



SOIL & WATER- ENVIRONMENTAL CONSULTING

6074 EAST BOWMAN LAKE ROAD

DULUTH, MN 55803-9416 Phone: 218-729-5402 Email: SoilWater@starband.net

October 5, 2009

To: Ron and Mike Edmunds Edmunds Co. 2200 Water St Duluth MN 55812	Ron Truscott RWT Holdings LLC 3942 Woodland Ave Duluth, MN 55803	Conrad and Lori Beaulieu 4630 Woodland Ave Duluth, MN 55803
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RE: Wetland Delineation for 4 parcels, all about 35 acres in The SE1/4, Sec 35, T50N, R14E, southeast of intersection of Woodland Ave and Pleasant View Road, Duluth, St. Louis County, MN.

Executive summary

For residential planning of your properties, I completed a wetland delineation utilizing wetland delineation publications and references as a guide. My report and accompanying survey map summarize data collected. The land has slopes of 1 to 35 percent. The soil materials derived from coarse-loamy till sediments. The land is in northern deciduous forest. It is in Amity Creek Watershed which drains to Lake Superior (South) Watershed.

Line placement methods and transect sampling techniques

Prior to the wetland delineation, I reviewed the National Wetland Inventory, USGS topographic map, and the Soil Survey. After that, I conducted direct in-field observations of vegetation, soils, landforms and hydrology within the project area.

The actual wetland boundary was determined by conducting transects across the landscape, generally going downslope. Along a transect, data points were selected at regularly spaced intervals. At each data point, I identified the plant species, described the soil profiles and identified the hydrology. The transition line is usually 10 feet or less. The methodology used to sample and describe soils, hydrology, and vegetation strata are described in US Army Corps manuals, NRCS manuals and guides (see references). The vegetation sample area around the data point is based on a 20 foot radius for Trees (T) and Saplings/Shrubs (S) and a 5 foot radius for Herbaceous (F). Dominant plant species was determined using the 50/20 rule. Routine Method data sheets (enclosed) were used to record soils, vegetation and hydrology for representative sites.

Letter/number system of wetlands, delineations and transects

The wetland-upland boundary and documented transect areas appear on the GIS map. The wetlands on the GIS map are geo-referenced using a sub-foot gps unit. The wetland boundaries have flags (survey tape with pre-printed words "wetland boundary") marked along its boundary. On the map, red lines indicate where transects took place which appear in this report. (Routine Wetland Determination Data Forms enclosed).

Discussion

The base maps for the wetland delineation includes the USGS topographic map, the September 2003 NWI map, and the soil survey map.

The upland parts of the property is mostly growing sugar maple, red oak and aspen. The wetlands part is mostly growing black ash, aspen, alder, with some deeper open areas that have mostly sedges and grasses. Two small old ditches enter from the west and drain into Wetlands B and Q. Another small old ditch is in the north 5 acre parcel. It partly receives water from Wetland T and the yard area. There are 5 natural drainage-ways on the subject property (Wetlands B, F, J, K, Q). Some have significant slope up to 25 percent and are considered seep areas. In addition, Wetland J may be a slump area as evidenced by truncated soil profiles. There is some evidence of timber harvesting about 20 years ago. The trees remaining are mostly aspen. Many small wetlands are isolated depressions, such as Wetland E and N. They are described in the soil survey in map unit 141D as a depressional complex and pitted. Some of these were used as small dump sites and have bottles, tires, and cans. A standard delineation was used with some adjustment for the disturbance, so soils criteria, landforms, and hydrology criteria were relied upon more closely. For example, as described in the transects documents, uplands are separated from wetlands where the soil morphology does not meet any hydric soil indicator and landform is on steeper slopes above depression and drainage-ways, and no primary or secondary wetland hydrology indicators exist.

Table of Wetland Types

The following table contains the area and wetland type within the delineated wetlands. An *asterisk indicates isolated types that are in depressions and have no outlet.

<u>Wetland I.D.</u>	<u>Sq ft</u>	<u>Wetland Type (Circ. 39)</u>	<u>Wetland Community Class-Eggers and Reed</u>
A*	3439	7	3B (Hardwood Swamp)
B	19,301	7	3B
C*	2109	6	8B (Shrub-Carr)
D*	3583	7	3B
E*	3544	3 (70%), 7 (30%)	13B (Shallow Marsh), 3B
F	41,179	7 (60%), 6 (40%)	3B, 8A (Alder Thicket)
G*	279	7	3B
H*	3710	7	3B
I*	335	6	8B
J	107,780	7 (60%), 6 (40%)	3B, 8A
K	39,848	7 (60%), 6 (40%)	3B, 8A
L*	1190	7	3B
M*	4220	7	3B
N*	5834	3 (70%), 7 (30%)	13B, 3B
O*	232	7	3B
P*	544	7	3B
Q	77,863	7 (70%), 6 (30%)	3B, 8A
R*	360	6	8B
T	8072	7	3B
Total wetland	323,416		
<u>Total land</u>	<u>1,525,359</u>	<u>(within project boundary, approximate)</u>	
Net upland	1, 201,943	(approximate)	

Recommendations

There have been several preliminary design plans for residential development within this area. With the land survey completed and the wetland delineation completed with a review scheduled for about October 15, it is recommended that residential plans include the locations and amounts of wetlands that would be impacted for each alternative. Minimizing fill to the wetlands will reduce overall permitting and mitigation costs, but it could also reduce the number of lots. The City of Duluth is the Local governmental unit (LGU) for the State of Minnesota Wetland Conservation Act. The United States Army Corps of Engineers administers wetlands (Section 404) of the Federal US Clean Water Act. These are the agencies that will review plans and have the authority for permitting any alteration to the wetlands that are under their jurisdiction.

I hereby certify that this plan, document, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Soil Scientist under the laws of the State of Minnesota.

Print Name: Thomas A. Fait

Signature:

Thomas A Fait

Date: 10/5/09 License # 30026 PWS, SWS# 362 WDC, MN# 1011

c: John Judd– Duluth Planning Department, Duluth, MN 55802 for distribution to TEP
Daryl Wierzbinski, USACE, 1554 Hwy 2, Ste #2, Two Harbors MN 55616

Selected References:

1. Public Notice 96-01078-SDE 17 April 1996, USACE.
 2. Corps of Engineers Wetlands Delineation Manual, 1987, USACE.
 3. Field Indicators of Hydric Soils In The United States Version 6, 2006 by Wetlands Science Institute and Soils Division- NRCS.
 4. Field Book for Describing Soils, 1998, National Soil Survey Center- NRCS.
 5. The USDA National Food Security Act Manual, 1985. USDA.
 6. An Illustrated Flora of the northern US and Canada. N. Britton and A. Brown, Dover Publications, 1970. NY,NY.
 7. Michigan Flora. E Voss. Bulletin 59. 2001. University of Michigan.
 8. A Field Guide to Wildflowers of Northeastern and North-central America. Roger T. Peterson and M McKenny. 1968. Houghton Mifflin Co, Boston, ME
 9. Soil Survey for St. Louis County, MN. Web Soil Survey.
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ROUTINE WETLAND DETERMINATION DATA FORM

Project/Site: <u>35 acres in SE1/4, S35, T50N, R14W</u> Applicant/Owner: <u>Edmunds Co, Ron Truscott, Conrad + Lori Beaulieu</u> Investigator: <u>Thomas Fait PSS- MN# 30026 PWS SWS #362 CWD#1011</u>	Date: <u>10/1/09</u> County: <u>Duluth, St. Louis</u> State: <u>MN</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential problem area (explain below) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>A5 Upland</u> Transect ID: <u>15' NE of flag A5</u> Plot ID: <u>_</u>

Vegetation

Dominant Plant Species (Scientific Name)	Common Name	Stratum	% Cover	Indicator
1. <u>Acer saccharum</u>	<u>sugar maple*</u>	<u>T</u>	<u>30</u>	<u>FACU</u>
2. <u>Populus tremuloides</u>	<u>quaking aspen*</u>	<u>T</u>	<u>30</u>	<u>FAC</u>
3. <u>Ostrya virginiana</u>	<u>hornbeam</u>	<u>T</u>	<u>10</u>	<u>FACU-</u>
4. <u>Rubus parviflorus</u>	<u>thimbleberry*</u>	<u>S</u>	<u>50</u>	<u>FACU+</u>
5. <u>Acer saccharum</u>	<u>sugar maple*</u>	<u>S</u>	<u>30</u>	<u>FACU</u>
6. <u>Acer spicatum</u>	<u>mtn maple</u>	<u>S</u>	<u>5</u>	<u>FACU*</u>
7. <u>Quercus rubra</u>	<u>red oak</u>	<u>S</u>	<u>5</u>	<u>FACU</u>
8. <u>Corylus cornuta</u>	<u>beaked hazel</u>	<u>S</u>	<u>5</u>	<u>UPL</u>
9. <u>Aster macrophyllus</u>	<u>large-leaf aster*</u>	<u>F</u>	<u>40</u>	<u>UPL</u>
10. <u>Carex communis</u>	<u>fibrous-rooted sedge</u>	<u>F</u>	<u>5</u>	<u>UPL</u>
11.				
12.				

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 50/20 rule 1/5 = 20%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Up 12" <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	Secondary Indicators (2 or > required): <input type="checkbox"/> Oxidized Root Channels (up 12") <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> Local Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth to Surface Water: (in) Depth to Free Water in Pit: (in) Depth to Saturated Soil: (in) Depth of boring: <u>20</u> (in)		
Remarks:		

SOILS

Map Unit Name — (Series and Phase): <u>F141D Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0-25% slopes</u>	Drainage Class: <u>Moderately well</u> Field Observations: Confirmed Mapped Type? <input checked="" type="checkbox"/> Yes No
Taxonomy (Subgroup): <u>Ahmeek part- Typic Eutrudepts</u>	

Profile Description:

Depth (inches)	Horizon	Matrix Color (Moist)	Redoximorphic Features	Abundance/ Contrast	Texture, Concretions, Structure, other
0-6	A	7.5YR2/2			loam
6-12	B/E	7.5YR4/4, 4/2			fine sandy loam
12-20	Bt	7.5YR4/4	4/6 1%	few dist	fine sandy loam

Hydric Soil Indicators:

Histosol	Concretions
Histic Epipedon	High Organic Content in Surface Layer in Sandy Soils
Sulfidic Odor	Organic Streaking in Sandy Soils
Aquic Moisture Regime	Listed on Local Hydric Soils List
Reducing Conditions	Listed on State Hydric Soils List
Gleyed or low-chroma matrix colors	Listed on National Hydric Soils List
Other (Explain in Remarks)	

Remarks: 8% convex summit landform indicates upland site.**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present	Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present	Yes <input checked="" type="checkbox"/> No	

Remarks:



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Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential problem area (explain below) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>A5 Wetland</u> Transect ID: <u>25' SW of flag A5</u> Plot ID: <u>_</u>

Vegetation

Dominant Plant Species (Scientific Name)	Common Name	Stratum	% Cover	Indicator
1. <u>Fraxinus nigra</u>	<u>black ash*</u>	<u>T</u>	<u>30</u>	<u>FACW+</u>
2. <u>Populus tremuloides</u>	<u>quaking aspen*</u>	<u>T</u>	<u>20</u>	<u>FAC</u>
3. <u>Fraxinus nigra</u>	<u>black ash*</u>	<u>S</u>	<u>30</u>	<u>FACW+</u>
4. <u>Tilia americana</u>	<u>basswood*</u>	<u>S</u>	<u>20</u>	<u>FACU</u>
5. <u>Alnus incana subsp rugosa</u>	<u>speckled alder</u>	<u>S</u>	<u>10</u>	<u>OBL</u>
6. <u>Solidago gigantea</u>	<u>giant goldenrod*</u>	<u>F</u>	<u>30</u>	<u>FACW</u>
7. <u>Rubus pubescens</u>	<u>dwarf blackberry*</u>	<u>F</u>	<u>20</u>	<u>FACW+</u>
8. <u>Aster macrophyllus</u>	<u>large-leaf aster*</u>	<u>F</u>	<u>20</u>	<u>UPL</u>
9. <u>Athyrium filix-femina</u>	<u>ladyfern*</u>	<u>F</u>	<u>20</u>	<u>FAC</u>
10. <u>Cinna latifolia</u>	<u>woodreed grass</u>	<u>F</u>	<u>10</u>	<u>FACW+</u>
11.				
12.				

