

**Dane County
Conditional Use Permit
Application**

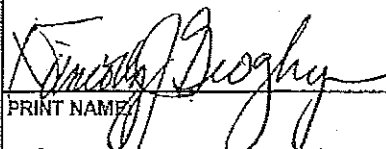
Application Date	C.U.P. Number
12/16/2013	DCPCUP-2013-02260
Public Hearing Date	
02/25/2014	

OWNER INFORMATION		AGENT INFORMATION	
OWNER NAME CRAZY ACRES INC	Phone with Area Code (608) 884-6191	AGENT NAME YAHARA MATERIALS	Phone with Area Code (608) 849-4162
BILLING ADDRESS (Number, Street) 720 HILLSIDE RD		ADDRESS (Number, Street) PO BOX 277	
(City, State, Zip) EDGERTON, WI 53534		(City, State, Zip) Waunakee, WI 53597	
E-MAIL ADDRESS		E-MAIL ADDRESS tim@yahara.com	

ADDRESS/LOCATION 1		ADDRESS/LOCATION 2		ADDRESS/LOCATION 3	
ADDRESS OR LOCATION OF CUP		ADDRESS OR LOCATION OF CUP		ADDRESS OR LOCATION OF CUP	
West of 983 STH 73					
TOWNSHIP ALBION	SECTION 15	TOWNSHIP	SECTION	TOWNSHIP	SECTION
PARCEL NUMBERS INVOLVED		PARCEL NUMBERS INVOLVED		PARCEL NUMBERS INVOLVED	
0512-152-9500-9		---		---	

CUP DESCRIPTION
mineral extraction

DANE COUNTY CODE OF ORDINANCE SECTION	ACRES
10.123(3)(d)	105

DEED RESTRICTION REQUIRED? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Inspectors Initials DJE1	SIGNATURE: (Owner or Agent) 
Applicant Initials		PRINT NAME TIMOTHY J. GEOGHAGAN
		DATE: 16 DEC 2013



DANE COUNTY
PLANNING & DEVELOPMENT

Conditional Use Application

Application Fee: \$486 Mineral Extraction: \$1136

Zoning Division
Room 116, City-County Building
210 Martin Luther King Jr. Blvd.
Madison, Wisconsin 53703-3342
Phone: (608) 266-4266
Fax: (608) 267-1540

Items required to be submitted with application:

- o Written Legal Description of Conditional Use Permit boundaries
- o Scaled drawing of the property showing existing/proposed buildings, setback requirements, driveway, parking area, outside storage areas, location/type of exterior lighting, any natural features, and proposed signs.
- o Scaled map showing neighboring area land uses and zoning districts
- o Written operations plan describing the items listed below (additional items needed for mineral extraction sites)
- o Written statement on how the proposal meets the 6 standards of a Conditional Use

Owner	Crazy Acres, Inc. (Jim Wileman)	Agent	Tim Geoghegan, Yahara Materials, Inc.
Address	781 Hillside Road, Edgerton, WI	Address	P.O. Box 277, Waunakee, WI 53597
Phone	608-884-6191	Phone	608-849-4162 (office) 608-445-4416 (Tim Cell)
Email	Not applicable	Email	tim@yahara.com

Parcel numbers affected: 0512-512-9500-9, 0512-512-9000-4 and 0512-151-9551-9, 0512-151-9000-5

Town: Albion Section: 15

Property Address:

Existing/ Proposed Zoning District : A-1 Exclusive – Conditional Use Mineral Extraction

- o Type of Activity proposed: Mineral Extraction
- o Hours of Operation: see submitted narrative
- o Number of employees: not applicable
- o Anticipated customers: Wisconsin DOT
- o Outside storage: not applicable
- o Outdoor activities: not applicable
- o Outdoor lighting: not applicable
- o Outside loudspeakers
- o Proposed signs: Active Quarry No Trespassing
- o Trash removal
- o Six Standards of CUP (see back)

The statements provided are true and provide an accurate depiction of the proposed land use. I authorize that I am the owner or have permission to act on behalf of the owner of the property.

Submitted By: *Timothy Geoghegan*

Date: 12 DECEMBER 2013



P.O. Box 277 Waunakee, WI 53597-0277 Phone 608-849-4162 Fax 608-849-5062

December 17, 2013

Mr. Dan Everson
Dane County Planning and Development
City County Building
210 Martin Luther King Jr. Blvd.
Room 116
Madison, WI 53703

Re: Crazy Acres, Inc.

Dear Dan:

I am submitting the following information in response to your request for additional information regarding the proposed CUP 2260.

Depth to Ground Water: 96 feet. Information obtained from well logs.

Depth of Mineral Deposit: The limestone on this site is 25 to 27 feet. The overburden on this site varies from three to six feet.

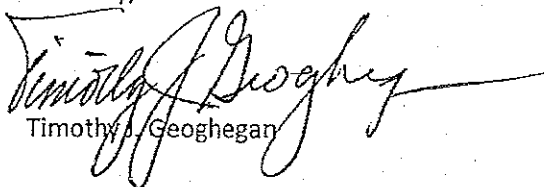
Types and quantities of material to be extracted: This is a limestone deposit and it is estimated that the deposit contains 500,000 to 600,000 tons.

Proposed dates to begin, end completion of Reclamation: Beginning: March 1, 2014, ending March 1, 2021 and complete reclamation by September 15, 2023.

Proposed Structures: As mentioned in paragraph three of our operational plan, a portable scale and office would be used on site to weigh trucks. This is a very remote site and the existing farm fencing and gates will be installed at the entrance to secure the site.

Please feel free to contact me if any additional information is needed.

Sincerely,


Timothy J. Geoghegan



P.O. Box 277 Waunakee, WI 53597-0277 Phone 608-849-4162 Fax 608-849-5062

Request for Conditional Use Permit
Jim Wileman/Crazy Acres Property
Albion Township
Dane County, Wisconsin

Introduction: Yahara Materials, Inc. has entered into a long-term lease with Crazy Acres, Inc. of 781 Hillside Road, Edgerton, Wisconsin to quarry rock on their property in Albion Township. This quarry operation would be used for DOT Reconstruction project on Interstate 90-94/Interstate 39 and State Highway 73 & 106, which are scheduled for major improvements. The proposed quarry area will also improve a portion of the farming and drainage area to be mined.

