DOUGLAS COUNTY ZONING COMMITTEE
PUBLIC HEARING AND REGULAR MEETING
Wednesday, March 11, 2020
Public Hearing – 9:00 a.m.; Regular Meeting to Follow
Government Center Board Room, 1316 North 14th Street, Superior, Wisconsin

Please call the Chair or Zoning Office (715-395-1380) if you are unable to attend.

MEMBERS:  Mary Lou Bergman, Chair  Patricia Ryan, Vice Chair  Jim Borgeson
            Charlie Glazman  Nick Baker

AGENDA
(Committee to maintain a two-hour meeting limit or take action to continue meeting beyond that time.)

1. Roll call.
2. Approval of minutes from the January 8, 2020, meeting (attached).
3. Suspend regular meeting; adjourn to public hearing.
4. Public Hearing (applications attached):
   a) Amendment to the Douglas County Zoning Ordinance 8.0: Petition No. 19-07: DL Skiing, LLC, from the December 11, 2019, hearing.
   b) Conditional-use permits:
       1. DL Skiing, LLC; and
       2. Kerry and Lyndsey Johnson.
   c) Conditional-use permit renewals/reclamation plan approvals:
       1. Town of Oakland – non-metallic mine permit #8244;
       2. Douglas County Forestry – non-metallic mine permit #13643; and
       3. Douglas County Forestry – non-metallic mine permit #22853.
   d) Recap of zone change recommendations to the County Board.
5. Resume agenda.
6. Reports:
   a) Planning and Zoning/Board of Adjustment;
   b) Rural Housing Authority;
   c) Land Conservation;
   d) Surveyor;
   e) Land Records;
   f) Real Property Lister; and
   g) Register of Deeds – retained fees account.
7. Action items/referrals:
   a) Resolution to adopt the policy to prohibit the use of excessive force and the barring of entrances/exits for non-violent civil rights demonstrations (attached);
   b) Approval to transfer $77,082 from 2019 capital project reserves for the second payment for imagery photography – pictometry (attached);
   c) Record funding of $4,000 for the Clean Boats Clean Waters Inspector position - grant (attached); and
   d) Record funding of $50,000 for the AIS Coordinator position - grant (attached).
8. Future agenda items.

cc:  County Board Supervisors  Other interested parties

NOTE: Attachments to agenda are available in County Clerk’s Office for review or copying. Action may be taken on any item listed on the agenda. The County of Douglas complies with the Americans with Disabilities Act of 1990. If you are in need of an accommodation to participate in the public meeting process, please contact the Douglas County Clerk’s Office at (715) 395-1341 by 4:00 p.m. on the day prior to the scheduled meeting. Douglas County will attempt to accommodate any request, depending on the amount of notice we receive. Posted: Courthouse, Government Center, Telegram

2/26/2020
Name  Date
A Public Hearing will be held by the Douglas County Planning & Zoning Committee at **9:00 a.m. on Wednesday, March 11, 2020** in the Government Center Board Room, Second Floor, 1316 North 14th Street, Superior, Wisconsin to hear the following:

**a) Amendment to the Douglas County Zoning Ordinance 8.0:**

Petition No. 19-07: DL Skiing LLC, Superior, WI - from the December 11, 2019 hearing - Lots 1 & 2, CSM #527, Vol 4, Pgs 28-29, Pt NW1/4-SW1/4, Section 8, T48N-R15W; (3041S Whitetail Ridge Rd; TS-030-01913-00; 01913-01), Town of Superior – from the R-2: Residential zoning district to the RR-1: Residential-Recreation zoning district, (proposed use: lodging for the resort), filed November 13, 2019 in the County Clerk’s Office.

**b) Conditional-Use Permits:**

1) DL Skiing LLC, Superior, WI – lodging for the resort (existing building) – Lot 1, CSM #527, Vol 4, Pgs 28-29, Pt NW1/4-SW1/4, Section 8, T48N-R15W; (3041S Whitetail Ridge Rd; TS-030-01913-00), Town of Superior.

2) Kerry & Lyndsey Johnson, Solon Springs, WI – home occupation (assembly hall for events) – Pt SE1/4–SE1/4, Section 27, T45N-R12W; (11517S Cemetery Rd; SO-026-01082-00), Town of Solon Springs.

**c) Conditional-Use Permit Renewals:**

1) Town of Oakland, South Range, WI (owner/operator) – non-metallic mine permit #8244 renewal and approval of reclamation plan – Pt SE1/4–SW1/4, Section 9, T46N-R13W; (5789E Tri Lakes Rd; OA-022-00143-00), Town of Oakland.

2) Douglas County Forestry, Solon Springs, WI (owner/operator) – non-metallic mine permit #13643 renewal and approval of reclamation plan – SW1/4–SW1/4, Section 28, T46N-R13W; SE1/4–SE1/4, Section 29, T46N-R13W; W1/2–NE1/4, Section 32, T46N-R13W; (9365S Lucas Rd; OA-022-00356-00; 00357-00; 00375-00), Town of Oakland.

3) Douglas County Forestry, Solon Springs, WI (owner/operator) – non-metallic mine permit #22853 renewal and approval of reclamation plan - S1/2-NE1/4-NW1/4 & S1/2-NW1/4-NE1/4, Section 26; S1/2-NE1/4, N1/2-SE1/4, Section 27, T44N-R13W; (13738S West Mail Rd; G0-012-01840-00; 01839-00; 01847-00; 01850-00), Town of Gordon.

Mary Lou Bergman, Chair

If you have any comments on this item, let the Planning & Zoning Office know in writing prior to the meeting, or appear at the Public Hearing. Planning & Zoning Office, 1313 Belknap St., Rm. 206, Superior, WI 54880 (715-395-1380). Action may be taken on any item listed on the public hearing. In accordance with WI Statutes 59.69 (5)(a), attachments to public hearing notice and maps of subject properties are available for review in the Planning & Zoning Office, or at www.douglascountywi.org. The County of Douglas complies with the Americans with Disabilities Act of 1990. If you are in need of accommodation to participate in the public meeting process, please contact the Douglas County Clerk’s Office at (715) 395-1341 by 4:00 p.m. on the day prior to the scheduled meeting. Douglas County will attempt to accommodate any request depending on the amount of notice we receive. TDD (715) 395-7521.

*ST February 21 & 28, 2020*
ZONING COMMITTEE
PUBLIC HEARING AND REGULAR MEETING
Douglas County Board of Supervisors
Wednesday, January 8, 2020, 9:00 a.m., Government Center Board Room
1316 North 14th Street, Superior, Wisconsin

Meeting called to order by Chair Mary Lou Bergman.


APPROVAL OF MINUTES: Motion by Ryan, second Baker, to approve minutes from the December 11, 2019, meeting. Motion carried.

PUBLIC HEARING:
Conditional-Use Permit Renewals:
TKC Real Estate Holdings LLC (owner) / Kraemer Company LLC (operator), Plain, WI – non-metallic mine permit #14268 – Pt NE1/4-NE1/4 & SE1/4-NE1/4, Section 35, T48N-R11W; (4479S Wuori Rd; MA-020-00676-01; 00679-00), Town of Maple.

Applicant present; correspondence received from Town of Superior recommending approval with same conditions as previous application, and change to condition number seven: replace 25,000 tons with 10,000 tons. Financial assurance will be adjusted; applicant aware and agrees to changes and conditions.

ACTION: Motion by Baker, second Glazman, to approve application with conditions as presented. Motion carried.

Peter & Christina Waletzko (owner/operators), Superior, WI – non-metallic mine permit #22816 – S1/2-NW1/4-SE1/4, Section 26, T47N-R14W; (TS-030-00674-00), Town of Superior.

Applicants not present; correspondence received from Town of Superior recommending approval with same conditions as previous application. Reclamation plan in process of updates.

ACTION: Motion by Baker, second Ryan, to approve application with conditions as presented. Motion carried.

Peter Waletzko (owner/operator) – non-metallic mine #22869 – E-10 acres of NW1/4-SW1/4 & W1/2-E1/2-NW1/4-SW1/4 & W1/2-NW1/4-SW1/4, Section 26, T47N-R14W; (TS-030-00667-00; 01), Town of Superior.

Applicant not present; correspondence received from Town of Superior recommending approval with same conditions as previous application. Reclamation plan in process of updates.

ACTION: Motion by Ryan, second Baker, to approve application with conditions as presented. Motion carried.
DEPARTMENT REPORTS:
Planning and Zoning/Board of Adjustment: Two vacant positions; tablets ordered for field staff to streamline processes.

Land Conservation: Groundwater test results presented in December. 2020 cost-share project funding 100% allocated. Clean Boat, Clean Water Coordinator grant funding awarded; awaiting grant approval for AIS coordinator.

Surveyor: 120 corners captured in 2019; additional 95 captured through contracts and private surveyors.

Land Records: Entire department received new computers with Windows 10.

Real Property Lister: Real Property Lister will attend pictometry conference in March. Tax bills finished in December; processing remaining 2019 deeds.

Register of Deeds: 641 documents recorded in December.

ACTION ITEM:
Resolution Regarding Wisconsin Department of Natural Resources Surface Water Grants for Aquatic Invasive Species: Grant application is to acquire funding for AIS Coordinator; funding will last two years for a part-time position.

ACTION (RESOLUTION): Motion by Baker, second Ryan, to approve resolution as presented and refer to County Board. Motion carried unanimously.

INFORMATIONAL ITEM:
Review of Conditional-Use Permit #25237 Approved December 13, 2017, for Virginia Metzdorf (Owner) / Les Chandler (Operator) for a Home Occupation (Boat Livery/Storage, Firewood Sales and Used Dock Sales), Located in the SW1/4-NE1/4, Section 2, T43N-R11W, Town of Wascott.

Operator in attendance. Items located within road right-of-way were delivered day of snow storm; unable to move due to snow.

ACTION: Motion by Ryan, second Glazman, to allow items encroaching road right-of-way to remain until May 1, 2020. Permit to be reviewed at May Zoning Committee meeting. Motion carried.

ADJOURNMENT: Motion by Ryan, second Glazman, to adjourn. Motion carried. Meeting adjourned at 9:27 a.m.

Submitted by,

Kaci Lundgren, Committee Clerk
PETITION FOR AMENDMENT TO DOUGLAS COUNTY ZONING ORDINANCE

Date of application: 11-8-19  ZC Hearing Date: 12-11-2019

TO THE DOUGLAS COUNTY BOARD OF SUPERVISORS AND ZONING COMMITTEE:
The Petitioner hereby petitions you pursuant to Wis Stat. § 59.69(5)(e)1, to amend the Zoning District Map of the Douglas County Zoning Ordinance by reclassifying the property as shown and stated below:

1. Requested Zone Change:

From (Zone District): R-2 Residential
To (Zone District): C-1 Commercial  R·R·1 Residential- Recreation

2. Property Description: Information must be complete and accurate.

Tax Parcel #: TS-030-01913-00  Section 4  Town 48  N  Range 15  W
Town of: Superior  Property Address: 3041 S Whitetail Dr.
Legal Description: (1) Lot 1 CSTM #527, Vol 14 pgs 28-29, pt NW SW
(2) Lot 2 CSTM #527, Vol 14 pgs 28-29, pt NW SW

3. Portion of Lot / Parcel Affected by Zone Change Request:
Lot / Parcel Size:  Length: Width: Acres: 10.01 (2 parcels)
Area to be Re-Zoned: Length: Width: Acres: 10.01 (2 parcels)

4. Property Owner:

Property Owner's Name: DL Skiing LLC  (Larry Palckrahek)
Mailing Address: 3125 S Mont du Lac Rd  City, State, Zip Superior, WI 54880
Telephone: 218-626-3797  E-mail Address: Mike.D @ mldResort.com

5. Petitioner requests this amendment for a proposed property use of:

/ Lodging for the resort

6. In making this petition, Petitioner gives permission for an inspection of the above-stated site by the Douglas County Office of Zoning Administration and/or Zoning Committee, and will allow photographs to be taken of the same if necessary.

7. Contact the Town Clerk to place this application on the Town Board agenda prior to scheduled Zoning Committee hearing as required by Sec. 59.69(5)(e) 3 Wis Stats.

(Continued on reverse)
8. A dimensional diagram of the property is as shown below:

![Diagram of the property]

*Property Owner or Agent Signature*
Larry Pulkrabek

*Date Signed*
11-12-19

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**Zoning Committee Decision:**
Date: 12-11-2019  □ Approved  □ Denied

**County Board Decision:**
Date: 12-19-2019  □ Approved  □ Denied

Petition for Amendment to Douglas County Zoning Ordinance
Rev 02-2017
APPLICATION FOR PERMIT:  □ LAND-USE  ✗ CONDITIONAL-USE

TO WHOM IT MAY CONCERN: The undersigned hereby applies for a permit to do work herein described in this application. The undersigned agrees that all work will be done in accordance with the Douglas County Zoning, Shoreland Zoning, Subdivision Control, Floodplain Ordinances and with all laws of the State of Wisconsin applicable to said premises. Do not start any construction until this office has issued a permit. Failure to obtain the necessary permits will result in a double permit fee and/or citation.

CONDITIONAL-USE PERMIT APPLICATIONS: PLEASE CONTACT TOWN CLERK - APPLICATIONS REQUIRE REVIEW BY YOUR TOWN BOARD PRIOR TO SCHEDULED ZONING COMMITTEE PUBLIC HEARING

Property Owner’s Name: DL SKILIN LLC
Mailing Address: 3125 mont de lac Dr, City, State, Zip Superior, WI 54880
Telephone: 218-626-3797  E-mail Address: mwco@MDCResort.com

PROPERTY DESCRIPTION: Information must be complete and accurate. If applicable state lot number, block number, subdivision name, government lot number, quarter sections, etc. (Note: This may be copied from your tax notice or deed.)

Tax Parcel #: TS-030-00913-00  Section 8  Town 48  N_Range 15 W
Town of: Superior  Parcel Acreage or Size: - 5.01
Property Address: 3041 S. Whiterace Dr
Legal Description: Lot 1 CSM #527 Vol 4 PGS 28-9 PT N 3/4 OF E 1/2 NW SW
Name of Adjacent Lake or Stream:  Wetlands: □ Yes □ No Zone District R2

Type of construction:  NONE  COST USE LODGING FOR RESORT
(propose addition to seasonal dwelling, alteration to accessory building, relocate structure)

Proposed Use: LODGING FOR THE RESORT (EXISTING BUILDING)

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Please stake building site prior to submitting this application.

Has any portion of the project been started? Yes □ No ✗ Sanitary Permit #: 44754 8/15/1972

By signing this application, I give my/our permission to allow a site inspection to be made of the site by Zoning staff and allow photographs to be taken if necessary. I hereby agree to terms and conditions on following site sketch page.

Applicant’s Signature: ____________________________ Date: 2-6-20

Printed Name (If different than property owner above):
Address & phone (If different than property owner above):

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Permit No:
Date Issued:
Zone Chg No:
Variance No:

Revised 03-2019
APPLICATION FOR PERMIT:  □ LAND-USE  □ CONDITIONAL-USE  
ZC Hearing:

TO WHOM IT MAY CONCERN: The undersigned hereby applies for a permit to do work herein described in this application. The undersigned agrees that all work will be done in accordance with the Douglas County Zoning, Shoreland Zoning, Subdivision Control, Floodplain Ordinances and with all laws of the State of Wisconsin applicable to said premises. Do not start any construction until this office has issued a permit. Failure to obtain the necessary permits will result in a double permit fee and/or citation.

CONDITIONAL-USE PERMIT APPLICATIONS: PLEASE CONTACT TOWN CLERK - APPLICATIONS REQUIRE REVIEW BY YOUR TOWN BOARD PRIOR TO SCHEDULED ZONING COMMITTEE PUBLIC HEARING

Property Owner's Name: KERRY "Al" JOHNSON
Mailing Address: 1217 CEMETERY RD  City, State, ZIP: Wi 54873
Telephone: 715 815 0605  E-mail Address: CAMPERAL@AOL.COM

PROPERTY DESCRIPTION: Information must be complete and accurate. If applicable state lot number, block number, subdivision name, government lot number, quarter sections, etc. (Note: This may be copied from your tax notice or deed.)

