



**Minnesota Pollution
Control Agency**

520 Lafayette Road North
St. Paul, MN 55155-4194

Notice of Availability of an Environmental Assessment Worksheet (EAW)

Lab USA's Ash Processing Project – Red Wing

Doc Type: Public Notice

Public Comment Information

EAW Public comment period begins: December 5, 2016

EAW Public comment period ends: January 4, 2017

Notice published in the EQB Monitor: December 5, 2016

Facility Specific Information

Facility name and location:

Lab USA's Ash Processing Project – Red Wing
Goodhue County
City of Red Wing
Section 35
Township 113N Range 15W

Facility contact:

Kane Flett
Lab USA
130 East Walnut Street #903
Green Bay, WI 54310
Phone: 902-544-2855
Email: kane.flett@labusa.us

MPCA Contact Information

MPCA EAW contact person:

Kevin Kain
Resource Management and Assistance Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155
Phone: 651-757-2482
Fax: 651-297-2343
Email: kevin.kain@state.mn.us
Admin staff phone: 651-757-2100

MPCA Permit contact person:

Sherri Nachtigal
Resource Management and Assistance
Division
Minnesota Pollution Control Agency
18 Woodlake Drive
Rochester, MN 55904
Phone: 507-206-2600
Fax: 501-280-5513
Email: sherri.nachtigal@state.mn.us

Daniel Aamodt
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155
Phone: 651-757-2435
Fax: 651- 297-2343
Email: daniel.aamodt@state.mn.us

General Information

The Minnesota Pollution Control Agency (MPCA) is distributing this Environmental Assessment Worksheet (EAW) for a 30-day review and comment period pursuant to the Environmental Quality Board (EQB) rules. The MPCA uses the EAW and any comments received to evaluate the potential for significant environmental effects from the project and decide on the need for an Environmental Impact Statement (EIS).

An electronic version of the EAW is available on the MPCA Environmental Review webpage at <http://www.pca.state.mn.us/oxpg691>. If you would like a copy of the EAW or NPDES/SDS Permit or have any questions on the EAW or NPDES/SDS Permit, contact the appropriate person(s) listed above.

p-ear2-119a

Description of Proposed Project

Lab USA intends to recover the ferrous and non-ferrous metals from combustor ash currently landfilled as well as currently generated in the Red Wing area. The Proposer plans to construct a 27,500 square foot building (Process Building) to house equipment for the recovery of ferrous and non-ferrous metals from combustor ash. The Proposer will locate the Process Building approximately 1.5 miles south of U.S. Highway 61 on Goodhue County State Aid Highway (CSAH) 1 (1540 Bench Street) (Project Site). The Project Site is adjacent to Xcel Energy's Red Wing Ash Disposal Landfill and the city of Red Wing's Land Disposal landfill.

Written comments on the EAW must be received by the MPCA EAW contact person within the comment period listed above.

For information on how to comment on the (NPDES/SDS Permit, contact the MPCA Permit contact person listed above.

NOTE: All comment letters are public documents and will be part of the official public record for this project.

Need for an EIS

The MPCA Commissioner will make a final decision on the need for an EIS after the end of the comment period.

ENVIRONMENTAL ASSESSMENT WORKSHEET

This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board's website at: <https://www.eqb.state.mn.us/content/environmental-review-guidance-practitioners-and-proposers>. The EAW form provides information about a project that may have the potential for significant environmental effects. The EAW Guidelines provide additional detail and resources for completing the EAW form.

Cumulative potential effects can either be addressed under each applicable EAW Item, or can be addresses collectively under EAW Item 19.

Note to reviewers: Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

1. **Project Title:** Lab USA's Ash Processing Project– Red Wing

2. **Proposer:** Lab USA Corp.
Contact person: Kane Flett
Title: Director of Business Development
Address: 211 North Broadway, #211
City, State, ZIP: Green Bay, WI 54303
Phone: 920-544-2855

Email: kane.flett@labusa.us

3. **RGU:** Minnesota Pollution Control Agency
Contact person: Kevin Kain
Title: Planner Principal
Address: 520 Lafayette Road N
City, State, ZIP: St. Paul, MN 55155
Phone: 651-757-2482
Fax: 651-297-2343
Email: kevin.kain@state.mn.us

4. **Reason for EAW Preparation:** (check one)

Required:

☐ EIS Scoping

☐ Mandatory EAW

Discretionary:

☐ Citizen Petition

☐ RGU Discretion

☒ Proposer Initiated

If EAW or EIS is mandatory give EQB rule category subpart number(s) and name(s):

Minn. R. 4410.1000 subp. 3.D. When the proposer wishes to initiate environmental review to determine if a project has the potential for significant environmental effects.