Location: The area is described as South $\frac{1}{2}$ of Section 15 and the South $\frac{1}{2}$ of the North $\frac{1}{2}$ of Section 15, Town 5 North, Range 12 East in the Albion Township, Dane County, WI.

Operator: Yahara Materials, Inc.
P.O. Box 277
Waunakee, Wisconsin 53597-0277
608-849-4162

Description of
Operations:

The proposed quarry would be accessed via an existing field road currently used in the farming operation of Crazy Acres, Inc. The quarry would be approximately 1500 feet west of Highway 73 in a 473-acre parcel of land.

This deposit of limestone lies in a ridge, which runs in a north-south direction. In preparation of the site, the top soils and sub soils would be stripped and stockpiled on the perimeter of the proposed quarry. The stockpiles would be shaped and seeded to prevent erosion. In addition, the stockpiles will create berms around the quarry.

Upon completion of the stripping operations, a drill would be used to prepare the rock for blasting. Conventional crushing equipment would be used to process the rock to the specifications required by DOT contract. A portable scale would be set up onsite to weigh the products being hauled to the DOT projects.

During all phases of the proposed quarry operation as much land, as possible would remain in agricultural production as possible and land that is quarried out will be returned to production as soon as possible.

Erosion
Control:

During all phases of our operations, disturbed areas will be closely monitored for potential erosion. The use of silt fencing, hay bales, riprap and prompt seeding and mulching of the disturbed areas will minimize erosion. All slopes will drain into the quarry creating a self-contained drainage pattern with no discharge from the quarry.

Dust
Control:

Spray bars will be used on the crushing equipment for dust suppression. The traveled areas of the quarry will be watered by truck as necessary to control dust (please see Fugitive Emissions Plan).

Hours of
Operation:

Hours of operation would be 6:00 a.m. to 6:00 p.m. Monday through Friday and 6:00 a.m. to 2:00 p.m. on Saturday (when necessary). The only exception to these normal hours of operation would be when required by WISDOT to perform work on the Interstate, which may require night work on a very limited basis for the duration of a specific project.

Blasting
Plan:

- 1.) All blasting will be conducted by a properly licensed class 5, 6, or 7 blaster.
- 2.) Phone or e-mail notifications will be made to all surrounding neighbors and the Town of Albion 24 hours prior to any blast.
- 3.) A blasting log will be required for each blast.
- 4.) All blasting will be recorded by a properly calibrated seismograph.
- 5.) All seismograph records will be available anytime for review by the township.
- 6.) All blasting will meet the Wisconsin Department of Commerce Administrative Code Chapter 7.


Reclamation:

The goal of this project is to supply aggregate for DOT projects and to reshape the contours of the proposed site to create a drainage pattern that will be more conducive to farming and improve soil quality by removing the limestone outcrop in the ridge to be mined. Upon completion of quarry operations, the entire site would be returned to typical row crops (i.e. corn or soybeans).

Conclusion:

Legitimate concerns regarding pit and quarry operation usually center on the issues of the environment, and safety of all those in the immediate vicinity of the Pit. Yahara Materials, Inc. as an aggregate producer is in the most highly regulated industry in the state. We conduct our operations well within these regulations, and with particular regard to the concerns of the neighbors about blasting, noise, and dust. Our carefully designed operation and reclamation plans will assure that all concerns are met.

Respectfully submitted,



Timothy Beeghgan
Yahara Materials, Inc.



Yahara Materials, Inc. recognizes the need for a comprehensive and consistent company policy that outlines control measures, activities, and management options that contribute to a reduction in fugitive emissions from crushing, processing, and transporting of non-metallic mineral aggregates at quarry locations. This plan specifies potential fugitive emissions sources and the appropriate control methods.

Plan Outline

I. POTENTIAL FUGITIVE EMISSION SOURCES

- A. Transport of shot rock to crusher
- B. Crushing Operations
- C. Screening Operations
- D. Conveying of Aggregate Products
- E. Stockpiling and Stockpile Maintenance
- F. Truck Transport of Final Products
- G. Total Facility

II. FUGITIVE EMISSIONS CONTROL OPTIONS

- A. Water Spray Application
- B. Drop Height Management
- C. Site Traffic Speed Control

III. TRAINED PERSONNEL RESPONSIBILITIES

- A. Maintain Control Equipment in Operable Condition
- B. Evaluate Fugitive Emissions and Need for Control Application
- C. Maintain Access to Water Sources as Needed
- D. Enforce Speed Limits on Process Vehicular Traffic
- E. Truck Transport of Final Product
- F. Total Facility