Tax Parcel #: 50-026-01082-00  Section 27  Town 45  N Range 12  W
Town of: GOLD SPRINGS  Parcel Acreage or Size: 31.870
Property Address: 1217 CEMETERY RD
Legal Description: SESE 27-45-12, EX 257/1184 EX LOT 1  CRM #1047 VOL 7 PES 234 235

Name of Adjacent Lake or Stream:  Wetlands: □ Yes □ No  Zone District

Type of construction:  STRENGTHEN EXISTING BUILDING USE TO A  
( accessory building, dwelling, addition to seasonal dwelling, alteration to accessory building, relocate structure)  
Proposed Use: SEASONAL  A-Z  (ASSEMBLY)  home occupation - assembly hall for events

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Has any portion of the project been started? Yes No  Sanitary Permit #: NA
By signing this application, I give my/our permission to allow a site inspection to be made of the site by Zoning staff and allow photographs to be taken if necessary. I hereby agree to terms and conditions on following site sketch page.

Applicant's Signature:  Date: 12-16-19
Printed Name (if different than property owner above):
Address & phone (if different than property owner above):

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Permit No:  
Date Issued:  
Zone Chg No:  
Variance No:  

Revised 03-2019
At the time this application is submitted for review, the proposed structure should be staked. Stakes, flags or some other method of identifying the footprint of the proposed structure must be placed before the site inspection can take place.

You are responsible for complying with State and Federal laws concerning construction near or on wetlands, lakes, and streams. Wetlands that are not associated with open water can be difficult to identify. Failure to comply may result in removal or modification of construction that violates the law or other penalties or costs. For more information, visit the Department of Natural Resources wetlands identification page or contact a Department of Natural Resources Service Center.

**Additional responsibilities for owners of projects disturbing one or more acre(s) of soil**

I understand that this project is subject to regulations regarding erosion control and storm water management and I will comply with those standards. For more information, visit the Department of Natural Resources or contact a Department of Natural Resources Service Center.

*It is the property owner's responsibility to know the location of their lot lines to ensure setback requirements are met.*
APPLICATION FOR PERMIT:  □ LAND-USE  ✔ CONDITIONAL-USE
APPLICATION WILL NOT BE PROCESSED WITHOUT SIGNATURE & DATE ON THIS PAGE.

TO WHOM IT MAY CONCERN: The undersigned hereby applies for a permit to do work herein described in this application. The undersigned agrees that all work will be done in accordance with the Douglas County Zoning, Shoreland Zoning, Subdivision Control, Floodplain Ordinances and with all laws of the State of Wisconsin applicable to said premises. Do not start any construction until this office has issued a permit. Failure to obtain the necessary permits will result in a double permit fee and/or citation.

CONDITIONAL-USE PERMIT APPLICATIONS: PLEASE CONTACT TOWN CLERK - APPLICATIONS REQUIRE REVIEW BY YOUR TOWN BOARD PRIOR TO SCHEDULED ZONING COMMITTEE PUBLIC HEARING

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<tr>
<td>Town of Oakland</td>
<td>Address: Same</td>
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<tr>
<td>Address</td>
<td>City, State, Zip Code: South Range WI 54874</td>
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<tr>
<td>6410 S County Road B</td>
<td>Phone Number: (please complete this field) 715-399-0204</td>
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PROPERTY DESCRIPTION: Information must be complete and accurate. If applicable state lot number, block number, subdivision name, government lot number, quarter sections, etc. (Note: This may be copied from your tax notice or deed.)

Tax Parcel #: OA-022-00143-00  Section 9  Town 460  N  Range 13  W
Town of: Oakland               Parcel Acreage or Size: 35.26
Property Address: 5789 E Tri Lakes Rd
Legal Description: SE, SW
Name of Adjacent Lake or Stream:  Wetlands: ☐ Yes ☐ No  Zone District F-1

Nonmetallic Mine (NEW) - Nonmetallic Mining Permit Number: YR-0017
CU Permit #: 8244

By signing this application, I give my/our permission to allow a site inspection to be made of the site by Zoning staff and allow photographs to be taken if necessary. I hereby agree to terms and conditions on following site sketch page.

Signature of Operator: [Signature]  Date: 2/1/2020

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* 5 year renewal

Revised 10-12-2016
You are responsible for complying with State and Federal laws concerning construction near or on wetlands, lakes, and streams. Wetlands that are not associated with open water can be difficult to identify. Failure to comply may result in removal or modification of construction that violates the law or other penalties or costs. For more information, visit the Department of Natural Resources wetlands identification page or contact a Department of Natural Resources Service Center.

**Additional responsibilities for owners of projects disturbing one or more acre(s) of soil**

I understand that this project is subject to regulations regarding erosion control and storm water management and I will comply with those standards. For more information, visit the Department of Natural Resources or contact a Department of Natural Resources Service Center.

*It is the property owner’s responsibility to know the location of their lot lines to ensure setback requirements are met.*
DOUGLAS COUNTY PERMIT

ISSUE DATE
03/08/2017

CONDITIONAL-USE#
8244

MAILING ADDRESS
TOWN OF OAKLAND
6410 S COUNTY ROAD B
SOUTH RANGE WI 54874

TOWN OF OAKLAND

PARCEL(S): OA-022-00143-00

PROPERTY ADDRESS
5789 E TRI LAKES RD

LEGAL DESCRIPTION: SE SW 9-46-13, EX W-160.02'

SECTION 09
TOWN 46 N
RANGE 13 W

FOR NON-METALLIC MINE (RENEWAL)

CONDITIONS: The following minimum requirements must be met for all land uses:

03-08-2017 - Douglas County Zoning Committee approved 3-year renewal of nonmetallic mining permit. Town approval dated 02-14-2017 received and on file. All conditions associated with this permit are listed on Page 2 (attached). This permit should be considered incomplete without Page 2 attached.

This is not a building permit. Check with your Town Chairman for information concerning township building requirements or permits for any structure. The Wisconsin Uniform Dwelling Code requires that all towns issue building permits for new dwellings and additions to existing dwellings. Please contact the appropriate town clerk for obtaining permits.

ZONING AUTHORITY
CONDITIONS OF PERMIT: 8244

As approved by Zoning Committee 03-08-2017

Tax Parcel I.D. Number: OA-022-00143-00

Proposed Use: Non-Metallic Mining Permit (3-Year Renewal)

NMM Permit Number: YR-0017

ISSUED: 03-08-2017
(5789 E Tri Lakes Rd)

CONDITIONS:

1. This permit approved for three-year period, expiring 03-08-2020.

2. Must comply with Ordinance 8.0, Section VI, Sub. 6.2. Reclamation plan on file reviewed by Douglas County Land & Water Conservation and determined adequate for permit renewal.

3. Must comply with Ordinance 8.9 to include NR-135 annual reporting requirements.

4. No financial assurance instrument required for municipal mines.

5. Must comply with all provisions of DNR stormwater permit regulations.

This page is intended to be a part of above numbered permit and should be included in any copies or other duplication of this permit.
January 24, 2020

#8244 - Town of Oakland Mine
OA-022-00143-00

This letter regards mine number 8244 owned by the Town of Oakland on Tri Lakes Road. The following two updates are requested for the upcoming conditional use renewal scheduled for the March 11, 2020 Zoning Committee meeting.

1. Map of proposed mine area including updated parcel lines
2. Authorization of Agent form signed by Aurora Ouiscosin Outdoor Club

Please review the attached maps of the mine area. The map created 1-20-2020 includes updated parcel lines which display the shift of the western parcel line. This map was drawn from the proposed mine area submitted with the initial reclamation plan. Please review for accuracy. Mining is only permitted with in the area defined on the map. If mining occurs outside this are, the Zoning Department must first approve the additional area to be mined. This map does not include display of wetlands or other protected resources. It is the duty of the mine operator to obtain permits prior to impacting wetlands or other protected resources.

The Douglas County Land Conservationist is also recommending after securing permissions from the property owner Aurora Ouiscosin Outdoor Club, reclamation be performed on the portion of the mine which extends onto the parcel to the west of parcel #OA-022-00143-00. The reclamation activities, including grading and seeding, should occur before November 1, 2020. This area will have a target to be approved as reclaimed acreage during the growing season of 2021.

Please provide written response if you are in an agreement with the areas defined in the attached map and the planned reclamation activities to occur by November 1, 2020. Please also return the signed Authorization of Agent form by the date of March 9, 2020.

Sincerely,

Ashley Vande Voort
Douglas County Land Conservationist
Ashley.VandeVoort@douglascountywi.org
(715) 395-1266

CC
Zach DeVoe
Sue Radzak

Attachments
1-20-2020 Proposed Mine Area Map
Original Proposed Mine Area Map
Authorization of Agent Form
DOUGLAS COUNTY, WISCONSIN
Planning, Zoning and Land Information Offices
1313 Belknap Street, Room 206
Superior, WI 54880

AUTHORIZATION OF AGENT TO ACT ON PROPERTY OWNER'S BEHALF

I hereby authorize the following person(s) to act as my agent(s) to apply for, sign and file the documents necessary to file the following application / paperwork:

☐ Land Use  ☐ Conditional Use  ☐ Sanitary  ☐ Address  ☐ Variance  ☑ Zoning

Tax Parcel I.D. Number:  OA-022-00142-00
Project Description:  SLOPE SIDES OF EXISTING GRAVEL PIT

AUTHORIZED AGENT

Signature:  
Daytime Telephone:  715-399-8611
Name:  BRIAN A. CONLEY
Mailing Street Address:  6693 S. LIEU RD.
City, State, Zip:  SOUTH RANGE, WI 54874

PROPERTY OWNER

Signature:  
Daytime Telephone:  715-816-0287
Name:  THOMAS A. VISALDY
Mailing Street Address:  8737 SD BYMAN BK RD.
City, State, Zip:  50 RANGE WI 54874

I declare, under penalty of perjury, that I am the property owner for the property listed above and that I personally filled out the above information and certify its accuracy with above signature.

NOTE: Verification of the property owner’s signature is required at the time of filing of this authorization form. Acceptable means of signature verification include copy of driver’s license with photograph, copy of any form of valid state or federal identification with photograph, or notarization of this form by a licensed notary public.
March 24, 2019

Notification of new Aurora Ouisconsin Outdoor Club Officers

Effective April 27, 2019, our newly elected officers take their positions.

President
Tom Visocky
8737 So Lyman Lake Road
South Range, WI 54874
Phone (715) 816-0287
Email: toms26t@gmail.com

Vice President
Matt Losiewski
905 East 5th St
Superior, WI 54880
(218) 428-6517
Email: mattsKl54874@yahoo.com

Secretary
Tim Crofoot
1227 Cumming Ave.
Superior, WI 54880
(218) 348-4050
Email: tecrofoot@gmail.com

Treasurer
Jerry Wittkopf
8598 S Cty Road L
South Range, WI 84874
(715) 398-6952
Email: jervon@aol.com
Reclamation Plan

Tri-Lakes Road (non-metallic mining) Pit
Town of Oakland
Douglas County

1. Site Information

A. Maps

General Location: enclosed is an excerpt from page 21 of Douglas County Plat Book showing the property.

Property Boundary: the property is described as the SE ¼ of the SW ¼ of Section 9, Town 46 North, Range 13 West. Enclosed is a copy of an aerial photograph provided by the Douglas County Land Records office. The Owner of record is the Town of Oakland. The Parcel Number is OA 022 – 00143 – 00.

Areal Extent: is shown on the attached drawing (base map provided by Thatcher Engineering). Current extent of mining encompasses approximately 9 acres. Ultimate extent of mining expected to include an additional 11.8 acres, for a total future mined area of approximately 20.8 acres of the 40-acre site. The “Old Town Dump” that was capped and closed in 1991 (registered with WDNR on August 7, 1991) accounts for approximately 3.7 acres of the site. An additional 3.2 acres of the site is town road right-of-way (Tri-Lakes Road) and a remnant portion to the south of Tri-Lakes Road, leaving approximately 12.3 acres of internal perimeter ultimately un-mined.

Geological Composition: Soil maps from Wisconsin Department of Transportation District 8 were obtained and copies are attached. These were prepared by DOT from historical published data on the region and have been refined over the years by the addition of regional field data. The area soils are defined as consisting primarily of Gogebic, Iron River, Cloquet and Cable loams and Vilas sand, all glacially deposited and providing the basis for the rolling terrain. Depth of deposit is expected to vary across the site down to the elevation of the regional ground water table at roughly elevation 1200. Borings performed on the adjacent 80 acres (S ¼ of the SE ¼ of Sec 9 T46N R13W) to the east of this property under supervision of Thatcher Engineering in 2001 (49 borings drilled – copies not attached) confirm deposit depths to the depth of their borings...down to approximate elevation 1213 without encountering the regional ground water. Thatcher described the soils on that property as consisting of “a random mix of sandy loam, silty loam and sometimes clayey loam”). As the depth of excavation in the previously mined areas approaches elevation 1252 with little change in material, depth of sand/gravel/loam on the site is expected to be up to 100 feet thick.
property to the immediate west of this property (SW ¼ of SW ¼ of Sec 9, T46N, R13W). Town roads are shown on the Plat Map as well. There are no other improvements on site or immediately nearby.

Previously Mined Areas: are shown on the enclosed location diagram (again based on the Thatcher Engineering base map) and were addressed above. Again, these comprise approximately 9 acres of the site.

B. Biological Information

The site consists of northern hardwoods (maples and aspen) bordering a previously mined excavation. Also on site is an “Old Town Dump” that was capped with clay, topsoiled and seeded with various grasses as directed by DNR (although the area has been colonized by native aspen vegetation) as part of its approved closure. Native birds such as black-capped chick-a-dees, blue jays and crows are at times seen on the site. Tracks of white-tailed deer are occasionally seen in the snow.

2. Post Mining Land Use.

For the foreseeable future, the site will remain as the Town’s sand and gravel pit. Likely this will be for at least the next 50 to 60 years. The Town obtains sand or gravel materials from the pit as need be for road repairs. Even though the pit is small and the materials are not ideal, we have had success with crushing operations bringing in a supply of crushed rock (from their own separate sources). This is mixed with materials extracted from the pit (and crushed) to create the final crushed gravel mixture we then stockpile and use. We have not had to do that for a couple years but will do so again when the need arises. The northern half of the existing pit area is the area the crushing operations are generally set up in, and where a small stockpile of crushed rock is still to be found. With over 50 miles of gravel roads to maintain in the Town, we rely on the gravel from this pit.

The pit is also put to other uses. In the deepest part of the excavation near Tri-Lakes Road (elevation 1252) we stockpile stumps from roadway ditching operations and/or from expanding the pit. Ultimately, these stumps will be covered with ditching materials and the area graded to finish this portion of the pit. As ditching materials are generally erosion-deposited topsoil and typically provide a rich source for native seed stock, these areas are expected to establish themselves quickly and will ultimately provide growing areas for aspen to begin successional colonization.

Along the westerly limits of the existing excavation and just north of the stump stockpile, large boulders uncovered during mining operations at the site are stored along the base of the excavation slope. As in the case of the stumps, these will eventually be covered with ditching materials and the material sloped up as shown in the enclosed site diagrams.
road improvement operations will be trucked to the site and spread/compacted by mechanical means over all areas that are to receive “salvaged topsoil.” It is possible that over time, ditching materials from nearby road ditching projects will be hauled to the site and stockpiled, perhaps along the south and west limits of the current excavation where future expansion of the pit is unlikely. These may receive temporary seeding if necessary to stabilize the “salvaged topsoil” stockpile, as determined by the Town Board. The Wisconsin Department of Transportation’s “Standard Specifications for Road and Bridge Construction” contain detailed specifications for all phases of finishing work related to highway appurtenances and borrow pits. These will be appropriately applied to the intended reclamation efforts for this site. The specifications involved are:

- Section 625: Topsoil and Salvaged Topsoil
- Section 626: Peat Humus
- Section 627: Mulching
- Section 628: Erosion Control
- Section 629: Fertilized
- Section 630: Seeding
- Section 631: Sodding
- Section 632: Furnishing and Planting Plant Materials

These sections of the specifications will be followed as appropriate and made available to Town employees or landscapers involved in the reclamation efforts. They are incorporated into this plan by reference.

C. Topography

Final topography will be determined upon completion of non-metallic mining activities at the site. Final contours will reflect the 3:1 maximum slope criterion. No wetlands or artificial water bodies will be created at this site. A diagram of final anticipated site contours is included, again based upon the Thatcher Engineering base map.

D. Structures

Existing roads will remain in use after the site has been reclaimed. No permanent structures are currently being planned for this site.

