to be Present or Limited by an ELG (Provide both concentration and mass estimates for each pollutant.)					
				Effluent					Intake Water
		Believed Present	Believed Absent	Units		Maximum Daily Discharge (required)	Average Daily Discharge (if available)	Source of Information (use codes in instructions)	Believed Present? (check only one response per item)
☑	Check (✓) here if you believe all pollutants listed to be absent from the discharge. You need not complete Table B for the noted outfall *unless* you have quantitative data available.								
1.	Bromide (24959-67-9)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
2.	Chlorine, total residual	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.	Color	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.	Fecal coliform	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
5.	Fluoride (16984-48-8)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
6.	Nitrate-nitrite	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
7.	Nitrogen, total organic (as N)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
8.	Oil and grease	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
9.	Phosphorus (as P), total (7723-14-0)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
10.	Sulfate (as SO_4) (14808-79-8)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
11.	Sulfide (as S)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					

TABLE B. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(k)(5)(ii))[1]

Pollutant		Presence or Absence (check one)		Estimated Data for Pollutants Expected to be Present or Limited by an ELG (Provide both concentration and mass estimates for each pollutant.)					
				Effluent					Intake Water
		Believed Present	Believed Absent	Units		Maximum Daily Discharge (required)	Average Daily Discharge (if available)	Source of Information (use codes in instructions)	Believed Present? (check only one response per item)
12.	Sulfite (as SO_3) (14265-45-3)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
13.	Surfactants	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
14.	Aluminum, total (7429-90-5)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
15.	Barium, total (7440-39-3)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
16.	Boron, total (7440-42-8)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
17.	Cobalt, total (7440-48-4)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
18.	Iron, total (7439-89-6)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
19.	Magnesium, total (7439-95-4)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
20.	Molybdenum, total (7439-98-7)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
21.	Manganese, total (7439-96-5)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
22.	Tin, total (7440-31-5)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					

TABLE B. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(k)(5)(ii))[1]

Pollutant		Presence or Absence (check one)		Estimated Data for Pollutants Expected to be Present or Limited by an ELG (Provide both concentration and mass estimates for each pollutant.)					
				Effluent					Intake Water
		Believed Present	Believed Absent	Units		Maximum Daily Discharge (required)	Average Daily Discharge (if available)	Source of Information (use codes in instructions)	Believed Present? (check only one response per item)
23.	Titanium, total (7440-32-6)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
24.	Radioactivity								
24.1	Alpha, total	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
24.2	Beta, total	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
24.3.	Radium, total	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
24.4	Radium 226, total	☐	☐	Concentration					☐ Yes ☐ No
				Mass					

[1] Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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EPA Identification Number	Facility Name	Outfall Number	Form Approved 03/05/19 OMB No. 2040-0004

TABLE C. TOXIC METALS, TOTAL CYANIDE, AND TOTAL PHENOLS (40 CFR 122.21(k)(5)(iii)(A))[1]

Pollutant (CAS Number, if available)		Presence or Absence (check one)		Estimated Data for Pollutants Expected to be Present in Discharge (Provide both concentration and mass estimates for each pollutant.)						
				Effluent					Intake Water	
		Believed Present	Believed Absent	Units	Maximum Daily Discharge (required)	Average Daily Discharge (if available)	Source of Information (Use codes in Instructions.)		Believed Present? (Check only one response per pollutant.)	
☑	Check (✓) here if you believe all pollutants listed to be absent from the discharge. You need not complete Table C for the noted outfall *unless* you have quantitative data available.									
1.	Antimony, Total (7440-36-0)	☐	☐	Concentration					☐ Yes	☐ No
				Mass						
2.	Arsenic, Total (7440-38-2)	☐	☐	Concentration					☐ Yes	☐ No
				Mass						
3.	Beryllium, Total (7440-41-7)	☐	☐	Concentration					☐ Yes	☐ No
				Mass						
4.	Cadmium, Total (7440-43-9)	☐	☐	Concentration					☐ Yes	☐ No
				Mass						
5.	Chromium, Total (7440-47-3)	☐	☐	Concentration					☐ Yes	☐ No
				Mass						
6.	Copper, Total (7440-50-8)	☐	☐	Concentration					☐ Yes	☐ No
				Mass						
7.	Lead, Total (7439-92-1)	☐	☐	Concentration					☐ Yes	☐ No
				Mass						
8.	Mercury, Total (7439-97-6)	☐	☐	Concentration					☐ Yes	☐ No
				Mass						
9.	Nickel, Total (7440-02-0)	☐	☐	Concentration					☐ Yes	☐ No
				Mass						
10.	Selenium, Total (7782-49-2)	☐	☐	Concentration					☐ Yes	☐ No
				Mass						
11.	Silver, Total (7440-22-4)	☐	☐	Concentration					☐ Yes	☐ No
				Mass						
12.	Thallium, Total (7440-28-0)	☐	☐	Concentration					☐ Yes	☐ No
				Mass						
13.	Zinc, Total (7440-66-6)	☐	☐	Concentration					☐ Yes	☐ No
				Mass						
14.	Cyanide, Total (57-12-5)	☐	☐	Concentration					☐ Yes	☐ No
				Mass						
15.	Phenols, Total	☐	☐	Concentration					☐ Yes	☐ No
				Mass						

[1] Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See Instructions and 40 CFR 122.21(e)(3).

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TABLE D. ORGANIC TOXIC POLLUTANTS (Gas Chromatography/Mass Spectrometry or GC/MS Fractions) (40 CFR 122.21(k)(5)(iii)(B))[1]

Pollutant (CAS Number, if available)		Presence or Absence (check one)		Estimated Data for Pollutants Expected to Be Present in Discharge (provide both concentration and mass estimates for each pollutant)					
						Effluent			Intake Water
		Believed Present	Believed Absent	Units		Maximum Daily Discharge	Average Daily Discharge	Source of Information (use codes in instructions)	Believed Present? (check only one response per pollutant)
☐	Check here if all pollutants listed in Table D are expected to be absent from your facility's discharge.								
☐	Check here if the facility believes it is exempt from Table D reporting requirements because it is a qualified small business. See the instructions for exemption criteria and for a list of materials you must attach to the application.								
Note: If you check either of the above boxes, you do not need to complete Table D for the noted outfall *unless* you have quantitative data available.									
1. Organic Toxic Pollutants (GC/MS Fraction—Volatile Compounds)									
1.1	Acrolein (107-02-8)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.2	Acrylonitrile (107-13-1)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.3	Benzene (71-43-2)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.4	Bromoform (75-25-2)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.5	Carbon tetrachloride (56-23-5)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.6	Chlorobenzene (108-90-7)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.7	Chlorodibromomethane (124-48-1)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.8	Chloroethane (75-00-3)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.9	2-chloroethylvinyl ether (110-75-8)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.10	Chloroform (67-66-3)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.11	Dichlorobromomethane (75-27-4)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					

TABLE D. ORGANIC TOXIC POLLUTANTS (Gas Chromatography/Mass Spectrometry or GC/MS Fractions) (40 CFR 122.21(k)(5)(iii)(B))[1]

Pollutant (CAS Number, if available)		Presence or Absence (check one)		Estimated Data for Pollutants Expected to Be Present in Discharge (provide both concentration and mass estimates for each pollutant)					
						Effluent			Intake Water
		Believed Present	Believed Absent	Units		Maximum Daily Discharge	Average Daily Discharge	Source of Information (use codes in instructions)	Believed Present? (check only one response per pollutant)
1.12	1,1-dichloroethane (75-34-3)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.13	1,2-dichloroethane (107-06-2)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.14	1,1-dichloroethylene (75-35-4)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.15	1,2-dichloropropane (78-87-5)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.16	1,3-dichloropropylene (542-75-6)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.17	Ethylbenzene (100-41-4)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.18	Methyl bromide (74-83-9)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.19	Methyl chloride (74-87-3)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.20	Methylene chloride (75-09-2)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.21	1,1,2,2-tetrachloroethane (79-34-5)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.22	Tetrachloroethylene (127-18-4)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.23	Toluene (108-88-3)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.24	1,2-trans-dichloroethylene (156-60-5)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					

TABLE D. ORGANIC TOXIC POLLUTANTS (Gas Chromatography/Mass Spectrometry or GC/MS Fractions) (40 CFR 122.21(k)(5)(iii)(B))[1]

Pollutant (CAS Number, if available)		Presence or Absence (check one)		Estimated Data for Pollutants Expected to Be Present in Discharge (provide both concentration and mass estimates for each pollutant)					
						Effluent			Intake Water
		Believed Present	Believed Absent	Units		Maximum Daily Discharge	Average Daily Discharge	Source of Information (use codes in instructions)	Believed Present? (check only one response per pollutant)
1.25	1,1,1-trichloroethane (71-55-6)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.26	1,1,2-trichloroethane (79-00-5)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.27	Trichloroethylene (79-01-6)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
1.28	Vinyl chloride (75-01-4)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
2. Organic Toxic Pollutants (GC/MS Fraction—Acid Compounds)									
2.1	2-chlorophenol (95-57-8)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
2.2	2,4-dichlorophenol (120-83-2)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
2.3	2,4-dimethylphenol (105-67-9)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
2.4	4,6-dinitro-o-cresol (534-52-1)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
2.5	2,4-dinitrophenol (51-28-5)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
2.6	2-nitrophenol (88-75-5)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
2.7	4-nitrophenol (100-02-7)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
2.8	p-chloro-m-cresol (59-50-7)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
2.9	Pentachlorophenol (87-86-5)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					