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 50/20 rule 2/8 = 25%

Remarks: Wetland Community Class: 3B (hardwood swamp). Plant community rating: Medium quality

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Up 12" <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input checked="" type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	Secondary Indicators (2 or > required): <input type="checkbox"/> Oxidized Root Channels (up 12") <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> Local Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth to Surface Water: (in) Depth to Free Water in Pit: (in) Depth to Saturated Soil: (in) Depth of boring: <u>20</u> (in)		
Remarks:		

SOILS

Map Unit Name — (Series and Phase): <u>F141D Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0-25% slopes</u>	Drainage Class: <u>Poorly</u> Field Observations: Confirmed Mapped Type? <input checked="" type="checkbox"/> Yes No
Taxonomy (Subgroup): <u>Canosia inclusion– Typic Epiaquepts</u>	

Profile Description:

<u>Depth (inches)</u>	<u>Horizon</u>	<u>Matrix Color (Moist)</u>	<u>Redoximorphic Features</u>	<u>Abundance/ Contrast</u>	<u>Texture, Concretions, Structure, other</u>
0-6	A	7.5YR2/2			loam
6-20	Bw	7.5YR4/4	4/6 10%	com dist	cb fine sandy loam

Hydric Soil Indicators:

Histosol	Concretions
Histic Epipedon	High Organic Content in Surface Layer in Sandy Soils
Sulfidic Odor	Organic Streaking in Sandy Soils
Aquic Moisture Regime	Listed on Local Hydric Soils List
Reducing Conditions	Listed on State Hydric Soils List
Gleyed or low-chroma matrix colors	Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Other (Explain in Remarks)	

Remarks: Meets hydric soils criteria TF2 (Redox in red parent material). Concave depression landform indicates wetland site.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes No
Wetland Hydrology Present	<input checked="" type="checkbox"/> Yes No	
Hydric Soils Present	<input checked="" type="checkbox"/> Yes No	

Remarks:



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Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential problem area (explain below) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>B41 Upland</u> Transect ID: <u>15' S of flag B41</u> Plot ID: <u>_</u>

Vegetation

Dominant Plant Species (Scientific Name)	Common Name	Stratum	% Cover	Indicator
1. <u>Acer saccharum</u>	<u>sugar maple*</u>	<u>T</u>	<u>70</u>	<u>FACU</u>
2. <u>Populus tremuloides</u>	<u>quaking aspen*</u>	<u>T</u>	<u>30</u>	<u>FAC</u>
3. <u>Rubus parviflorus</u>	<u>thimbleberry*</u>	<u>S</u>	<u>50</u>	<u>FACU+</u>
4. <u>Acer saccharum</u>	<u>sugar maple*</u>	<u>S</u>	<u>40</u>	<u>FACU</u>
5. <u>Acer spicatum</u>	<u>mtn maple</u>	<u>S</u>	<u>5</u>	<u>FACU*</u>
6. <u>Quercus rubra</u>	<u>red oak</u>	<u>S</u>	<u>5</u>	<u>FACU</u>
7. <u>Corylus cornuta</u>	<u>beaked hazel</u>	<u>S</u>	<u>5</u>	<u>UPL</u>
8. <u>Lonicera canadensis</u>	<u>honeysuckle</u>	<u>S</u>	<u>5</u>	<u>FACU</u>
9. <u>Aster macrophyllus</u>	<u>large-leaf aster*</u>	<u>F</u>	<u>20</u>	<u>UPL</u>
10. <u>Carex communis</u>	<u>fibrous-rooted sedge</u>	<u>F</u>	<u>5</u>	<u>UPL</u>
11.				
12.				

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 50/20 rule 1/5 = 20%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Up 12" <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	Secondary Indicators (2 or > required): <input type="checkbox"/> Oxidized Root Channels (up 12") <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> Local Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth to Surface Water: (in) Depth to Free Water in Pit: (in) Depth to Saturated Soil: (in) Depth of boring: <u>20</u> (in)		
Remarks:		

SOILS

Map Unit Name — (Series and Phase): <u>F141D Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0-25% slopes</u> Taxonomy (Subgroup): <u>Ahmeek part- Typic Eutrudepts</u>	Drainage Class: <u>Moderately well</u> Field Observations: Confirmed Mapped Type? <input checked="" type="checkbox"/> Yes No
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Profile Description:

<u>Depth (inches)</u>	<u>Horizon</u>	<u>Matrix Color (Moist)</u>	<u>Redoximorphic Features</u>	<u>Abundance/ Contrast</u>	<u>Texture, Concretions, Structure, other</u>
0-6	A	7.5YR2/2			loam
6-12	B/E	7.5YR4/4, 4/2			fine sandy loam
12-20	Bt	7.5YR4/4	4/6 1%	few dist	fine sandy loam

Hydric Soil Indicators:

Histosol	Concretions
Histic Epipedon	High Organic Content in Surface Layer in Sandy Soils
Sulfidic Odor	Organic Streaking in Sandy Soils
Aquic Moisture Regime	Listed on Local Hydric Soils List
Reducing Conditions	Listed on State Hydric Soils List
Gleyed or low-chroma matrix colors	Listed on National Hydric Soils List
Other (Explain in Remarks)	

Remarks: 25% linear, linear sideslope landform indicates upland site.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present	Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present	Yes <input checked="" type="checkbox"/> No	

Remarks:



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Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential problem area (explain below) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>B41 Wetland</u> Transect ID: <u>10' N of flag B41</u> Plot ID: <u>_</u>

Vegetation

Dominant Plant Species (Scientific Name)	Common Name	Stratum	% Cover	Indicator
1. <u>Fraxinus nigra</u>	<u>black ash*</u>	<u>T</u>	<u>20</u>	<u>FACW+</u>
2. <u>Populus tremuloides</u>	<u>quaking aspen*</u>	<u>T</u>	<u>20</u>	<u>FAC</u>
3. <u>Fraxinus nigra</u>	<u>black ash*</u>	<u>S</u>	<u>20</u>	<u>FACW+</u>
4. <u>Alnus incana subsp rugosa</u>	<u>speckled alder</u>	<u>S</u>	<u>2</u>	<u>OBL</u>
5. <u>Calamagrostis canadensis</u>	<u>blue-joint reedgrass*</u>	<u>F</u>	<u>60</u>	<u>OBL</u>
6. <u>Osmunda claytoniana</u>	<u>interrupted fern*</u>	<u>F</u>	<u>30</u>	<u>FAC+</u>
7. <u>Cinna latifolia</u>	<u>woodreed grass</u>	<u>F</u>	<u>10</u>	<u>FACW+</u>
8. <u>Scirpus cyperinus</u>	<u>woolgrass</u>	<u>F</u>	<u>10</u>	<u>OBL</u>
9. <u>Athyrium filix-femina</u>	<u>ladyfern</u>	<u>F</u>	<u>5</u>	<u>FAC</u>
10. <u>Solidago gigantea</u>	<u>giant goldenrod</u>	<u>F</u>	<u>5</u>	<u>FACW</u>
11. <u>Rubus pubescens</u>	<u>dwarf blackberry</u>	<u>F</u>	<u>5</u>	<u>FACW+</u>
12.				

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 50/20 rule 5/5 = 100%

Remarks: Wetland Community Class: 3B (hardwood swamp). Plant community rating: Medium quality

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: <u>Primary Indicators:</u> <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Up 12" <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands	<u>2ndary Indicators (2 or > required):</u> <input type="checkbox"/> Oxidized Root Channels (up 12") <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> Local Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth to Surface Water: (in) Depth to Free Water in Pit: (in) Depth to Saturated Soil: (in) Depth of boring: <u>20</u> (in)		

Remarks:

SOILS

Map Unit Name — (Series and Phase): <u>F141D Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0-25% slopes</u> Taxonomy (Subgroup): <u>Canosia inclusion– Typic Epiaquepts</u>	Drainage Class: <u>Poorly</u> Field Observations: Confirmed Mapped Type? <input checked="" type="checkbox"/> Yes No
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Profile Description:

<u>Depth (inches)</u>	<u>Horizon</u>	<u>Matrix Color (Moist)</u>	<u>Redoximorphic Features</u>	<u>Abundance/ Contrast</u>	<u>Texture, Concretions, Structure, other</u>
0-5	A	7.5YR2/2			loam
5-20	Bw	7.5YR4/4	4/6 10%	com dist	cb fine sandy loam

Hydric Soil Indicators:

Histosol Histic Epipedon Sulfidic Odor Aquic Moisture Regime Reducing Conditions Gleyed or low-chroma matrix colors <input checked="" type="checkbox"/> Other (Explain in Remarks)	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils Listed on Local Hydric Soils List Listed on State Hydric Soils List Listed on National Hydric Soils List
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Remarks: Meets hydric soils criteria TF2 (Redox in red parent material). Concave drainage-way landform indicates wetland site.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes No Wetland Hydrology Present <input checked="" type="checkbox"/> Yes No Hydric Soils Present <input checked="" type="checkbox"/> Yes No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes No
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Remarks:



SOIL & WATER- ENVIRONMENTAL CONSULTING

6074 EAST BOWMAN LAKE ROAD DULUTH, MN 55803-9416 Phone: 218-729-5402

Email: SoilWater@starband.net

ROUTINE WETLAND DETERMINATION DATA FORM

Project/Site: <u>35 acres in SE1/4, S35, T50N, R14W</u> Applicant/Owner: <u>Edmunds Co, Ron Truscott, Conrad + Lori Beaulieu</u> Investigator: <u>Thomas Fait PSS- MN# 30026 PWS SWS #362 CWD#1011</u>	Date: <u>10/1/09</u> County: <u>Duluth, St. Louis</u> State: <u>MN</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential problem area (explain below) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>C6 Upland</u> Transect ID: <u>15' E of flag C6</u> Plot ID: <u>_</u>

Vegetation

Dominant Plant Species (Scientific Name)	Common Name	Stratum	% Cover	Indicator
1. <u>Acer saccharum</u>	<u>sugar maple*</u>	<u>T</u>	<u>20</u>	<u>FACU</u>
2. <u>Betula papyrifera</u>	<u>paper birch*</u>	<u>T</u>	<u>20</u>	<u>FACU+</u>
3. <u>Acer rubrum</u>	<u>red maple*</u>	<u>T</u>	<u>20</u>	<u>FAC</u>
4. <u>Acer saccharum</u>	<u>sugar maple*</u>	<u>S</u>	<u>30</u>	<u>FACU</u>
5. <u>Corylus cornuta</u>	<u>beaked hazel*</u>	<u>S</u>	<u>20</u>	<u>UPL</u>
6. <u>Acer spicatum</u>	<u>mtn maple</u>	<u>S</u>	<u>5</u>	<u>FACU*</u>
7. <u>Quercus rubra</u>	<u>red oak</u>	<u>S</u>	<u>5</u>	<u>FACU</u>
8. <u>Aster macrophyllus</u>	<u>large-leaf aster*</u>	<u>F</u>	<u>50</u>	<u>UPL</u>
9. <u>Carex communis</u>	<u>fibrous-rooted sedge</u>	<u>F</u>	<u>5</u>	<u>UPL</u>
10. <u>Calamagrostis canadensis</u>	<u>blue-joint reedgrass</u>	<u>F</u>	<u>5</u>	<u>OBL</u>
11.				
12.				