E. Cost

The cost to reclaim the site is estimated at approximately $8,000. Please see attached Table.
H. Erosion Control:

Erosion control during reclamation shall be according to Section 628 ("Erosion Control") of the Wisconsin Department of Transportation's "Standard Specifications for Road and Bridge Construction." This may include but is not limited to silt fence, erosion mat or bales, riprap and seeding. Due to the topography of the site little in the way of erosion control is expected to be required, other than addressing the erosion potential of steeper slopes (steeper than 10:1 where measures may need to be taken to ensure seed remains in place on the slopes until the roots "catch").

I. Interim Reclamation:

This is not applicable to the Tri-Lakes Pit. Reclamation will not be undertaken until after all the sand/gravel has been mined to the depth of excavation as determined in future by the Town. At that future time, reclamation will proceed as a single individual construction effort.

J. Criteria for Successful Reclamation:

Reclamation will be complete when the following have been met:
1. Seeded areas support vegetation cover;
2. erosion control measures are no longer necessary and are removed;
3. there is no unnatural erosion occurring at the site;
4. the slopes meet the 3:1 criterion, except where stable high walls intentionally remain;
5. and all criteria listed in this plan have been met.

Representatives of Douglas County Zoning will be invited to inspect the site to verify that conditions and requirements of the reclamation plan have been met. County Zoning will issue the final determination that the reclamation plan has been accomplished. (If conditions or objectives change over the intervening years from those anticipated and addressed in this document, an amended reclamation plan will be prepared and submitted for approval as necessary to address and incorporate those changes.)
### SUMMARY OF RECLAMATION COSTS

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
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<tbody>
<tr>
<td>Slope preparation prior to gardening</td>
<td>$400</td>
</tr>
<tr>
<td>Small bulldozer at 8 hours</td>
<td></td>
</tr>
<tr>
<td>Topsoil hauling (fuel cost only)</td>
<td>$1,300</td>
</tr>
<tr>
<td>325 truckloads, fuel at $2 / gallon</td>
<td></td>
</tr>
<tr>
<td>12 mile round trip at 6 mpg</td>
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<tr>
<td>Topsoil spreading, finish grading and compaction</td>
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<tr>
<td>Small bulldozer at 32 hours</td>
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<td>Seed</td>
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<td>48 pounds at approx. $6 / pound</td>
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<td>Fertilizer</td>
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<td>18 hundred weight at approx. $30 / cwt</td>
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<tr>
<td>Lime</td>
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<td>12 tons at approx. $16 / ton</td>
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<tr>
<td>Mulch</td>
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<td>360 bales at approx. $3.25 / bale</td>
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<td>Cost to spread seed, fertilizer, lime and mulch by landscape (includes watering) (40 hours at $50 / hour)</td>
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<td>Site Maintenance until approval</td>
<td>$500</td>
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<tr>
<td><strong>Total estimated reclamation cost</strong></td>
<td>$8,000</td>
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</table>

**NOTE:** Town employees are anticipated to do most of the work. As they are on salary, no separate costs for labor are included in this estimate. A landscaping contractor will likely be hired to spread the gardening materials. If contractors are employed for other portions of this effort, costs will increase significantly above this estimate.
STABLE HIGH WALLS
NO SALVAGED TOPSOIL REQ'D.
NOT TO SCALE

(*) EL 1260 FOR PLANNING PURPOSES ONLY
STUMP BURIAL LOCATION

NOT TO SCALE

(*) EL 1260 FOR PLANNING PURPOSES ONLY
FUTURE EXPANSION LIMIT OF GRAVEL PIT (44.8 ACRES)

PAWNEE CREEK TOWNSHIP PLAIN (CURRENTLY NOT USED) (3.7 ACRES)

AREAL EXTENT
SCALE 1" = 150' APPROX

E THI LAKE ROAD

0A-022-00143-00 SEW SWN S9 T46N R13W
RECLAMATION PLAN APPROVED AND ON FILE
DOUGLAS COUNTY PLANNING, ZONING & LAND INFORMATION OFFICE
1313 BELKNAP STREET, ROOM 206
SUPERIOR, WI 54880
715 – 395-1380 / FAX 715 – 395-7643

APPLICATION FOR PERMIT:  □ LAND-USE  □ CONDITIONAL-USE

APPLICATION WILL NOT BE PROCESSED WITHOUT SIGNATURE & DATE ON THIS PAGE.

TO WHOM IT MAY CONCERN: The undersigned hereby applies for a permit to do work herein described in this application. The undersigned agrees that all work will be done in accordance with the Douglas County Zoning, Shoreland Zoning, Subdivision Control, Floodplain Ordinances and with all laws of the State of Wisconsin applicable to said premises. Do not start any construction until this office has issued a permit. Failure to obtain the necessary permits will result in a double permit fee and/or citation.

CONDITIONAL-USE PERMIT APPLICATIONS: PLEASE CONTACT TOWN CLERK - APPLICATIONS REQUIRE REVIEW BY YOUR TOWN BOARD PRIOR TO SCHEDULED ZONING COMMITTEE PUBLIC HEARING

<table>
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<tr>
<th>Applicant / Operator</th>
<th>Property Owners / Lessors (if different from Applicant)</th>
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<tbody>
<tr>
<td>Douglas County Forestry</td>
<td>Address: Same</td>
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<tr>
<td>PO Box 211</td>
<td>Address:</td>
</tr>
<tr>
<td>Solon Springs, WI 54873</td>
<td>City, State, Zip Code:</td>
</tr>
<tr>
<td>715-378-2219</td>
<td>Phone Number (please complete this field):</td>
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PROPERTY DESCRIPTION: Information must be complete and accurate. If applicable state lot number, block number, subdivision name, government lot number, quarter sections, etc. (Note: This may be copied from your tax notice or deed.)

Tax Parcel #: OA-022-00359-00; 00356-00; 28-29-
Section 32 Town 46 N Range 13 W
Town of: OAKLAND 00375-00
Parcel Acreage or Size: 640 ac
Property Address: 9365 S Lucas Road
Legal Description: SE-SE; SW-SW; W-NE
Name of Adjacent Lake or Stream: Erickson Creek (floodplain)

Nonmetallic Mine (NEW) - Nonmetallic Mining Permit Number: YR - 0018
CU Permit #: 13643

By signing this application, I give my/our permission to allow a site inspection to be made of the site by Zoning staff and allow photographs to be taken if necessary. I hereby agree to terms and conditions on following site sketch page.

Signature of Operator: [Signature] (for Douglas County)  Date: 01/17/2020

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<td></td>
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<tr>
<td>Vendor #</td>
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<td></td>
<td>IDT</td>
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* 5 year renewal
ERICKSON CREEK PIT (9365 South Lucas Road)
'SESE Section 29, T46N, R13W, Town of Oakland, Douglas County, WI

This map is for representation purposes only and is not guaranteed to be without error.
Hi Zach,

Please find enclosed the Non-Metallic Mining 2019 Annual Report for both our West Mail Road Pit and Erickson Creek Road Pit.

Hopefully I completed the paperwork correctly. We did not open up any additional area or perform any crushing operations over the past year in the West Mail Road Pit. **We did open up 8.2 acres of additional area in the Erickson Creek Road Pit for crushing this past summer.** You should already have a previously approved reclamation plan for each pit in your file.

The fee is **$55.00** for the West Mail Road Pit and **$285.00** for the Erickson Creek Road Pit, together totaling **$340.00**. Please use an interdepartmental transfer from Forestry and bill cost center **33117.5329** for payment.

If you have any further questions or need further information please feel free to contact me.

Thanks,
-Jon Harris
DOUGLAS COUNTY PERMIT

ISSUE DATE
03/08/2017

MAILING ADDRESS
DOUGLAS COUNTY FORESTRY
1313 BELKNAP ST
SUPERIOR WI 54880

CONDITIONAL-USE#
13643

TOWN OF OAKLAND

PARCEL(S): OA-022-00356-00, OA-022-00357-00, OA-022-00375-00

PROPERTY ADDRESS
9365 S LUCAS RD

LEGAL DESCRIPTION:
Pt of OA-022-00356-00 (SW SW, 28-46-13)
Pt of OA-022-00357-00 (SE SE, 29-46-13)
Pt of OA-022-00375-00 (W-1/2 NE, 32-46-13)

SECTION 28/29/32
TOWN 46 N
RANGE 13 W

FOR NON-METALLIC MINE (RENEWAL)

CONDITIONS: The following minimum requirements must be met for all land uses:

YR-0018

03-08-2017 - Douglas County Zoning Committee approves 3 year renewal of nonmetallic mining permit. Town approval dated 02-14-2017 received and on file.

All conditions associated with this permit are listed on Page 2. This permit should be considered incomplete without Page 2 attached.

This is not a building permit. Check with your Town Chairman for information concerning township building requirements or permits for any structure. The Wisconsin Uniform Dwelling Code requires that all towns issue building permits for new dwellings and additions to existing dwellings. Please contact the appropriate town clerk for obtaining permits.

ZONING AUTHORITY
DOUGLAS COUNTY, WISCONSIN
Planning, Zoning and Land Information Offices
1313 Belknap Street, Room 206
Superior, WI 54880

CONDITIONS OF PERMIT: 13643
ISSUED: 03-08-2017

As approved by Zoning Committee 03-08-2017

(9365 S Lucas Rd)

Tax Parcel I.D. Number:
1) Pt of OA-022-00356-00 (SW SW, 28-46N-13W)
2) Pt of OA-022-00357-00 (SE SE, 29-46N-13W)
3) Pt of OA-022-00375-00 (W-1/2 NE, 32-46N-13W)

Proposed Use:
Non-Metallic Mining Permit (3-Year Renewal)

NMM Permit Number: YR-0018

CONDITIONS:

1. This permit approved for three-year period, expiring 03-08-2020.

2. Must comply with Ordinance 8.0, Section VI, Sub. 6.2. Reclamation plan on file reviewed by Douglas County Land & Water Conservation and determined adequate for permit renewal.

3. Must comply with Ordinance 8.9 to include NR-135 annual reporting requirements.

4. Must comply with any conditions or approvals required by the Wisconsin DNR. Steve LaValley is the point of contact: 1701 North 4th Street, Superior, WI, 54880 / 715-392-7988 / steven.lavalley@wisconsin.gov

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This page is intended to be a part of above numbered permit and should be included in any copies or other duplication of this permit.
Amended Nonmetallic Mine Reclamation Plan
Lucas Road Pit

Sections 28, 29 and 32
Town of Oakland
Douglas County, WI

Submitted to:
Douglas County Zoning Department

Prepared by:
Schmitt Technical Services, Inc., Cross Plains, WI

On behalf of:
Douglas County Forestry Department (Applicant),
Douglas County, WI

January 27, 2012
(STS Project No. 11054)

RECLAMATION PLAN
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## APPENDICES

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<thead>
<tr>
<th>Appendix</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>National Resources Conservation Service Custom Soil Resource Report</td>
</tr>
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</table>
Amended Reclamation Plan

Lucas Road “Esker” (non-metallic mining) Pit
Town of Oakland
Douglas County, WI

1. Site Information

A. Maps

General Location: enclosed is an excerpt from page 21 of Douglas County Plat Book showing the property (Figure 1).

Current Property Boundary: the currently permitted area is described as the SE ¼ of the SE ¼ of Section 29, and the NE ¼ of the NE ¼ of Section 32, Township 46 North, Range 13 West. The owner of record is the Douglas County Forestry Department. The Parcel Number is OA-022-00357-00

The Proposed Northern Reserve area is described as being a 1.73 acre portion of the SW ¼ of the SW ¼ of Section 28, Township 46 North, Range 13 West. The owner of record is the Douglas County Forestry Department. The Parcel Number is OA-022-00356-00

The Proposed Southern Reserve area, excluding the area encompassed in Section 32 for the currently permitted area, is described as being a 29.24 acre portion of the West ½ of the NE ¼ of Section 32, T 46 North, Range 13 West. The owner of record is the Douglas County Forestry Department. The Parcel Number is OA-022-00375-00

Enclosed is an aerial photograph showing the existing permitted area and the proposed Northern and Southern Reserve areas to be added (Figure 2).

Notes: The Township of Oakland has the existing permit at this location. However, the Township has expressed an interest in releasing the permit since they have not used this location significantly over the last few years. Therefore the Douglas County Forestry Department (Owner of Record for the property) wishes to take over the existing permit and would like to amend the Conditional Use Permit to include proposed Northern and Southern Reserve area additions, with this document will be an amendment to the existing Reclamation Plan.

Several conditions of the County Forestry Department approval were placed upon the pit permit at the time of the Town of Oakland’s initial permit request, by Mr. David Epperly, County Forester. As of this resubmittal, all conditions were upheld by the Town of Oakland. Therefore the County Forestry Department recommends removal of these conditions from the permit request.

Areal Extent: is shown on the attached drawing (Figure 2.). The extent of mining for the currently permitted area encompasses approximately 9.63 acres in Section 29. The Douglas County Forestry Department proposes to add additional reserve areas to the existing permitted area. These additional areas are approximately 1.73 acres in Section 28 which is contiguous to the existing permitted area, and approximately 29.24 acres in Section 32 which is contiguous to the existing permitted area (Figure 2.). The ultimate extent of mining will be 36.25 acres in Sections 28, 29 and 32. Material removal has been completed on approximately 1.12 acres down to contour elevation 1235 at the south end of the existing permitted area.
Geological Composition: A NRCS/USDA Custom Soil Resource Report is included in this amended reclamation plan for the project area as Appendix A. The area soils are defined as consisting primarily of Gogebic, Iron River, Cloquet and Cable loams and Vilas sand, all glacially deposited and providing the basis for the rolling terrain. Depth of deposit is expected to vary across the site down to the elevation of the regional ground water table at roughly elevation 1200 feet above mean sea level (msl) (Figures 6 and 7), or lower. Regional groundwater information was obtained from USGS Hydrologic Investigations Atlas HA-524. The maximum depth of removal anticipated for this site is to elevation 1185 if the deposit is considered operationally feasible and cost effective to obtain. The depth of excavation now approaches elevation 1235 with little change in material; the depth of sand/gravel/loam is expected to be greater than 60 feet thick.

Distribution, Thickness and Type of Topsoil: The existing topsoil was found to be a sandy loam or silt loam, occasionally with gravel present and was rarely more than 2 to 3 inches thick (generally less) across the site for the existing permitted area. This is consistent with on-site observations made during exploration of the proposed northern and southern reserve areas. Most of the topsoil is bound in the root mass of tree stumps and only nominal topsoil salvage will be possible. Salvaging operations have and will take place by stockpiling salvaged topsoil in berms to act as a protective barrier from the nearby wetlands until final reclamation of the site takes place.

Approximate Elevation of Groundwater: There are no water wells within a 1-mile distance of the site boundary, but USGS Hydrologic Investigations Atlas HA-524 shows the regional water table at an elevation of 1200 feet (Figures 6 and 7). Groundwater flow is from south to north across the site.

Location of Surface Water: No surface water is located within the project boundary, and all wetlands are a minimum of 75 feet away from project boundaries (Figure 8). Nearby Lakes are Scout Lake (elevation 1211), Lyman Lake (elevation 1186) and Amnicon Lake (elevation 1195). Wetlands on site are outside the limits of excavation and are protected from disturbance by the salvaged topsoil berms and the required 75 foot setback from wetlands (Figure 11). Adjacent wetlands are shown on Figure 8 depicting findings from the Wisconsin Wetland Inventory. Wetland shape files were obtained from the National Wetland Inventory, and a 75 foot setback buffer has also been applied to the outer perimeter of wetland areas to comply with Wisconsin State Law regarding land use near wetland areas.

Nearby Wetlands include the following types and are shown on Figure 8.

- PEMC Freshwater Emergent Wetland
- PFO1/4B Freshwater Forested/Shrub Wetland
- PFO1/SS1F Freshwater Forested/Shrub Wetland
- PFO1C Freshwater Forested/Shrub Wetland
- PFO2/SSB Freshwater Forested/Shrub Wetland
- PFO2B Freshwater Forested/Shrub Wetland
- PSS1/EMC Freshwater Forested/Shrub Wetland
- PSS1C Freshwater Forested/Shrub Wetland
- PSS1F Freshwater Forested/Shrub Wetland
- PSS3B Freshwater Forested/Shrub Wetland
- PUBH Freshwater Pond
**Existing Drainage Patterns:** The site has been partially excavated and will continue to involve removal of material from an “esker” (glacially deposited material in the form of a sinuous ridge) as shown in the typical cross section diagrams (Figure 13, before and after). Rain water or snow melt will run off toward the wetlands but will be intercepted by the salvaged topsoil berms, and will infiltrate into the soil. The site will be internally drained. When reclamation activities are undertaken, appropriate erosion controls will be implemented.