TABLE D. ORGANIC TOXIC POLLUTANTS (Gas Chromatography/Mass Spectrometry or GC/MS Fractions) (40 CFR 122.21(k)(5)(iii)(B))[1]

Pollutant (CAS Number, if available)		Presence or Absence (check one)		Estimated Data for Pollutants Expected to Be Present in Discharge (provide both concentration and mass estimates for each pollutant)					
						Effluent			Intake Water
		Believed Present	Believed Absent	Units		Maximum Daily Discharge	Average Daily Discharge	Source of Information (use codes in instructions)	Believed Present? (check only one response per pollutant)
2.10	Phenol (108-95-2)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
2.11	2,4,6-trichlorophenol (88-05-2)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3. Organic Toxic Pollutants (GC/MS Fraction—Base /Neutral Compounds)									
3.1	Acenaphthene (83-32-9)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.2	Acenaphthylene (208-96-8)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.3	Anthracene (120-12-7)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.4	Benzidine (92-87-5)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.5	Benzo (a) anthracene (56-55-3)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.6	Benzo (a) pyrene (50-32-8)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.7	3,4-benzofluoranthene (205-99-2)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.8	Benzo (ghi) perylene (191-24-2)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.9	Benzo (k) fluoranthene (207-08-9)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.10	Bis (2-chloroethoxy) methane (111-91-1)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.11	Bis (2-chloroethyl) ether (111-44-4)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					

TABLE D. ORGANIC TOXIC POLLUTANTS (Gas Chromatography/Mass Spectrometry or GC/MS Fractions) (40 CFR 122.21(k)(5)(iii)(B))[1]

Pollutant (CAS Number, if available)		Presence or Absence (check one)		Estimated Data for Pollutants Expected to Be Present in Discharge (provide both concentration and mass estimates for each pollutant)					
						Effluent			Intake Water
		Believed Present	Believed Absent	Units		Maximum Daily Discharge	Average Daily Discharge	Source of Information (use codes in instructions)	Believed Present? (check only one response per pollutant)
3.12	Bis (2-chloroisopropyl) ether (102-80-1)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.13	Bis (2-ethylhexyl) phthalate (117-81-7)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.14	4-bromophenyl phenyl ether (101-55-3)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.15	Butyl benzyl phthalate (85-68-7)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.16	2-chloronaphthalene (91-58-7)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.17	4-chlorophenyl phenyl ether (7005-72-3)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.18	Chrysene (218-01-9)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.19	Dibenzo (a,h) anthracene (53-70-3)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.20	1,2-dichlorobenzene (95-50-1)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.21	1,3-dichlorobenzene (541-73-1)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.22	1,4-dichlorobenzene (106-46-7)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.23	3,3-dichlorobenzidine (91-94-1)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.24	Diethyl phthalate (84-66-2)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.25	Dimethyl phthalate (131-11-3)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					

TABLE D. ORGANIC TOXIC POLLUTANTS (Gas Chromatography/Mass Spectrometry or GC/MS Fractions) (40 CFR 122.21(k)(5)(iii)(B))[1]

Pollutant (CAS Number, if available)		Presence or Absence (check one)		Estimated Data for Pollutants Expected to Be Present in Discharge (provide both concentration and mass estimates for each pollutant)					
						Effluent			Intake Water
		Believed Present	Believed Absent	Units		Maximum Daily Discharge	Average Daily Discharge	Source of Information (use codes in instructions)	Believed Present? (check only one response per pollutant)
3.26	Di-n-butyl phthalate (84-74-2)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.27	2,4-dinitrotoluene (121-14-2)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.28	2,6-dinitrotoluene (606-20-2)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.29	Di-n-octyl phthalate (117-84-0)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.30	1,2-diphenylhydrazine (as azobenzene) (122-66-7)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.31	Fluoranthene (206-44-0)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.32	Fluorene (86-73-7)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.33	Hexachlorobenzene (118-74-1)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.34	Hexachlorobutadiene (87-68-3)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.35	Hexachlorocyclopentadiene (77-47-4)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.36	Hexachloroethane (67-72-1)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.37.	Indeno (1,2,3-cd) pyrene (193-39-5)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.38	Isophorone (78-59-1)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.39	Naphthalene (91-20-3)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					

TABLE D. ORGANIC TOXIC POLLUTANTS (Gas Chromatography/Mass Spectrometry or GC/MS Fractions) (40 CFR 122.21(k)(5)(iii)(B))[1]

Pollutant (CAS Number, if available)		Presence or Absence (check one)		Estimated Data for Pollutants Expected to Be Present in Discharge (provide both concentration and mass estimates for each pollutant)					
						Effluent			Intake Water
		Believed Present	Believed Absent	Units		Maximum Daily Discharge	Average Daily Discharge	Source of Information (use codes in instructions)	Believed Present? (check only one response per pollutant)
3.40	Nitrobenzene (98-95-3)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.41	N-nitrosodimethylamine (62-75-9)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.42	N-nitrosodi-n-propylamine (621-64-7)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.43	N-nitrosodiphenylamine (86-30-6)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.44	Phenanthrene (85-01-8)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.45	Pyrene (129-00-0)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
3.46	1,2,4-trichlorobenzene (120-82-1)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4. Organic Toxic Pollutants (GC/MS Fraction—Pesticides)									
4.1.	Aldrin (309-00-2)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.2	α-BHC (319-84-6)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.3	β-BHC (319-85-7)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.4	γ-BHC (58-89-9)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.5	δ-BHC (319-86-8)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.6	Chlordane (57-74-9)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					

TABLE D. ORGANIC TOXIC POLLUTANTS (Gas Chromatography/Mass Spectrometry or GC/MS Fractions) (40 CFR 122.21(k)(5)(iii)(B))[1]

Pollutant (CAS Number, if available)		Presence or Absence (check one)		Estimated Data for Pollutants Expected to Be Present in Discharge (provide both concentration and mass estimates for each pollutant)					
						Effluent			Intake Water
		Believed Present	Believed Absent	Units		Maximum Daily Discharge	Average Daily Discharge	Source of Information (use codes in instructions)	Believed Present? (check only one response per pollutant)
4.7	4,4'-DDT (50-29-3)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.8	4,4'-DDE (72-55-9)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.9	4,4'-DDD (72-54-8)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.10	Dieldrin (60-57-1)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.11	α-endosulfan (115-29-7)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.12	β-endosulfan (115-29-7)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.13	Endosulfan sulfate (1031-07-8)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.14	Endrin (72-20-8)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.15	Endrin aldehyde (7421-93-4)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					

TABLE D. ORGANIC TOXIC POLLUTANTS (Gas Chromatography/Mass Spectrometry or GC/MS Fractions) (40 CFR 122.21(k)(5)(iii)(B))[1]

Pollutant (CAS Number, if available)		Presence or Absence (check one)		Estimated Data for Pollutants Expected to Be Present in Discharge (provide both concentration and mass estimates for each pollutant)					
						Effluent			Intake Water
		Believed Present	Believed Absent	Units		Maximum Daily Discharge	Average Daily Discharge	Source of Information (use codes in instructions)	Believed Present? (check only one response per pollutant)
4.16	Heptachlor (76-44-8)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.17	Heptachlor epoxide (1024-57-3)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.18	PCB-1242 (53469-21-9)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.19	PCB-1254 (11097-69-1)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.20	PCB-1221 (11104-28-2)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.21	PCB-1232 (11141-16-5)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.22	PCB-1248 (12672-29-6)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.23	PCB-1260 (11096-82-5)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.24	PCB-1016 (12674-11-2)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					
4.25	Toxaphene (8001-35-2)	☐	☐	Concentration					☐ Yes ☐ No
				Mass					

[1] Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE E. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(k)(5)(v))[1]

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
☑	Check (✓) here if you believe all pollutants listed to be absent from the discharge. You need not complete Table E for the noted outfall *unless* you have quantitative data available.				
1.	Asbestos	☐	☐		
2.	Acetaldehyde	☐	☐		
3.	Allyl alcohol	☐	☐		
4.	Allyl chloride	☐	☐		
5.	Amyl acetate	☐	☐		
6.	Aniline	☐	☐		
7.	Benzonitrile	☐	☐		
8.	Benzyl chloride	☐	☐		
9.	Butyl acetate	☐	☐		
10.	Butylamine	☐	☐		
11.	Captan	☐	☐		
12.	Carbaryl	☐	☐		
13.	Carbofuran	☐	☐		
14.	Carbon disulfide	☐	☐		
15.	Chlorpyrifos	☐	☐		
16.	Coumaphos	☐	☐		
17.	Cresol	☐	☐		
18.	Crotonaldehyde	☐	☐		

TABLE E. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(k)(5)(v))[1]

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
19.	Cyclohexane	☐	☐		
20.	2,4-D (2,4-dichlorophenoxyacetic acid)	☐	☐		
21.	Diazinon	☐	☐		
22.	Dicamba	☐	☐		
23.	Dichlobenil	☐	☐		
24.	Dichlone	☐	☐		
25.	2,2-dichloropropionic acid	☐	☐		
26.	Dichlorvos	☐	☐		
27.	Diethyl amine	☐	☐		
28.	Dimethyl amine	☐	☐		
29.	Dintrobenzene	☐	☐		
30.	Diquat	☐	☐		
31.	Disulfoton	☐	☐		
32.	Diuron	☐	☐		
33.	Epichlorohydrin	☐	☐		
34.	Ethion	☐	☐		
35.	Ethylene diamine	☐	☐		
36.	Ethylene dibromide	☐	☐		
37.	Formaldehyde	☐	☐		

TABLE E. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(k)(5)(v))[1]