IV. RECORDKEEPING

- A. Activity Documentation

I. POTENTIAL FUGITIVE EMISSION SOURCES

- A. Transport Shot Rock to Crusher — Loader traffic to and from the primary crusher from the shot rock or nibble pile may create excess fines in the tire lanes when surface moisture conditions are dry. Loader operators should scrape and replace traffic lane aggregates when necessary to reduce surface fines. Water may be added as necessary to maintain fugitive suppression.
- B. Crushing Operations — Each reduction phase of the crushing process has the potential to generate fugitive emissions. Primary crushing typically exhibits the least fugitive generation, with each successive reduction having a greater potential for emissions. Each facility or crushing spread has spray equipment, including pumps, hose, spray nozzles, and spare parts. Spray nozzle location and water application rate is determined by the operator to provide maximum control under situational circumstances. The nozzle or nozzles may be located on one crusher or all crushers at the facility, depending on the needed control.
- C. Screening Operations — Screening operations may generate fugitive emissions and are particularly susceptible to wind and low moisture conditions. The initial screen may have adequate material moisture for good emissions control in most circumstances, but as with the reduction phase, each successive screening operation has an increased potential for emissions, with decreased material moisture contents and finer fractions. Water addition during crushing exhibits the best control for screening operations.
- D. Conveying of Aggregate Products — Conveyance of rock products during the processing of aggregates exhibits the least potential for fugitive emissions of all the processes at a facility. The drop or transfer points between processes and conveyors provide the most opportunity for emissions, but are typically the easiest to control. Wind and/or low moisture conditions may be abated by water application, and minimizing the drop height between transfer points. For normal operations, application of a single management tool may be very effective in controlling emissions.
- E. Stockpiling and Stockpiling Maintenance — Stockpiling operations at crushing facilities consist of placing aggregates in storage piles with stackers or front-end loaders. Stackers are typically adjustable; so drop height to the pile can be controlled as with other conveyors. Loader transfer results in fewer emissions from dumping, but greater potential from the loader traffic and tire contact with generated fines. Travel roads may be sprayed with water for longer lasting control. Scraping and application of new aggregate can also be effective in controlling fugitive emissions from this operation. Fugitive emissions from stockpiles are highly dependent on aggregate gradation, weather, location, stockpile age, and amount of loading face activity.
- F. Truck Transport of Final Product Truck traffic in the area of crushing operations has the potential to generate excessive surface fines on haul roads. Watering and speed controls are the most effective options for controlling fugitive emissions from truck traffic. Any one of these management options may be incorporated into routine operations to provide continuous benefit.
- G. Total Facility — Minimizing the emissions from fugitive sources at a crushing and processing facility requires a knowledge of potential contributing factors on the part of operations level personnel, and a common-sense application of available management options to provide significant control of fugitive emissions from crushing operations.

II. FUGITIVE EMISSIONS CONTROL OPTIONS

- A. Water Spray Application — Water may be added directly to aggregate product with spray nozzles at any phase of the production cycle. Each facility is equipped with adequate equipment to make multiple-point application of water if needed. The person responsible for plant operations decides where application affords the best control efficiency for current conditions. In addition to material control; the plant foreman is responsible for water application to site roads and stockpiles as necessary to maintain acceptable site opacity.
- B. Drop Height Management — Facility foreman is responsible for minimizing drop height at all material transfer points, including stacker and loading operations.
- C. Site Traffic Speed Control — Facility foreman or company responsible official enforces appropriate speed limit in the production area. Speed limit determination is influenced by site-specific conditions and may be lowered at the foreman's discretion, to provide greater control influence.

III. TRAINED PERSONNEL RESPONSIBILITIES

- A. Maintain Control Equipment in Operable Condition — The facility foreman is responsible for managing emissions control and is required to maintain all suppressive equipment in operational condition according to the Malfunction Prevention and Abatement Plan. He must maintain adequate spare parts inventory to accommodate changing conditions and equipment replacement.
- B. Evaluate Fugitive Emissions and Need for Control Application — The facility foreman or other person designated as being trained for operations management is required to evaluate conditions, process variables, and fugitive emissions on a continuous basis during crushing operations. From this evaluation, the trained person determines whether opacity and emissions are within allowable levels, and if not, to apply available control options as needed to gain the required level of fugitive control.
- C. Maintain Access to Water Sources as Needed — The foreman is responsible for locating and maintaining access to water resources to provide adequate fugitive emissions control. For normal operations, application of a single management tool may be very effective in controlling emissions.
- D. Enforce Speed Limits on Process Vehicular Traffic — The facility foreman/responsible person must determine if enforced speed limits are effective in controlling fugitive emissions from that source. He has authority to reduce vehicular speeds as appropriate to gain the needed control. Site speed limits affect all process vehicles, including loaders, trucks, and visitors.
- E. Transport of Final Product — Truck traffic in the area of crushing operations has the potential to generate excessive surface fines on haul roads. Watering and speed controls are the most effective options for controlling fugitive emissions from truck traffic. Any one of these management options may be incorporated into routine operations to provide continuous benefit.
- F. Total Facility — Minimizing the emissions from fugitive sources at a crushing and processing facility requires a knowledge of potential contributing factors on the part of operations level personnel, and a common-sense application of available management options to provide significant control of fugitive emissions from crushing operations.

VI. RECORDKEEPING

- A. Activity Documentation – Yahara Materials, Inc. is committed to accurate and complete documentation of crushing process parameters that influence and indicate compliance with applicable State and Federal regulations. The facility foreman is required to record important process information on a daily basis, maintain the daily records for inspection, and to deliver the records to the company office for storage and reference for an additional four years.