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 50/20 rule 1/6 = 17%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Up 12" <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	Secondary Indicators (2 or > required): <input type="checkbox"/> Oxidized Root Channels (up 12") <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> Local Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth to Surface Water: (in) Depth to Free Water in Pit: (in) Depth to Saturated Soil: (in) Depth of boring: <u>20</u> (in)		
Remarks:		

SOILS

Map Unit Name — (Series and Phase): <u>F141D Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0-25% slopes</u>	Drainage Class: <u>Moderately well</u> Field Observations: Confirmed Mapped Type? <input checked="" type="checkbox"/> Yes No
Taxonomy (Subgroup): <u>Ahmeek part- Typic Eutrudepts</u>	

Profile Description:

Depth (inches)	Horizon	Matrix Color (Moist)	Redoximorphic Features	Abundance/ Contrast	Texture, Concretions, Structure, other
0-6	A	7.5YR2/2			loam
6-12	B/E	7.5YR4/4, 4/2			fine sandy loam
12-20	Bt	7.5YR4/4	4/6 1%	few dist	fine sandy loam

Hydric Soil Indicators:

Histosol	Concretions
Histic Epipedon	High Organic Content in Surface Layer in Sandy Soils
Sulfidic Odor	Organic Streaking in Sandy Soils
Aquic Moisture Regime	Listed on Local Hydric Soils List
Reducing Conditions	Listed on State Hydric Soils List
Gleyed or low-chroma matrix colors	Listed on National Hydric Soils List
Other (Explain in Remarks)	

Remarks: 4% convex slight summit landform indicates upland site.**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present	Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present	Yes <input checked="" type="checkbox"/> No	

Remarks:



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Email: SoilWater@starband.net

ROUTINE WETLAND DETERMINATION DATA FORM

Project/Site: <u>35 acres in SE1/4, S35, T50N, R14W</u> Applicant/Owner: <u>Edmunds Co, Ron Truscott, Conrad + Lori Beaulieu</u> Investigator: <u>Thomas Fait PSS- MN# 30026 PWS SWS #362 CWD#1011</u>	Date: <u>10/1/09</u> County: <u>Duluth, St. Louis</u> State: <u>MN</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential problem area (explain below) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>C6 Wetland</u> Transect ID: <u>25' W of flag C6</u> Plot ID: <u>_</u>

Vegetation

Dominant Plant Species (Scientific Name)	Common Name	Stratum	% Cover	Indicator
1. <u>Tilia americana</u>	<u>basswood*</u>	<u>S</u>	<u>20</u>	<u>FACU</u>
2. <u>Rhamnus cathartica</u>	<u>European buckthorn*</u>	<u>S</u>	<u>80</u>	<u>FAC-</u>
3. <u>Fraxinus nigra</u>	<u>black ash*</u>	<u>S</u>	<u>20</u>	<u>FACW+</u>
4. <u>Rubus strigosus</u>	<u>wild red raspberry</u>	<u>S</u>	<u>5</u>	<u>FACW-</u>
5. <u>Alnus incana subsp rugosa</u>	<u>speckled alder</u>	<u>S</u>	<u>5</u>	<u>OBL</u>
6. <u>Rubus pubescens</u>	<u>dwarf blackberry*</u>	<u>F</u>	<u>30</u>	<u>FACW+</u>
7. <u>Athyrium filix-femina</u>	<u>ladyfern*</u>	<u>F</u>	<u>20</u>	<u>FAC</u>
8. <u>Equisetum sylvaticum</u>	<u>wood horsetail</u>	<u>F</u>	<u>10</u>	<u>FACW</u>
9. <u>Calamagrostis canadensis</u>	<u>blue-joint reedgrass</u>	<u>F</u>	<u>5</u>	<u>OBL</u>
10.				
11.				
12.				

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 50/20 rule 3/5 = 60%

Remarks: Wetland Community Class: 3B (hardwood swamp). Plant community rating: Low quality– high % of non-native invasive European buckthorn

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Up 12" <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	Secondary Indicators (2 or > required): <input checked="" type="checkbox"/> Oxidized Root Channels (up 12") <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> Local Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth to Surface Water: (in) Depth to Free Water in Pit: (in) Depth to Saturated Soil: (in) Depth of boring: <u>20</u> (in)		
Remarks:		

SOILS

Map Unit Name — (Series and Phase): <u>F141D Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0-25% slopes</u>	Drainage Class: <u>Poorly</u> Field Observations: Confirmed Mapped Type? <input checked="" type="checkbox"/> Yes No
Taxonomy (Subgroup): <u>Canosia inclusion– Typic Epiaquepts</u>	

Profile Description:

<u>Depth (inches)</u>	<u>Horizon</u>	<u>Matrix Color (Moist)</u>	<u>Redoximorphic Features</u>	<u>Abundance/ Contrast</u>	<u>Texture, Concretions, Structure, other</u>
0-6	A	7.5YR2/2	3/6 5% root channels	com dist	loam
6-20	Bw	7.5YR4/4	4/6 5%	com dist	cb fine sandy loam

Hydric Soil Indicators:

Histosol	Concretions
Histic Epipedon	High Organic Content in Surface Layer in Sandy Soils
Sulfidic Odor	Organic Streaking in Sandy Soils
Aquic Moisture Regime	Listed on Local Hydric Soils List
Reducing Conditions	Listed on State Hydric Soils List
Gleyed or low-chroma matrix colors	Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Other (Explain in Remarks)	

Remarks: Meets hydric soils criteria TF2 (Redox in red parent material). Slight depression landform indicates wetland site.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes No
Wetland Hydrology Present	<input checked="" type="checkbox"/> Yes No	
Hydric Soils Present	<input checked="" type="checkbox"/> Yes No	

Remarks:



SOIL & WATER- ENVIRONMENTAL CONSULTING

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Email: SoilWater@starband.net

ROUTINE WETLAND DETERMINATION DATA FORM

Project/Site: <u>35 acres in SE1/4, S35, T50N, R14W</u> Applicant/Owner: <u>Edmunds Co, Ron Truscott, Conrad + Lori Beaulieu</u> Investigator: <u>Thomas Fait PSS- MN# 30026 PWS SWS #362 CWD#1011</u>	Date: <u>10/1/09</u> County: <u>Duluth, St. Louis</u> State: <u>MN</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential problem area (explain below) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>D8 Upland</u> Transect ID: <u>20' E of flag D8</u> Plot ID: <u>_</u>

Vegetation

Dominant Plant Species (Scientific Name)	Common Name	Stratum	% Cover	Indicator
1. <u>Acer saccharum</u>	<u>sugar maple*</u>	<u>T</u>	<u>30</u>	<u>FACU</u>
2. <u>Populus tremuloides</u>	<u>quaking aspen*</u>	<u>T</u>	<u>30</u>	<u>FAC</u>
3. <u>Acer saccharum</u>	<u>sugar maple*</u>	<u>S</u>	<u>30</u>	<u>FACU</u>
4. <u>Rubus parviflorus</u>	<u>thimbleberry*</u>	<u>S</u>	<u>30</u>	<u>FACU+</u>
5. <u>Corylus cornuta</u>	<u>beaked hazel</u>	<u>S</u>	<u>5</u>	<u>UPL</u>
6. <u>Acer spicatum</u>	<u>mtn maple</u>	<u>S</u>	<u>5</u>	<u>FACU*</u>
7. <u>Quercus rubra</u>	<u>red oak</u>	<u>S</u>	<u>5</u>	<u>FACU</u>
8. <u>Aster macrophyllus</u>	<u>large-leaf aster*</u>	<u>F</u>	<u>40</u>	<u>UPL</u>
9. <u>Carex communis</u>	<u>fibrous-rooted sedge</u>	<u>F</u>	<u>5</u>	<u>UPL</u>
10.				
11				
12.				

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 50/20 rule 1/5 = 20%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Up 12" <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	Secondary Indicators (2 or > required): <input type="checkbox"/> Oxidized Root Channels (up 12") <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> Local Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth to Surface Water: (in) Depth to Free Water in Pit: (in) Depth to Saturated Soil: (in) Depth of boring: <u>20</u> (in)		
Remarks:		

SOILS

Map Unit Name — (Series and Phase): <u>F141D Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0-25% slopes</u>	Drainage Class: <u>Moderately well</u> Field Observations: Confirmed Mapped Type? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Taxonomy (Subgroup): <u>Normanna part- Aquic Eutrudepts</u>	

Profile Description:

Depth (inches)	Horizon	Matrix Color (Moist)	Redoximorphic Features	Abundance/ Contrast	Texture, Concretions, Structure, other
0-5	A	7.5YR2/2			loam
5-12	B/E	7.5YR4/4, 4/2			fine sandy loam
12-20	Bt	7.5YR4/4	4/6 5%	com dist	fine sandy loam

Hydric Soil Indicators:

Histosol	Concretions
Histic Epipedon	High Organic Content in Surface Layer in Sandy Soils
Sulfidic Odor	Organic Streaking in Sandy Soils
Aquic Moisture Regime	Listed on Local Hydric Soils List
Reducing Conditions	Listed on State Hydric Soils List
Gleyed or low-chroma matrix colors	Listed on National Hydric Soils List
Other (Explain in Remarks)	

Remarks: 6% convex summit landform indicates upland site.**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is this Sampling Point Within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Wetland Hydrology Present	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Hydric Soils Present	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks:



SOIL & WATER- ENVIRONMENTAL CONSULTING

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Email: SoilWater@starband.net

ROUTINE WETLAND DETERMINATION DATA FORM

Project/Site: <u>35 acres in SE1/4, S35, T50N, R14W</u> Applicant/Owner: <u>Edmunds Co, Ron Truscott, Conrad + Lori Beaulieu</u> Investigator: <u>Thomas Fait PSS- MN# 30026 PWS SWS #362 CWD#1011</u>	Date: <u>10/1/09</u> County: <u>Duluth, St. Louis</u> State: <u>MN</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential problem area (explain below) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>D8 Wetland</u> Transect ID: <u>25' W of flag D8</u> Plot ID: <u>_</u>

Vegetation

Dominant Plant Species (Scientific Name)	Common Name	Stratum	% Cover	Indicator
1. <u>Populus tremuloides</u>	<u>quaking aspen*</u>	<u>S</u>	<u>80</u>	<u>FAC</u>
2. <u>Fraxinus nigra</u>	<u>black ash*</u>	<u>S</u>	<u>20</u>	<u>FACW+</u>
3. <u>Alnus incana subsp rugosa</u>	<u>speckled alder</u>	<u>S</u>	<u>5</u>	<u>OBL</u>
4. <u>Athyrium filix-femina</u>	<u>ladyfern*</u>	<u>F</u>	<u>20</u>	<u>FAC</u>
5. <u>Rubus pubescens</u>	<u>dwarf blackberry*</u>	<u>F</u>	<u>20</u>	<u>FACW+</u>
6. <u>Solidago gigantea</u>	<u>giant goldenrod</u>	<u>F</u>	<u>5</u>	<u>FACW</u>
7. <u>Aster macrophyllus</u>	<u>large-leaf aster</u>	<u>F</u>	<u>5</u>	<u>UPL</u>
8.				
9.				
10.				
11.				
12.				

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 50/20 rule 4/4 = 100%

Remarks: Wetland Community Class: 3B (hardwood swamp). Plant community rating: Medium quality

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Up 12" <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	2ndary Indicators (2 or > required): <input checked="" type="checkbox"/> Oxidized Root Channels (up 12") <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> Local Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth to Surface Water: (in) Depth to Free Water in Pit: (in) Depth to Saturated Soil: (in) Depth of boring: <u>20</u> (in)		

Remarks: Sight depression in dense till soils

SOILS

Map Unit Name — (Series and Phase): <u>F141D Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0-25% slopes</u> Taxonomy (Subgroup): <u>Canosia inclusion– Typic Epiaquepts</u>	Drainage Class: <u>Poorly</u> Field Observations: Confirmed Mapped Type? <input checked="" type="checkbox"/> Yes No
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Profile Description:

<u>Depth (inches)</u>	<u>Horizon</u>	<u>Matrix Color (Moist)</u>	<u>Redoximorphic Features</u>	<u>Abundance/ Contrast</u>	<u>Texture, Concretions, Structure, other</u>
0-6	A	7.5YR2/2	3/6 5% root channels	com dist	loam
6-20	Bw	7.5YR4/4	4/6 10%	com dist	cb fine sandy loam

Hydric Soil Indicators:

Histosol	Concretions
Histic Epipedon	High Organic Content in Surface Layer in Sandy Soils
Sulfidic Odor	Organic Streaking in Sandy Soils
Aquic Moisture Regime	Listed on Local Hydric Soils List
Reducing Conditions	Listed on State Hydric Soils List
Gleyed or low-chroma matrix colors	Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Other (Explain in Remarks)	

Remarks: Meets hydric soils criteria TF2 and F6(Redox in red parent material). Slight depression landform indicates wetland site.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes No	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present	<input checked="" type="checkbox"/> Yes No	
Hydric Soils Present	<input checked="" type="checkbox"/> Yes No	

Remarks:



SOIL & WATER- ENVIRONMENTAL CONSULTING

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ROUTINE WETLAND DETERMINATION DATA FORM