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
38.	Furfural	☐	☐		
39.	Guthion	☐	☐		
40.	Isoprene	☐	☐		
41.	Isopropanolamine	☐	☐		
42.	Kelthane	☐	☐		
43.	Kepone	☐	☐		
44.	Malathion	☐	☐		
45.	Mercaptodimethur	☐	☐		
46.	Methoxychlor	☐	☐		
47.	Methyl mercaptan	☐	☐		
48.	Methyl methacrylate	☐	☐		
49.	Methyl parathion	☐	☐		
50.	Mevinphos	☐	☐		
51.	Mexacarbate	☐	☐		
52.	Monoethyl amine	☐	☐		
53.	Monomethyl amine	☐	☐		
54.	Naled	☐	☐		
55.	Naphthenic acid	☐	☐		
56.	Nitrotoluene	☐	☐		

TABLE E. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(k)(5)(v))[1]

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
57.	Parathion	☐	☐		
58.	Phenolsulfonate	☐	☐		
59.	Phosgene	☐	☐		
60.	Propargite	☐	☐		
61.	Propylene oxide	☐	☐		
62.	Pyrethrins	☐	☐		
63.	Quinoline	☐	☐		
64.	Resorcinol	☐	☐		
65.	Strontium	☐	☐		
66.	Strychnine	☐	☐		
67.	Styrene	☐	☐		
68.	2,4,5-T (2,4,5-trichlorophenoxyacetic acid)	☐	☐		
69.	TDE (tetrachlorodiphenyl ethane)	☐	☐		
70.	2,4,5-TP [2-(2,4,5-trichlorophenoxy) propanoic acid]	☐	☐		
71.	Trichlorofon	☐	☐		
72.	Triethanolamine	☐	☐		
73.	Triethylamine	☐	☐		
74.	Trimethylamine	☐	☐		
75.	Uranium	☐	☐		

TABLE E. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(k)(5)(v))[1]

Pollutant		Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
76.	Vanadium	☐	☐		
77.	Vinyl acetate	☐	☐		
78.	Xylene	☐	☐		
79.	Xylenol	☐	☐		
80.	Zirconium	☐	☐		

[1] Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

INTRODUCTION

3 Tees, LLC is requesting a NPDES Permit for a quarry on property located on 3725 Sullivan Gardens Parkway, Kingsport, Tennessee. 3 Tees has an option to purchase these properties and plans to develop a limestone quarry to manufacture stone aggregate for construction. The proposed quarry will be located approximately 1,200 ft from Sullivan Gardens Parkway. Access to the proposed quarry site will be via an existing drive/farm road from Sullivan Gardens Parkway. An existing bridge crosses Horse Creek. These facilities will be upgraded suitable for the proposed use.

SITE LOCATION

3 Tees proposed operation will be an open pit limestone excavation, crushing and screening operation located at 3725 Sullivan Gardens Parkway, Kingsport, Tennessee in Sullivan County.

The site is located in the north west section of the Sullivan Gardens United States Geological Services (U.S.G.S) Sullivan Gardens 7.5' Quadrangle at the geographic coordinates of 36°28'43" North Latitude and 82°34'49" West Longitude. The site is located on the south side of Horse Creek at approximate elevation of 1350 ft. Horse Creek is approximately 1,000 ft. from the proposed quarry at an elevation of 1215 ft. Horse Creek is a first order perennial stream that flows north east to the Holston River.

The following tracts are located in the proposed rezoning:

Tract ID	Owner	Acres	Current Use
59.10	Preston H. Taylor		Drive/Farm Access
59.20	Preston H. Taylor		Agricultural
59.00	Preston H. Taylor	90	Agricultural

A location map is included with the drawings.

SITE DESCRIPTION

The proposed quarry will be located in a gently sloping area at approximately 1325 ft. in elevation approximately 1,000 ft South and 110 ft. above Horse Creek. The terrain between the proposed quarry and Horse Creek is fairly steep. Both eastward and southward the elevation rises to above 1,425 ft. to form a series of small knobs. On the west side the terrain is not as steep and rises to 1,350 ft. A sink hole is located south of the proposed site, between the knobs to the south and the less steep terrain to the west. The sink hole is at 1,290 ft. elevation.

On the north side of Horse Creek and south of Sullivan Gardens Parkway the terrain is nearly level at an elevation of 1220 ft. The elevation of Sullivan Gardens Parkway is 1230 ft. This area is in the FEMA floodway with a flood elevation of 1223. The bottom elevation of Horse Creek in this area is 1215 ft.

Drainage from the proposed quarry site is northward to Horse Creek in swales. This would only occur during periods of heavy rainfall. The site is high and dry with no indications of perennial or even intermittent stream flow that would be considered jurisdictional waters of the United States and regulated by the U. S. Army Corps of Engineers under Section 401 of the Clean Water Act. No wetlands were identified on the property either in the sink hole or along Horse Creek.

Access to the site from Sullivan Gardens Parkway will be via a road traversing southeast. From the parkway to Horse Creek for a distance of 375 ft the road will slope down at approximately 1%. A new bridge will be constructed across Horse Creek. The road will traverse along the swale a distance of 650 ft upward at a grade of 10% to the screening area and the proposed quarry pit.

The proposed quarry pit will be developed from approximately 1300 ft. in elevation to a proposed bottom of 1220 ft in elevation. The pit will be approximately 400 ft wide and 700 ft long. The pit walls will be developed with a slope ratio of 0.25 horizontal to 1 vertical. A 25 ft. wide bench is proposed in the pit walls at vertical intervals of 50 ft. A 25 ft. wide pit road will be developed as the pit progresses with a grade of 10 %.

A fill area to store topsoil and two (2) fill areas to store overburden will be constructed southeast of the pit. The topsoil fill will be approximately 10 ft. deep with a top elevation of 1335 ft. Overburden Fill No. 1 will be 50 ft. deep with a final elevation of 1350 ft. Overburden Fill No. 2 will be 70 ft. deep with a final elevation of 1400 ft. The front face of the fill will be sloped at a ratio of 2 horizontal to 1 vertical.

A proposed site plan at a scale of 1" = 200' is included with this submittal. Both existing and proposed elevation contours at 5 ft. intervals is shown on the site plan.

LAND USE

The existing land use on and around the proposed quarry include single family residential, agricultural and unmanaged forest lands. The following table is a summary of land use by tract.

LAND USE TABLE			
Tract ID	**Owner**	**Acres**	**Current Use**
59.10	Preston H. Taylor		Drive/Farm Access
59.20	Preston H. Taylor		Agricultural
59.00	Preston H. Taylor	90	Agricultural/Unmanaged Forest
178.02	Horse Creek Farms		Agricultural/Unmanaged Forest
175.00	Joe & Rebecca Riggs		Single Residential
53.10	Billy & Dinah Lawson		Agricultural
54.00	Billy & Dinah Lawson		Agricultural/Single Residential
58.00	Danny & Crystal Edwards		Agricultural/Single Residential
59.50	City of Kingsport		Public Recreational
64.00	Harry Bachman, Jr.		Agricultural/Unmanaged Forest
60.00	Harry Bachman, Jr.		Agricultural/Unmanaged Forest
166.00	Jerry & Gladys Dean		Agricultural/Unmanaged Forest
149.00	Charles & Letitia Williams		Agricultural/Unmanaged Forest
178.1	Jill & Kenneth Rich		Single Residential
55.00	Ruth Blix		Single Residential
57.00	Derek Blix		Single Residential
53.00	Nau & Natalie Tran		Single Residential
52.00	Jeremiah Blair		Single Residential
178.01	Josephine Riggs		Agricultural

HIGHWAY ACCESS

Highway access to the proposed quarry is Tennessee State Route 93. State Route 93 begins at an intersection with US 11E/US 321 in Greeneville, TN. It then heads northeast toward Kingsport, TN. The route intersects State Route 81 just south of Fall Branch and heads more northerly. In Fall Branch, it has an interchange with Interstate 81exit 50 and continues north to Kingsport where it intersects State Route 347 just south of there. In Kingsport, it has an interchange with Interstate 26 and State Route 126 for the first time. This also marks the western terminus of State Route 126. The route heads east as a controlled-access southern bypass of the city passing by Eastman Chemical Company and crossing over the South Fork Holston River and has an interchange with State Route 36. Then, it intersects State Route 126 for a second time at an interchange. State Route 93 then turns back north to an interchange with US 11W and then it meets its northern terminus, at the Tennessee–Virginia State Line in Bloomingdale.

All of State Route 93, from just north of Interstate 81 to US 11W, is included as part of the National Highway System, a system of roadways important to the nation's economy, defense, and mobility. This section is also classified as a principal arterial route.

This highway is named Sullivan Gardens Parkway in the vicinity of the site. The highway is four (4) lanes undivided with a center turning lane. Each lane, including the turn lane is 12 ft. wide. There are paved shoulders on both sides 10 ft. wide.

The average number of vehicles per day on this segment the highway is 4,500, with about 47% north bound and 53% south bound. The average number of vehicles per hour is approximately 250 between the hours of 7 a.m. to 4 p.m., with a peak volume 450 vehicles from 5 to 6 p.m. Site distance to the north is 1,000 ft. or more and site distance to the south is 775 ft.

These road conditions are suitable for the proposed M-2 zoning district. Once re-zoning is approved, 3 Tees shall apply for a commercial entrance to the site from State Route 93 through the Tennessee Department of Transportation. The entrance shall incorporate all geometrics required for the intended use.

OPERATION PLAN

Limestone rock will be mined at this site utilizing the open pit quarry surface mining technique. Drilling and blasting will be utilized to break the rock. Once broken, the raw material will then be trucked or carried to a portable crushing and screening machine. The crusher will reduce the large rock to smaller sizes suitable for sale and screening. The screening will isolate the product by size for sale. Once sized, the material will sold and removed from the area by trucks. The screened-off material will be stored and used to reclaim disturbed areas. The proposed pit will be over 200 feet deep maximum.