ALBION

T.5N

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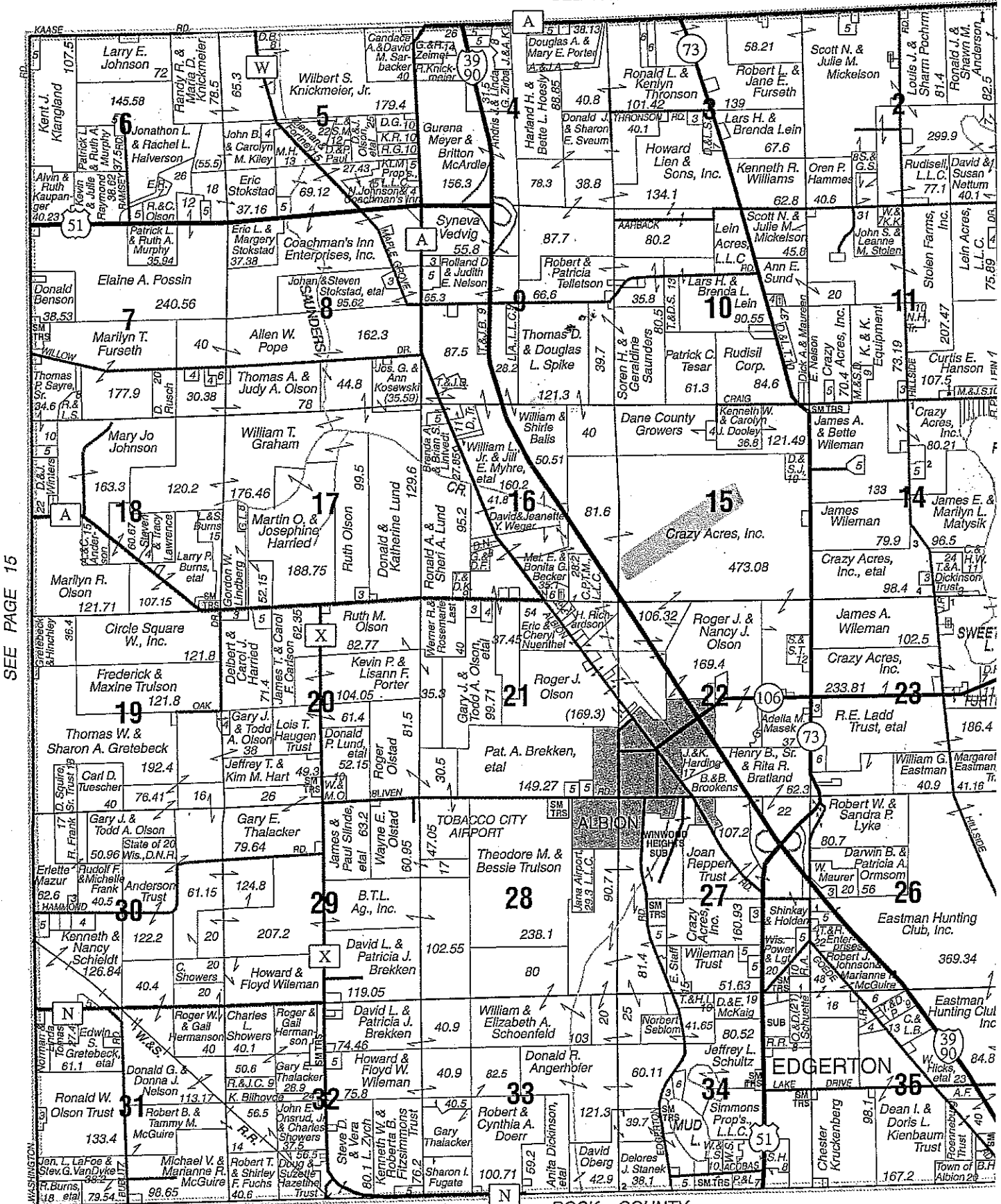
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SEE PAGE 15



P.O. Box 277 Waunakee, WI 53597-0277 Phone 608-849-4162 Fax 608-849-5062

YAHARA MATERIALS BLASTING PROCEDURE

- 1.) Blasting will be conducted by a properly licensed class 5, 6 or 7 Blaster.
- 2.) Notifications will be made by either the Blasting Contractor and/or Yahara Materials Twenty-four (24) hours prior to any blast.
- 3.) A blasting log will be required for each blast.
- 4.) All blasting will be recorded by a seismograph.
- 5.) All seismograph records will be available at any time for review by the township.
- 6.) All blasting will meet the Wisconsin's Department of Commerce Administrative Code Chapter 7.

Yahara Materials, Inc.

Tom Poad
Blasting Manager



**EROSION CONTROL AND
STORMWATER MANAGEMENT PLAN
WILEMAN/CRAZY ACRES, INC. QUARRY
ALBION TOWNSHIP
DANE COUNTY, WISCONSIN**

EROSION CONTROL MEASURES:

ENTRANCE:

The entrance to this site will have a clear stone tracking pad, which prevents tracking of material onto public roads.

BERMS:

The stripped soils will be separated in stock piles, the overburden will be stripped and used as the base of the berm, the top soil will be used to top dress the berms. The top soil and the subsoil will be used in the final restoration. The berms will be constructed with a depression that will serve as a sediment trap at the base of the berm. (See detail. The berms will be seeded and mulched within seven days of construction.) If needed, the berm will have a buffer beyond the limits of the berm. This buffer will be seeded and mulched.

SILT FENCING:

Silt Fencing is used as necessary when soils are being stripped and stockpiled.

STONE WEEPER:

A stone weeper will be used to slow water velocity and trap any sediment as necessary. The weeper will be built with 3 to 6 inch clear stone, with a depression in the middle and higher at the slope of the ditch. The weeper will have a face with 1 to 2 inch stone.

SEEDING & MULCHING:

Seeding:

All the berms and non-farmable areas will be seeded at a rate of seven pounds per 1,000 square feet of #20 Wis DOT Specification seed mixture. Within seven days of completion of the grading operations. To optimize growth all planting will be conducted between May 15th in the spring, and no later than September 15th

in the fall. Fertilizer shall be applied at the rate of 10 pounds per 1,000 square feet 16-8-8 (NPK). The steep side slopes of the quarry will be stabilized with seed and polymer treatment to prevent any erosion. As our long range plan is to return this site to agriculture, the relatively flat or gently sloping area would be returned to either row crops, such as corn and soybeans or to alfalfa. Therefore seeding of the quarry floor will be unnecessary except to allow for any waterways within the site. The berms will be stabilized with 90 lbs per 1000 square foot (2.5 tons per square foot) of mulch.

Note*: Please see enclosed WisDOT specifications for seed Properties and germination rates.

MAINTENANCE:

The berms will be inspected and repaired according to needs of the site. This will include cleaning of the weeper, the sediment basins and additional application of seed and mulch, if necessary. The drive way will be maintained free of sediment or soil deposits.

COST:

The annual estimated cost of the erosion control measures is approximately \$1500.00 per year.

SCHEDULE:

All schedules are presented as an estimate, as work at this site is project driven, and operational dates may vary as project demands dictate.

- | | |
|------------|--|
| March: | Strip top soil and overburden, prepare and shape berms for seeding. Construct the swale next to the berms. |
| March: | Seed and mulch berms and disturbed areas, not to be used in operation. |
| April/May: | Seeding established and repair the areas where new vegetation is needed. |
| Weekly: | Inspect all erosion control measures to insure effectiveness. |

The contact Person for Erosion Control Plan is:

Tim Geoghegan
Yahara Materials, Inc.
P.O. Box 277
Waunakee, WI 53597
Telephone: 608-849-4162
E-Mail: tim@yahara.com

STORM WATER POLLUTION PREVENTION PLAN

SUMMARY

The Storm Water Pollution Prevention Plan concentrates on identifying potential pollutants on the construction site and adopting management practices that eliminate their contact with storm water. The following outline was used as a guideline to develop an effective and functional program for pollution prevention.