**Existing Topography:** See Figures 2 and 5.

**Location of Manmade Features:** There are no structures or other improvements within the site boundaries.

**B. Biological Information**

The site consists of northern hardwoods (maples and aspen) in the upland areas and coniferous species in the wetland areas. Tree removal has, and will occur as needed for the progression of mining operations within site boundaries as shown in Figure 9. Native birds such as black-capped chick-a-dees, blue jays and crows are typical bird species.

The existing permitted area was logged off by the Douglas County Forestry Department prior to granting permission to the existing permit holder, Township of Oakland. It is anticipated that similar activities will be performed as needed for the progression of mining. Currently there is no logging plan in place for the proposed northern and southern reserve areas, but logging is anticipated to occur as needed to progress mining (figure 10).

**2. Post Mining Land Use**

For the immediate foreseeable future, the site will remain as a gravel pit utilized by the Douglas County Forestry Department and it’s contractors for sand and gravel resource removal, crushing, sizing and stockpiling of material to be utilized for repair and maintenance of existing, in addition to the potential construction of new roads within County Forestry Department Properties.

It is anticipated that the Post Mining Land use will be for timber resource production and minor recreational usage, upon reclamation, similar to existing Forestry Department Lands in the area.

**3. Reclamation Measures**

**A. Earthwork: Site Grading**

Final Slope Angles will not exceed the maximum 3:1 (length vs. height) slope requirement. The surface of the disturbed area will generally be flat with the potential for small ponds to remain if the sand and gravel resource continues below the groundwater table. Maximum depth of excavation will potentially be down to 15 feet below the regional groundwater table elevation of 1200 feet msl. Final grading of excavations will conform to 3:1 or shallower slopes, and where ponds are left, they will be graded to conform to the requirements of NR 135. Salvaged topsoil will be transported back to excavation areas, and seeding of these areas will be implemented as part of the reclamation (Figure 12).

High Wall Reduction is not applicable at this site. Benching and terracing is not expected to be utilized at this site.
B. Topsoil

Topsoil on the site is very thin and is bound in the root mass of tree stumps, complicating the salvage operation. Topsoil on site was removed along with the stumps and moved to berms-type stockpiles along wetland areas for an area encompassing approximately 1.15 acres in the existing permitted pit. As the incorporated roots stabilize the stockpiles, no temporary seeding was necessary. Similar practices will be used in the proposed northern and southern reserve areas as excavation proceeds in these areas.

Wisconsin Department of Transportation’s (WISDOT) “Standard Specifications for Road and Bridge Construction” contain detailed specifications for all phases of finishing work related to highway appurtenances and borrow pits. These specifications will be appropriately applied to the reclamation efforts for this site. The specifications involved are:

- Section 625: Topsoil and Salvaged Topsoil
- Section 626: Peat Hummus
- Section 627: Mulching
- Section 628: Erosion Control
- Section 629: Fertilizer
- Section 630: Seeding
- Section 631: Sodding
- Section 632: Furnishing and Planting Plant Materials

These sections of the specifications will be followed as appropriate and are available to Forestry Department employees or contractors involved in operations and reclamation. These documents are incorporated into this plan by reference.

C. Topography

Final topography will be as shown on the “after” typical cross section. Final contours will reflect the 3:1 maximum slope criteria. Artificial water bodies may remain as part of the final reclamation of excavations which extend below the groundwater table and remaining side slopes will conform to the grading requirements of NR 135.

D. Structures

Existing town roads (Lucas Road) will remain in use after the site has been reclaimed, and it is expected the access road will continue to be maintained as a snowmobile trail by Douglas County. No permanent structures are currently being planned for this site.

E. Cost

The cost to reclaim the site is expected to be approximately $75,338.60. Please see the attached COST SUMMARY table.

F. Re-vegetation Plan

Dormant Seeding Requirements: dormant seeding is typically involved after November 1st. No dormant seeding is expected to be required.
Temporary Seeding Requirements: temporary seeding is generally involved when permanent seeding is delayed and is generally installed between September 15th and October 1st. It usually consists of winter wheat or rye applied at a rate of 2 pounds of seed per acre. Temporary seeding can also be used to supplement existing ground cover in areas of disturbance and it is proposed that this be done in the areas between the excavations and salvaged topsoil berms. The area involved is approximately 5.6 acres in the existing permit area and will therefore require approximately 11 pounds of the temporary seed mixture. Similar application rates and procedures will be employed for the proposed northern and southern reserve areas when excavation proceeds into these areas.

Permanent Seeding Requirements: areas reclaimed by respreading of salvaged topsoil will receive permanent seeding. These areas will be contained within the proposed mining limits and salvaged topsoil will only be applied to final slopes 3:1 or shallower. It is expected that native species will recolonize the area, but the permanent seeding is expected to provide suitable shade and root structure for native seed stock until such time that native species overtake the seeded species. Eventually it is expected that planting will be undertaken by the Douglas County Forestry Department of tree species for future timber production.

Area to be seeded in the existing permitted area is 10.67 acres (Phase 1).

**#75 WISDOT Seed Mix:** Rate is 30 pounds per acre; seed needed is 320 pounds. Fertilizer: 300 pounds of 20-20-20 per acre; fertilizer required is 3,200 pounds. Lime (80 - 85) or equivalent spread at 2 tons per acre; lime needed is 22 tons. Mulch 2 Tons or 60 Bales per acre; mulch needed is 22 tons or 640 bales.

Area to be seeded in the proposed northern reserve area is 1.73 acres (Phase 1).

**#75 WISDOT Seed Mix:** Rate is 30 pounds per acre; seed needed is 52 pounds. Fertilizer: 300 pounds of 20-20-20 per acre; fertilizer required is 520 pounds. Lime (80 - 85) or equivalent spread at 2 tons per acre; lime needed is 3.5 tons. Mulch 2 Tons or 60 Bales per acre; mulch needed is 3.5 tons or 104 bales.

Area to be seeded in the proposed southern reserve area is 29.24 acres (Phase 2).

**#75 WISDOT Seed Mix:** Rate is 30 pounds per acre; seed needed is 877 pounds. Fertilizer: 300 pounds of 20-20-20 per acre; fertilizer required is 8,772 pounds. Lime (80 - 85) or equivalent spread at 2 tons per acre; lime needed is 59.5 tons. Mulch 2 Tons or 60 Bales per acre; mulch needed is 59.5 tons or 1,755 bales.

Table 1. Total Permanent Seed Materials Required for the Existing and Proposed Northern and Southern areas.

<table>
<thead>
<tr>
<th>Material</th>
<th>Units</th>
<th>Existing Area</th>
<th>Northern Area</th>
<th>Southern Area</th>
<th>Total Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed</td>
<td>Pounds</td>
<td>320</td>
<td>52</td>
<td>877</td>
<td>1,249</td>
</tr>
<tr>
<td>Fertilizer</td>
<td>Pounds</td>
<td>3,200</td>
<td>520</td>
<td>8,772</td>
<td>12,492</td>
</tr>
<tr>
<td>Lime (80-85)</td>
<td>Tons</td>
<td>22</td>
<td>3.5</td>
<td>59.5</td>
<td>85</td>
</tr>
<tr>
<td>Mulch</td>
<td>Tons/Bales</td>
<td>22 / 640</td>
<td>3.5 / 104</td>
<td>59.5 / 1,755</td>
<td>85 / 2,499</td>
</tr>
</tbody>
</table>
All seeding operations will conform to WISDOT Standard Specifications for Road and Bridge Construction, Section 630, Seeding. Optimum seeding dates are: 5/01 to 6/16 for spring seeding, and 7/15 to 8/15 for fall seeding.

All gardening/landscaping materials (seed, fertilizer, lime and mulch) shall be on site prior to completion of topsoil respraying operations. All certifications (live seed contents, fertilizer and lime guaranteed analyses, etc.) are to be provided to the Douglas County Forestry Department at the time the materials are delivered. Seed mixtures will applied at pure live seed rates and mulch will be placed within 48 hours of seeding, and in the manner defined in the WISDOT Specifications.

G. Re-vegetative Standards

The standards for the re-vegetation of the defined areas of the pit are as follows:
Proper installation of seed, fertilizer and mulch in accordance with the re-vegetative plan described above. Re-vegetation will be considered complete when the re-vegetated areas support the planted seeding. Long-term, re-vegetation will be considered a success when aspen colonization is apparent on reclaimed areas.

H. Erosion Control

Erosion control during reclamation shall be according to Section 628, “Erosion Control” of the WISDOT “Standard Specifications for Road and Bridge Construction.” This may include, but is not limited to silt fence, erosion mat or bales, riprap and seeding. Due to the topography of the site little in the way of erosion control is expected to be required, other than addressing the erosion potential of the natural and reclaimed slopes during seed germination; and where salvaged topsoil is retrieved from its stockpile berms adjacent to wetland areas.

I. Interim Reclamation

This is not applicable to the Lucas Road Pit. Reclamation will be completed in 2 phases. Phase 1 will occur after depletion of the sand and gravel reserve in both the currently permitted and proposed northern reserve areas which will encompass an area of approximately 11.36 acres. Once these reserves of sand and gravel have been depleted reclamation will start in the north easternmost area of the proposed northern reserve area and will progress in a southwestern and southern direction until both the proposed northern reserve and currently permitted area have been reclaimed. Phase 2 of the reclamation will occur on the proposed southern reserve area after depletion of the sand and gravel deposit has been completed. It is anticipated that reclamation of this area will progress from south to north over the 29.24 acres.

J. Criteria for Successful Reclamation

Reclamation will be considered complete when the following conditions have been met:
1. Disturbed areas support 80% vegetative cover with sufficient native species coverage.
2. Erosion control measures are no longer necessary and have been removed.
3. There is no unnatural erosion occurring at the site.
4. Slopes meet the 3:1 Maximum slope grading requirement for disturbed areas.
5. All criteria listed in this plan have been met to the satisfaction of the Douglas County Zoning Department.

Representatives of the Douglas County Zoning Department will be invited inspect the site to verify that conditions and requirements of the reclamation plan have been met. County Zoning will issue the final
determination that the reclamation plan has been accomplished. If conditions or objectives change over the life of the mining operation from those anticipated and addressed in this document, an amended reclamation plan will be prepared and submitted for approval as necessary to address and incorporate those changes.

4. Certification of the Reclamation Plan

I hereby certify that, as a duly sworn official representing the Douglas County Forestry Department, that the Douglas County Forestry Department will comply with the provisions of this reclamation plan as well as with the statewide non-metallic mining reclamation standards established in ss. NR 135.05 through NR 135.15 Wisconsin Administrative Code and that “best management practices” are installed and maintained.

(Signature of duly authorized representative) (Date)

>Title of duly authorized representative

5. Financial Assurance

Financial assurance is not required of county departments per NR 135.02.2

6. Submitting of the Plan

Michael J. Markgraf of Schmitt Technical Services, Inc. prepared this plan for submittal on behalf of the Douglas County Forestry Department.

7. Certification and Acceptance

I, as a duly sworn official of the Douglas County Forestry Department, and responsible for the property herein described, do hereby certify that I have reviewed this reclamation plan for the existing and proposed areas of the Lucas Road Pit, concur with its provisions; and agree to permit its implementation.

Signature _______________________________ Title __________________________ Date ________________
SUMMARY OF RECLAMATION COSTS

Phase 1.

Surface preparation prior to landscaping
   Small bulldozer at 5 hours $ 500.00

Topsoil spreading and finish grading
   Small bulldozer at 29 hours $ 3,000.00
   Backhoe at 29 hours $ 4,060.00

Seed 372 pounds at approximately $12.00 / pound $ 4,464.00

Fertilizer 3,720 pounds at approximately $1.30 / pound $ 4,850.00

Lime 25.5 Tons at $30.00 / Ton $ 765.00

Mulch 744 Bales at $5.00 / Bale $ 3,720.00

Cost to spread seed, fertilizer and mulch by a landscaping contractor, including watering. Estimate 19 hours at approximately $100.00 / Hour $ 1,900.00

Site maintenance until approval of reclaimed state. $ 2,000.00

Total estimated reclamation cost for Phase 1: $ 21,595.00

Note: Cost estimates assume that all work will be performed by outside contractors. However, if the Douglas County Forestry Department decides to have their own personnel perform some or all of the work, the reclamation costs will be considerably lower.
Phase 2.

Surface preparation prior to landscaping
Small bulldozer at 15 hours $1,500.00

Topsoil spreading and finish grading
Small bulldozer at 85 hours $8,500.00
Backhoe at 85 hours $11,900.00

Seed 877 pounds at approximately $12.00 / pound $10,524.00

Fertilizer 8,772 pounds at approximately $1.30 / pound $11,403.60

Lime 59.5 Tons at $30.00 / Ton $1,785.00

Mulch 1,755 Bales at $5.00 / Bale $8,775.00

Cost to spread seed, fertilizer and mulch by a landscaping contractor, including watering. Estimate 50 hours at approximately $100.00 / Hour $5,000.00

Site maintenance until approval of reclaimed state. $3,000.00

Total estimated reclamation cost for Phase 1: $53,743.60

Note: Cost estimates assume that all work will be performed by outside contractors. However, if the Douglas County Forestry Department decides to have their own personnel perform some or all of the work, the reclamation costs will be considerably lower.

The total estimated reclamation costs for both phases of reclamation are: $75,338.60
Figures
Figure 6. Estimated Groundwater Elevation & Direction of Flow

Legend
- Project Boundary
- 1 Mile Buffer
- Groundwater Movement
- Regional Water 1200ft

Ortho: NAIP 2010 Douglas County

Sec 28, 29 & 32
T46N, R13W
Township of Oakland
Douglas County, WI

0  750  1,500  3,000 Feet
Figure 7. Groundwater Elevation

Legend
- Project Boundary

*Base map: Interior Dept Geological Survey (Young & Skinner, 1974)

Schmitt Technical Services
Figure 13. Proposed Gravel Pit Cross-Section

Legend
- Groundwater
- Removed Material
- Original Elevation

Section A - A' Before (Typical)

Section A - A' After (Typical)

Scale indicated on cross-sections
Appendix A

National Resources Conservation Service Soil Resource Report
Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means
for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.
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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the
individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.
Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)
☐ Area of Interest (AOI)

Soils
☐ Soil Map Units

Special Point Features
○ Blowout
☒ Borrow Pit
☒ Clay Spot
○ Closed Depression
☒ Gravel Pit
☑ Gravelly Spot
☒ Landfill
☒ Lava Flow
☒ Marsh or swamp
☒ Mine or Quarry
☒ Miscellaneous Water
☒ Perennial Water
○ Rock Outcrop
☒ Saline Spot
☒ Sandy Spot
☒ Severely Eroded Spot
☒ Sinkhole
☒ Slide or Slip
☒ Sodic Spot
☒ Spoil Area
☒ Stony Spot

Special Line Features
☒ Gully
☐ Short Steep Slope
☐ Other

Political Features
☐ Cities

Water Features
☒ Streams and Canals

Transportation
☒ Rails
☒ Interstate Highways
☒ US Routes
☒ Major Roads
☒ Local Roads

MAP INFORMATION

Map Scale: 1:7,390 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Coordinate System: UTM Zone 15N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas County, Wisconsin
Survey Area Data: Version 9, Aug 16, 2011

Date(s) aerial images were photographed: 6/18/2005; 6/19/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.
Map Unit Legend