Before any disturbance begins, sediment control will be provided. Silt fence may be used initially and on a temporary basis until such time as the sediment control basin is constructed and the pit is developed below grade. The basin will be constructed on the flat on the south side of Horse Creek. More detail is provided in The Drainage and Sediment Control section of this narrative.

The haulroad will be constructed from Sullivan Gardens Parkway to the proposed quarry. It will generally follow the old farm road, only upgraded for the intended use and size of vehicles using the road. The road will be constructed by the cut/fill method, with an average grade of 10%. Ditches provided on the cut side and a safety berm provided on the fill side. The road will be graded at 2% toward the ditch. The road shall be adequately surface for the type of vehicles using it.

Following road construction, the mining area will first be cleared of trees and brush. The trees and brush will be either windrowed along the edge of the clearing to aid in sediment or erosion control, burned in accordance the governing local, state, or federal law or they will be removed from the site.

Following clearing, the available topsoil will be salvaged. This material will be placed in the designated topsoil fill southeast of the proposed pit. After removal of the topsoil, the overburden shall be removed. This consists of clay soil, weathered limestone, and

shale not suitable for sale. This material may be stripped or ripped with a dozer or excavator or blasted if necessary. Two (2) overburden fills east and southeast of the pit will be used for disposal of the overburden. Note that prior to placement of topsoil or overburden, the footprint of the fill shall be cleared and grubbed of all vegetation. Additionally, the topsoil shall be salvaged from the overburden fill areas. Following storage area foundation preparation, spoil or overburden material will be placed in these areas. Dozers, front-end loaders, trucks, etc. will then be used to move the spoil to the storage areas. The spoil material will placed in the fill area by the "end dump" method. No debris or other deleterious material will be placed in these storage areas. The outslope of the storage area will generally equal the angle of repose of the material being placed, however, when this material is placed in the final reclamation grade it will not be allowed to exceed a grade of 2 horizontal to 1 vertical.

The pit development will begin in the nearly level area at elevation 1300 ft and progress eastward. Once the pit has been developed, will be continually expanded and deepened by removal of the material by blasting. No cut slopes at the top of the pit wall will extend any closer than 25 feet of the property line. The pit bottom will be at elevation 1220 ft. and the wall at the highest on the east side of the pit will be at 1425 ft. The slope of the pit wall will be no greater than 2 horizontal to 1 vertical in unconsolidated material and 1 horizontal to 1 vertical in consolidated material and 0.25 horizontal to 1 vertical in solid limestone. A 25 ft. wide bench will be provided int he pit wall at intervals not exceeding 50 ft.

A portable crusher and screens will be set up northwest of the proposed pit. Blasted rock from the quarry will be hauled up the pit road and dumped. The raw material will be loaded directly into the screening/sizing machine for processing. The processing machine is a portable, diesel operated conveyor and dry screening device that can be set-up and various locations on the permit. The processing includes a screening that grades the rock by size. The classified aggregate is transferred from the machine to stockpile areas via small portable conveyors and trucks. The final marketed products produced at this site are transported via trucks. Scales will be set up for weighing the stone sold.

Limestone is not considered hazardous. The mine plans to produce 200,000 tons per year over the next 10 years. The anticipated daily vehicle count is 40, with 60% coming and leaving from north on State Route 93.

SAFETY

The proposed operation shall be conducted in a manner to ensure the safety of all employees, customers, and the general public and nearby resources. Prior to land disturbing activity, a permanent sign shall be installed at the entrance to the site and shall be visible and legible to access road traffic. The name of the company and any required permit numbers shall be on the sign. Additional signs shall also be posted instructing visitors and customers how to check in and proceed onto the site, speed

limit, and personal protective equipment required. Signs shall also be posted regarding blasting. These signs shall outline the signaling system for blasting. Additional signs and barricades will be erected immediately prior to any blasting. The boundary of the mine shall be clearly marked with identifiable markings when mine related land disturbing activities are within 100 feet of the boundary.

All slopes shall be developed in a safe manner in consideration to the type of material and geology. At a minimum the following slopes are proposed:

Unconsolidated material	2H:1V
Fill material	2H:1V
Consolidated material	1H:1V
Solid Shale	1H:1V
Solid Limestone	1H:1V

For walls exceeding 50 ft in height, a bench with a minimum 25 ft width shall be provided.

Roadways shall be provided of sufficient width to accommodate the safe passing of two (2) of the largest vehicles anticipated to use the roads. The roads should not exceed a grade of 10%. A safety berm shall be provided on the outside of the road and shall be at a minimum the axle height of the largest vehicle traveling the road.

Buildings or areas used for storage of flammable or combustible materials shall be of fire resistant material, well ventilated, kept clean and orderly, posted with fire hazard warning signs, and provided with means to confine or contain accidental spills.

Several methods are employed at the site for the control of fugitive dust. These methods are in conjunction with a separate air quality control permit maintained with the Tennessee Department of Environmental. These methods include:

- Paving of entrances
- Washing of entrances
- Periodic resurfacing and grading of roads
- Periodic watering of roads
- Misting water sprays at conveyor transfer and discharge points

The quarry location and design should minimize disturbance and effects to nearby citizens. However, in the event that a compliant is made it will be diligently addressed. In the event the complaint is valid the issue will be promptly corrected.

DRAINAGE AND SEDIMENT CONTROL

The primary sediment control features for this site is the use of a sediment basin and the quarry pit itself. Drainage from disturbed areas below the pit will be directed by

ditches or use of a natural drainage swale to the location where a sediment basin will be constructed. The sediment basins will provide sediment and drainage control for the initial mining area, plant area, and roads. After the pit is developed below grade, it will provide drainage control for upstream of it and the basin will only control drainage for the road and plant area.

The sediment basin along with ditches, culverts, spillways, etc. have been designed for the 10 year frequency, 24 hour duration storm event. Rainfall for this event was obtained from the National Oceanic and Atmospheric Administrations (NOAA) data server. Soil classifications and drainage classes were obtained Natural Resource Conservation Service (NRCS) Soil Surveys. The SedCad 4 computer program was used to determine peak runoff and design the structures. The computer output is included. The following tables are a summary of the structure designs.

SEDIMENT BASIN DATA							
Basin No.	1	NPDES No.	001	TN State Plane Northing	799234	TN State Plane Easting	2973715
GENERAL INFORMATION							
Total Drainage Area (ac)		10.7		Design Flow (cfs)		17.96	
Total Disturbed Area (ac)		1.60		Design Storm Event (yr/hr)		10/24	
Required Basin Volume (ac-ft)		1.37		Provided Basin Volume (ac-ft)			
BASIN GEOMETRY							
	Bottom	Principal Spillway		Basin Volume		Emergency Spillway	Top
Elevation (ft)	1212	NA		1219.45		1220	1224
Area (sq ft)	6534	NA		9605		9845	11761
Principal Spillway (Yes/No)							No
Pipe Diameter (in)	NA	Pipe Length (ft)	NA	Pipe Inlet Elevation (ft)	NA	Pipe Slope (%)	NA
Riser Diameter (in)	NA	Riser Height (ft)	NA	Riser Top Elevation (ft)	NA	Hp (ft)	NA
Emergency Spillway (Yes/No)							Yes
Hp (ft.)	1.12	Bottom Width (ft)	4	Bottom Length (ft)	4	Side Slopes (H:V)	2:1
Flow Velocity (fps)	2.1			Type of Lining		Riprap Dmin: 2.00 in, D50: 3.00 in, Dmax: 4.50 in	
Exit Channel(Yes/No)							Yes
Slope (%)	3	Bottom Width (ft)		4	Side Slopes (H:V)		
Flow Depth (ft.)	0.62	Freeboard (ft)		0.38	Channel Depth (ft)		1.0
Flow Velocity (fps)	4.5	Type of Lining		Riprap Dmin: 2.00 in, D50: 3.00 in, Dmax: 4.50 in			

DIVERSION DITCH/CULVERT DATA						
Ditch ID	1	2	3	4	5	Road Culvert
Type Conveyance	Triangular	Trapezoidal	Triangular	Triangular	Triangular	Round
Design Storm (yr/hr)	10/24	10/24	10/24	10/24	10/24	10/24
Drainage Area (acres)	10.7	10.7	0.5	0.5	3.26	10.7
Disturbed Area (acres)	1.6	1.6	0.5	0.5	0.52	1.6
Design Flow (cfs)	17.96	17.96	1	1	6.54	17.96
Length (ft)	630	63	30	30	450	30
Grade (%)	10	1	1	1	10	1
Bottom (ft.)	NA	2	NA	NA	NA	NA
Side Slopes (H:V)	2:1	2:1	2:1	2:1	2:1	NA
Flow Depth (ft.)	1.17	1.31	0.7	0.7	0.7	3.0
Design Velocity (fps)	6.52	4.4	3.0	3.0	5.7	5.7
Freeboard(ft.)	0.33	0.69	0.3	0.3	0.3	1.0
Design Depth (ft.)	1.5	2.0	1.0	1.0	1.0	4.0
Erosion Protection	Riprap Dmin: 3 in, D50: 6 in, Dmax: 9 in	Mixed Grass	Mixed Grass	Mixed Grass	Riprap Dmin: 3 in, D50: 6 in, Dmax: 9 in	Riprap Dmin: 3 in, D50: 6 in, Dmax: 9 in