I. Intent

- A. Identify potential sources of storm water contamination on the construction site.
- B. Develop or modify procedures to eliminate storm water contamination from significant substances on the site.

II. Focus

- A. Provide education for company employees. Reduce human error factor as contributor to pollution.
- B. Identify significant management practices that achieve the plan intent.
- C. Implement Best Management Practices.

III. Scope

- A. Rock crushing and processing plants
- B. Hot mix asphalt plants
- C. Areas adjacent to plants that are impacted by operations
- D. Externally and internally drained sites

Potential pollutants and particular operations that create exposure risk were identified. The plan development then focused on management options that addressed those issues and best served the intent of reducing storm water pollution. Best Management Practices were expanded from available options.

Ten Best Management Practices were incorporated into the plan that encompass the operation of hot mix asphalt plants, rock and gravel crushing and processing plants, areas adjacent to the plants, and externally and internally drained sites that may be impacted by the operations. A summary of the Best Management Practices is:

1. Education- operator and employee training
2. Inspection and Supervision
3. Communication and emergency response
4. Plant site selection
5. Significant material storage
6. Repair and maintenance schedule
7. Good housekeeping practices
8. Construction of containment as needed
9. Erosion control prevention
10. Outside Vehicle Washing

The practices listed have been expanded in the plan to address specific areas of concern. Plant operators or supervisors have the option to expand or adapt particular practices to best serve the intent of the plan at a specific site.



Universal Soil Loss Equation for Construction Sites

Dane County Land Conservation Division



Developer: Yahara Materials
 Project: Wielman Quarry - Operational
 Date: 11/18/2013

Version 2.2

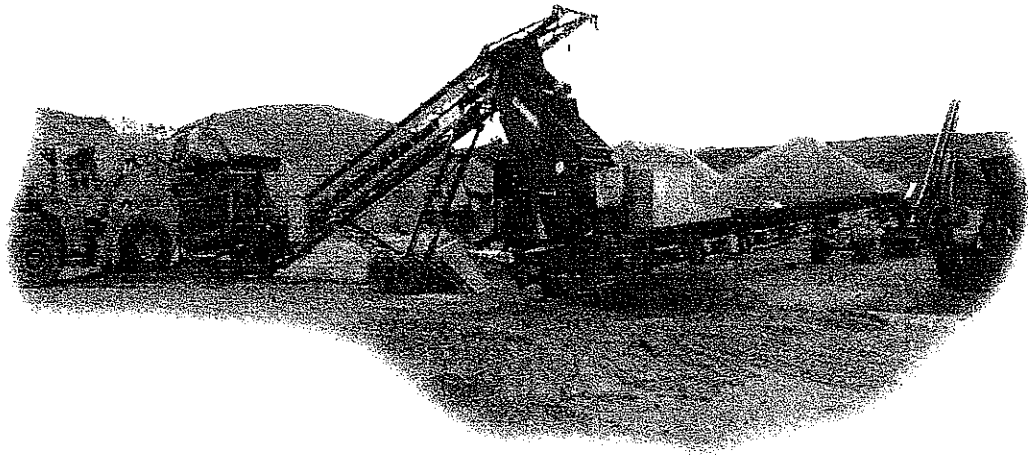
Land Disturbing Activity	Begin Date	End Date	Period % R	Annual R Factor	Soil Map Unit	Soil Erodibility K Factor	Slope (%)	Slope Length (feet)	LS Factor	Land Cover C Factor	Soil loss A=%RxRxKxLSxC (tons/acre)	Percent Reduction Required (7.5 tons/acre)
disturb ground	3/1/2014	3/1/2021	700.0%	150	RnB	0.43	2.0%	1720	0.47	1.00	212.8	
seed and mulch	3/1/2021	-----	12.0%	150	RnB	0.43	2.0%	1720	0.47	0.12	0.4	
TOTAL											213.2	96%

Land Disturbing Activities:

input	disturb ground	definition
	apply mulch	activity which leaves the ground devoid of vegetation
	seed and mulch	application of straw mulch at 1.5 tons/acre
	seeding	seeding and application of straw mulch at 1.5 tons/acre
	sod	temporary or permanent seeding without the use of mulching materials
	paving	installation of sod
		providing 100% cover to disturbed ground with paving materials or stone

Notes: Erosion control measures will be installed prior to commencing land disturbing construction activities and will be maintained throughout the operation of the quarry. Runoff from the quarry area will be self-contained. The soil type with the highest soil erodibility K factor was used. The slope length assumes that there will be a high point in the floor so that all of the runoff is not directed towards one corner of the quarry.

Designed By:	RKOL
Date	11/18/2013
Checked By:	RKOL
Date	11/18/2013



Aggregate Processing Plant Sound Level Assessment



Gail Jensen, P.E.
Keith Mathison
Mathy Construction Company
920 10th Avenue North
Onalaska, WI 54650
January 30, 2004

Noise Measurements at an Actual Sand and Gravel Operation and Other Everyday Noises

- (1) Noise measurements were taken at the Mathy Construction Sievertson Sand and Gravel Operation on October 3 and 5, 2000. Results are provided below.
(2) Background noise measurements were also taken at the intersection of County Highways B and P on October 7, 2000. Results are provided below.
(3) Reference everyday noise levels were obtained from the League of the Hard of Hearing. These noises are also provided for reference.