Project/Site: <u>35 acres in SE1/4, S35, T50N, R14W</u> Applicant/Owner: <u>Edmunds Co, Ron Truscott, Conrad + Lori Beaulieu</u> Investigator: <u>Thomas Fait PSS- MN# 30026 PWS SWS #362 CWD#1011</u>	Date: <u>10/1/09</u> County: <u>Duluth, St. Louis</u> State: <u>MN</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential problem area (explain below) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>E4 Upland</u> Transect ID: <u>15' NE of flag E4</u> Plot ID: <u>_</u>

Vegetation

Dominant Plant Species (Scientific Name)	Common Name	Stratum	% Cover	Indicator
1. <u>Acer saccharum</u>	<u>sugar maple*</u>	<u>T</u>	<u>50</u>	<u>FACU</u>
2. <u>Populus tremuloides</u>	<u>quaking aspen*</u>	<u>T</u>	<u>20</u>	<u>FAC</u>
3. <u>Rubus parviflorus</u>	<u>thimbleberry*</u>	<u>S</u>	<u>40</u>	<u>FACU+</u>
4. <u>Acer saccharum</u>	<u>sugar maple*</u>	<u>S</u>	<u>30</u>	<u>FACU</u>
5. <u>Corylus cornuta</u>	<u>beaked hazel*</u>	<u>S</u>	<u>20</u>	<u>UPL</u>
6. <u>Quercus rubra</u>	<u>red oak</u>	<u>S</u>	<u>5</u>	<u>FACU</u>
7. <u>Lonicera canadensis</u>	<u>honeysuckle</u>	<u>S</u>	<u>5</u>	<u>FACU</u>
8. <u>Aster macrophyllus</u>	<u>large-leaf aster*</u>	<u>F</u>	<u>20</u>	<u>UPL</u>
9. <u>Carex communis</u>	<u>fibrous-rooted sedge</u>	<u>F</u>	<u>10</u>	<u>UPL</u>
10. <u>Aralia nudicaulis</u>	<u>sarsaparilla</u>	<u>F</u>	<u>5</u>	<u>FACU</u>
11. <u>Pteridium aquilinum</u>	<u>brackenfern</u>	<u>F</u>	<u>5</u>	<u>FACU</u>
12.				

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 50/20 rule 1/6 = 17%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Up 12" <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	Secondary Indicators (2 or > required): <input type="checkbox"/> Oxidized Root Channels (up 12") <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> Local Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth to Surface Water: (in) Depth to Free Water in Pit: (in) Depth to Saturated Soil: (in) Depth of boring: <u>20</u> (in)		
Remarks:		

SOILS

Map Unit Name — (Series and Phase): <u>F141D Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0-25% slopes</u> Taxonomy (Subgroup): <u>Ahmeek part- Typic Eutrudepts</u>	Drainage Class: <u>Moderately well</u> Field Observations: Confirmed Mapped Type? <input checked="" type="checkbox"/> Yes No
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Profile Description:

<u>Depth (inches)</u>	<u>Horizon</u>	<u>Matrix Color (Moist)</u>	<u>Redoximorphic Features</u>	<u>Abundance/ Contrast</u>	<u>Texture, Concretions, Structure, other</u>
0-4	A	7.5YR2/2			loam
4-14	B/E	7.5YR4/4, 4/2			fine sandy loam
14-20	Bt	7.5YR4/4	4/6 1%	few dist	fine sandy loam

Hydric Soil Indicators:

Histosol	Concretions
Histic Epipedon	High Organic Content in Surface Layer in Sandy Soils
Sulfidic Odor	Organic Streaking in Sandy Soils
Aquic Moisture Regime	Listed on Local Hydric Soils List
Reducing Conditions	Listed on State Hydric Soils List
Gleyed or low-chroma matrix colors	Listed on National Hydric Soils List
Other (Explain in Remarks)	

Remarks: 5% summit landform indicates upland site.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present	Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present	Yes <input checked="" type="checkbox"/> No	

Remarks:



SOIL & WATER- ENVIRONMENTAL CONSULTING

6074 EAST BOWMAN LAKE ROAD DULUTH, MN 55803-9416 Phone: 218-729-5402

Email: SoilWater@starband.net

ROUTINE WETLAND DETERMINATION DATA FORM

Project/Site: <u>35 acres in SE1/4, S35, T50N, R14W</u> Applicant/Owner: <u>Edmunds Co, Ron Truscott, Conrad + Lori Beaulieu</u> Investigator: <u>Thomas Fait PSS- MN# 30026 PWS SWS #362 CWD#1011</u>	Date: <u>10/1/09</u> County: <u>Duluth, St. Louis</u> State: <u>MN</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential problem area (explain below) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>E4 Wetland</u> Transect ID: <u>25' SW of flag E4</u> Plot ID: <u>_</u>

Vegetation

Dominant Plant Species (Scientific Name)	Common Name	Stratum	% Cover	Indicator
1. <u>Fraxinus nigra</u>	<u>black ash*</u>	<u>T</u>	<u>10</u>	<u>FACW+</u>
2. <u>Fraxinus nigra</u>	<u>black ash*</u>	<u>S</u>	<u>10</u>	<u>FACW+</u>
3. <u>Populus tremuloides</u>	<u>quaking aspen*</u>	<u>T</u>	<u>10</u>	<u>FAC</u>
4. <u>Carex intumescens</u>	<u>bladder sedge*</u>	<u>F</u>	<u>50</u>	<u>FACW+</u>
5. <u>Carex comosa</u>	<u>bottlebrush sedge*</u>	<u>F</u>	<u>20</u>	<u>OBL</u>
6. <u>Calamagrostis canadensis</u>	<u>blue-joint reedgrass</u>	<u>F</u>	<u>10</u>	<u>OBL</u>
7. <u>Cinna latifolia</u>	<u>woodreed grass</u>	<u>F</u>	<u>10</u>	<u>FACW+</u>
8. <u>Athyrium filix-femina</u>	<u>ladyfern</u>	<u>F</u>	<u>5</u>	<u>FAC</u>
9.				
10.				
11.				
12.				

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 50/20 rule 5/5 = 100%

Remarks: Wetland Community Class: 3B (hardwood swamp). Plant community rating: Medium quality

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Up 12" <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	2ndary Indicators (2 or > required): <input checked="" type="checkbox"/> Oxidized Root Channels (up 12") <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> Local Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth to Surface Water: (in) Depth to Free Water in Pit: (in) Depth to Saturated Soil: (in) Depth of boring: <u>20</u> (in)		

Remarks: Closed deep depression

SOILS

Map Unit Name — (Series and Phase): <u>F141D Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0-25% slopes</u>	Drainage Class: <u>Poorly</u> Field Observations: Confirmed Mapped Type? <input checked="" type="checkbox"/> Yes No
Taxonomy (Subgroup): <u>Canosia inclusion- Typic Epiaquepts</u>	

Profile Description:

<u>Depth (inches)</u>	<u>Horizon</u>	<u>Matrix Color (Moist)</u>	<u>Redoximorphic Features</u>	<u>Abundance/ Contrast</u>	<u>Texture, Concretions, Structure, other</u>
0-6	A	7.5YR2/2	3/6 5%		loam
6-20	Bg	7.5YR4/1	4/6 10%	com dist	fine sandy loam

Hydric Soil Indicators:

Histosol	Concretions
Histic Epipedon	High Organic Content in Surface Layer in Sandy Soils
Sulfidic Odor	Organic Streaking in Sandy Soils
Aquic Moisture Regime	Listed on Local Hydric Soils List
Reducing Conditions	Listed on State Hydric Soils List
Gleyed or low-chroma matrix colors	Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Other (Explain in Remarks)	

Remarks: Meets hydric soils criteria TF2 (Redox in red parent material). Concave depression landform indicates wetland site.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes No
Wetland Hydrology Present	<input checked="" type="checkbox"/> Yes No	
Hydric Soils Present	<input checked="" type="checkbox"/> Yes No	

Remarks:



SOIL & WATER- ENVIRONMENTAL CONSULTING

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Email: SoilWater@starband.net

ROUTINE WETLAND DETERMINATION DATA FORM

Project/Site: <u>35 acres in SE1/4, S35, T50N, R14W</u> Applicant/Owner: <u>Edmunds Co, Ron Truscott, Conrad + Lori Beaulieu</u> Investigator: <u>Thomas Fait PSS- MN# 30026 PWS SWS #362 CWD#1011</u>	Date: <u>9/30/09</u> County: <u>Duluth, St. Louis</u> State: <u>MN</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential problem area (explain below) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>F69 Upland</u> Transect ID: <u>15' NW of flag F69</u> Plot ID: <u>_</u>

Vegetation

Dominant Plant Species (Scientific Name)	Common Name	Stratum	% Cover	Indicator
1. <u>Acer saccharum</u>	<u>sugar maple*</u>	<u>T</u>	<u>50</u>	<u>FACU</u>
2. <u>Quercus rubra</u>	<u>red oak*</u>	<u>T</u>	<u>20</u>	<u>FACU</u>
3. <u>Acer saccharum</u>	<u>sugar maple*</u>	<u>S</u>	<u>30</u>	<u>FACU</u>
4. <u>Corylus cornuta</u>	<u>beaked hazel*</u>	<u>S</u>	<u>20</u>	<u>UPL</u>
5. <u>Aster macrophyllus</u>	<u>large-leaf aster*</u>	<u>F</u>	<u>50</u>	<u>UPL</u>
6. <u>Athyrium filix-femina</u>	<u>ladyfern*</u>	<u>F</u>	<u>20</u>	<u>FAC</u>
7. <u>Lonicera canadensis</u>	<u>honeysuckle*</u>	<u>F</u>	<u>20</u>	<u>FACU</u>
8. <u>Pteridium aquilinum</u>	<u>brackenfern</u>	<u>F</u>	<u>10</u>	<u>FACU</u>
9. <u>Carex communis</u>	<u>fibrous-rooted sedge</u>	<u>F</u>	<u>5</u>	<u>UPL</u>
10.				
11				
12.				

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 50/20 rule 1/7 = 14%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Up 12" <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	Secondary Indicators (2 or > required): <input type="checkbox"/> Oxidized Root Channels (up 12") <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> Local Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth to Surface Water: (in) Depth to Free Water in Pit: (in) Depth to Saturated Soil: (in) Depth of boring: <u>20</u> (in)		
Remarks:		

SOILS

Map Unit Name — (Series and Phase): <u>F141D Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0-25% slopes</u>	Drainage Class: <u>Moderately well</u> Field Observations: Confirmed Mapped Type? <input checked="" type="checkbox"/> Yes No
Taxonomy (Subgroup): <u>Ahmeek part- Typic Eutrudepts</u>	

Profile Description:

<u>Depth (inches)</u>	<u>Horizon</u>	<u>Matrix Color (Moist)</u>	<u>Redoximorphic Features</u>	<u>Abundance/ Contrast</u>	<u>Texture, Concretions, Structure, other</u>
0-5	A	7.5YR2/2			loam
5-15	Bw1	7.5YR4/4			fine sandy loam
15-20	Bw2	7.5YR4/4	4/6 1%	few dist	fine sandy loam

Hydric Soil Indicators:

Histosol	Concretions
Histic Epipedon	High Organic Content in Surface Layer in Sandy Soils
Sulfidic Odor	Organic Streaking in Sandy Soils
Aquic Moisture Regime	Listed on Local Hydric Soils List
Reducing Conditions	Listed on State Hydric Soils List
Gleyed or low-chroma matrix colors	Listed on National Hydric Soils List
Other (Explain in Remarks)	

Remarks: 8% linear, linear sidslope landform indicates upland site.**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	Yes	<input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present	Yes	<input checked="" type="checkbox"/> No	
Hydric Soils Present	Yes	<input checked="" type="checkbox"/> No	

Remarks:



SOIL & WATER- ENVIRONMENTAL CONSULTING

6074 EAST BOWMAN LAKE ROAD DULUTH, MN 55803-9416 Phone: 218-729-5402

Email: SoilWater@starband.net

ROUTINE WETLAND DETERMINATION DATA FORM

Project/Site: <u>35 acres in SE1/4, S35, T50N, R14W</u> Applicant/Owner: <u>Edmunds Co, Ron Truscott, Conrad + Lori Beaulieu</u> Investigator: <u>Thomas Fait PSS- MN# 30026 PWS SWS #362 CWD#1011</u>	Date: <u>9/30/09</u> County: <u>Duluth, St. Louis</u> State: <u>MN</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential problem area (explain below) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>F69 Wetland</u> Transect ID: <u>15' SE of flag F69</u> Plot ID: <u>_</u>

Vegetation

Dominant Plant Species (Scientific Name)	Common Name	Stratum	% Cover	Indicator
1. <u>Fraxinus nigra</u>	<u>black ash*</u>	<u>T</u>	<u>30</u>	<u>FACW+</u>
2. <u>Betula papyrifera</u>	<u>paper birch*</u>	<u>T</u>	<u>20</u>	<u>FACU+</u>
3. <u>Fraxinus nigra</u>	<u>black ash*</u>	<u>S</u>	<u>30</u>	<u>FACW+</u>
4. <u>Populus tremuloides</u>	<u>quaking aspen</u>	<u>S</u>	<u>5</u>	<u>FAC</u>
5. <u>Cinna latifolia</u>	<u>woodreed grass*</u>	<u>F</u>	<u>50</u>	<u>FACW+</u>
6. <u>Athyrium filix-femina</u>	<u>ladyfern*</u>	<u>F</u>	<u>20</u>	<u>FAC</u>
7. <u>Carex intumescens</u>	<u>bladder sedge*</u>	<u>F</u>	<u>20</u>	<u>FACW+</u>
8. <u>Carex normalis</u>	<u>larger straw sedge</u>	<u>F</u>	<u>10</u>	<u>FACW</u>
9. <u>Calamagrostis canadensis</u>	<u>blue-joint reedgrass</u>	<u>F</u>	<u>5</u>	<u>OBL</u>
10.				
11.				
12.				