3 Tees
Horse Creek Quarry

Pond Design

sem

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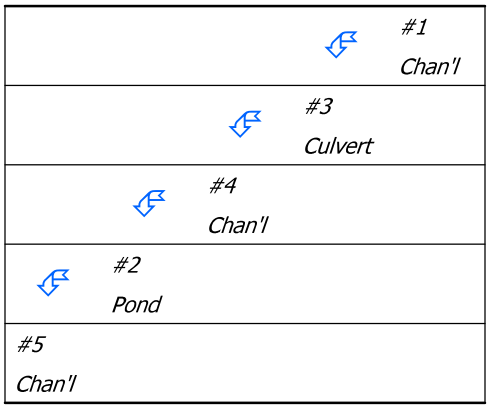
General Information

Storm Information:

Storm Type:	NRCS Type II
Design Storm:	10 yr - 24 hr
Rainfall Depth:	3.580 inches

Structure Networking:

Type	Stru #	(flows into)	Stru #	Musk. K (hrs)	Musk. X	Description
Channel	#1	==>	#3	0.000	0.000	Road Ditch
Pond	#2	==>	#5	0.000	0.000	
Culvert	#3	==>	#4	0.000	0.000	Road Culvert
Channel	#4	==>	#2	0.000	0.000	Ditch to Pond
Channel	#5	==>	End	0.000	0.000	Exit Channel



Structure Summary:

		Immediate Contributing Area (ac)	Total Contributing Area (ac)	Peak Discharge (cfs)	Total Runoff Volume (ac-ft)
#1		10.700	10.700	17.96	1.37
#3		0.000	10.700	17.96	1.37
#4		0.000	10.700	17.96	1.37
#2	In	0.000	10.700	17.96	1.37
	Out			14.65	1.37
#5		0.000	10.700	14.65	1.37

Structure Detail:

Structure #1 (Riprap Channel)

Road Ditch

Triangular Riprap Channel Inputs:

Material: Riprap

Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)
2.0:1	2.0:1	10.0	0.30		

Riprap Channel Results:

PADER Method - Steep Slope Design

	w/o Freeboard	w/ Freeboard
Design Discharge:	17.96 cfs	
Depth:	1.17 ft	1.47 ft
Top Width:	4.69 ft	5.89 ft
Velocity:	6.52 fps	
X-Section Area:	2.75 sq ft	
Hydraulic Radius:	0.525 ft	
Froude Number:	1.50	
Manning's n:	0.0470	
Dmin:	3.00 in	
D50:	6.00 in	
Dmax:	9.00 in	

Structure #3 (Culvert)

Road Culvert

Culvert Inputs:

Length (ft)	Slope (%)	Manning's n	Max. Headwater (ft)	Tailwater (ft)	Entrance Loss Coef. (Ke)
20.00	3.00	0.0150	3.00	0.00	0.90

Culvert Results:

Design Discharge = 17.96 cfs

Minimum pipe diameter: 1 - 24 inch pipe(s) required

Structure #4 (Vegetated Channel)

Ditch to Pond

Trapezoidal Vegetated Channel Inputs:

Material: Grass mixture

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
2.00	2.0:1	2.0:1	1.0	D, B	0.30			5.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	17.96 cfs		17.96 cfs	
Depth:	1.36 ft	1.66 ft	2.11 ft	2.41 ft
Top Width:	7.44 ft	8.64 ft	10.44 ft	11.64 ft
Velocity:	2.79 fps		1.37 fps	
X-Section Area:	6.43 sq ft		13.11 sq ft	
Hydraulic Radius:	0.795 ft		1.147 ft	
Froude Number:	0.53		0.22	
Roughness Coefficient:	0.0457		0.1192	

Structure #2 (Pond)

Pond Inputs:

Initial Pool Elev:	1,220.00 ft
Initial Pool:	1.49 ac-ft

Broad-crested Weir

Weir Width (ft)	Spillway Elev (ft)
4.00	1,220.00

Pond Results:

Peak Elevation:	1,221.12 ft
Dewater Time:	0.62 days

Dewatering time is calculated from peak stage to lowest spillway

Elevation-Capacity-Discharge Table

Elevation	Area (ac)	Capacity (ac-ft)	Discharge (cfs)	Dewater Time (hrs)
1,212.00	0.150	0.000	0.000	
1,212.10	0.151	0.015	0.000	
1,212.20	0.152	0.030	0.000	
1,212.30	0.153	0.045	0.000	
1,212.40	0.153	0.061	0.000	
1,212.50	0.154	0.076	0.000	
1,212.60	0.155	0.092	0.000	
1,212.70	0.156	0.107	0.000	
1,212.80	0.157	0.123	0.000	
1,212.90	0.158	0.138	0.000	
1,213.00	0.159	0.154	0.000	
1,213.10	0.160	0.170	0.000	
1,213.20	0.160	0.186	0.000	
1,213.30	0.161	0.202	0.000	
1,213.40	0.162	0.218	0.000	
1,213.50	0.163	0.235	0.000	
1,213.60	0.164	0.251	0.000	
1,213.70	0.165	0.268	0.000	
1,213.80	0.166	0.284	0.000	
1,213.90	0.167	0.301	0.000	
1,214.00	0.168	0.317	0.000	
1,214.10	0.168	0.334	0.000	
1,214.20	0.169	0.351	0.000	
1,214.30	0.170	0.368	0.000	
1,214.40	0.171	0.385	0.000	
1,214.50	0.172	0.402	0.000	
1,214.60	0.173	0.420	0.000	
1,214.70	0.174	0.437	0.000	
1,214.80	0.175	0.454	0.000	
1,214.90	0.176	0.472	0.000	
1,215.00	0.177	0.490	0.000	
1,215.10	0.178	0.507	0.000	
1,215.20	0.179	0.525	0.000	
1,215.30	0.180	0.543	0.000	
1,215.40	0.180	0.561	0.000	
1,215.50	0.181	0.579	0.000	
1,215.60	0.182	0.597	0.000	
1,215.70	0.183	0.616	0.000	
1,215.80	0.184	0.634	0.000	
1,215.90	0.185	0.652	0.000	
1,216.00	0.186	0.671	0.000	
1,216.10	0.187	0.690	0.000	
1,216.20	0.188	0.708	0.000	

Elevation	Area (ac)	Capacity (ac-ft)	Discharge (cfs)	Dewater Time (hrs)	
1,216.30	0.189	0.727	0.000		
1,216.40	0.190	0.746	0.000		
1,216.50	0.191	0.765	0.000		
1,216.60	0.192	0.784	0.000		
1,216.70	0.193	0.804	0.000		
1,216.80	0.194	0.823	0.000		
1,216.90	0.195	0.842	0.000		
1,217.00	0.196	0.862	0.000		
1,217.10	0.197	0.881	0.000		
1,217.20	0.198	0.901	0.000		
1,217.30	0.199	0.921	0.000		
1,217.40	0.200	0.941	0.000		
1,217.50	0.201	0.961	0.000		
1,217.60	0.202	0.981	0.000		
1,217.70	0.203	1.001	0.000		
1,217.80	0.204	1.022	0.000		
1,217.90	0.205	1.042	0.000		
1,218.00	0.206	1.062	0.000		
1,218.10	0.207	1.083	0.000		
1,218.20	0.208	1.104	0.000		
1,218.30	0.209	1.125	0.000		
1,218.40	0.210	1.146	0.000		
1,218.50	0.211	1.167	0.000		
1,218.60	0.212	1.188	0.000		
1,218.70	0.213	1.209	0.000		
1,218.80	0.214	1.230	0.000		
1,218.90	0.215	1.252	0.000		
1,219.00	0.216	1.273	0.000		
1,219.10	0.217	1.295	0.000		
1,219.20	0.218	1.317	0.000		
1,219.30	0.219	1.338	0.000		
1,219.40	0.220	1.360	0.000		
1,219.50	0.221	1.382	0.000		
1,219.60	0.222	1.404	0.000		
1,219.70	0.223	1.427	0.000		
1,219.80	0.224	1.449	0.000		
1,219.90	0.225	1.472	0.000		
1,220.00	0.226	1.494	0.000		Spillway #1
1,220.10	0.227	1.517	0.390	6.80	
1,220.20	0.228	1.539	1.104	5.95	
1,220.30	0.229	1.562	2.029	1.15	
1,220.40	0.230	1.585	3.124	0.40	
1,220.50	0.231	1.608	4.366	0.15	

Elevation	Area (ac)	Capacity (ac-ft)	Discharge (cfs)	Dewater Time (hrs)	
1,220.60	0.232	1.632	5.738	0.20	
1,220.70	0.234	1.655	7.231	0.10	
1,220.80	0.235	1.678	8.836	0.05	
1,220.90	0.236	1.702	10.543	0.05	
1,221.00	0.237	1.725	12.348	0.05	
1,221.10	0.238	1.749	14.245		
1,221.12	0.238	1.754	14.647	0.05	Peak Stage
1,221.20	0.239	1.773	16.231		
1,221.30	0.240	1.797	18.304		
1,221.40	0.241	1.821	20.455		
1,221.50	0.242	1.845	22.685		
1,221.60	0.243	1.869	24.990		
1,221.70	0.244	1.894	27.369		
1,221.80	0.245	1.918	29.821		
1,221.90	0.246	1.943	32.340		
1,222.00	0.248	1.968	34.925		
1,222.10	0.249	1.992	37.577		
1,222.20	0.250	2.017	40.292		
1,222.30	0.251	2.042	43.073		
1,222.40	0.252	2.067	45.911		
1,222.50	0.253	2.093	48.810		
1,222.60	0.254	2.118	51.767		
1,222.70	0.255	2.144	54.781		
1,222.80	0.256	2.169	57.856		
1,222.90	0.258	2.195	60.982		
1,223.00	0.259	2.221	64.162		
1,223.10	0.260	2.247	67.396		
1,223.20	0.261	2.273	70.682		
1,223.30	0.262	2.299	74.025		
1,223.40	0.263	2.325	77.414		
1,223.50	0.264	2.351	80.853		
1,223.60	0.265	2.378	84.342		
1,223.70	0.267	2.404	87.880		
1,223.80	0.268	2.431	91.470		
1,223.90	0.269	2.458	95.104		
1,224.00	0.270	2.485	98.784		