Sand and Gravel Operation Noise Levels

<u>Location</u>	<u>Noise Level (in Decibels, dBA)</u>
Immediately adjacent to primary crusher	88
Immediately adjacent to screener	95
Immediately adjacent to generator	99
Immediately adjacent to loading trucks	76
Average	90
500 feet from processing equipment	60
750 feet from processing equipment (behind berm)	49
1000 feet from processing equipment (behind berm)	47
1500 feet from processing equipment (behind berm)	43
2 miles from processing equipment	47
1000 feet from processing equipment (no berm)	58

Other Everyday Noises

Highway B & P background	57
Highway B & P background when vehicles pass	75
Immediately adjacent to Riley Tractor in high idle	97
Normal conversation	60

Home

- 50 refrigerator
- 50 - 60 electric toothbrush
- 50 - 75 washing machine
- 50 - 75 air conditioner
- 50 - 80 electric shaver
- 55 coffee percolator
- 55 - 70 dishwasher
- 60 sewing machine
- 60 - 85 vacuum cleaner
- 60 - 95 hair dryer
- 65 - 80 alarm clock
- 70 TV audio
- 70 - 80 coffee grinder
- 70 - 95 garbage disposal
- 75 - 85 flush toilet
- 80 pop-up toaster
- 80 doorbell
- 80 ringing telephone
- 80 whistling kettle
- 80 - 90 food mixer or processor
- 80 - 90 blender
- 80 - 95 garbage disposal
- 110 baby crying
- 110 squeaky toy held close to the ear
- 135 noisy squeeze toys

Work

- 40 quiet office, library
- 50 large office
- 65 - 95 power lawn mower
- 80 manual machine, tools
- 85 handsaw
- 90 tractor
- 90 - 115 subway
- 95 electric drill
- 100 factory machinery
- 100 woodworking class
- 105 snow blower
- 110 power saw
- 110 leafblower
- 120 chain saw, hammer on nail
- 120 pneumatic drills, heavy machine
- 120 jet plane (at ramp)
- 120 ambulance siren
- 125 chain saw
- 130 jackhammer, power drill
- 130 air raid
- 130 percussion section at symphony
- 140 airplane taking off
- 150 jet engine taking off
- 150 artillery fire at 500 feet
- 180 rocket launching from pad

Recreation

- 40 quiet residential area
- 70 freeway traffic
- 85 heavy traffic, noisy restaurant
- 90 truck, shouted conversation
- 95 - 110 motorcycle
- 100 snowmobile
- 100 school dance, boom box
- 110 disco
- 110 busy video arcade
- 110 symphony concert
- 110 car horn
- 110 - 120 rock concert
- 112 personal cassette player on high
- 117 football game (stadium)
- 120 band concert
- 125 auto stereo (factory installed)
- 130 stock car races
- 143 bicycle horn
- 150 firecracker
- 156 capgun
- 157 balloon pop
- 162 fireworks (at 3 feet)
- 163 rifle
- 166 handgun
- 170 shotgun

Section 1.0

Introduction

1.1 Purpose

Sounds generated by industry, transportation and normal day to day activities are receiving attention by the general public. Sound generated by aggregate processing plants is among the industries that are becoming a local interest. Expanding residential developments are encroaching on the areas where aggregate processing plants operate. Concerned neighbors are becoming more interested in aggregate processing plant operations in their neighborhoods. To this end, a study was conducted last construction season (2003) to measure, record and comment on the sound levels generated by normal operation of aggregate processing plants. The result of these sound pressure readings is used to determine any potential problems with sound leaving the plant site boundaries and to examine any preventive measures to any problems that may exist.

1.2 Acoustics

In order to put the data recorded into perspective, it is necessary to understand how sound is measured. When an object moves it produces a vibration. When an object vibrates in the atmosphere it moves air particles around it, and in turn, these air particles move air particles around them creating a pulse of the vibration through the air. Sound is measured in decibel (one tenth of a bel), which is the amount of air pressure on the eardrum.

The human ear perceives sound that occurs within the frequency range of 20Hz (Hertz) and 20kHz. In addition the human ear will detect sound that is above the hearing threshold, which is a function of frequency. A standardized A-weighting curve was developed to measure to the change in sensitivity of the ear with respect to frequency. Sound level measured is typically denoted as decibels (dBA).

A quiet home or whisper is about 33 dBA (decibels). Normal conversation is about 63 dBA and a jackhammer is about 103 dBA. Table 1 lists the typical sound levels encountered each day by most people. Sound intensity can be perceived differently by individuals due to the efficiency of the individuals hearing ability.

80-89	Concrete Mixer, Noisy Workshop, Main Road Traffic
70-79	Noisy Office, Car Interior, Vacuum Cleaner, TV, Radio
60-69	Busy Office, Normal Speech
50-59	Urban Residence, Average Office, Quiet Restaurant
40-49	Small Town Residence, Living Room
30-39	Quiet Home, Whisper, Normal Sleep
20-29	Broadcast or Recording Studio
10-19	An-echoic Chamber

Table 1 Typical Sound Levels

A change of 3 dBA is barely noticeable to the human ear, but a change of 5 dBA is clearly noticeable to the human ear. A change of 10 dBA is a doubling of the typical loudness of the sound. Theoretically, sound levels decrease by 6 dBA from a point source for each doubling of the distance from the source.

1.3 Study Parameters

For this study, sound pressure levels were measured with a Radio Shack 33-2055A and/or a Casella Cel-231 Digital Sound Survey hand-held meter. Aggregate processing plants were taken to be a point source center at the generator trailer (loudest source of an aggregate processing plant), rather than the individual components of the plant. Sound emanates from a source in a spherical pattern therefore a ray pattern of measurement was used to intersect the spherical wave at a given distance. Distances from the generator were measured and readings were taken in each quadrant for set intervals from the source.

LEGEND

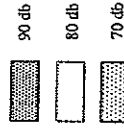
- PAVED AND DRIVE ROAD
- LAKE/POND
- RIVER/STREAM
- DRAINAGE CHANNEL (UNIMPROVED)
- SWAMP
- MOSS CONTOUR
- SCHEMATIC CONTOUR
- DEPRESSION CONTOUR
- SPOT ELEVATION
- Property Lines
- POWERS LINE
- LANDING LIMIT BOUNDARY
- SEULIAN FOOTING
- TREE COVER
- ROCK
- ROCKLAND SLIPES
- CURRENT OR FUTURE
- MATERIAL STOCKPILE
- STRIPPED AREA
- DIRECTION OF WIND
- TEST PILES