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 50/20 rule 5/6 = 83%

Remarks: Wetland Community Class: 3B (hardwood swamp). Plant community rating: Medium quality

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Up 12" <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands	2ndary Indicators (2 or > required): <input type="checkbox"/> Oxidized Root Channels (up 12") <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> Local Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth to Surface Water: (in) Depth to Free Water in Pit: (in) Depth to Saturated Soil: (in) Depth of boring: <u>20</u> (in)		

Remarks:

SOILS

Map Unit Name — (Series and Phase): <u>F141D Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0-25% slopes</u>	Drainage Class: <u>Poorly</u> Field Observations: Confirmed Mapped Type? <input checked="" type="checkbox"/> Yes No
Taxonomy (Subgroup): <u>Canosia inclusion– Typic Epiaquepts</u>	

Profile Description:

<u>Depth (inches)</u>	<u>Horizon</u>	<u>Matrix Color (Moist)</u>	<u>Redoximorphic Features</u>	<u>Abundance/ Contrast</u>	<u>Texture, Concretions, Structure, other</u>
0-6	A	7.5YR2/2	3/6 5%		<u>xcb-fine sandy loam</u>
6-20	Bw	7.5YR4/4	4/6 10%	com dist	<u>xcb-fine sandy loam</u>

Hydric Soil Indicators:

Histosol	Concretions
Histic Epipedon	High Organic Content in Surface Layer in Sandy Soils
Sulfidic Odor	Organic Streaking in Sandy Soils
Aquic Moisture Regime	Listed on Local Hydric Soils List
Reducing Conditions	Listed on State Hydric Soils List
Gleyed or low-chroma matrix colors	Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Other (Explain in Remarks)	

Remarks: Meets hydric soils criteria TF2 (Redox in red parent material). Drainage-way landform indicates wetland site.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes No
Wetland Hydrology Present	<input checked="" type="checkbox"/> Yes No	
Hydric Soils Present	<input checked="" type="checkbox"/> Yes No	

Remarks:



SOIL & WATER- ENVIRONMENTAL CONSULTING

6074 EAST BOWMAN LAKE ROAD DULUTH, MN 55803-9416 Phone: 218-729-5402

Email: SoilWater@starband.net

ROUTINE WETLAND DETERMINATION DATA FORM

Project/Site: <u>35 acres in SE1/4, S35, T50N, R14W</u> Applicant/Owner: <u>Edmunds Co, Ron Truscott, Conrad + Lori Beaulieu</u> Investigator: <u>Thomas Fait PSS- MN# 30026 PWS SWS #362 CWD#1011</u>	Date: <u>9/30/09</u> County: <u>Duluth, St. Louis</u> State: <u>MN</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential problem area (explain below) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>J8 Upland</u> Transect ID: <u>15' W of flag J8</u> Plot ID: <u>_</u>

Vegetation

Dominant Plant Species (Scientific Name)	Common Name	Stratum	% Cover	Indicator
1. <u>Acer saccharum</u>	<u>sugar maple*</u>	<u>T</u>	<u>50</u>	<u>FACU</u>
2. <u>Populus tremuloides</u>	<u>quaking aspen*</u>	<u>T</u>	<u>40</u>	<u>FAC</u>
3. <u>Acer saccharum</u>	<u>sugar maple*</u>	<u>S</u>	<u>20</u>	<u>FACU</u>
4. <u>Corylus cornuta</u>	<u>beaked hazel*</u>	<u>S</u>	<u>20</u>	<u>UPL</u>
5. <u>Aster macrophyllus</u>	<u>large-leaf aster*</u>	<u>F</u>	<u>90</u>	<u>UPL</u>
6. <u>Athyrium filix-femina</u>	<u>ladyfern</u>	<u>F</u>	<u>10</u>	<u>FAC</u>
7. <u>Lonicera canadensis</u>	<u>honeysuckle</u>	<u>F</u>	<u>5</u>	<u>FACU</u>
8. <u>Pteridium aquilinum</u>	<u>brackenfern</u>	<u>F</u>	<u>5</u>	<u>FACU</u>
9. <u>Carex communis</u>	<u>fibrous-rooted sedge</u>	<u>F</u>	<u>5</u>	<u>UPL</u>
10.				
11				
12.				

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 50/20 rule 1/5 = 20%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Up 12" <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	Secondary Indicators (2 or > required): <input type="checkbox"/> Oxidized Root Channels (up 12") <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> Local Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth to Surface Water: (in) Depth to Free Water in Pit: (in) Depth to Saturated Soil: (in) Depth of boring: <u>20</u> (in)		
Remarks:		

SOILS

Map Unit Name — (Series and Phase): <u>F141D Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0-25% slopes</u>	Drainage Class: <u>Moderately well</u> Field Observations: Confirmed Mapped Type? <input checked="" type="checkbox"/> Yes No
Taxonomy (Subgroup): <u>Ahmeek part- Typic Eutrudepts</u>	

Profile Description:

Depth (inches)	Horizon	Matrix Color (Moist)	Redoximorphic Features	Abundance/ Contrast	Texture, Concretions, Structure, other
0-5	A	7.5YR2/2			loam
5-15	Bw1	7.5YR4/4			fine sandy loam
15-20	Bw2	7.5YR4/4	4/6 1%	few dist	fine sandy loam

Hydric Soil Indicators:

Histosol Histic Epipedon Sulfidic Odor Aquic Moisture Regime Reducing Conditions Gleyed or low-chroma matrix colors Other (Explain in Remarks)	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils Listed on Local Hydric Soils List Listed on State Hydric Soils List Listed on National Hydric Soils List
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Remarks: 25% linear, linear sideslope landform indicates upland site.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	<input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present	Yes	<input checked="" type="checkbox"/> No	
Hydric Soils Present	Yes	<input checked="" type="checkbox"/> No	

Remarks:

SOILS

Map Unit Name — (Series and Phase): <u>F141D Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0-25% slopes</u> Taxonomy (Subgroup): <u>Canosia inclusion– Typic Epiaquepts</u>	Drainage Class: <u>Poorly</u> Field Observations: Confirmed Mapped Type? <input checked="" type="checkbox"/> Yes No
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Profile Description:

<u>Depth (inches)</u>	<u>Horizon</u>	<u>Matrix Color (Moist)</u>	<u>Redoximorphic Features</u>	<u>Abundance/ Contrast</u>	<u>Texture, Concretions, Structure, other</u>
0-6	A	7.5YR2/2			loam
6-20	Bw	7.5YR4/4	4/6 10%	com dist	cb fine sandy loam

Hydric Soil Indicators:

Histosol	Concretions
Histic Epipedon	High Organic Content in Surface Layer in Sandy Soils
Sulfidic Odor	Organic Streaking in Sandy Soils
Aquic Moisture Regime	Listed on Local Hydric Soils List
Reducing Conditions	Listed on State Hydric Soils List
Gleyed or low-chroma matrix colors	Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Other (Explain in Remarks)	

Remarks: Meets hydric soils criteria TF2 (Redox in red parent material). Concave depression landform indicates wetland site.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes No	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present	<input checked="" type="checkbox"/> Yes No	
Hydric Soils Present	<input checked="" type="checkbox"/> Yes No	

Remarks:



SOIL & WATER- ENVIRONMENTAL CONSULTING

6074 EAST BOWMAN LAKE ROAD DULUTH, MN 55803-9416 Phone: 218-729-5402

Email: SoilWater@starband.net

ROUTINE WETLAND DETERMINATION DATA FORM

Project/Site: <u>35 acres in SE1/4, S35, T50N, R14W</u> Applicant/Owner: <u>Edmunds Co, Ron Truscott, Conrad + Lori Beaulieu</u> Investigator: <u>Thomas Fait PSS- MN# 30026 PWS SWS #362 CWD#1011</u>	Date: <u>9/28/09</u> County: <u>Duluth, St. Louis</u> State: <u>MN</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential problem area (explain below) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>K53 Wetland</u> Transect ID: <u>15' NW of flag K53</u> Plot ID: <u>_</u>

Vegetation

Dominant Plant Species (Scientific Name)	Common Name	Stratum	% Cover	Indicator
1. <u>Fraxinus nigra</u>	<u>black ash*</u>	<u>T</u>	<u>70</u>	<u>FACW+</u>
2. <u>Betula papyrifera</u>	<u>paper birch*</u>	<u>T</u>	<u>20</u>	<u>FACU+</u>
3. <u>Fraxinus nigra</u>	<u>black ash*</u>	<u>S</u>	<u>20</u>	<u>FACW+</u>
4. <u>Populus tremuloides</u>	<u>quaking aspen</u>	<u>T</u>	<u>10</u>	<u>FAC</u>
5. <u>Rubus pubescens</u>	<u>dwarf blackberry*</u>	<u>F</u>	<u>40</u>	<u>FACW+</u>
6. <u>Athyrium filix-femina</u>	<u>ladyfern*</u>	<u>F</u>	<u>30</u>	<u>FAC</u>
7. <u>Calamagrostis canadensis</u>	<u>blue-joint reedgrass*</u>	<u>F</u>	<u>30</u>	<u>OBL</u>
8. <u>Fragaria virginiana</u>	<u>strawberry</u>	<u>F</u>	<u>10</u>	<u>FAC-</u>
9. <u>Cinna latifolia</u>	<u>woodreed grass</u>	<u>F</u>	<u>10</u>	<u>FACW+</u>
10. <u>Solidago gigantea</u>	<u>giant goldenrod</u>	<u>F</u>	<u>5</u>	<u>FACW</u>
11.				