5. **Project Location:**

County: Goodhue

City/Township: City of Red Wing

PLS Location (¼, ¼, Section, Township, Range): NW ¼ of the SE 1/4, Section 35,

Twp 113N Range 15W

Watershed (81 major watershed scale): Cannon River Watershed

GPS Coordinates: Decimal Latitude (44.550118), Decimal Longitude (-92.576597)

Tax Parcel Number: 559-290150

At a minimum attach each of the following to the EAW

Figure 1 - Site Location and USGS Topographic Map

Figure 2 - Existing Conditions Map

Figure 3 - Aerial Photo of Site Showing Proposed Changes

Figure 4 - Site Layout and Grading Plan

Figure 5 - Building Layout and Perspective

Figure 6 - Building Side View with Elevations

Figure 7 - Surface Water Management Plan

Figure 8 - Existing Land Cover Map

Figure 9 - Prime Farmland

Figure 10 - City of Red Wing Future Land Use Map

Figure 11 - City of Red Wing Zoning Map

Figure 12 - Aerial Photo Showing Adjacent Property Owners

Figure 12b – Area Map

Figure 13 - SSURGO Soils Map – Percent Slope

Figure 14 - Public Waters Inventory Map

Figure 15 - Minnesota County Well Index

Figure 16 - National Wetland Inventory Map

Figure 17 - Local Water Table and Potentiometric Surface Contour Map

Figure 18 - Traffic Patterns

Appendices

Appendix A - 2012 Minnesota Department of Natural Resources (MNDNR) Natural Heritage Inventory Letter

Appendix B - Cultural Resources Information

Appendix C - Noise Assessment for Red Wing Crushing Operations

Appendix D – Air Permit Applicability Determination

6. Project Description:

- a. **Provide the brief project summary to be published in the *EQB Monitor*, (approximately 50 words).**

Lab USA (Proposer) plans to construct a transfer and ash processing facility consisting of a 30,000 square foot building (Process Building) to process 100,000 to 150,000 of combustor ash annually to recover ferrous and non-ferrous metals (Project). This waste combustor ash is currently generated and landfilled in the Red Wing area. The two sources of waste combustor ash are the Xcel Energy Generating Plant and Xcel Energy Ash Landfill. The Proposer will locate the Process Building approximately 1.5 miles south of U.S. Highway 61 on Goodhue County State Aid Highway (CSAH) 1 (1540 Bench Street) (Project Site). The Project Site is adjacent to Xcel Energy's Red Wing Ash Disposal Landfill (Xcel Energy Ash Landfill), and the Goodhue County/Red Wing Land Disposal Landfill (County/City Landfill).

- b. Give a complete description of the proposed project and related new construction, including infrastructure needs. If the project is an expansion include a description of the existing facility. Emphasize: 1) construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes, 2) modifications to existing equipment or industrial processes, 3) significant demolition, removal or remodeling of existing structures, and 4) timing and duration of construction activities.

The Proposer is planning to process 100,000 to 150,000 tons of combustor ash annually to recover ferrous and non-ferrous metals. The two sources of waste combustor ash are the Xcel Energy Generating Plant and Xcel Energy Ash Landfill. Waste material received directly from the Xcel Energy Generating Plant will only include combustor ash. Waste material from the Xcel Energy Ash Landfill will include combustor ash, incidental permitted materials such as gloves and filter bags, air quality control system residuals, and cover material.

The Project Site development utilizes the existing east-west access road off Bench Street for all traffic entering or leaving the site. The Proposer plans to construct two extensions to the access road (Figure 18).

The Proposer has designed the Project so that the Project Site has a gravel pad on the east and north sides to allow trucks to back into the Process Building from the north side (Figure 4). The Process Building is enclosed on the south, east and west sides with ventilation openings along the top of the east and west walls. The north side has two openings (minimum width of 25-feet by a minimum height of 25-feet) on each end to accommodate heavy equipment movement in and out of the building. Doors may be installed dependent on ventilation and heating requirements. The Proposer will incorporate the needed office space and facilities into the Project Site. The building structure allows for sufficient storage under cover and is contained by berms in accordance with Minn. R. 7035.2855. Temporary storage of recovered metals material will be stored outside the building in covered roll offs in preparation for pick-up and transport off site.