<table>
<thead>
<tr>
<th>Map Unit Symbol</th>
<th>Map Unit Name</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
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<td>Keweenaw-Sayner-Vilas complex, 2 to 6 percent slopes, stony</td>
<td>0.6</td>
<td>1.5%</td>
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<tr>
<td>69C</td>
<td>Keweenaw-Sayner-Vilas complex, 6 to 15 percent slopes, stony</td>
<td>25.9</td>
<td>63.7%</td>
</tr>
<tr>
<td>69E</td>
<td>Keweenaw-Sayner-Vilas complex, 15 to 45 percent slopes, stony</td>
<td>4.2</td>
<td>10.3%</td>
</tr>
<tr>
<td>74B</td>
<td>Vilas loamy sand, 0 to 6 percent slopes</td>
<td>3.7</td>
<td>9.0%</td>
</tr>
<tr>
<td>371A</td>
<td>Croswell loamy sand, 0 to 3 percent slopes</td>
<td>0.4</td>
<td>0.9%</td>
</tr>
<tr>
<td>384B</td>
<td>Springstead sandy loam, 1 to 6 percent slopes, stony</td>
<td>5.5</td>
<td>13.6%</td>
</tr>
<tr>
<td>419A</td>
<td>Seelyeville, Cathro, and Markey soils, 0 to 1 percent slopes</td>
<td>0.1</td>
<td>0.3%</td>
</tr>
<tr>
<td>654A</td>
<td>Pesabic-Newwood-Capitola complex, 0 to 3 percent slopes, very stony</td>
<td>0.3</td>
<td>0.8%</td>
</tr>
<tr>
<td>3403A</td>
<td>Loxley, Beseman, and Dawson soils, 0 to 1 percent slopes</td>
<td>0.0</td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td><strong>40.6</strong></td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified.
by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a soil series. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into soil phases. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A complex consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An association is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An undifferentiated group is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include miscellaneous areas. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.
Douglas County, Wisconsin

69B—Keweenaw-Sayner-Vilas complex, 2 to 6 percent slopes, stony

Map Unit Setting
- Elevation: 600 to 1,950 feet
- Mean annual precipitation: 26 to 33 inches
- Mean annual air temperature: 36 to 45 degrees F
- Frost-free period: 90 to 135 days

Map Unit Composition
- Keweenaw and similar soils: 45 percent
- Sayner and similar soils: 30 percent
- Vilas and similar soils: 20 percent
- Minor components: 5 percent

Description of Keweenaw

Setting
- Landform: Disintegration moraines
- Landform position (two-dimensional): Summit
- Down-slope shape: Convex
- Across-slope shape: Convex
- Parent material: Sandy till

Properties and qualities
- Slope: 2 to 6 percent
- Surface area covered with cobbles, stones or boulders: 0.1 percent
- Depth to restrictive feature: More than 80 inches
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Available water capacity: Low (about 5.8 inches)

Interpretive groups
- Land capability (nonirrigated): 3s

Typical profile
- 0 to 2 inches: Loamy sand
- 2 to 4 inches: Loamy sand
- 4 to 16 inches: Loamy sand
- 16 to 20 inches: Loamy sand
- 20 to 27 inches: Loamy sand
- 27 to 43 inches: Sand
- 43 to 75 inches: Loamy sand
- 75 to 80 inches: Loamy sand

Description of Sayner

Setting
- Landform: Disintegration moraines
- Landform position (two-dimensional): Summit
- Down-slope shape: Convex
Custom Soil Resource Report

Across-slope shape: Convex
Parent material: Sandy and gravelly outwash

Properties and qualities
Slope: 2 to 6 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.1 inches)

Interpretive groups
Land capability (nonirrigated): 4s

Typical profile
0 to 2 inches: Loamy sand
2 to 4 inches: Loamy sand
4 to 7 inches: Loamy sand
7 to 14 inches: Sand
14 to 22 inches: Gravelly sand
22 to 60 inches: Stratified sand to very gravelly coarse sand

Description of Vilas
Setting
Landform: Disintegration moraines
Landform position (two-dimensional): Summit
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy outwash

Properties and qualities
Slope: 2 to 6 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.3 inches)

Interpretive groups
Land capability (nonirrigated): 4s

Typical profile
0 to 2 inches: Loamy sand
2 to 4 inches: Loamy sand
4 to 11 inches: Loamy sand
11 to 23 inches: Sand
23 to 32 inches: Sand
32 to 60 inches: Sand
Minor Components

Pence

Percent of map unit: 5 percent

69C—Keweenaw-Sayner-Vilas complex, 6 to 15 percent slopes, stony

Map Unit Setting

Elevation: 600 to 1,950 feet
Mean annual precipitation: 26 to 33 inches
Mean annual air temperature: 36 to 45 degrees F
Frost-free period: 90 to 135 days

Map Unit Composition

Keweenaw and similar soils: 40 percent
Sayner and similar soils: 30 percent
Vilas and similar soils: 20 percent
Minor components: 10 percent

Description of Keweenaw

Setting

Landform: Disintegration moraines
Landform position (two-dimensional): Shoulder, backslope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy till

Properties and qualities

Slope: 6 to 15 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.8 inches)

Interpretive groups

Land capability (nonirrigated): 4s

Typical profile

0 to 2 inches: Loamy sand
2 to 4 inches: Loamy sand
4 to 16 inches: Loamy sand
16 to 20 inches: Loamy sand
20 to 27 inches: Loamy sand
27 to 43 inches: Sand
43 to 75 inches: Loamy sand
75 to 80 inches: Loamy sand

Description of Sayner

Setting
Landform: Disintegration moraines
Landform position (two-dimensional): Backslope, shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly outwash

Properties and qualities
Slope: 6 to 15 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.1 inches)

Interpretive groups
Land capability (nonirrigated): 6s

Typical profile
0 to 2 inches: Loamy sand
2 to 4 inches: Loamy sand
4 to 7 inches: Loamy sand
7 to 14 inches: Sand
14 to 22 inches: Gravelly sand
22 to 60 inches: Stratified sand to very gravelly coarse sand

Description of Vilas

Setting
Landform: Disintegration moraines
Landform position (two-dimensional): Backslope, shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy outwash

Properties and qualities
Slope: 6 to 15 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.3 inches)
Interpretive groups
Land capability (nonirrigated): 6s

Typical profile
0 to 2 inches: Loamy sand
2 to 4 inches: Loamy sand
4 to 11 inches: Loamy sand
11 to 23 inches: Sand
23 to 32 inches: Sand
32 to 80 inches: Sand

Minor Components
Pence
Percent of map unit: 10 percent

69E—Keweenaw-Sayner-Vilas complex, 15 to 45 percent slopes, stony

Map Unit Setting
Elevation: 600 to 1,950 feet
Mean annual precipitation: 26 to 33 inches
Mean annual air temperature: 36 to 45 degrees F
Frost-free period: 90 to 135 days

Map Unit Composition
Keweenaw and similar soils: 40 percent
Sayner and similar soils: 30 percent
Vilas and similar soils: 20 percent
Minor components: 10 percent

Description of Keweenaw
Setting
Landform: Disintegration moraines
Landform position (two-dimensional): Backslope, shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy till

Properties and qualities
Slope: 15 to 45 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None  
Available water capacity: Low (about 5.8 inches)

**Interpretive groups**  
Land capability (nonirrigated): 7s

**Typical profile**  
0 to 2 inches: Loamy sand  
2 to 4 inches: Loamy sand  
4 to 16 inches: Loamy sand  
16 to 20 inches: Loamy sand  
20 to 27 inches: Loamy sand  
27 to 43 inches: Sand  
43 to 75 inches: Loamy sand  
75 to 80 inches: Loamy sand

**Description of Sayner**

**Setting**  
*Landform*: Disintegration moraines  
*Landform position (two-dimensional)*: Backslope, shoulder  
*Down-slope shape*: Convex  
*Across-slope shape*: Convex  
*Parent material*: Sandy and gravelly outwash

**Properties and qualities**  
*Slope*: 15 to 45 percent  
*Surface area covered with cobbles, stones or boulders*: 0.1 percent  
*Depth to restrictive feature*: More than 80 inches  
*Drainage class*: Excessively drained  
*Capacity of the most limiting layer to transmit water (Ksat)*: High (2.00 to 6.00 in/hr)  
*Depth to water table*: More than 80 inches  
*Frequency of flooding*: None  
*Frequency of ponding*: None  
*Available water capacity*: Low (about 3.1 inches)

**Interpretive groups**  
Land capability (nonirrigated): 7s

**Typical profile**  
0 to 2 inches: Loamy sand  
2 to 4 inches: Loamy sand  
4 to 7 inches: Loamy sand  
7 to 14 inches: Sand  
14 to 22 inches: Gravelly sand  
22 to 60 inches: Stratified sand to very gravelly coarse sand

**Description of Vilas**

**Setting**  
*Landform*: Disintegration moraines  
*Landform position (two-dimensional)*: Backslope, shoulder  
*Down-slope shape*: Convex  
*Across-slope shape*: Convex  
*Parent material*: Sandy outwash

**Properties and qualities**  
*Slope*: 15 to 45 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.3 inches)

Interpretive groups
Land capability (nonirrigated): 7s

Typical profile
0 to 2 inches: Loamy sand
2 to 4 inches: Loamy sand
4 to 11 inches: Loamy sand
11 to 23 inches: Sand
23 to 32 inches: Sand
32 to 80 inches: Sand

Minor Components
Pence
Percent of map unit: 10 percent

74B—Vilas loamy sand, 0 to 6 percent slopes

Map Unit Setting
Elevation: 600 to 1,950 feet
Mean annual precipitation: 28 to 33 inches
Mean annual air temperature: 36 to 45 degrees F
Frost-free period: 90 to 120 days

Map Unit Composition
Vilas and similar soils: 90 percent
Minor components: 10 percent

Description of Vilas

Setting
Landform: Outwash plains, outwash terraces
Landform position (two-dimensional): Summit
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy outwash

Properties and qualities
Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.3 inches)

Interpretive groups
Land capability (nonirrigated): 4s

Typical profile
0 to 2 inches: Loamy sand
2 to 4 inches: Loamy sand
4 to 11 inches: Loamy sand
11 to 23 inches: Sand
23 to 32 inches: Sand
32 to 80 inches: Sand

Minor Components
Croswell
Percent of map unit: 5 percent

Karlin
Percent of map unit: 5 percent

371A—Croswell loamy sand, 0 to 3 percent slopes

Map Unit Setting
Elevation: 600 to 1,600 feet
Mean annual precipitation: 27 to 34 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 90 to 150 days

Map Unit Composition
Croswell and similar soils: 87 percent
Minor components: 13 percent

Description of Croswell
Setting
Landform: Lake terraces, lake plains, outwash plains, stream terraces
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Sandy outwash

Properties and qualities
Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Custom Soil Resource Report

Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.2 inches)

Interpretive groups
Land capability (nonirrigated): 4s

Typical profile
0 to 1 inches: Loamy sand
1 to 7 inches: Loamy sand
7 to 16 inches: Loamy sand
16 to 39 inches: Sand
39 to 60 inches: Sand

Minor Components
Au gres
Percent of map unit: 5 percent
Vilas
Percent of map unit: 5 percent
Sayner
Percent of map unit: 3 percent

384B—Springstead sandy loam, 1 to 6 percent slopes, stony

Map Unit Setting
Elevation: 1,100 to 1,700 feet
Mean annual precipitation: 28 to 33 inches
Mean annual air temperature: 37 to 45 degrees F
Frost-free period: 110 to 135 days

Map Unit Composition
Springstead and similar soils: 88 percent
Minor components: 12 percent

Description of Springstead
Setting
Landform: Moraines, stream terraces, drumlins
Landform position (two-dimensional): Summit, backslope, shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy mudflow sediments or outwash underlain by dense sandy lodgment till
Properties and qualities
Slope: 1 to 6 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: 25 to 40 inches to densic material
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.0 inches)

Interpretive groups
Land capability (nonirrigated): 3s

Typical profile
0 to 2 inches: Moderately decomposed plant material
2 to 3 inches: Sandy loam
3 to 7 inches: Sandy loam
7 to 13 inches: Sandy loam
13 to 26 inches: Loamy sand
26 to 32 inches: Loamy sand
32 to 39 inches: Gravelly loamy sand
39 to 80 inches: Gravelly loamy sand

Minor Components
Keweenaw
Percent of map unit: 5 percent

Parkfalls
Percent of map unit: 4 percent

Lenroot
Percent of map unit: 3 percent

419A—Seelyeville, Cathro, and Markey soils, 0 to 1 percent slopes

Map Unit Setting
Elevation: 600 to 1,950 feet
Mean annual precipitation: 27 to 44 inches
Mean annual air temperature: 36 to 46 degrees F
Frost-free period: 70 to 145 days

Map Unit Composition
Seelyeville and similar soils: 40 percent
Markey and similar soils: 20 percent
Cathro and similar soils: 20 percent
Minor components: 20 percent
Description of Seelyeville

Setting
Landform: Depressions on outwash plains, depressions on lake plains, drainageways on outwash plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Parent material: Herbaceous organic material more than 51 inches thick

Properties and qualities
Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water capacity: Very high (about 23.9 inches)

Interpretive groups
Land capability (nonirrigated): 7w

Typical profile
0 to 80 inches: Muck

Description of Markey

Setting
Landform: Depressions on lake plains, depressions on outwash plains, drainageways on outwash plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Parent material: Herbaceous organic material 16 to 51 inches thick over sandy deposits

Properties and qualities
Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water capacity: Very high (about 14.4 inches)

Interpretive groups
Land capability (nonirrigated): 7w

Typical profile
0 to 32 inches: Muck
32 to 60 inches: Sand
Custom Soil Resource Report

Description of Cathro

Setting

Landform: Depressions on disintegration moraines, drainageways on disintegration moraines
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Parent material: Herbaceous organic material 16 to 51 inches thick over loamy or silty deposits

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water capacity: Very high (about 16.6 inches)

Interpretive groups

Land capability (nonirrigated): 7w

Typical profile

0 to 28 inches: Muck
28 to 49 inches: Loam
49 to 60 inches: Sandy loam

Minor Components

Lupton

Percent of map unit: 10 percent
Landform: Depressions on lake plains, depressions on outwash plains, drainageways on outwash plains

Loxley

Percent of map unit: 5 percent
Landform: Depressions on lake plains, depressions on outwash plains, drainageways on outwash plains

Tawas

Percent of map unit: 5 percent
Landform: Depressions on lake plains, depressions on outwash plains, drainageways on outwash plains
654A—Pesabic-Newood-Capitola complex, 0 to 3 percent slopes, very stony

Map Unit Setting
- Elevation: 800 to 1,950 feet
- Mean annual precipitation: 28 to 33 inches
- Mean annual air temperature: 37 to 45 degrees F
- Frost-free period: 70 to 135 days

Map Unit Composition
- Pesabic and similar soils: 45 percent
- Newood and similar soils: 25 percent
- Capitola and similar soils: 20 percent
- Minor components: 10 percent

Description of Pesabic

Setting
- Landform: Moraines
- Landform position (two-dimensional): Footslope
- Down-slope shape: Linear
- Across-slope shape: Concave
- Parent material: Dense loamy till

Properties and qualities
- Slope: 0 to 3 percent
- Surface area covered with cobbles, stones or boulders: 1.5 percent
- Depth to restrictive feature: 40 to 60 inches to densic material
- Drainage class: Somewhat poorly drained
- Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.01 to 0.06 in/hr)
- Depth to water table: About 6 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Available water capacity: Moderate (about 7.1 inches)

Interpretive groups
- Land capability (nonirrigated): 4s

Typical profile
- 0 to 3 inches: Moderately decomposed plant material
- 3 to 4 inches: Sandy loam
- 4 to 16 inches: Sandy loam
- 16 to 30 inches: Sandy loam
- 30 to 39 inches: Sandy loam
- 39 to 53 inches: Gravelly sandy loam
- 53 to 84 inches: Gravelly sandy loam
Description of Newood

Setting
Landform: Moraines
Landform position (two-dimensional): Backslope, summit, shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Dense sandy loam till

Properties and qualities
Slope: 1 to 3 percent
Surface area covered with cobbles, stones or boulders: 1.5 percent
Depth to restrictive feature: 40 to 60 inches to densic material
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low
(0.01 to 0.06 in/hr)
Depth to water table: About 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.8 inches)

Interpretive groups
Land capability (nonirrigated): 4s

Typical profile
0 to 4 inches: Sandy loam
4 to 5 inches: Gravelly sandy loam
5 to 13 inches: Gravelly sandy loam
13 to 17 inches: Gravelly sandy loam
17 to 29 inches: Gravelly sandy loam
29 to 37 inches: Gravelly sandy loam
37 to 46 inches: Gravelly sandy loam
46 to 58 inches: Sandy loam
58 to 60 inches: Sandy loam

Description of Capitola

Setting
Landform: Depressions, drainageways
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Parent material: Silty or loamy alluvium underlain by dense loamy till

Properties and qualities
Slope: 0 to 1 percent
Surface area covered with cobbles, stones or boulders: 1.5 percent
Depth to restrictive feature: 20 to 40 inches to densic material
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low
(0.01 to 0.06 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water capacity: Low (about 5.8 inches)
Interpretive groups
  Land capability (nonirrigated): 7w