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 50/20 rule 5/6 = 83%

Remarks: Wetland Community Class: 3B (hardwood swamp). Plant community rating: Medium quality

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: <u>Primary Indicators:</u> <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Up 12" <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands	<u>2ndary Indicators (2 or > required):</u> <input type="checkbox"/> Oxidized Root Channels (up 12") <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> Local Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth to Surface Water: (in) Depth to Free Water in Pit: (in) Depth to Saturated Soil: (in) Depth of boring: <u>20</u> (in)		

Remarks:

SOILS

Map Unit Name — (Series and Phase): <u>F141D Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0-25% slopes</u>	Drainage Class: <u>Poorly</u> Field Observations: Confirmed Mapped Type? <input checked="" type="checkbox"/> Yes No
Taxonomy (Subgroup): <u>Canosia inclusion- Typic Epiaquepts</u>	

Profile Description:

Depth (inches)	Horizon	Matrix Color (Moist)	Redoximorphic Features	Abundance/ Contrast	Texture, Concretions, Structure, other
0-5	A	7.5YR2/1	3/6 5% root channels	com dist	loam
5-20	Bw	7.5YR4/4	4/6 10%	com dist	cb fine sandy loam

Hydric Soil Indicators:

Histosol	Concretions
Histic Epipedon	High Organic Content in Surface Layer in Sandy Soils
Sulfidic Odor	Organic Streaking in Sandy Soils
Aquic Moisture Regime	Listed on Local Hydric Soils List
Reducing Conditions	Listed on State Hydric Soils List
Gleyed or low-chroma matrix colors	Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Other (Explain in Remarks)	

Remarks: Meets hydric soils criteria F6 TF2 (Redox in dark surface soil, Redox in red parent material). Concave drainage-way landform indicates wetland site.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes No
Wetland Hydrology Present	<input checked="" type="checkbox"/> Yes No	
Hydric Soils Present	<input checked="" type="checkbox"/> Yes No	

Remarks:



SOIL & WATER- ENVIRONMENTAL CONSULTING

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Email: SoilWater@starband.net

ROUTINE WETLAND DETERMINATION DATA FORM

Project/Site: <u>35 acres in SE1/4, S35, T50N, R14W</u> Applicant/Owner: <u>Edmunds Co, Ron Truscott, Conrad + Lori Beaulieu</u> Investigator: <u>Thomas Fait PSS- MN# 30026 PWS SWS #362 CWD#1011</u>	Date: <u>9/28/09</u> County: <u>Duluth, St. Louis</u> State: <u>MN</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential problem area (explain below) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>K53-Q1 Upland</u> Transect ID: <u>20' SE of flag K53 and 15' NW of flag Q1</u> Plot ID: <u>_</u>

Vegetation

Dominant Plant Species (Scientific Name)	Common Name	Stratum	% Cover	Indicator
1. <u>Betula papyrifera</u>	<u>paper birch*</u>	<u>T</u>	<u>40</u>	<u>FACU+</u>
2. <u>Acer spicatum</u>	<u>mtn maple*</u>	<u>S</u>	<u>40</u>	<u>FACU*</u>
3. <u>Rubus parviflorus</u>	<u>thimbleberry*</u>	<u>S</u>	<u>30</u>	<u>FACU+</u>
4. <u>Corylus cornuta</u>	<u>beaked hazel*</u>	<u>S</u>	<u>30</u>	<u>UPL</u>
5. <u>Pteridium aquilinum</u>	<u>brackenfern*</u>	<u>F</u>	<u>20</u>	<u>FACU</u>
6. <u>Aster macrophyllus</u>	<u>large-leaf aster*</u>	<u>F</u>	<u>20</u>	<u>UPL</u>
7. <u>Carex communis</u>	<u>fibrous-rooted sedge</u>	<u>F</u>	<u>5</u>	<u>UPL</u>
8.				
9.				
10.				
11.				
12.				

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 50/20 rule 0/6 = 0%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: <u>Primary Indicators:</u> <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Up 12" <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	<u>2ndary Indicators (2 or > required):</u> <input type="checkbox"/> Oxidized Root Channels (up 12") <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> Local Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth to Surface Water: (in) Depth to Free Water in Pit: (in) Depth to Saturated Soil: (in) Depth of boring: <u>20</u> (in)		
Remarks:		

SOILS

Map Unit Name — (Series and Phase): <u>F141D Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0-25% slopes</u> Taxonomy (Subgroup): <u>Normanna part– Aquic Eutrudepts</u>	Drainage Class: <u>Moderately well</u> Field Observations: Confirmed Mapped Type? <input checked="" type="checkbox"/> Yes No
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Profile Description:

<u>Depth (inches)</u>	<u>Horizon</u>	<u>Matrix Color (Moist)</u>	<u>Redoximorphic Features</u>	<u>Abundance/ Contrast</u>	<u>Texture, Concretions, Structure, other</u>
0-6	A	7.5YR2/2			loam
6-12	BE	7.5YR4/3			fine sandy loam
12-20	Bw	7.5YR4/4	4/6 5%	com dist	fine sandy loam

Hydric Soil Indicators:

Histosol	Concretions
Histic Epipedon	High Organic Content in Surface Layer in Sandy Soils
Sulfidic Odor	Organic Streaking in Sandy Soils
Aquic Moisture Regime	Listed on Local Hydric Soils List
Reducing Conditions	Listed on State Hydric Soils List
Gleyed or low-chroma matrix colors	Listed on National Hydric Soils List
Other (Explain in Remarks)	

Remarks: 5% summit landform between lower lands indicates upland site.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present	Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present	Yes <input checked="" type="checkbox"/> No	

Remarks:



SOIL & WATER- ENVIRONMENTAL CONSULTING

6074 EAST BOWMAN LAKE ROAD DULUTH, MN 55803-9416 Phone: 218-729-5402

Email: SoilWater@starband.net

ROUTINE WETLAND DETERMINATION DATA FORM

Project/Site: <u>35 acres in SE1/4, S35, T50N, R14W</u> Applicant/Owner: <u>Edmunds Co, Ron Truscott, Conrad + Lori Beaulieu</u> Investigator: <u>Thomas Fait PSS- MN# 30026 PWS SWS #362 CWD#1011</u>	Date: <u>9/28/09</u> County: <u>Duluth, St. Louis</u> State: <u>MN</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential problem area (explain below) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>Q1 Wetland</u> Transect ID: <u>15' SE of flag Q1</u> Plot ID: <u>_</u>

Vegetation

Dominant Plant Species (Scientific Name)	Common Name	Stratum	% Cover	Indicator
1. <u>Fraxinus nigra</u>	<u>black ash*</u>	<u>T</u>	<u>70</u>	<u>FACW+</u>
2. <u>Alnus incana subsp rugosa</u>	<u>speckled alder*</u>	<u>S</u>	<u>40</u>	<u>OBL</u>
3. <u>Fraxinus nigra</u>	<u>black ash*</u>	<u>S</u>	<u>30</u>	<u>FACW+</u>
4. <u>Calamagrostis canadensis</u>	<u>blue-joint reedgrass*</u>	<u>F</u>	<u>40</u>	<u>OBL</u>
5. <u>Rubus pubescens</u>	<u>dwarf blackberry*</u>	<u>F</u>	<u>30</u>	<u>FACW+</u>
6. <u>Athyrium filix-femina</u>	<u>ladyfern*</u>	<u>F</u>	<u>30</u>	<u>FAC</u>
7. <u>Equisetum arvense</u>	<u>field horsetail</u>	<u>F</u>	<u>10</u>	<u>FAC</u>
8. <u>Scirpus cyperinus</u>	<u>woolgrass</u>	<u>F</u>	<u>10</u>	<u>OBL</u>
9. <u>Cinna latifolia</u>	<u>woodreed grass</u>	<u>F</u>	<u>5</u>	<u>FACW+</u>
10. <u>Solidago gigantea</u>	<u>giant goldenrod</u>	<u>F</u>	<u>5</u>	<u>FACW</u>
11.				

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 50/20 rule 6/6 = 100%

Remarks: Wetland Community Class: 3B (hardwood swamp). Plant community rating: Medium quality

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: <u>Primary Indicators:</u> <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Up 12" <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands	<u>2ndary Indicators (2 or > required):</u> <input checked="" type="checkbox"/> Oxidized Root Channels (up 12") <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> Local Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth to Surface Water: (in) Depth to Free Water in Pit: (in) Depth to Saturated Soil: (in) Depth of boring: <u>20</u> (in)		

Remarks: Buttressed tree trunks indicates wetland hydrology.

SOILS

Map Unit Name — (Series and Phase): <u>F141D Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0-25% slopes</u> Taxonomy (Subgroup): <u>Canosia inclusion– Typic Epiaquepts</u>	Drainage Class: <u>Very poorly</u> Field Observations: Confirmed Mapped Type? <input checked="" type="checkbox"/> Yes No
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Profile Description:

<u>Depth (inches)</u>	<u>Horizon</u>	<u>Matrix Color (Moist)</u>	<u>Redoximorphic Features</u>	<u>Abundance/ Contrast</u>	<u>Texture, Concretions, Structure, other</u>
0-8	A	7.5YR2/1	3/6 5% root channels	com dist	silt loam
8-20	Bw	7.5YR4/4	4/6 10%	com dist	cb fine sandy loam

Hydric Soil Indicators:

Histosol	Concretions
Histic Epipedon	High Organic Content in Surface Layer in Sandy Soils
Sulfidic Odor	Organic Streaking in Sandy Soils
Aquic Moisture Regime	Listed on Local Hydric Soils List
Reducing Conditions	Listed on State Hydric Soils List
Gleyed or low-chroma matrix colors	Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Other (Explain in Remarks)	

Remarks: Meets hydric soils criteria F6 TF2 (Redox in dark surface soil, Redox in red parent material). Concave drainage-way landform indicates wetland site.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes No	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present	<input checked="" type="checkbox"/> Yes No	
Hydric Soils Present	<input checked="" type="checkbox"/> Yes No	

Remarks:



SOIL & WATER- ENVIRONMENTAL CONSULTING

6074 EAST BOWMAN LAKE ROAD DULUTH, MN 55803-9416 Phone: 218-729-5402

Email: SoilWater@starband.net

ROUTINE WETLAND DETERMINATION DATA FORM

Project/Site: <u>35 acres in SE1/4, S35, T50N, R14W</u> Applicant/Owner: <u>Edmunds Co, Ron Truscott, Conrad + Lori Beaulieu</u> Investigator: <u>Thomas Fait PSS- MN# 30026 PWS SWS #362 CWD#1011</u>	Date: <u>9/30/09</u> County: <u>Duluth, St. Louis</u> State: <u>MN</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential problem area (explain below) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>T17 Upland</u> Transect ID: <u>10' S of flag T17</u> Plot ID: <u>_</u>

Vegetation

Dominant Plant Species (Scientific Name)	Common Name	Stratum	% Cover	Indicator
1. <u>Populus tremuloides</u>	<u>quaking aspen*</u>	<u>T</u>	<u>40</u>	<u>FAC</u>
2. <u>Acer spicatum</u>	<u>mtn maple*</u>	<u>S</u>	<u>30</u>	<u>FACU*</u>
3. <u>Corylus cornuta</u>	<u>beaked hazel*</u>	<u>S</u>	<u>30</u>	<u>UPL</u>
4. <u>Rubus parviflorus</u>	<u>thimbleberry*</u>	<u>S</u>	<u>20</u>	<u>FACU+</u>
5. <u>Aster macrophyllus</u>	<u>large-leaf aster*</u>	<u>F</u>	<u>40</u>	<u>UPL</u>
6. <u>Pteridium aquilinum</u>	<u>brackenfern*</u>	<u>F</u>	<u>20</u>	<u>FACU</u>
7. <u>Athyrium filix-femina</u>	<u>ladyfern</u>	<u>F</u>	<u>10</u>	<u>FAC</u>
8. <u>Carex communis</u>	<u>fibrous-rooted sedge</u>	<u>F</u>	<u>5</u>	<u>UPL</u>
9.				
10.				
11.				
12.				