Detailed Discharge Table

Elevation (ft)	Broad-crested Weir (cfs)	Combined Total Discharge (cfs)
1,212.00	0.000	0.000
1,212.10	0.000	0.000
1,212.20	0.000	0.000
1,212.30	0.000	0.000
1,212.40	0.000	0.000
1,212.50	0.000	0.000
1,212.60	0.000	0.000
1,212.70	0.000	0.000
1,212.80	0.000	0.000
1,212.90	0.000	0.000
1,213.00	0.000	0.000
1,213.10	0.000	0.000
1,213.20	0.000	0.000
1,213.30	0.000	0.000
1,213.40	0.000	0.000
1,213.50	0.000	0.000
1,213.60	0.000	0.000
1,213.70	0.000	0.000
1,213.80	0.000	0.000
1,213.90	0.000	0.000
1,214.00	0.000	0.000
1,214.10	0.000	0.000
1,214.20	0.000	0.000
1,214.30	0.000	0.000
1,214.40	0.000	0.000
1,214.50	0.000	0.000
1,214.60	0.000	0.000
1,214.70	0.000	0.000
1,214.80	0.000	0.000
1,214.90	0.000	0.000
1,215.00	0.000	0.000
1,215.10	0.000	0.000
1,215.20	0.000	0.000
1,215.30	0.000	0.000
1,215.40	0.000	0.000
1,215.50	0.000	0.000
1,215.60	0.000	0.000
1,215.70	0.000	0.000
1,215.80	0.000	0.000
1,215.90	0.000	0.000
1,216.00	0.000	0.000

Elevation (ft)	Broad-crested Weir (cfs)	Combined Total Discharge (cfs)
1,216.10	0.000	0.000
1,216.20	0.000	0.000
1,216.30	0.000	0.000
1,216.40	0.000	0.000
1,216.50	0.000	0.000
1,216.60	0.000	0.000
1,216.70	0.000	0.000
1,216.80	0.000	0.000
1,216.90	0.000	0.000
1,217.00	0.000	0.000
1,217.10	0.000	0.000
1,217.20	0.000	0.000
1,217.30	0.000	0.000
1,217.40	0.000	0.000
1,217.50	0.000	0.000
1,217.60	0.000	0.000
1,217.70	0.000	0.000
1,217.80	0.000	0.000
1,217.90	0.000	0.000
1,218.00	0.000	0.000
1,218.10	0.000	0.000
1,218.20	0.000	0.000
1,218.30	0.000	0.000
1,218.40	0.000	0.000
1,218.50	0.000	0.000
1,218.60	0.000	0.000
1,218.70	0.000	0.000
1,218.80	0.000	0.000
1,218.90	0.000	0.000
1,219.00	0.000	0.000
1,219.10	0.000	0.000
1,219.20	0.000	0.000
1,219.30	0.000	0.000
1,219.40	0.000	0.000
1,219.50	0.000	0.000
1,219.60	0.000	0.000
1,219.70	0.000	0.000
1,219.80	0.000	0.000
1,219.90	0.000	0.000
1,220.00	0.000	0.000
1,220.10	0.390	0.390

Elevation (ft)	Broad-crested Weir (cfs)	Combined Total Discharge (cfs)
1,220.20	1.104	1.104
1,220.30	2.029	2.029
1,220.40	3.124	3.124
1,220.50	4.366	4.366
1,220.60	5.738	5.738
1,220.70	7.231	7.231
1,220.80	8.836	8.836
1,220.90	10.543	10.543
1,221.00	12.348	12.348
1,221.10	14.245	14.245
1,221.20	16.231	16.231
1,221.30	18.304	18.304
1,221.40	20.455	20.455
1,221.50	22.685	22.685
1,221.60	24.990	24.990
1,221.70	27.369	27.369
1,221.80	29.821	29.821
1,221.90	32.340	32.340
1,222.00	34.925	34.925
1,222.10	37.577	37.577
1,222.20	40.292	40.292
1,222.30	43.073	43.073
1,222.40	45.911	45.911
1,222.50	48.810	48.810
1,222.60	51.767	51.767
1,222.70	54.781	54.781
1,222.80	57.856	57.856
1,222.90	60.982	60.982
1,223.00	64.162	64.162
1,223.10	67.396	67.396
1,223.20	70.682	70.682
1,223.30	74.025	74.025
1,223.40	77.414	77.414
1,223.50	80.853	80.853
1,223.60	84.342	84.342
1,223.70	87.880	87.880
1,223.80	91.470	91.470
1,223.90	95.104	95.104
1,224.00	98.784	98.784

Structure #5 (Riprap Channel)

Exit Channel

Trapezoidal Riprap Channel Inputs:

Material: Riprap

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)
4.00	2.0:1	2.0:1	1.0	0.38		

Riprap Channel Results:

PADER Method - Mild Slope Design

	w/o Freeboard	w/ Freeboard
Design Discharge:	14.65 cfs	
Depth:	0.80 ft	1.18 ft
Top Width:	7.19 ft	8.71 ft
Velocity:	3.28 fps	
X-Section Area:	4.47 sq ft	
Hydraulic Radius:	0.590 ft	
Froude Number:	0.73	
Manning's n:	0.0320	
Dmin:	1.00 in	
D50:	1.50 in	
Dmax:	3.00 in	

Subwatershed Hydrology Detail:

Stru #	SWS #	SWS Area (ac)	Time of Conc (hrs)	Musk K (hrs)	Musk X	Curve Number	UHS	Peak Discharge (cfs)	Runoff Volume (ac-ft)
#1	1	1.600	0.047	0.000	0.000	82.000	M	3.11	0.246
	2	9.100	0.025	0.000	0.000	77.000	M	14.85	1.129
	Σ	**10.700**						**17.96**	**1.375**
#3	Σ	**10.700**						**17.96**	**1.375**
#4	Σ	**10.700**						**17.96**	**1.375**
#2	Σ	**10.700**						**17.96**	**1.375**
#5	Σ	**10.700**						**14.65**	**1.375**

Subwatershed Time of Concentration Details:

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#1	1	7. Paved area and small upland gullies	3.00	6.00	200.00	3.480	0.015
		8. Large gullies, diversions, and low flowing streams	10.00	68.19	681.90	9.480	0.019
		6. Grassed waterway	3.00	3.75	125.00	2.590	0.013
#1	**1**	**Time of Concentration:**					**0.047**
#1	2	1. Forest with heavy ground litter	40.00	50.00	125.00	1.600	0.021
		7. Paved area and small upland gullies	36.84	70.00	190.00	12.210	0.004
#1	**2**	**Time of Concentration:**					**0.025**

HIORSE CREEK QUARRY

DITCH 5

sem

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General Information

Storm Information:

Storm Type:	NRCS Type II
Design Storm:	10 yr - 24 hr
Rainfall Depth:	3.580 inches

Structure Networking:

Type	Stru #	(flows into)	Stru #	Musk. K (hrs)	Musk. X	Description
Channel	#1	==>	End	0.000	0.000	DITCH 5

Structure Summary:

	Immediate Contributing Area (ac)	Total Contributing Area (ac)	Peak Discharge (cfs)	Total Runoff Volume (ac-ft)
#1	3.260	3.260	6.54	0.53

Structure Detail:

Structure #1 (Riprap Channel)

DITCH 5

Triangular Riprap Channel Inputs:

Material: Riprap

Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)
2.0:1	2.0:1	10.0	0.30		

Riprap Channel Results:

PADER Method - Steep Slope Design

	w/o Freeboard	w/ Freeboard
Design Discharge:	6.54 cfs	
Depth:	0.76 ft	1.06 ft
Top Width:	3.03 ft	4.23 ft
Velocity:	5.72 fps	
X-Section Area:	1.14 sq ft	
Hydraulic Radius:	0.338 ft	
Froude Number:	1.64	
Manning's n:	0.0400	
Dmin:	2.00 in	
D50:	3.00 in	
Dmax:	4.50 in	

Subwatershed Hydrology Detail:

Stru #	SWS #	SWS Area (ac)	Time of Conc (hrs)	Musk K (hrs)	Musk X	Curve Number	UHS	Peak Discharge (cfs)	Runoff Volume (ac-ft)
#1	1	2.740	0.050	0.000	0.000	82.000	5.32	0.422	
	2	0.520	0.017	0.000	0.000	89.000	1.23	0.104	
	Σ	**3.260**						**6.54**	**0.526**

Subwatershed Time of Concentration Details:

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#1	1	1. Forest with heavy ground litter	30.00	60.00	200.00	1.380	0.040
		7. Paved area and small upland gullies	30.00	60.00	200.00	11.020	0.005
		8. Large gullies, diversions, and low flowing streams	10.00	20.00	200.00	9.480	0.005
#1	**1**	**Time of Concentration:**					**0.050**
#1	2	8. Large gullies, diversions, and low flowing streams	10.00	60.00	600.00	9.480	0.017
#1	**2**	**Time of Concentration:**					**0.017**

RECLAMATION

The final reclamation of this site will return this area to a post-mining land use of unmanaged forest land for wildlife. This will be in compliment to the natural surrounding terrain and the pre-mining land use. In as far as practical, reclamation will occur simultaneously with mining. However, due to the mine site size and method of mining, final reclamation of all pit areas may not be possible until the completion of mining. However, once mining is declared complete, reclamation shall commence with 12 months.