Typical profile
  0 to 5 inches: Muck
  5 to 7 inches: Silt loam
  7 to 22 inches: Silt loam
  22 to 33 inches: Sandy loam
  33 to 60 inches: Sandy loam

Minor Components
  Springstead
    Percent of map unit: 5 percent
  Cathro
    Percent of map unit: 5 percent
    Landform: Depressions

3403A—Loxley, Beseman, and Dawson soils, 0 to 1 percent slopes

Map Unit Setting
  Elevation: 600 to 1,400 feet
  Mean annual precipitation: 24 to 45 inches
  Mean annual air temperature: 36 to 45 degrees F
  Frost-free period: 60 to 140 days

Map Unit Composition
  Loxley and similar soils: 40 percent
  Beseman and similar soils: 30 percent
  Dawson and similar soils: 28 percent
  Minor components: 2 percent

Description of Loxley

Setting
  Landform: Depressions on disintegration moraines
  Landform position (two-dimensional): Toeslope
  Down-slope shape: Concave
  Across-slope shape: Concave
  Parent material: herbaceous organic material more than 51 inches thick

Properties and qualities
  Slope: 0 to 1 percent
  Depth to restrictive feature: More than 80 inches
  Drainage class: Very poorly drained
  Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
    (0.20 to 6.00 in/hr)
Custom Soil Resource Report

*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Occasional  
*Available water capacity:* Very high (about 26.5 inches)

**Interpretive groups**  
*Land capability (nonirrigated):* 7w

**Typical profile**  
0 to 13 inches: Mucky peat  
13 to 60 inches: Muck

**Description of Beseman**

**Setting**  
*Landform:* Depressions on disintegration moraines  
*Landform position (two-dimensional):* Toeslope  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Parent material:* Herbaceous organic material 16 to 51 inches thick over loamy till

**Properties and qualities**  
*Slope:* 0 to 1 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Very poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.60 in/hr)  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Occasional  
*Available water capacity:* Very high (about 18.2 inches)

**Interpretive groups**  
*Land capability (nonirrigated):* 7w

**Typical profile**  
0 to 36 inches: Muck  
36 to 60 inches: Loam

**Description of Dawson**

**Setting**  
*Landform:* Depressions on disintegration moraines  
*Landform position (two-dimensional):* Toeslope  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Parent material:* Sphagnum moss and herbaceous organic material 16 to 51 inches thick over sandy or sandy and gravelly deposits

**Properties and qualities**  
*Slope:* 0 to 1 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Very poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 2.00 in/hr)  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Occasional
Custom Soil Resource Report

Available water capacity: Very high (about 18.2 inches)

Interpretive groups
  Land capability (nonirrigated): 7w

Typical profile
  0 to 8 inches: Peat
  8 to 38 inches: Muck
  38 to 40 inches: Silt loam
  40 to 60 inches: Sand

Minor Components

Uskabwanka
  Percent of map unit: 2 percent
  Landform: Depressions on disintegration moraines
References


Custom Soil Resource Report

TO WHOM IT MAY CONCERN: The undersigned hereby applies for a permit to do work herein described in this application. The undersigned agrees that all work will be done in accordance with the Douglas County Zoning, Shoreland Zoning, Subdivision Control, Floodplain Ordinances and with all laws of the State of Wisconsin applicable to said premises. Do not start any construction until this office has issued a permit. Failure to obtain the necessary permits will result in a double permit fee and/or citation.

CONDITIONAL-USE PERMIT APPLICATIONS: PLEASE CONTACT TOWN CLERK - APPLICATIONS REQUIRE REVIEW BY YOUR TOWN BOARD PRIOR TO SCHEDULED ZONING COMMITTEE PUBLIC HEARING

<table>
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<th>Property Owners / Lessors (if different from Applicant)</th>
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<tr>
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<tr>
<td>Phone Number</td>
<td></td>
</tr>
<tr>
<td>(please complete this field)</td>
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PROPERTY DESCRIPTION: Information must be complete and accurate. If applicable state lot number, block number, subdivision name, government lot number, quarter sections, etc. (Note: This may be copied from your tax notice or deed.)

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<table>
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<th>Legal Description</th>
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<tr>
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<td>NE * NW 26-44-13; NE * N1/2 SE 27-44-13</td>
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</tbody>
</table>

Name of Adjacent Lake or Stream: Moose River

Nonmetallic Mine (NEW) - Nonmetallic Mining Permit Number: YR-0076

By signing this application, I give my/our permission to allow a site inspection to be made of the site by Zoning staff and allow photographs to be taken if necessary. I hereby agree to terms and conditions on following site sketch page.

Signature of Operator: 

<table>
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</tbody>
</table>

Vendor #

*5 year renewal*
You are responsible for complying with State and Federal laws concerning construction near or on wetlands, lakes, and streams. Wetlands that are not associated with open water can be difficult to identify. Failure to comply may result in removal or modification of construction that violates the law or other penalties or costs. For more information, visit the Department of Natural Resources wetlands identification page or contact a Department of Natural Resources Service Center.

**Additional responsibilities for owners of projects disturbing one or more acre(s) of soil**

I understand that this project is subject to regulations regarding erosion control and storm water management and I will comply with those standards. For more information, visit the Department of Natural Resources or contact a Department of Natural Resources Service Center.

_It is the property owner’s responsibility to know the location of their lot lines to ensure setback requirements are met._
Hi Zach,

Please find enclosed the Non-Metallic Mining 2019 Annual Report for both our West Mail Road Pit and Erickson Creek Road Pit.

Hopefully I completed the paperwork correctly. We did not open up any additional area or perform any crushing operations over the past year in the West Mail Road Pit. We did open up 8.2 acres of additional area in the Erickson Creek Road Pit for crushing this past summer. You should already have a previously approved reclamation plan for each pit in your file.

The fee is $55.00 for the West Mail Road Pit and $285.00 for the Erickson Creek Road Pit, together totaling $340.00. Please use an interdepartmental transfer from Forestry and bill cost center 33117.5329 for payment.

If you have any further questions or need further information please feel free to contact me.

Thanks,
-Jon Harris
DOUGLAS COUNTY PERMIT

ISSUE DATE
03/08/2017

CONDITIONAL-USE#
22853

MAILING ADDRESS
DOUGLAS COUNTY FORESTRY
1313 BELKNAP ST
SUPERIOR WI 54880

TOWN OF GORDON

PARCEL(S): GO-012-01839-00, GO-012-01840-00, GO-012-01847-00, GO-012-01850-00

PROPERTY ADDRESS
13738 S WEST MAIL RD

LEGAL DESCRIPTION: NW-1/4 26-44-13

SECTION  TOWN  RANGE
26  44 N  13 W

FOR
NON-METALLIC MINE (RENEWAL)

CONDITIONS: The following minimum requirements must be met for all land uses:

03-08-2017 - Douglas County Zoning Committee approved 3-year renewal of nonmetallic mining permit. Town approval dated 02-08-2017 received and on file. All conditions associated with this permit are listed on Page 2 (attached). This permit should be considered incomplete without Page 2 attached.

This is not a building permit. Check with your Town Chairman for information concerning township building requirements or permits for any structure. The Wisconsin Uniform Dwelling Code requires that all towns issue building permits for new dwellings and additions to existing dwellings. Please contact the appropriate town clerk for obtaining permits.

ZONING AUTHORITY
CONavDS OF PERMIT: 22853  

As approved by Zoning Committee 03-08-2017  

Tax Parcel I.D. Number:  
1) GO-012-01847-00 (S-1/2 NE 27-44N-13W)  
2) GO-012-01840-00 (S-1/2 NE NW 26-44N-13W)  
3) GO-012-01850-00 (N-1/2 SE 27-44N-13W)  
4) GO-012-01839-00 (S-1/2 NW NE 26-44N-13W)  

Proposed Use:  
Non-Metallic Mining Permit (3-Year Renewal)  

NMM Permit Number: YR-0076  

ISSUED: 03-08-2017  

(13738 S West Mail Rd)  

CONDITIONS:  

1 This permit approved for three-year period, expiring 03-08-2020.  

2 Must comply with Ordinance 8.0, Section VI, Sub. 6.2. Reclamation plan on file reviewed by Douglas County Land & Water Conservation and determined adequate for permit renewal.  

3 Must comply with Ordinance 8.9 to include NR-135 annual reporting requirements.  

4 Must comply with any conditions or approvals required by the Wisconsin DNR. Steve LaValley is the point of contact: 1701 North 4th Street, Superior, WI, 54880 / 715-392-7988 / steven.lavalley@wisconsin.gov  

This page is intended to be a part of above numbered permit and should be included in any copies or other duplication of this permit.
Nonmetallic Mine Reclamation Plan
South Mail Road and Holmes Camp Road
Gravel Pits

Sections 26 and 27
Town of Gordon
Douglas County, WI

Submitted to:
Douglas County Zoning Department

Prepared by:
Schmitt Technical Services, Inc., Cross Plains, WI

On behalf of:
Douglas County Forestry Department (Applicant),
Douglas County, WI

February 17, 2012
(STS Project No. 11054)
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Appendix A  National Resource Conservation Service Custom Soil Resource Report
Reclamation Plan

South Mail Road and Holmes Camp Road (non-metallic mining) Pits
Township of Gordon
Douglas County, WI

1. Site Information

A. Maps

General Location: enclosed is an excerpt from page 9 of Douglas County Plat Book showing the properties (Figure 1).

Current Property Boundary: The Proposed South Mail Road Pit is described as being a 28.42 acre portion of the E 1/4 of the NW 1/4 of Section 26, Township 44 North, Range 13W. The owner of record is the Douglas County Forestry Department. The Parcel Number is: GO-012-01840-00.

The Proposed Holmes Camp Road Pit is described as being a 51.83 acre parcel including portions of the NE 1/4 and NW 1/4 of the SE 1/4, and a portion of the SE 1/4 of the NE 1/4 of Section 27, Township 44 North, Range 13W. The owner of record is the Douglas County Forestry Department. The Parcel Numbers are: GO-012-01850-00 and GO-012-01847-00 respectively.

Enclosed is an aerial photograph showing the proposed South Mail Road and Holmes Camp Road Road Pits (Figure 2).

Notes: This Reclamation Plan encompasses 2 different proposed gravel pits to be considered as 1 site for the purposes of permitting and reclamation.

Areal Extents: are shown on the attached drawing (Figure 2). The extent of mining for the proposed South Mail Road pit area encompasses approximately 28.42 acres in Section 26 and the Holmes Camp Road pit area encompasses approximately 51.83 acres in Section 27. The Douglas County Forestry Department proposes to extract and crush gravel deposits to be blended with on-site sand deposits for use in maintaining Douglas County Forestry Department Roads. The maximum extent of mining will be 80.25 acres in Sections 26 and 27.

Geological Composition: The sand and gravel deposit is from the Copper Falls Formation and was deposited prior to the most recent glacial event. Depth of deposit is expected to vary across the site down to the elevation of the regional ground water table at roughly elevation 1000 feet above mean sea level (msl) (Figures 6 and 7), or lower. The maximum depth of removal anticipated for this site is to elevation 1025 if the deposit is considered operationally feasible and cost effective to obtain. The proposed maximum depth of excavation will be at least 25 feet above the regional ground water table. The thickness of sand/gravel/loam is expected to be greater than 10 feet.

Distribution, Thickness and Type of Topsoil: A NRCS/USDA Custom Soil Resource Report is included in this reclamation plan for the project area as Appendix A. The area soils are defined as consisting primarily of Dairyland-Emmet Complex and Springstead-parkfalls complex soils, all glacially deposited and providing the basis for the rolling terrain. Less prominent soils outside of the proposed mining areas include the Totagatic-Winterfield complex, Springstead Loamy Sand, Lenroot Loamy Sand and the Newood-Pesabie-Capitola complex. The existing topsoil was found to be a sandy loam or silt loam, often with gravel present and was rarely more than 2 to 3 inches thick (generally less) across the
site. This is consistent with on-site observations made during exploration of the proposed South Mail Road and Homes Camp Road Pits. Most of the topsoil is bound in the root mass of tree stumps and only nominal topsoil salvage will be possible. Salvaging operations will take place by stockpiling salvaged topsoil in berms to act as a protective barrier for the nearby wetlands until final reclamation of the site takes place (Figure 11).

**Approximate Elevation of Groundwater:** Regional groundwater information was obtained from USGS Hydrologic Investigations Atlas HA-451. There is one private well within a 1-mile distance of the site boundary, and one private well just outside of the one-mile distance. USGS Hydrologic Investigations Atlas HA-524 shows the regional water table at an elevation of 1000 feet (Figures 6 and 7). Groundwater flow is generally from north to south across the site.

**Location of Surface Water:** The Moose River is located within the center of the project boundary. A 300 foot setback has been used to determine the eastern extent of the proposed Holmes Camp Road Pit mining boundary per subsection 2.12 of Section 8.4 “Shoreland Zoning” of Chapter VIII, “Zoning and Planning” of the Douglas County Ordinance. All wetlands are a minimum of 75 feet away from project Mining boundaries (Figure 8). Wetlands on site are outside the limits of excavation and are protected from disturbance by the salvaged topsoil berms and the required 75 foot setback from wetlands (Figure 11). Adjacent wetlands are shown on Figure 8 depicting findings from the Wisconsin Wetland Inventory. Wetland shape files were also obtained from the National Wetland Inventory, and a 75 foot setback buffer has also been applied to the outer perimeter of wetland areas to comply with Wisconsin State Law regarding land use near wetland areas.

Nearby Wetlands include the following types and are shown on Figure 8.

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<tr>
<th>ID</th>
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<tbody>
<tr>
<td>T8K</td>
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<td>S3/E2K</td>
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<tr>
<td>T8/WOH</td>
<td>Forested/Open Water</td>
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<td>T3/S3K</td>
<td>Forested, Scrub/shrub</td>
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<tr>
<td>E2/WOH</td>
<td>Emergent/Wet Meadow, Open Water</td>
</tr>
<tr>
<td>T8/S3K</td>
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<td>S3K</td>
<td>Scrub/Shrub</td>
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<td>S3/E1K</td>
<td>Scrub/Shrub, Emergent/Wet Meadow</td>
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<td>T5K</td>
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</tr>
<tr>
<td>T3/E1K</td>
<td>Forested, Emergent/Wet Meadow</td>
</tr>
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</table>

**Existing Drainage Patterns:** The proposed pits will involve removal of material from stream deposits (glacially deposited material in the form of sand and gravel) as shown in the typical cross section diagrams (Figure 13, before and after). Rain water or snow melt will run off toward the wetlands but will be intercepted by the salvaged topsoil berms, and will infiltrate into the soil. The site will be internally drained. When reclamation activities are undertaken, appropriate erosion controls will be implemented.

**Existing Topography:** See Figure 5.
Location of Manmade Features: There are no structures or other improvements within the site boundaries.

B. Biological Information

The site consists of northern hardwoods (maples and aspen) in most areas and upland grass species in lesser abundances in small clearings. Tree removal will occur as needed for the progression of mining operations within site boundaries as shown in Figure 9. Native birds such as black-capped chick-a-dees, blue jays and crows are typical bird species.

The proposed pit areas will be logged off by the Douglas County Forestry Department prior to initial topsoil stripping and isolation activities. Currently there is no logging plan in place for the proposed South Mail Road and Holmes Camp Road Pits, but logging is anticipated to occur as needed to progress mining (figure 10).

The Wisconsin DNR Natural History Inventory (NHI, January, 2012) database lists 8 animal species and 4 natural communities in Superior County that are endangered, threatened, or of special concern (http://dnr.wi.gov/org, accessed January, 2012). According to the NHI database, the only species of note would be the Gray Wolf which has been delisted as of January 27, 2012, and the Bald Eagle. Since the project areas are mostly forest and timber production areas which were severely affected by recent straight line wind events, very limited habitats currently exist within the site property for the Bald Eagle; and none were observed within the proposed mining areas.