Stormwater will not contact combustor ash during off loading, loading or processing. The Process Building is designed so that any excess water in the combustor ash will be collected and treated as wastewater through the City wastewater treatment facility (WWTF). As a result, the collection of wastewater and the diversion of stormwater eliminates potential of groundwater contamination from the Project.

Transport of Excavated Combustor Ash from, and Processed Combustor Ash back to, the Xcel Energy Landfill

The Proposer will load waste combustor ash excavated from the Xcel Energy Ash Landfill within the lined area of the landfill. The Proposer will use off road trucks to transport the waste combustor ash along haul roads to the processing plant. The transport trucks will back up into the Processing Building to offload the combustor ash under cover onto a tipping floor on the north side of the building. The empty trucks will then move to the loading area on the north side of the building where they are re-filled under cover with processed combustor ash after metals are further reclaimed. The trucks finally return to the Xcel Energy Ash Landfill to dispose the processed ash in accordance with the MPCA solid waste permit.

Transport of Combustor Ash from the Xcel Energy Generating Plant

The Proposer will also process combustor ash to recover metals received directly from Xcel Energy's Generating Plant. Once the Proposer has recovered metals from Xcel's Ash Landfill, the Proposer will send the processed combustor ash back to the Xcel Energy Ash Landfill in accordance with the MPCA solid waste permit.

The Proposer will load trucks with combustor ash generated from the Xcel Energy Generating Plant and transport it to the Project Site from the eastern access road, and back up into the Process Building. The Proposer will then offload the combustor ash under cover onto a north-facing, tipping floor of the Process Building for processing as described below under "Processing of Combustor Ash." Once empty, the trucks will then return to the Xcel Energy Generating Plant via the eastern access road. The tipping floor and loading area has sufficient storage capacity for delivered ash to manage weekend and holiday schedules.

Processing of Combustor Ash

After the combustor ash is deposited in the building off-loading area, the material is then loaded into the processing hopper. All processing would occur within the processing building location situated away from the incoming and outgoing loading and unloading areas. Detailed operation procedures of the processing equipment will be established during final design, installation, and initial operations of the Processing Building.

General processing operations summarized as follows:

- Combustor ash is removed from the tipping floor and storage area using a loader and placed into the hopper of a crusher and/or a screening system to separate particles for the conveyor system.
- Conveyors will carry the combustor ash through a series of magnetic separators and eddy current machines to segregate the waste material by size, density, and magnetic properties.
- Within the process, ferrous metals, nonferrous metals, bulky waste materials, and residual combustor ash are separated.

c. Project magnitude:

Total Project Acreage	3.4 acres
Linear project length	0
Number and type of residential units	0
Commercial building area (in square feet)	0
Industrial building area (in square feet)	Approximately 30,000-sq. ft.
Institutional building area (in square feet)	0
Other uses – specify (in square feet)	0
Structure height(s)	Approximately 42-feet

d. Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.

The Proposer will recover the ferrous and non-ferrous metals from combustor ash currently generated and previously landfilled in the Red Wing area.

Under Xcel Energy's current Conditional Use Permit (CUP) with the City, Xcel Energy is required to evaluate alternative management methods for the disposal of combustor ash. In addition, Minn. Stat. 115A.02 emphasizes the goal of reducing toxicity and volume of wastes. Minn. R. 7035.0350 also states that "...the goal of solid waste management should be to use wastes of the highest and best value and to dispose of them only after other feasible options have been evaluated..." The Project will help achieve this goal, by reducing the volume of waste landfilled, through the recovery of ferrous and nonferrous materials from the combustor ash prior to final disposal.

- e. **Are future stages of this development including development on any other property planned or likely to happen?** ☐ Yes ☒ No

If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

- f. **Is this project a subsequent stage of an earlier project?** Yes ☒ No

If yes, briefly describe the past development, timeline and any past environmental review.