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 50/20 rule 1/6 = 17%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Up 12" <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	Secondary Indicators (2 or > required): <input type="checkbox"/> Oxidized Root Channels (up 12") <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> Local Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth to Surface Water: (in) Depth to Free Water in Pit: (in) Depth to Saturated Soil: (in) Depth of boring: <u>20</u> (in)		
Remarks:		

SOILS

Map Unit Name — (Series and Phase): <u>F141D Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0-25% slopes</u>	Drainage Class: <u>Moderately well</u> Field Observations: Confirmed Mapped Type? <input checked="" type="checkbox"/> Yes No
Taxonomy (Subgroup): <u>Normanna part- Aquic Eutrudepts</u>	

Profile Description:

<u>Depth (inches)</u>	<u>Horizon</u>	<u>Matrix Color (Moist)</u>	<u>Redoximorphic Features</u>	<u>Abundance/ Contrast</u>	<u>Texture, Concretions, Structure, other</u>
0-6	A	7.5YR2/2			loam
6-12	BE	7.5YR4/3			fine sandy loam
12-20	Bw	7.5YR4/4	4/6 5%	com dist	fine sandy loam

Hydric Soil Indicators:

Histosol	Concretions
Histic Epipedon	High Organic Content in Surface Layer in Sandy Soils
Sulfidic Odor	Organic Streaking in Sandy Soils
Aquic Moisture Regime	Listed on Local Hydric Soils List
Reducing Conditions	Listed on State Hydric Soils List
Gleyed or low-chroma matrix colors	Listed on National Hydric Soils List
Other (Explain in Remarks)	

Remarks: 10% sideslope landform indicates upland site.**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present	Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present	Yes <input checked="" type="checkbox"/> No	

Remarks:



SOIL & WATER- ENVIRONMENTAL CONSULTING

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Email: SoilWater@starband.net

ROUTINE WETLAND DETERMINATION DATA FORM

Project/Site: <u>35 acres in SE1/4, S35, T50N, R14W</u> Applicant/Owner: <u>Edmunds Co, Ron Truscott, Conrad + Lori Beaulieu</u> Investigator: <u>Thomas Fait PSS- MN# 30026 PWS SWS #362 CWD#1011</u>	Date: <u>9/30/09</u> County: <u>Duluth, St. Louis</u> State: <u>MN</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential problem area (explain below) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>T17 Wetland</u> Transect ID: <u>20' E of flag T17</u> Plot ID: <u>_</u>

Vegetation

Dominant Plant Species (Scientific Name)	Common Name	Stratum	% Cover	Indicator
1. <u>Populus tremuloides</u>	<u>quaking aspen*</u>	<u>T</u>	<u>40</u>	<u>FAC</u>
2. <u>Alnus incana subsp rugosa</u>	<u>speckled alder*</u>	<u>S</u>	<u>30</u>	<u>OBL</u>
3. <u>Salix discolor</u>	<u>pussywillow*</u>	<u>S</u>	<u>20</u>	<u>FAC</u>
4. <u>Corylus cornuta</u>	<u>beaked hazel</u>	<u>S</u>	<u>10</u>	<u>UPL</u>
5. <u>Cornus stolonifera</u>	<u>red-osier dogwood</u>	<u>S</u>	<u>10</u>	<u>FACW</u>
6. <u>Rhamnus cathartica</u>	<u>European buckthorn</u>	<u>S</u>	<u>10</u>	<u>FAC-</u>
7. <u>Aster macrophyllus</u>	<u>large-leaf aster (knolls)*</u>	<u>F</u>	<u>40</u>	<u>UPL</u>
8. <u>Rubus pubescens</u>	<u>dwarf blackberry*</u>	<u>F</u>	<u>30</u>	<u>FACW+</u>
9. <u>Athyrium filix-femina</u>	<u>ladyfern*</u>	<u>F</u>	<u>20</u>	<u>FAC</u>
10. <u>Carex scoparia</u>	<u>pointed broom sedge*</u>	<u>F</u>	<u>20</u>	<u>FACW</u>
11.				
12.				

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 50/20 rule 6/7 = 86%

Remarks: Wetland Community Class: 3B (hardwood swamp). Plant community rating: Low quality- non-native invasives and partly drained.

HYDROLOGY

_ Recorded Data (Describe in Remarks) <u>_</u> Stream, Lake or Tide Gauge <u>_</u> Aerial Photographs <u>_</u> Other <u>X</u> No Recorded Data Available	Wetland Hydrology Indicators: <u>Primary Indicators:</u> - Inundated - Saturated in Up 12" - Water Marks - Drift Lines - Sediment Deposits <u>X</u> Drainage Patterns in Wetlands <u>2ndary Indicators (2 or > required):</u> - Oxidized Root Channels (up 12") - Water Stained Leaves - Local Survey Data - FAC-Neutral Test - Other (Explain in Remarks)
Field Observations: Depth to Surface Water: (in) Depth to Free Water in Pit: (in) Depth to Saturated Soil: (in) Depth of boring: <u>20</u> (in)	

Remarks:

SOILS

Map Unit Name — (Series and Phase): <u>F141D Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0-25% slopes</u> Taxonomy (Subgroup): <u>Canosia inclusion– Typic Epiaquepts</u>	Drainage Class: <u>Poorly</u> Field Observations: Confirmed Mapped Type? <input checked="" type="checkbox"/> Yes No
--	---

Profile Description:

<u>Depth (inches)</u>	<u>Horizon</u>	<u>Matrix Color (Moist)</u>	<u>Redoximorphic Features</u>	<u>Abundance/ Contrast</u>	<u>Texture, Concretions, Structure, other</u>
0-6	A	7.5YR2/2			loam
6-20	Bw	7.5YR4/4	4/6 5%	com dist	fine sandy loam

Hydric Soil Indicators:

Histosol	Concretions
Histic Epipedon	High Organic Content in Surface Layer in Sandy Soils
Sulfidic Odor	Organic Streaking in Sandy Soils
Aquic Moisture Regime	Listed on Local Hydric Soils List
Reducing Conditions	Listed on State Hydric Soils List
Gleyed or low-chroma matrix colors	Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Other (Explain in Remarks)	

Remarks: Meets hydric soils criteria TF2 (Redox in red parent material). Concave drainage-way landform indicates wetland site.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes No	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present	<input checked="" type="checkbox"/> Yes No	
Hydric Soils Present	<input checked="" type="checkbox"/> Yes No	

Remarks:

Minnesota Climatology Working Group

State Climatology Office - DNR Waters University of Minnesota

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Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Saint Louis** township number: **51N**
 township name: **Rice Lake** range number: **14W**
 nearest community: **Woodland** section number: **34**

Aerial photograph or site visit date:

Monday, October 05, 2009

(values are in inches)	first prior month: September 2009	second prior month: August 2009	third prior month: July 2009
estimated precipitation total for this location:	0.00	0.00	0.00
there is a 30% chance this location will have less than: *	2.90	2.95	2.89
there is a 30% chance this location will have more than: *	4.90	4.88	4.99
type of month: dry normal wet	dry	dry	dry
monthly score	3 * 1 = 3	2 * 1 = 2	1 * 1 = 1
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)			
6 (Dry)			

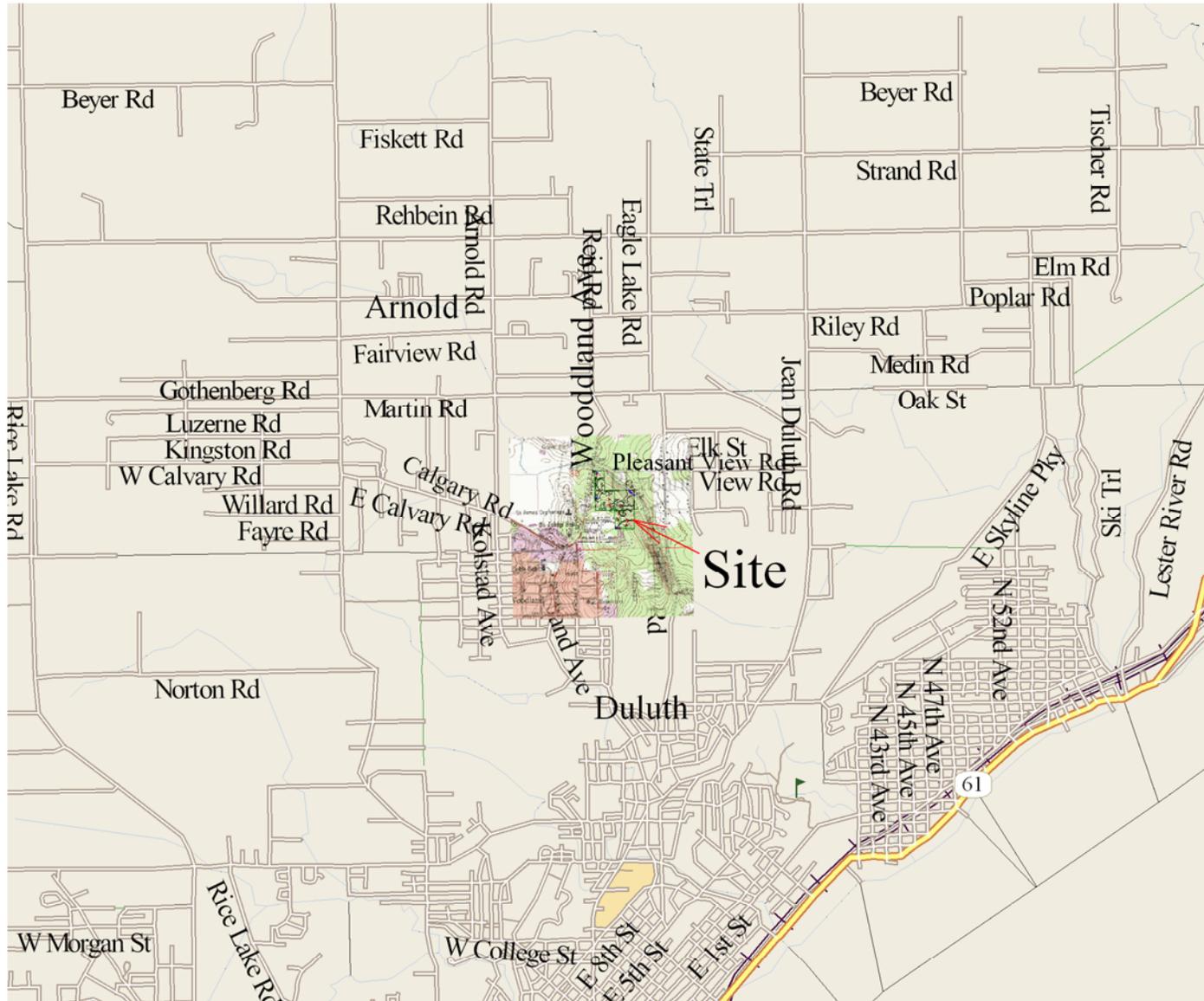
view [USDA-NRCS WETS data](#) for Saint Louis County

Other Resources:

- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Hydrology Tools for Wetland Determination, USDA-NRCS](#)

* from [USDA-NRCS two-parameter gamma distribution fit](#) of 1971-2000 data

Site Locator Map for 4 parcels in SE1/4, Sec 35, T50N, R14W, Duluth, MN

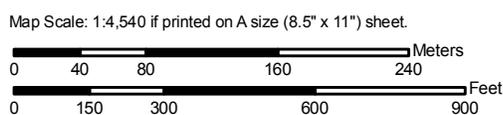
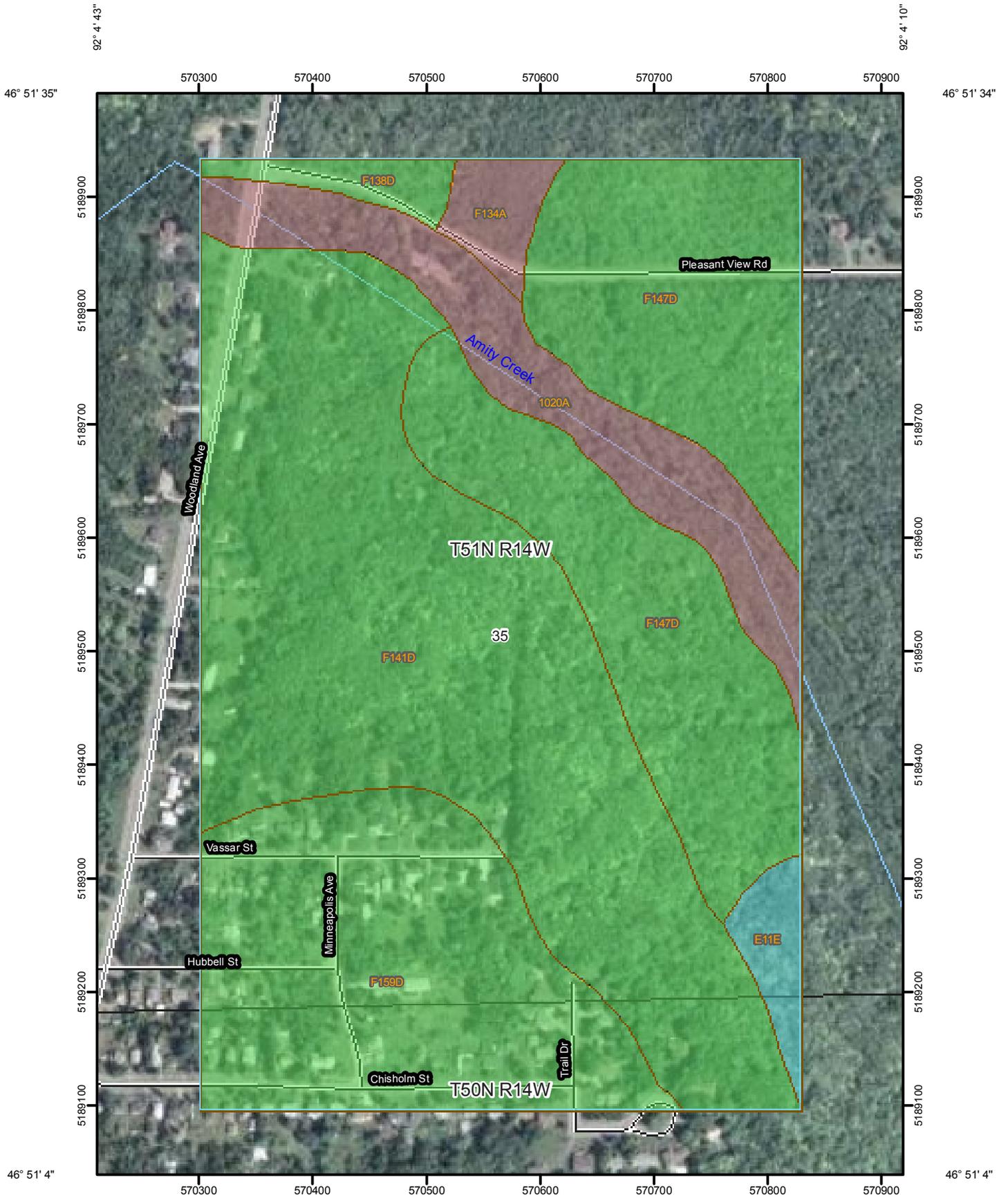


Scale = 1 : 5600.00 (In : US Feet)

For: Edmunds Realty Inc.