Table 1: WDNR Natural Heritage Inventory Database

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<th>Scientific Name</th>
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<td>Gilt Darter</td>
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*Source: Wisconsin Department of Natural Resources National Heritage Inventory Database.
Wisconsin State Status Protection category designated by the Wisconsin DNR. END = endangered; THR = threatened; SC = Special Concern.
Special Concern species are those species about which some problem of abundance or distribution is suspected but not yet proved. The main purpose of this category is to focus attention on certain species before they become threatened or endangered. The current categories and their respective level of protection are as follows: SC/P = fully protected; SC/N = no laws regulating use, possession, or harvesting; SC/H = take regulated by establishment of open closed seasons; SC/FL = Federally protected as endangered or threatened, but not so designated by state WDNR; SC/M = fully protected by federal and state laws under the Migratory Bird Act. Delisted indicates a regulatory change to a group status.
2. Post Mining Land Use

For the immediate future, the site will be utilized as a gravel pit by the Douglas County Forestry Department and it's contractors for sand and gravel resource removal, crushing, sizing and stockpiling of material to be utilized for repair and maintenance of existing, in addition to the potential construction of new roads within County Forestry Department Properties.

It is anticipated that the Post Mining Land use will be for timber resource production and minor recreational usage, upon reclamation, similar to existing Forestry Department Lands in the area; and previous use of this land.

3. Reclamation Measures

A. Earthwork: Site Grading

Final Slope Angles will not exceed the maximum 3:1 (length vs. height) slope requirement. The surface of the disturbed area will generally be a slight depression with the potential for small ponds to remain if the sand and gravel resource continues below the groundwater table. Final grading of excavations will conform to 3:1 or shallower slopes, and if ponds are left, they will be graded to conform to the requirements of NR 135. Salvaged topsoil will be transported back to excavation areas, and seeding of these areas will be implemented as part of the reclamation (Figure 12).

High Wall Reduction is not applicable at this site. Benching and terracing is not expected to be utilized at this site.

B. Topsoil

Topsoil on the site is very thin and is bound in the root mass of tree stumps, complicating the salvage operation. Topsoil on site will be removed along with the stumps and moved to berm-type stockpiles along wetland areas for an area encompassing approximately 4.31 acres in the proposed Holmes Camp Road pit, and 3.13 acres in the proposed South Mail Road pit. As the incorporated roots stabilize the stockpiles, no temporary seeding will be necessary. Similar practices will be used in both proposed pit areas as excavation takes place in these areas.

C. Topography

Final topography will be as shown on the “after” typical cross section. Final contours will reflect the 3:1 maximum slope criteria. Artificial water bodies likely will not remain as part of the final reclamation and remaining side slopes will conform to the grading requirements of NR 135.

D. Structures

Existing town roads (South Mail Road and Holmes Camp Road) will remain in use after the site has been reclaimed, and it is expected the access roads will continue to be maintained as snowmobile trails by Douglas County. No permanent structures are currently being planned for this site.

E. Cost

The cost to reclaim both pits at the site is expected to be approximately $132,243 on 80.25 acres; or approximately $1,648 per acre. Please see the attached COST SUMMARY table.
F. Re-vegetation Plan

Dormant Seeding Requirements: dormant seeding is typically involved after November 1st. No dormant seeding is expected to be required.

Temporary Seeding Requirements: temporary seeding is generally involved when permanent seeding is delayed and is generally installed between September 15th and October 1st. It usually consists of winter wheat or rye applied at a rate of 2 pounds of seed per acre. Temporary seeding can also be used to supplement existing ground cover in areas of disturbance and it is proposed that this be done in the areas between the excavations and salvaged topsoil berms.

Permanent Seeding Requirements: areas reclaimed by respraying of salvaged topsoil will receive permanent seeding. These areas will be contained within the proposed mining limits and salvaged topsoil will only be applied to final slopes 3:1 or shallower. It is expected that native species will recolonize the area, but the permanent seeding is expected to provide suitable shade and root structure for native seed stock until such time that native species overtake the seeded species. Eventually it is expected that planting will be undertaken by the Douglas County Forestry Department of tree species for future timber production.

Area to be seeded in the proposed South Mail Road pit is 28.42 acres.

#75 WISDOT Seed Mix: Rate is 30 pounds per acre; seed needed is 853 pounds. Fertilizer: 300 pounds of 20-20-20 per acre; fertilizer required is 8,530 pounds. Lime (80 - 85) or equivalent spread at 2 tons per acre; lime needed is 57 tons. Mulch 2 Tons or 60 Bales per acre; mulch needed is 57 tons or 1,705 bales.

Area to be seeded in the proposed Holmes Camp Road pit is 51.83 acres.

#75 WISDOT Seed Mix: Rate is 30 pounds per acre; seed needed is 1,555 pounds. Fertilizer: 300 pounds of 20-20-20 per acre; fertilizer required is 15,550 pounds. Lime (80 - 85) or equivalent spread at 2 tons per acre; lime needed is 104 tons. Mulch 2 Tons or 60 Bales per acre; mulch needed is 104 tons or 3,110 bales.

Table 2. Total Permanent Seed Materials Required for the Proposed South Mail Road and Holmes Camp Road Pits.

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<th>Holmes Camp Road Pit</th>
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<td>Seed</td>
<td>Pounds</td>
<td>853</td>
<td>1,555</td>
<td>2,408</td>
</tr>
<tr>
<td>Fertilizer</td>
<td>Pounds</td>
<td>8,530</td>
<td>15,550</td>
<td>24,080</td>
</tr>
<tr>
<td>Lime (80-85)</td>
<td>Tons</td>
<td>57</td>
<td>104</td>
<td>161</td>
</tr>
<tr>
<td>Mulch</td>
<td>Tons/Bales</td>
<td>57/1,705</td>
<td>104/3,110</td>
<td>161/4,815</td>
</tr>
</tbody>
</table>

All seeding operations will conform to WISDOT Standard Specifications for Road and Bridge Construction, Section 630, Seeding. Optimum seeding dates are: 5/01 to 6/16 for spring seeding, and 7/15 to 8/15 for fall seeding.

All gardening/landscaping materials (seed, fertilizer, lime and mulch) shall be on site prior to completion of topsoil respraying operations. All certifications (live seed contents, fertilizer and lime guaranteed analyses, etc.) are to be provided to the Douglas County Forestry Department at the time the materials are delivered. Seed mixtures will be applied at pure live seed rates and mulch will be placed within 48 hours of seeding, and in the manner defined in the WISDOT Specifications.
G. Re-vegetative Standards

The standards for the re-vegetation of the defined areas of the pits are as follows: Proper installation of seed, fertilizer and mulch in accordance with the re-vegetative plan described above. Re-vegetation will be considered complete when the re-vegetated areas support the planted seeding. Long-term, re-vegetation will be considered a success when aspen colonization is apparent on reclaimed areas.

H. Erosion Control

Erosion control during reclamation shall be according to Section 628, “Erosion Control” of the WISDOT “Standard Specifications for Road and Bridge Construction.” This may include, but is not limited to silt fence, erosion mat or bales, riprap and seeding. Due to the topography of the site little in the way of erosion control is expected to be required, other than addressing the erosion potential of the reclaimed slopes during seed germination; and where salvaged topsoil is retrieved from its stockpile berms adjacent to wetland areas.

I. Interim Reclamation

This is not applicable to either pit. Reclamation and also mining operations will be completed in 2 phases. Phase 1 will occur after depletion of the sand and gravel reserve in the South Mail Road Pit. This will be the initial mining location and will encompass an area of approximately 28.42 acres. Once reserves of sand and gravel have been depleted in the South Mail Road Pit, reclamation will start in the north easternmost area of this pit and, if needed, excavations for the Holmes Camp Road Pit will progress concurrently with reclamation of the South Mail Road Pit. It is anticipated that some or most of the proposed Holmes Camp Road Pit areal extent will be reduced in size to keep reclamation costs down. Reclamation for both pits will progress from Northwest to Southeast across the disturbed areas. Phase 2 of the reclamation will occur on the proposed Holmes Camp Road Pit area after depletion of the sand and gravel reserve has been completed.

J. Criteria for Successful Reclamation

Reclamation will be considered complete when the following conditions have been met:
1. Disturbed areas support 80% vegetative cover with sufficient native species coverage.
2. Erosion control measures are no longer necessary and have been removed.
3. There is no unnatural erosion occurring at the site.
4. Slopes meet the 3:1 Maximum slope grading requirement for disturbed areas.
5. All criteria listed in this plan have been met to the satisfaction of the Douglas County Zoning Department.

Representatives of the Douglas County Zoning Department will be invited inspect the site to verify that conditions and requirements of the reclamation plan have been met. County Zoning will issue the final determination that the reclamation plan has been accomplished. If conditions or objectives change over the life of the mining operation from those anticipated and addressed in this document, an amended reclamation plan will be prepared and submitted for approval as necessary to address and incorporate those changes.
4. Certification of the Reclamation Plan

I hereby certify that, as a duly sworn official representing the Douglas County Forestry Department, that the Douglas County Forestry Department will comply with the provisions of this reclamation plan as well as with the statewide non-metallic mining reclamation standards established in ss. NR 135.05 through NR 135.15 Wisconsin Administrative Code and that "best management practices" are installed and maintained.

(Signature of duly authorized representative)                  (Date)

>Title of duly authorized representative

5. Financial Assurance

Financial assurance is not required of county departments per NR 135.02.2

6. Submitting of the Plan

Michael J. Markgraf of Schmitt Technical Services, Inc. prepared this plan for submittal on behalf of the Douglas County Forestry Department.

7. Certification and Acceptance

I, as a duly sworn official of the Douglas County Forestry Department, and responsible for the property herein described, do hereby certify that I have reviewed this reclamation plan for the existing and proposed areas of the South Mail Road and Holmes Camp Road Pits, concur with its provisions; and agree to permit its implementation.

Signature                                      Title                                      Date
SUMMARY OF RECLAMATION COSTS

Phase 1. South Mail Road Pit: Extent of reclamation activities is 28.42 acres

Surface preparation prior to landscaping
   Small bulldozer at 11 hours $1,100.00

Topsoil spreading and finish grading
   Small bulldozer at 64 hours $6,400.00
   Backhoe at 64 hours $8,960.00

Seed 853 pounds at approximately $12.00 / pound $10,236.00

Fertilizer 8,530 pounds at approximately $1.30 / pound $11,089.00

Lime 57 Tons at $25.00 / Ton $1,425.00

Mulch 1,705 Bales at $5.00 / Bale $8,525.00

Cost to spread seed, fertilizer and mulch by a landscaping contractor, including watering. Estimate 45 hours at approximately $100.00 / Hour $4,500.00

Site maintenance until approval of reclaimed state. $3,000.00

Total estimated reclamation cost for Phase 1: $46,823.00

Note: Cost estimates assume that all work will be performed by outside contractors. However, if the Douglas County Forestry Department decides to have their own personnel perform some or all of the work, the reclamation costs will be considerably lower.
Phase 2. Holmes Camp Road Pit: Extent of reclamation activities is 51.83 acres

Surface preparation prior to landscaping
Small bulldozer at 20 hours $2,000.00

Topsoil spreading and finish grading
Small bulldozer at 120 hours $12,000.00
Backhoe at 120 hours $16,800.00

Seed 1,555 pounds at approximately $12.00 / pound $18,660.00

Fertilizer 15,550 pounds at approximately $1.30 / pound $20,150.00

Lime 104 Tons at $25.00 / Ton $2,600.00

Mulch 3,110 Bales at $5.00 / Bale $15,550.00

Cost to spread seed, fertilizer and mulch by a landscaping contractor, including watering. Estimate 80 hours at approximately $100.00 / Hour $8,000.00

Site maintenance until approval of reclaimed state. $5,000.00

Total estimated reclamation cost for Phase 2: $85,420.00

Note: Cost estimates assume that all work will be performed by outside contractors. However, if the Douglas County Forestry Department decides to have their own personnel perform some or all of the work, the reclamation costs will be considerably lower.

The total estimated reclamation costs for both phases of reclamation are: $132,243.00
Figure 4. Site Location & Pleistocene

STS Project: 11054

Sec.26 & 27
T44N, R13W
Township of Gordon
Douglas County, WI

*Wisconsin Geological & Natural History Survey*
Figure 7. Groundwater Elevation & Movement
STS Project: 11034
Sec.26 & 27
T44N. R13W
Township of Gordon
Douglas County, WI

Legend
Southern Granite Pit Boundary

*Base map: Interior Dept Geological Survey (Young & Skinner, 1974)
Figure 13. Proposed Gravel Pit Cross-Section

Legend
- Groundwater
- Removed Material
- Original/ New Elevation

Section B - B' Before (Typical)

Section B - B' After (Typical)

Scale Indicated on Cross-sections
Figure 14. Proposed Gravel Pit Cross-Section

Legend

- Groundwater
- Removed Material
- Original/ New Elevation

STS Project: 11051
Sec. 26 & 27
T44N; R13W
Township of Gordon
Douglas County, WI
Scale indicated on cross-sections
Appendix A

National Resources Conservation Service Soil Resource Report
Custom Soil Resource Report for
Douglas County, Wisconsin

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants.
Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqil/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcc) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means
for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.
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<td>1153C—Newood-Pesabic-Capitola complex, 0 to 15 percent slopes, very stony</td>
<td>21</td>
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<td>2015—Pits</td>
<td>24</td>
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<td>References</td>
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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the
individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.
Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot

MAP INFORMATION

Map Scale: 1:9,340 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Coordinate System: UTM Zone 15N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas County, Wisconsin
Survey Area Data: Version 9, Aug 16, 2011

Date(s) aerial images were photographed: 8/19/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.
Map Unit Legend

<table>
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<tr>
<th>Map Unit Symbol</th>
<th>Map Unit Name</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
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</thead>
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<tr>
<td>64A</td>
<td>Totagatic-Winterfield complex, 0 to 2 percent slopes, frequently flooded</td>
<td>11.6</td>
<td>6.2%</td>
</tr>
<tr>
<td>385B</td>
<td>Springstead loamy sand, 1 to 5 percent slopes, stony</td>
<td>0.0</td>
<td>0.0%</td>
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<tr>
<td>426B</td>
<td>Emmer-Mahtomedi-Menahga complex, 2 to 5 percent slopes</td>
<td>2.5</td>
<td>1.3%</td>
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<td>471B</td>
<td>Dairyland-Emmet complex, 0 to 6 percent slopes, very stony</td>
<td>125.8</td>
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</tr>
<tr>
<td>771A</td>
<td>Lenroot loamy sand, 0 to 3 percent slopes</td>
<td>22.0</td>
<td>11.6%</td>
</tr>
<tr>
<td>1153C</td>
<td>Newood-Pesabic-Capitola complex, 0 to 10 percent slopes, very stony</td>
<td>12.0</td>
<td>6.3%</td>
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<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td><strong>188.7</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the
Custom Soil Resource Report

contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a soil series. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into soil phases. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A complex consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An association is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An undifferentiated group is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include miscellaneous areas. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.
Douglas County, Wisconsin

64A—Totagatic-Winterfield complex, 0 to 2 percent slopes, frequently flooded

Map Unit Setting
- **Elevation**: 600 to 1,400 feet
- **Mean annual precipitation**: 25 to 36 inches
- **Mean annual air temperature**: 36 to 46 degrees F
- **Frost-free period**: 90 to 140 days

Map Unit Composition
- **Totagatic and similar soils**: 50 percent
- **Winterfield and similar soils**: 40 percent
- **Minor components**: 10 percent

Description of Totagatic

Setting
- **Landform**: Flood plains
- **Landform position (two-dimensional)**: Toeslope
- **Landform position (three-dimensional)**: Talf
- **Down-slope shape**: Linear
- **Across-slope shape**: Linear
- **Parent material**: Mostly sandy alluvium

Properties and qualities
- **Slope**: 0 to 2 percent
- **Depth to restrictive feature**: More than 80 inches
- **Drainage class**: Poorly drained
- **Capacity of the most limiting layer to transmit water (Ksat)**: High to very high (6.00 to 20.00 in/hr)
- **Depth to water table**: About 0 inches
- **Frequency of flooding**: Frequent
- **Frequency of ponding**: Frequent
- **Available water capacity**: Low (about 5.4 inches)

Interpretive groups
- **Land capability (nonirrigated)**: 7w

Typical profile
- 0 to 4 inches: Muck
- 4 to 8 inches: Loamy fine sand
- 8 to 17 inches: Fine sand
- 17 to 28 inches: Fine sand
- 28 to 48 inches: Sand
- 46 to 70 inches: Sand
- 70 to 80 inches: Sand

Description of Winterfield

Setting
- **Landform**: Flood plains
- **Landform position (two-dimensional)**: Toeslope
- **Landform position (three-dimensional)**: Rise
- **Down-slope shape**: Linear
Across-slope shape: Linear
Parent material: Sandy alluvium

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water capacity: Low (about 4.4 inches)