Plant 29 Foxridge

Temp 81 F
Wind N/A

Equipment
85-23

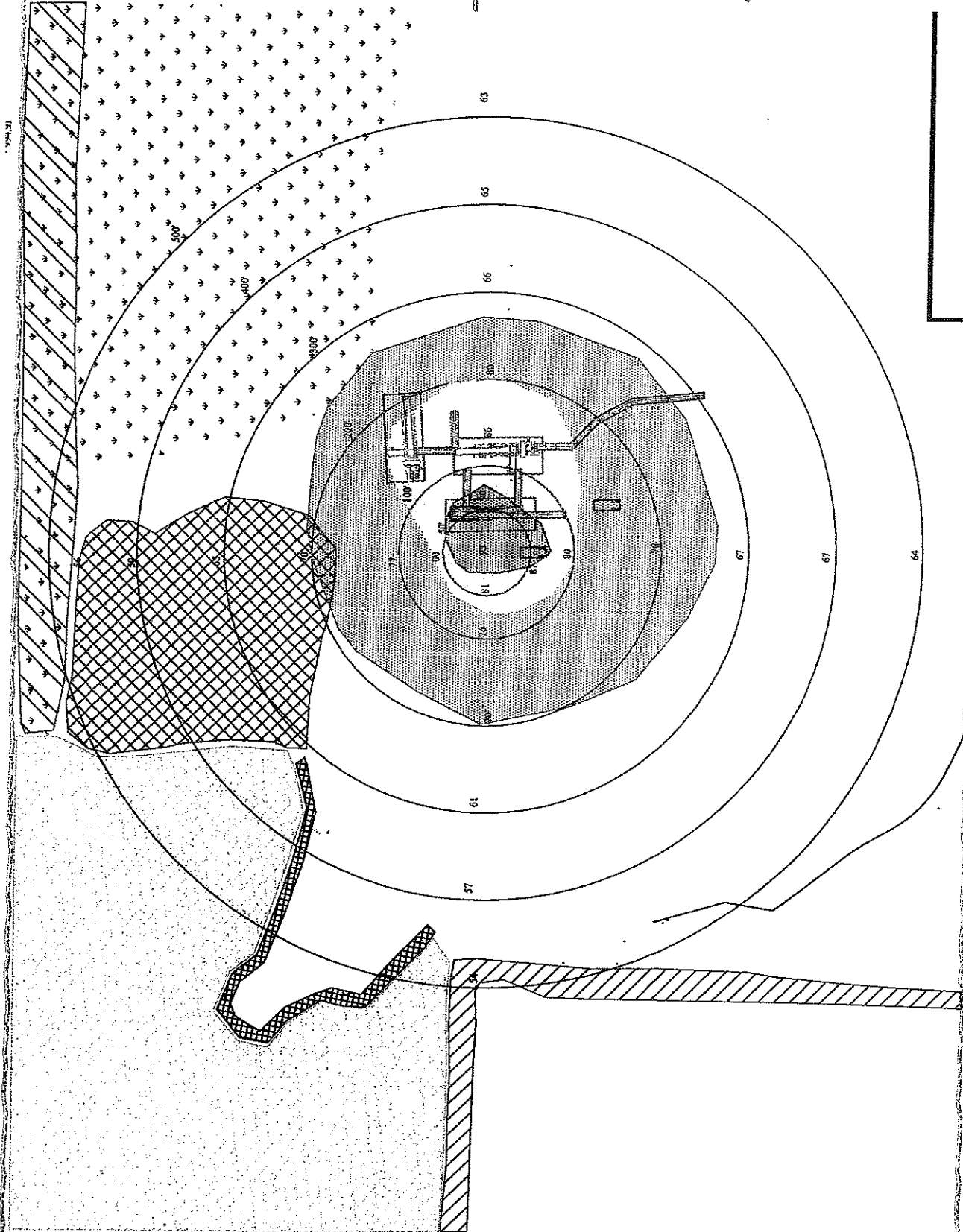


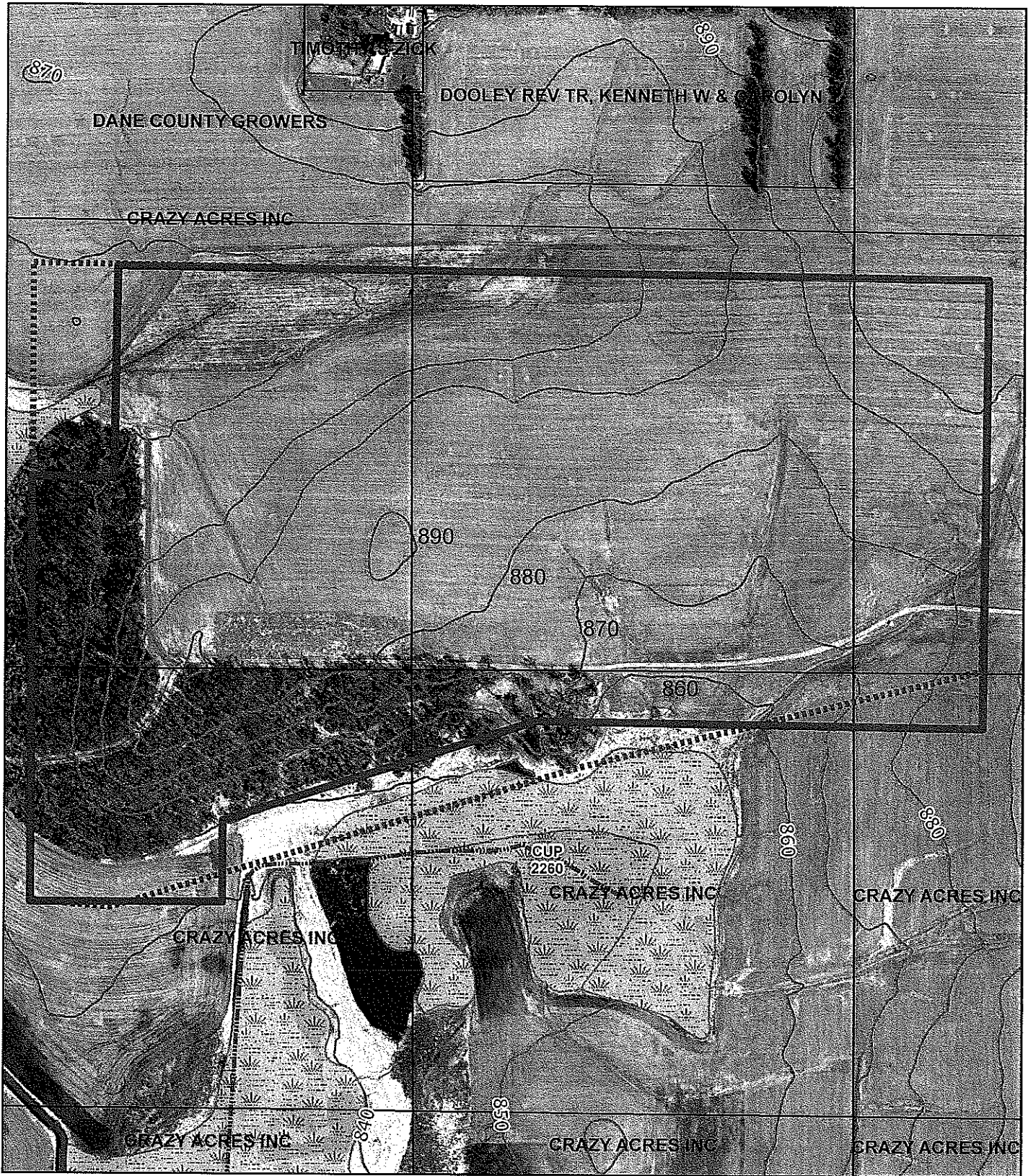
Masby Construction is
Committed to Protecting Our
Environment and Natural Resources