GIS by SWEC 218-729-5402

Hydric Rating by Map Unit—St. Louis County, Minnesota, Duluth Part
(Edmunds-Truscott)



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Units

Soil Ratings

-  All Hydric
-  Partially Hydric
-  Not Hydric
-  Unknown Hydric
-  Not rated or not available

Political Features

-  Cities
-  PLSS Township and Range
-  PLSS Section

Water Features

-  Oceans
-  Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

MAP INFORMATION

Map Scale: 1:4,540 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
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: St. Louis County, Minnesota, Duluth Part
Survey Area Data: Version 6, Sep 3, 2009

Date(s) aerial images were photographed: 8/18/2003; 6/15/2003

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.

Hydric Rating by Map Unit

Hydric Rating by Map Unit— Summary by Map Unit — St. Louis County, Minnesota, Duluth Part				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1020A	Bowstring and Fluvaquents, loamy, 0 to 2 percent slopes, frequently flooded	All Hydric	9.9	9.1%
E11E	Miskoaki-Rock outcrop complex, 18 to 70 percent slopes	Unknown Hydric	1.9	1.8%
F134A	Giese muck, depressionnal, 0 to 1 percent slope	All Hydric	1.9	1.8%
F138D	Ahmeek-Normanna-Canosia complex, 0 to 18 percent slopes	Partially Hydric	1.7	1.6%
F141D	Ahmeek-Normanna-Cathro, depressionnal, complex, pitted, 0 to 25 percent slopes	Partially Hydric	42.8	39.2%
F147D	Ahmeek-Canosia-Rock outcrop complex, 0 to 25 percent slopes	Partially Hydric	29.0	26.6%
F159D	Urban land-Ahmeek-Normanna complex, 3 to 18 percent slopes	Partially Hydric	21.8	20.0%
Totals for Area of Interest			109.1	100.0%

Description

This rating indicates the proportion of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is designated as "all hydric," "partially hydric," "not hydric," or "unknown hydric," depending on the rating of its respective components.

"All hydric" means that all components listed for a given map unit are rated as being hydric, while "not hydric" means that all components are rated as not hydric. "Partially hydric" means that at least one component of the map unit is rated as hydric, and at least one component is rated as not hydric. "Unknown hydric" indicates that at least one component is not rated so a definitive rating for the map unit cannot be made.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Absence/Presence

Tie-break Rule: Lower



Wetlands in 4 parcels in SE1/4, + 5 acres in W1/2, SW1/4, SW1/4, NE1/4, Sec 35



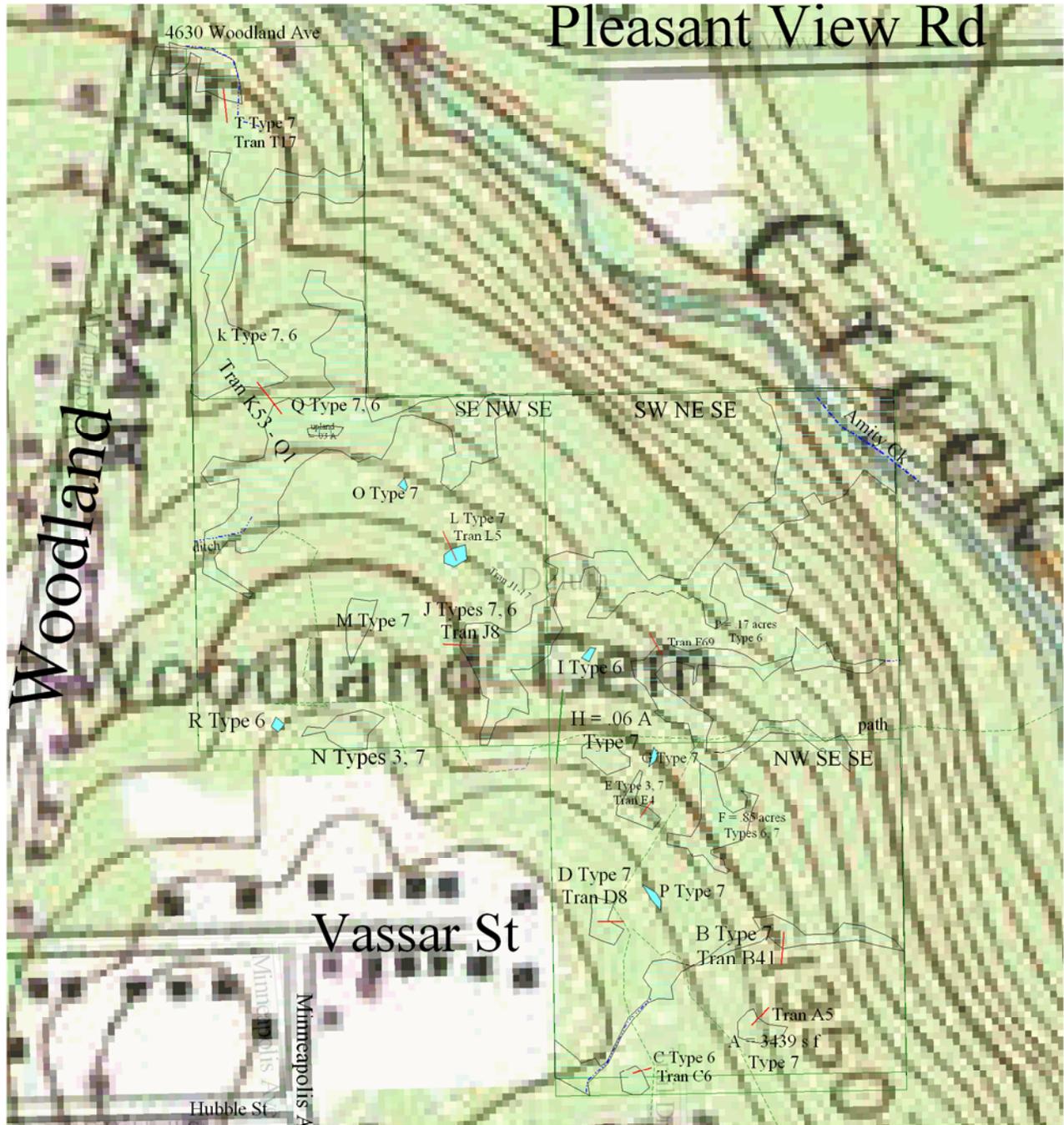
800 0 US Feet

Scale = 1 : 400.00 (In : US Feet)

For: Edmunds Realty Inc.



Wetlands in 4 parcels in SE1/4, + 5 acres in W1/2, SW1/4, SW1/4, NE1/4, Sec 35

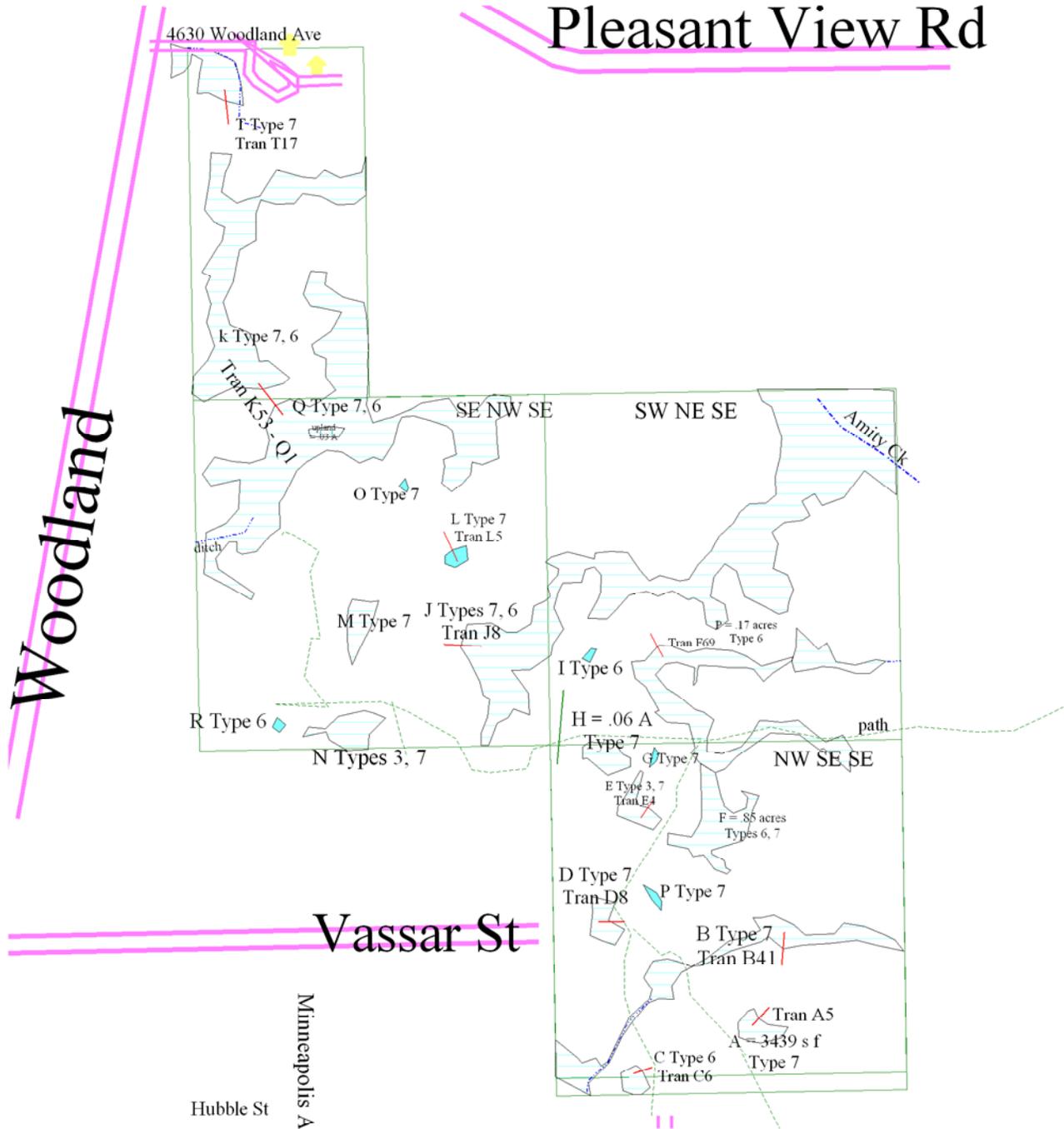


Scale = 1 : 300.00 (In : US Feet)

For: Edmunds Realty Inc.



Wetlands in 4 parcels in SE1/4, + 5 acres in W1/2, SW1/4, SW1/4, NE1/4, Sec 35



Scale = 1 : 300.00 (In : US Feet)

For: Edmunds Realty Inc.