Interpretive groups
Land capability (nonirrigated): 4w

Typical profile
0 to 7 inches: Loamy sand
7 to 60 inches: Sand

Minor Components

Bowstring
Percent of map unit: 5 percent
Landform: Flood plains
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear

Ausable
Percent of map unit: 5 percent
Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear

385B—Springstead loamy sand, 1 to 6 percent slopes, stony

Map Unit Setting
Elevation: 1,100 to 1,700 feet
Mean annual precipitation: 28 to 33 inches
Mean annual air temperature: 37 to 45 degrees F
Frost-free period: 110 to 135 days

Map Unit Composition
Springstead and similar soils: 88 percent
Minor components: 12 percent
Description of Springstead

Setting
- *Landform*: Moraines, stream terraces, drumlins
- *Landform position (two-dimensional)*: Summit
- *Down-slope shape*: Convex
- *Across-slope shape*: Convex
- *Parent material*: Sandy mudflow sediments or outwash underlain by dense sandy lodgment till

Properties and qualities
- *Slope*: 1 to 6 percent
- *Surface area covered with cobbles, stones or boulders*: 0.1 percent
- *Depth to restrictive feature*: 25 to 40 inches to densic material
- *Drainage class*: Moderately well drained
- *Capacity of the most limiting layer to transmit water (Ksat)*: Moderately low to moderately high (0.06 to 0.20 in/hr)
- *Depth to water table*: About 24 inches
- *Frequency of flooding*: None
- *Frequency of ponding*: None
- *Available water capacity*: Low (about 3.5 inches)

Interpretive groups
- *Land capability (nonirrigated)*: 3s

Typical profile
- *0 to 2 inches*: Moderately decomposed plant material
- *2 to 3 inches*: Loamy sand
- *3 to 7 inches*: Loamy sand
- *7 to 26 inches*: Loamy sand
- *26 to 32 inches*: Loamy sand
- *32 to 39 inches*: Gravelly loamy sand
- *39 to 80 inches*: Gravelly loamy sand

Minor Components

Keweenaw
- *Percent of map unit*: 5 percent

Parkfalls
- *Percent of map unit*: 4 percent

Lenroot
- *Percent of map unit*: 3 percent

426B—Emmert-Mahtomedi-Menahga complex, 2 to 6 percent slopes

Map Unit Setting
- *Elevation*: 670 to 1,610 feet
- *Mean annual precipitation*: 24 to 34 inches
- *Mean annual air temperature*: 36 to 45 degrees F
Frost-free period: 88 to 150 days

Map Unit Composition
Emmert and similar soils: 50 percent
Mahtomedi and similar soils: 25 percent
Menahga and similar soils: 20 percent
Minor components: 5 percent

Description of Emmert

Setting
Landform: Stream terraces, eskers, outwash plains
Landform position (two-dimensional): Summit
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy-skelatal outwash

Properties and qualities
Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 1.9 inches)

Interpretive groups
Land capability (nonirrigated): 4s

Typical profile
0 to 1 inches: Loamy sand
1 to 5 inches: Gravelly loamy coarse sand
5 to 24 inches: Very gravelly coarse sand
24 to 60 inches: Very gravelly coarse sand

Description of Mahtomedi

Setting
Landform: Stream terraces, outwash plains, eskers
Landform position (two-dimensional): Summit
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy outwash

Properties and qualities
Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 2.7 inches)
Interpretive groups
Land capability (nonirrigated): 4s

Typical profile
0 to 5 inches: Loamy sand
5 to 8 inches: Sand
8 to 15 inches: Gravelly coarse sand
15 to 30 inches: Gravelly sand
30 to 60 inches: Gravelly sand

Description of Menahga

Setting
Landform: Outwash plains, eskers, stream terraces
Landform position (two-dimensional): Summit
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy outwash

Properties and qualities
Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.8 inches)

Interpretive groups
Land capability (nonirrigated): 4s

Typical profile
0 to 1 inches: Slightly decomposed plant material
1 to 2 inches: Loamy sand
2 to 25 inches: Sand
25 to 80 inches: Sand

Minor Components
Lenroot
Percent of map unit: 3 percent

Elderon
Percent of map unit: 2 percent
471B—Dairyland-Emmert complex, 0 to 6 percent slopes, very stony

Map Unit Setting
Elevation: 690 to 1,610 feet
Mean annual precipitation: 25 to 33 inches
Mean annual air temperature: 36 to 45 degrees F
Frost-free period: 90 to 140 days

Map Unit Composition
Dairyland and similar soils: 55 percent
Emmert and similar soils: 30 percent
Minor components: 15 percent

Description of Dairyland
Setting
Landform: Stream terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy-skeletal alluvium over dense loamy till

Properties and qualities
Slope: 0 to 6 percent
Surface area covered with cobbles, stones or boulders: 1.5 percent
Depth to restrictive feature: 40 to 60 inches to densic material
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.01 to 0.06 in/hr)
Depth to water table: About 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.6 inches)

Interpretive groups
Land capability (nonirrigated): 7s

Typical profile
0 to 1 inches: Moderately decomposed plant material
1 to 7 inches: Cobbly sandy loam
7 to 14 inches: Very gravelly loamy sand
14 to 36 inches: Very gravelly loamy sand
36 to 49 inches: Extremely gravelly loamy sand
49 to 80 inches: Sandy loam
Description of Emmert

Setting
Landform: Stream terraces
Landform position (two-dimensional): Summit
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy-skeletal outwash

Properties and qualities
Slope: 1 to 6 percent
Surface area covered with cobbles, stones or boulders: 1.5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 1.9 inches)

Interpretive groups
Land capability (nonirrigated): 7s

Typical profile
0 to 1 inches: Gravelly coarse sandy loam
1 to 5 inches: Gravelly loamy coarse sand
5 to 24 inches: Very gravelly coarse sand
24 to 60 inches: Very gravelly coarse sand

Minor Components

Bigisland
Percent of map unit: 10 percent
Landform: Stream terraces
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex

Elderon
Percent of map unit: 3 percent
Landform: Stream terraces, eskers, kames
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear

Rockmarsh
Percent of map unit: 2 percent
Landform: Flood plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Concave
678B—Springstead-Parkfalls complex, 0 to 6 percent slopes, very stony

Map Unit Setting
- **Elevation:** 1,100 to 1,700 feet
- **Mean annual precipitation:** 28 to 33 inches
- **Mean annual air temperature:** 37 to 45 degrees F
- **Frost-free period:** 110 to 135 days

Map Unit Composition
- **Springstead and similar soils:** 60 percent
- **Parkfalls and similar soils:** 25 percent
- **Minor components:** 15 percent

Description of Springstead

Setting
- **Landform:** Stream terraces
- **Landform position (two-dimensional):** Summit, backslope, shoulder
- **Down-slope shape:** Convex
- **Across-slope shape:** Convex
- **Parent material:** Sandy mudflow sediments or outwash underlain by dense sandy lodgment till

Properties and qualities
- **Slope:** 1 to 6 percent
- **Surface area covered with cobbles, stones or boulders:** 1.5 percent
- **Depth to restrictive feature:** 25 to 40 inches to densic material
- **Drainage class:** Moderately well drained
- **Capacity of the most limiting layer to transmit water (Ksat):** Moderately low to moderately high (0.06 to 0.20 in/hr)
- **Depth to water table:** About 24 inches
- **Frequency of flooding:** None
- **Frequency of ponding:** None
- **Available water capacity:** Low (about 4.0 inches)

Interpretive groups
- **Land capability (nonirrigated):** 4s

Typical profile
- **0 to 2 inches:** Slightly decomposed plant material
- **2 to 3 inches:** Sandy loam
- **3 to 7 inches:** Sandy loam
- **7 to 13 inches:** Sandy loam
- **13 to 26 inches:** Loamy sand
- **26 to 32 inches:** Loamy sand
- **32 to 39 inches:** Gravelly loamy sand
- **39 to 80 inches:** Gravelly loamy sand
Description of Parkfalls

Setting
  - Landform: Stream terraces
  - Landform position (two-dimensional): Footslope
  - Down-slope shape: Linear
  - Across-slope shape: Concave
  - Parent material: Loamy alluvium over sandy lodgment till

Properties and qualities
  - Slope: 0 to 4 percent
  - Surface area covered with cobbles, stones or boulders: 1.5 percent
  - Depth to restrictive feature: 30 to 50 inches to densec material
  - Drainage class: Somewhat poorly drained
  - Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
  - Depth to water table: About 6 inches
  - Frequency of flooding: None
  - Frequency of ponding: None
  - Available water capacity: Low (about 5.3 inches)

Interpretive groups
  - Land capability (nonirrigated): 4s

Typical profile
  - 0 to 3 inches: Highly decomposed plant material
  - 3 to 7 inches: Sandy loam
  - 7 to 28 inches: Sandy loam
  - 28 to 35 inches: Sandy loam
  - 35 to 46 inches: Sandy loam
  - 46 to 80 inches: Loamy sand

Minor Components

Springstead
  - Percent of map unit: 10 percent

Wozny
  - Percent of map unit: 3 percent
  - Landform: Depressions, drainageways

Cathro
  - Percent of map unit: 2 percent
  - Landform: Depressions

771A—Lenroot loamy sand, 0 to 3 percent slopes

Map Unit Setting
  - Elevation: 600 to 1,600 feet
  - Mean annual precipitation: 26 to 33 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 135 days

Map Unit Composition
Lenroot and similar soils: 85 percent
Minor components: 15 percent

Description of Lenroot
Setting
Landform: Outwash plains, stream terraces
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Sandy and gravelly outwash

Properties and qualities
Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 2.8 inches)

Interpretive groups
Land capability (nonirrigated): 4s

Typical profile
0 to 4 inches: Loamy sand
4 to 8 inches: Loamy sand
8 to 14 inches: Loamy coarse sand
14 to 21 inches: Gravelly coarse sand
21 to 80 inches: Stratified coarse sand to gravelly coarse sand

Minor Components
Mahtomedi
Percent of map unit: 10 percent

Meehan
Percent of map unit: 5 percent

1153C—Newood-Pesabic-Capitola complex, 0 to 15 percent slopes, very stony

Map Unit Setting
Elevation: 800 to 1,950 feet
Mean annual precipitation: 28 to 33 inches
Mean annual air temperature: 37 to 45 degrees F
Frost-free period: 70 to 135 days

Map Unit Composition

Newood and similar soils: 45 percent
Pesabic and similar soils: 25 percent
Capitola and similar soils: 20 percent
Minor components: 10 percent

Description of Newood

Setting

Landform: Moraines
Landform position (two-dimensional): Backslope, shoulder, summit
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Dense sandy loam till

Properties and qualities

Slope: 1 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.5 percent
Depth to restrictive feature: 40 to 60 inches to dencis material
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.01 to 0.06 in/hr)
Depth to water table: About 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.8 inches)

Interpretive groups

Land capability (nonirrigated): 6s

Typical profile

0 to 4 inches: Sandy loam
4 to 5 inches: Gravelly sandy loam
5 to 13 inches: Gravelly sandy loam
13 to 17 inches: Gravelly sandy loam
17 to 29 inches: Gravelly sandy loam
29 to 37 inches: Gravelly sandy loam
37 to 46 inches: Gravelly sandy loam
46 to 58 inches: Sandy loam
58 to 60 inches: Sandy loam

Description of Pesabic

Setting

Landform: Moraines
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Dense loamy till

Properties and qualities

Slope: 1 to 4 percent
Surface area covered with cobbles, stones or boulders: 1.5 percent
Depth to restrictive feature: 40 to 60 inches to dencis material
Drainage class: Somewhat poorly drained
Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.01 to 0.06 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.1 inches)

Interpretive groups
Land capability (nonirrigated): 4s

Typical profile
0 to 3 inches: Moderately decomposed plant material
3 to 4 inches: Sandy loam
4 to 16 inches: Sandy loam
16 to 30 inches: Sandy loam
30 to 39 inches: Sandy loam
39 to 53 inches: Gravelly sandy loam
53 to 84 inches: Gravelly sandy loam

Description of Capitola

Setting
Landform: Depressions on moraines
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Silty or loamy alluvium underlain by dense loamy till

Properties and qualities
Slope: 0 to 1 percent
Surface area covered with cobbles, stones or boulders: 1.5 percent
Depth to restrictive feature: 20 to 40 inches to densic material
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.01 to 0.06 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water capacity: Low (about 5.8 inches)

Interpretive groups
Land capability (nonirrigated): 7w

Typical profile
0 to 5 inches: Muck
5 to 7 inches: Silt loam
7 to 22 inches: Silt loam
22 to 33 inches: Sandy loam
33 to 60 inches: Sandy loam

Minor Components

Newot
Percent of map unit: 5 percent

Keweenaw
Percent of map unit: 3 percent
Cathro

Percent of map unit: 2 percent
Landform: Depressions

2015—Pits

Map Unit Composition
Pits: 100 percent

Description of Pits
Setting
Landform: Stream terraces, outwash plains, moraines, eskers

Interpretive groups
Land capability (nonirrigated): 8s
References


Resolution to Adopt the Policy to
Prohibit the Use of Excessive Force and the Barring of Entrances/Exits
for Non-Violent Civil Rights Demonstrations

POLICY TO PROHIBIT THE USE OF EXCESSIVE FORCE AND THE BARRING OF ENTRANCES/EXITS
FOR NON-VIOLENT CIVIL RIGHTS DEMONSTRATIONS

WHEREAS Section 104 (L)(1) of Title I of the Housing and Community Development Act of 1974 as amended (42 U.S.C. 69 §5304) prohibits the State from expending or obligating any Community Development Block Grant funds to any unit of general local government that does not have or adopt a policy prohibiting the use of excessive force by local law enforcement agencies within its jurisdiction against any individuals engaged in nonviolent civil rights demonstrations; and a policy of enforcing State and local laws against physically barring entrance to or exit from a facility or location which is the subject of such nonviolent civil rights demonstration within its jurisdiction;

AND WHEREAS it is in the interest of Douglas County to pursue Community Development Block Grant Funds and to adopt policy that complies with Section 104 (L)(1) of Title I of the Housing and Community Development Act of 1974 as amended (42 USC 69 §5304);

NOW THEREFORE, BE IT RESOLVED BY THE CHAIRMAN AND DOUGLAS COUNTY:

It is POLICY of Douglas County to prohibit the use of excessive force by law enforcement agencies within the County’s jurisdiction against any individuals engaged in nonviolent civil rights demonstrations.

It is POLICY of Douglas County to enforce applicable State and local laws against physically barring entrance to or exit from a facility or location which is the subject of such nonviolent civil rights demonstration within the County’s jurisdiction.

The officials and employees of Douglas County shall assist in the orderly prevention of all excessive force within Douglas County by implementing the authority and enforcement procedures set forth in Title I of the Housing and Community Development Act of 1974.

The Douglas County Board directs the Douglas County Sheriff to implement this Resolution by amending applicable Douglas County Sheriff Department procedures.

PASSED BY THE BOARD OF SUPERVISORS OF DOUGLAS COUNTY.

______________________________________          Date____________________
Chief Elected Official Signature
Mark Liebaert, Chairman

ATTEST:

______________________________________          Date____________________
Municipal Clerk Signature
Susan Sandvick, Clerk
**DOUGLAS COUNTY BUDGETARY JOURNAL ENTRY**

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**EXPLANATION — ATTACH SUPPORTING DATA IF NECESSARY**

Increase Purchase Service - Land Information

Decrease 2019 Canteen Project Reserve

**ACTION REQUIRED**

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**Prepared by**

[Signature]

**Date**

**Clerk’s Approval**

**Date**

* Minutes of meeting and copy of resolution if applicable should be attached.
# DOUGLAS COUNTY
## BUDGETARY JOURNAL ENTRY

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**EXPLANATION — ATTACH SUPPORTING DATA IF NECESSARY**

Increase grant revenue by $4,000. Increase purchased services by $4,000. $4,500 in match is “in kind.” No effect on levy.

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Prepared by: 

Entered by: 

* Minutes of meeting and copy of resolution if applicable should be attached.

White-County Clerk; Yellow-Finance Dept.; Pink-Dept.
**DOUGLAS COUNTY**
**BUDGETARY JOURNAL ENTRY**

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Department: **Land Conservation**  Date: **2/25/20**

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**EXPLANATION — ATTACH SUPPORTING DATA IF NECESSARY**

Record grant for education, prevention and planning
County Levy Required $78,500 (source to be determined)

(in kind/ERF)

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