Foxridge Pit Plant 29 Crusher
Milestone Materials
331.246.8700
10000 Highway 100, Foxridge, VT 05443


Sound Pressure Map
Drawing No. 1





Legend

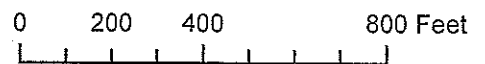
 Wetland

 Original proposed boundary

 Revised Boundary



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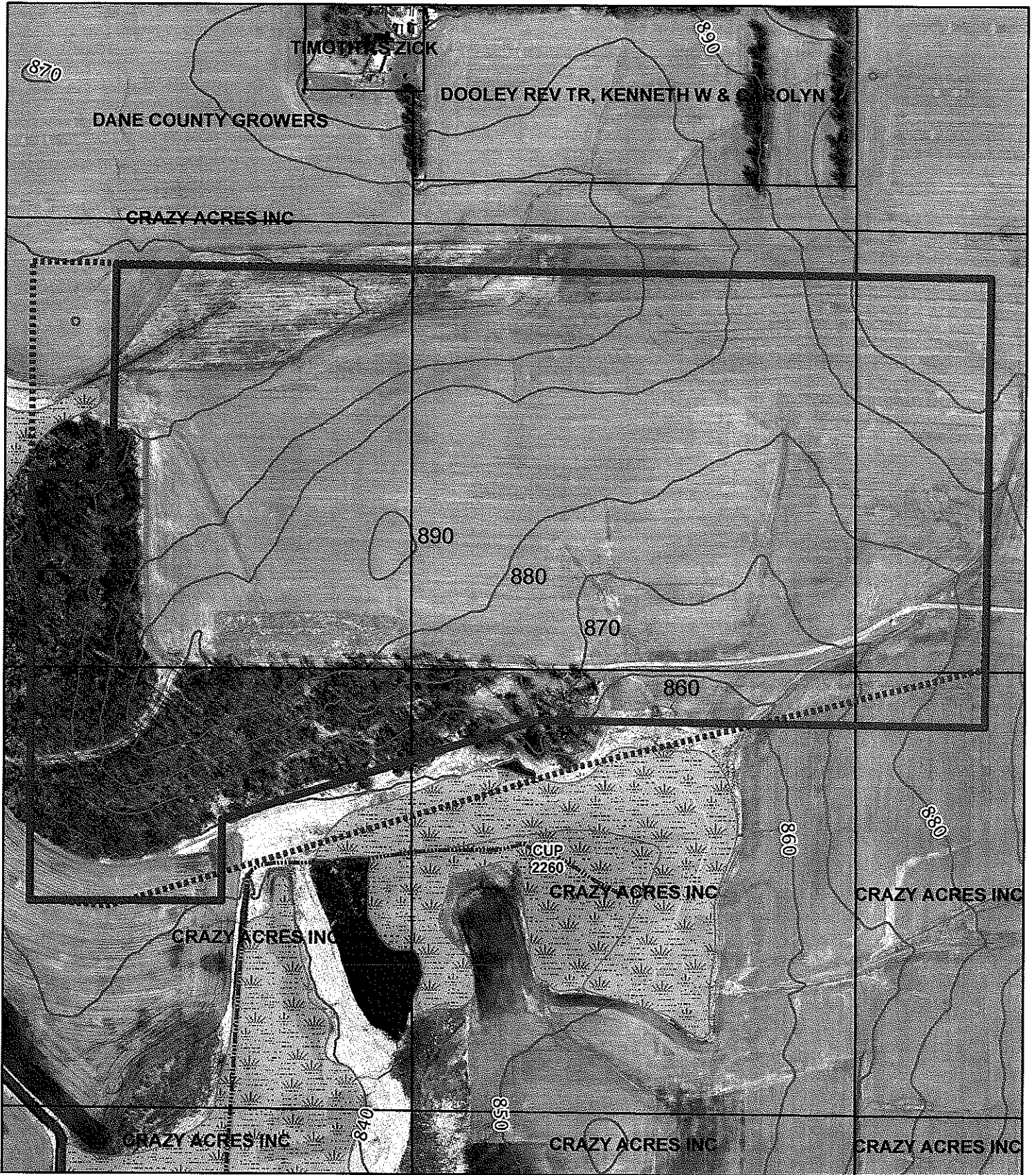
Legend

 Wetland


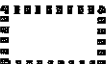



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Legend

-  Wetland
-  Original proposed boundary
-  Revised Boundary



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Crazy Acres LLC**