All fill area slopes will be graded to not exceed a 2 horizontal to 1 vertical slope. Topsoil from the storage area will be used to cover fill areas and other hard surfaces to propagate vegetation. The exposed walls will be enclosed with a woven wire fence 5 feet high with two (2) strands of barbed wire above (making the total height 6 feet) to prevent encroachment. In addition to the fence, danger signs will be strategically placed to warn of the hazardous exposed high wall.

After the completion of mining all buildings, plant structures, mining equipment, scrap metal, debris, etc. will be removed from the site. These areas and internal roads will be scarified and prepared for seeding. The stockpiles will be removed or graded to contour with the natural surroundings. The overburden will be graded to 2h: 1v and in high walls left exposed will be fenced. Topsoil will be redistributed and the area prepared for re-vegetation.

Seeding of all disturbed areas will occur within thirty (30) days of final re-grading. Soil tests will be taken when the re-grading process is nearly completed to determine specific nutrient requirements. Testing for pH, phosphorous, potassium, and textural class will be performed. The results of these tests will be used to determine proper soil additives. During seeding one thousand five hundred (1,500) pounds per acre of cellulose or wood fiber mulch or two thousand (2,000) pounds per acre of straw mulch will be used. The following table will be utilized to achieve the re-vegetation plan:

PLAN	TYPE	RATE /ACRE
Permanent Grass	KY 31 Fescue and Orchard Grass	30 lbs. And 20 lbs.
Legumes	White or Ladino Clover and Red Clover	2 lbs. And 4 lbs.
Temporary Mixture	Annual Rye and Foxtail Millet	20 lbs. And 10 lbs.
Mulch or Straw	Wood Fiber or Rye	1500 lbs. Or 2000 lbs.
Fertilizer	16-24-14 or 10-20-10	300 lbs. Or 500 lbs.
Lime	Agricultural	As required by soil testing during final regrade

A balance of tree cover is planned to establish proper ground cover, erosion control, valuable timber products, and wildlife habitat. Two categories of tree species will be utilized to achieve the post mining land use. These are the crop trees and the nitrogen fixing nurse trees or shrubs. The crop trees are long-lived species that offer value to the

landowners. The nurse trees and shrubs are nitrogen-fixing plants that benefit the tree crop and provide food and cover for wildlife.

Crop Trees	Pines - Pitch X Loblolly Pine Hybrid, White Pine, Virginia Pine. Hardwoods - Yellow Poplar, Oaks, White Ash, Sycamore, Red Maple, Black Cherry
Nurse Trees or Shrubs	Black Locust (not used with White Pine), European Black Alder (used w/ White Pine), Bicolor Lespedeza, Indigo Bush, Bristly Locust

A mixture of the above trees will be planted with to establish a minimum of 400 trees per acre, after two growing seasons. A spot application of herbicide may be required if ground cover growth is especially vigorous. This will reduce competition and allow trees to become established.

After vegetation is established, the sediment basin may be removed. Since the basin is an excavated basin, it will simply be filled in until the impounding capacity has been eliminated. A "swale" will be created through the basin area and to the spillway for post mining/reclamation drainage. The fill will be obtained from around the pond area. Any areas disturbed during removal of the basins will be seeded with a permanent seed mixture.

Any areas of the site that remain inactive for twelve (12) months will be seeded with a temporary seed mixture and any areas of the permit that remain inactive for twenty-four (24) months will be final graded and seeded with a permanent seed mixture.

GROUNDWATER ASSESSMENT

Groundwater flow will originate as precipitation and surface water flow. The surface flow gradient is governed by topography. Surface flow atop ridges will begin migration to the lower valleys. As the flow migrates to the valley, stress relief fractures within the valley wall will begin to intercept the surface flow and transmit it into the groundwater system. Limestone is defined as karst terrain which has been eroded by dissolution to produce fissures and sinkholes has the capability to transmit groundwater, while shale tends to be more impervious. Therefore, groundwater water encountering the limestone may be retained in this strata especially when the strata is underlain by the more impervious shale or unweathered strata. Groundwater movement encountering shale may tend to follow the bedding plane or dip. This may result in groundwater discharge as a spring or seep. Fracturing within the valley floor has been found to be more intense and extend to greater depths than the valley walls. Groundwater movement within the valley floor fracture system will typically follow the stream gradient through the connected fractures.

Groundwater flow through the fracture flow system is typically characterized as rapid recharge, but low yielding. Groundwater quality is typically a function of contact time

between the strata and the water. Therefore, the quality of the groundwater along the slope is typically better than the valley floors or water found in aquifers of porous strata.

Typically a second groundwater system exists within the low gradient stream channels. This system consists of groundwater flow through the alluvial deposits within the valley floor. Typical alluvial deposits consist primarily of sand and silt with lesser amounts of clay and gravel. The physical characteristics allow these deposits to function as aquifers that store and transport ground water. Alluvial aquifers serve to capture a portion of water from precipitation events that would otherwise leave the area as surface runoff. Water stored in these alluvial aquifers contributes recharge to underlying valley floor fracture aquifer system and may supply recharge to streams, thereby sustaining base flows. Alluvial aquifers generally require a thickness in excess of 10 meters to supply sufficient water for the support of domestic wells. These groundwater systems are believed to exist along Horse Creek.

Drilling in the proposed quarry area did not identify any groundwater. No significant groundwater is anticipated unless a perched system would be encountered due to underlying shale or clays. If ground water is found to be present, it shall be directed to a sump in the pit. If necessary it will filtered prior to discharge into the stream or groundwater system. If these measures are implemented, no negative effects are expected to the surface water or groundwater system.

ENVIRONMENTAL ASSESSMENT

This operation will minimize adverse impacts to the environment. Potential pollutants generated at the site include dust and erosion/sediment. Additionally, oil and petroleum products may be stored on site for use in the mining equipment.

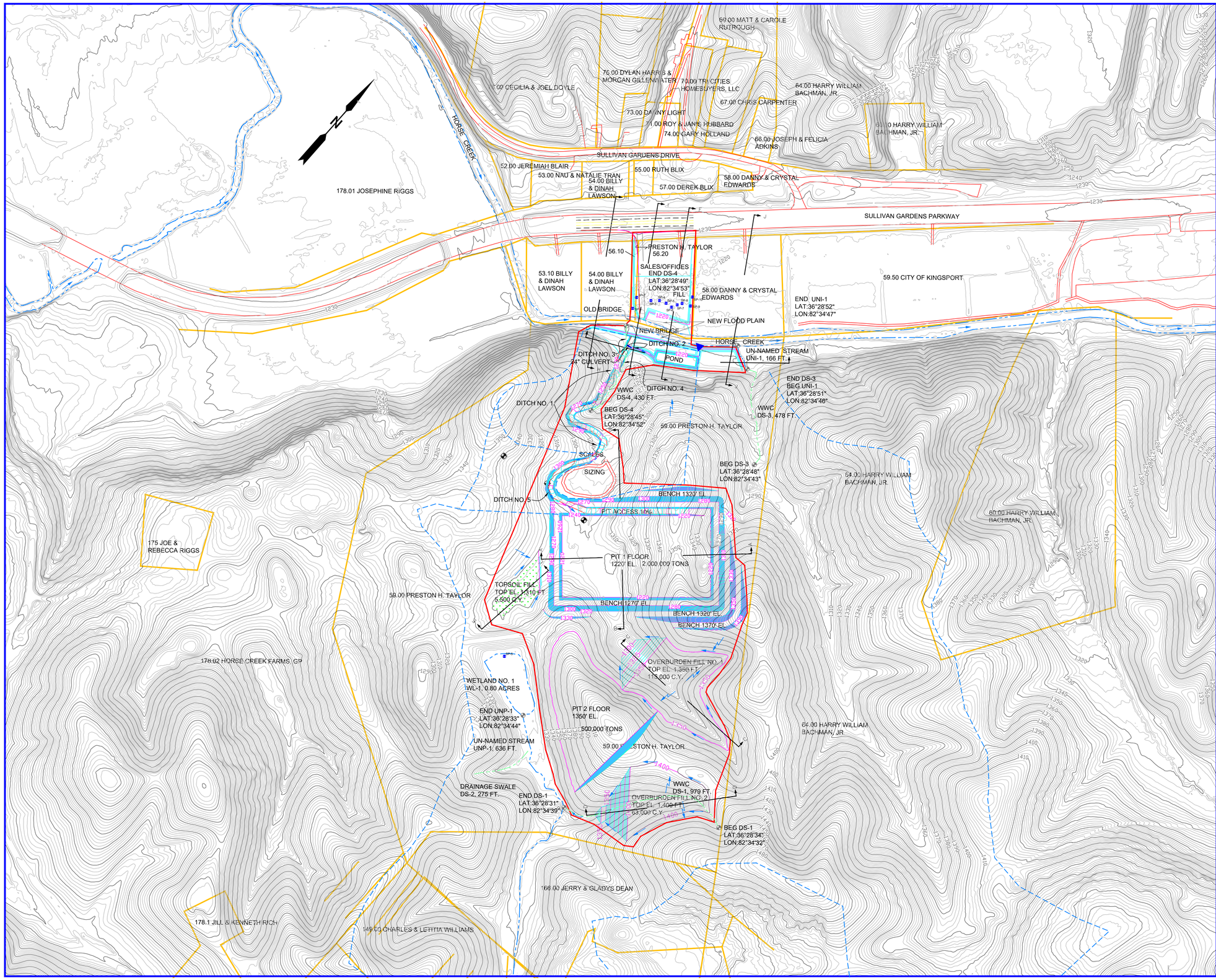
Measures have been outlined in the Operation Plan to control dust. An Air Quality Permit will be obtained from the Tennessee Department of Environment prior to beginning mining.

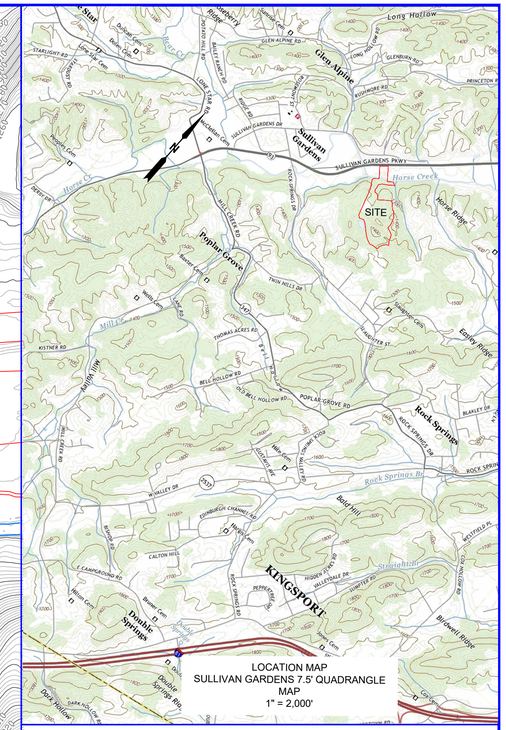
Additionally, measures have been outlined to control contribution of sediment to the streams. The Drainage and Sediment Control Plan above delineates the control measures. A National Pollution Discharge Elimination System (NPDES) will be obtained for the site.

All chemicals and petroleum products used at the site will be properly handled, to ensure the groundwater supply or stream is not contaminated. A supply of spill containment supplies such as absorbent pads and oil dry will be maintained on site it the unlikely event of a spill. Per 40 CFR 112 if any one tank on site is larger than 660 gallons, or the total storage is greater than or equal to 1,320 gallons, a Spill Prevention

Control Countermeasures (SPCC) plan as required by the Environmental Protection Agency (EPA) will be implemented.

The site will not impact any jurisdictional waters of the United States or waters of the State of Tennessee. A thorough field investigation of the site was conducted and there were no indicators of streams or wetlands on this site other than Horse Creek. No impacts to Horse Creek are proposed. A new bridge will be constructed; however, it will be located outside of and beyond the defined Ordinary High Water Mark (OHWM) precluding any authorization from the U. S. Army Corps of Engineers.





LOCATION MAP
SULLIVAN GARDENS 7.5' QUADRANGLE MAP
1" = 2,000'

The property lines represented on this map are compiled from information maintained by the local county Assessor's office and are a best-fit visualization of how all the properties in a county relate to one another. The property lines are determined by examining detailed property descriptions on deeds and by using surveys created by a licensed surveyor but are not conclusive evidence of property ownership in any court of law. This map shall does not represent an actual land survey and shall not be used to divide or transfer property.

Legend

- Site Boundary
- Property Line
- 500' Site Radius
- Drainage Divide
- Diversion/Drainage Direction
- Sheet Flow Direction
- Stream
- Berm
- Road
- Wet Weather Conveyance (WWC)
- Stream/WWC BEG/END Point
- Existing Contours (2')
- Existing Contours (10')
- Proposed Contours (2')
- Proposed Contours (10')
- Culvert
- Building or Structure
- NPDES Point
- Borehole
- Topsoil Stockpile
- Soil Test Location

ENGINEERING BY:
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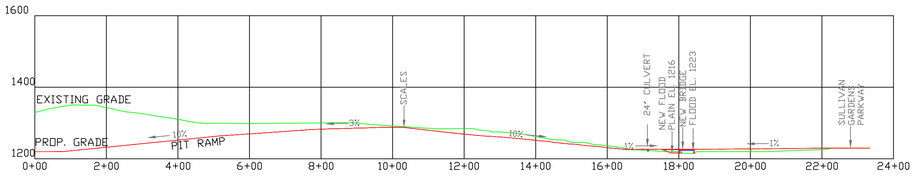
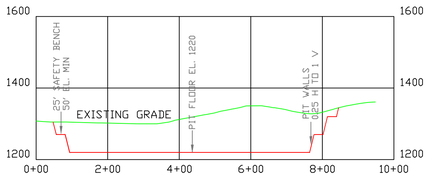
3 Tees, LLC
1300 Jan Way
Kingsport, TN 37660

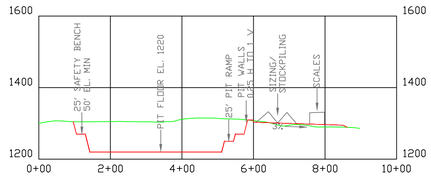
HORSE CREEK QUARRY
SITE PLAN AND DRAINAGE
STREAMS AND WETLANDS
SCALE: 1" = 200'



ROAD PROFILE
1" = 200 HORIZONTAL
1" = 200' VERTICAL



SECTION A - A
1" = 200 HORIZONTAL
1" = 200' VERTICAL



SECTION B - B
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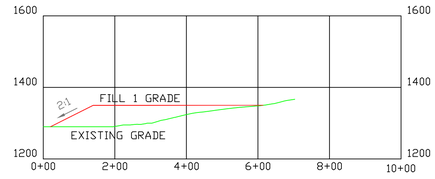

SECTION C - C
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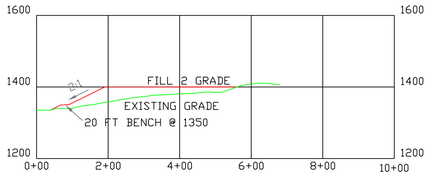

SECTION D - D
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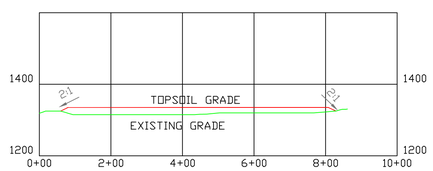

SECTION E - E
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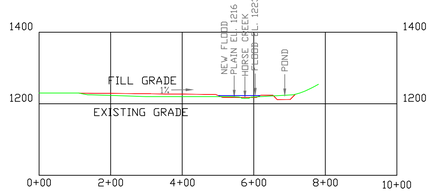
1" = 200' VERTICAL



SECTION F - F
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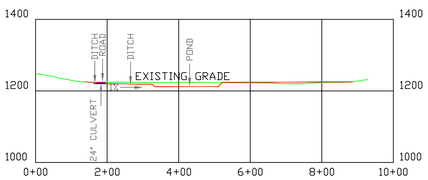
1" = 200' VERTICAL



SECTION G - G
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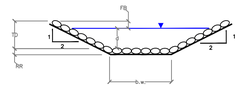
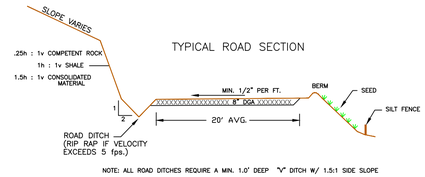
1" = 200' VERTICAL



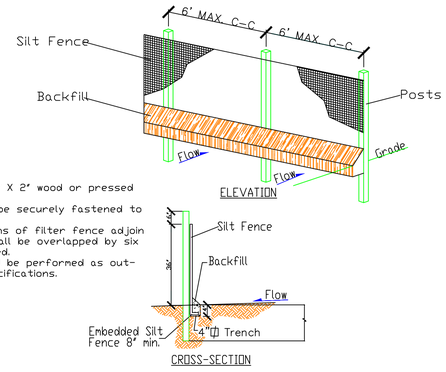
TYPICAL CHANNEL SECTION
n.t.s.

Ditch / Channel Data						
I.D.	bw (ft.)	S (%)	d (ft.)	FB (ft.)	TD (ft.)	V (fps)	RR (d_{50} in)
Haulroad Ditch No. 1	0.0	10	1.17	0.33	1.5	6.5	6
Haulroad Ditch No. 2	2.0	1	2.11	0.49	2.5	2.8	N/A - grass
Haulroad Ditch No. 3	0.0	1	0.70	0.30	1.0	3.0	N/A - grass
Haulroad Ditch No. 4	0.0	1	0.70	0.30	1.0	3.0	N/A - grass
Haulroad Ditch No. 5	0.0	10	0.70	0.30	1.0	7.2	6
Pond Emergency Spillway	4.0	0	1.12	2.89	4.0	5.3	3
Pond Exit Channel	4.0	1	0.48	0.52	1.0	3.3	3

NOTE: NO RIPRAP REQ'D IF DITCH IS IN SOLID ROCK



NOTE: ALL ROAD DITCHES REQUIRE A MIN. 1.0' DEEP "V" DITCH W/ 1.5:1 SIDE SLOPE



NOTES:
1. Posts shall be 2" X 2" wood or pressed steel.
2. Silt fence shall be securely fastened to posts.
3. When two sections of filter fence adjoin each section shall be overlapped by six inches and folded.
4. Maintenance shall be performed as outlined in the specifications.

Temporary Sediment Control
Typical Silt Fence

ENGINEERING BY:
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HONAKER, VA 24260

3 Tees, LLC
1300 Jan Way
Kingsport, TN 37660

HORSE CREEK QUARRY
SECTIONS AND DETAILS

SCALE: 1" = 200'