The Proposer will construct the Process Building on a previously undeveloped portion of property owned by Xcel Energy. Xcel's property was previously identified as part of the Project Site for the Xcel Energy Ash Landfill permitting and environmental review in 2012

7. **Cover Types: Estimate the acreage of the site with each of the following cover types before and after development:**

	Before	After		Before	After
Wetlands	0.0	0.0	Lawn/landscaping	0.0	0.0
Deep water/streams	0.0	0.0	Impervious surface	0.0	1.9
Wooded/forest	0.3	0.0	Stormwater Pond	0.0	0.0
Brush/Grassland	0.0	0.0	Other (describe)	0.0	0.0
Cropland	3.1	1.2	Drainage Ditch	0.0	0.3
			TOTAL	3.4	3.4

The Proposer used Geographic Information Systems (GIS) data and aerial photograph obtained from the USGS National Land Cover Data Base (NLCD), 2011 Land Cover Metadata to determine land cover types (Figures 3 and 8). The Project will result in an increase of new impervious surface greater than 1 acre due to construction of access roads, the gravel pad, and the Process Building.

Please note that stormwater ponds are not included in the calculation above. The City will manage stormwater runoff by developing stormwater detention ponds on the site of the City's laydown area east of the Project Site, please see Figure 4. The Proposer must apply and receive a Construction Stormwater Permit (CSP) from the MPCA prior to construction. The CSP will include an approved Stormwater Pollution Prevention plan.

8. **Permits and Approvals Required:** List all known local, state and federal permits, approvals, certifications and financial assistance for the project. Include modifications of any existing permits, governmental review of plans and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure. *All of these final decisions are prohibited until all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.*

The Proposer is responsible to obtain or review requirements for the following permits:

Unit of Government	Type of Application	Application Date
MPCA	Solid Waste Permit to Construct and Operate a Solid Waste Transfer Station (including processing and storage)	June 2016
MPCA	Solid Waste Permit No. SW-307 - Xcel Energy's Red Wing Ash Disposal Project (major modification) (Xcel Energy Ash Landfill)	June 2016
MPCA	National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) - General Construction Permit	To be submitted prior to construction
MPCA	NPDES/SDS Multi-Sector General Permit - Industrial Stormwater Permit – No Exposure (MNRNE3D5B)	To be submitted prior to construction
City	CUP	To be submitted upon EAW approval
City	Building, Plumbing and Mechanical Permits	To be submitted prior to construction
City	Utility Permit on City Right of Way	To be submitted upon CUP issuance

Cumulative potential effects may be considered and addressed in response to individual EAW Item Nos. 9-18, or the RGU can address all cumulative potential effects in response to EAW Item No. 19. If addressing cumulative effect under individual items, make sure to include information requested in EAW Item No. 19

9. **Land Use:**

a. **Describe:**

- i. **Existing land use of the site as well as areas adjacent to and near the site, including parks, trails, prime or unique farmlands.**

The Project Site is part of the property boundary designated for the land disposal project for Xcel Energy. Xcel Energy originally sited and constructed the Xcel Energy Ash Landfill in 1988.

The current land use in the area of the Project Site is tillable, forested, and borrow areas. Figure 8 shows the existing land cover for the Project Site. Gadiant Heights Park is the closest park and it is more than 1 mile east of the Project Site, across the Hay Creek valley. The Project Site is 1/2 mile from Goodhue Pioneer State Trail.

The U.S. Department of Agriculture identified prime farmland soils in a small portion of Xcel Energy's property (Figure 9). Xcel Energy currently leases this area for farming. However, Xcel Energy has indicated that future use of that part of the site does not include continued agricultural use as covered under previous environmental review.

- ii. **Plans. Describe planned land use as identified in comprehensive plan (if available) and any other applicable plan for land use, water, or resources management by a local, regional, state, or federal agency.**

The Project Site is within the City's boundaries in Goodhue County, Minnesota. The City has planning and zoning jurisdiction over the Project Site. The Proposer has designed the Project to allow a continuation of solid waste operations in an area permitted for solid waste management activities for Xcel Energy Ash Landfill.

The City adopted its current Land Use Comprehensive Plan in 2007. Figure 10 shows the Project Site as an activity center, surrounded by a Green Network. Activity centers focus on commercial retail and service uses, institutions and higher density residential, and provides places to do business along transportation corridors.

- iii. **Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.**

The Proposer must obtain a CUP for the Project from the City after environmental review is complete. The CUP process requires a public hearing and review process for approval, before any construction begins.

- b. **Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 9a above, concentrating on implications for environmental effects.**

Xcel Energy has previously agreed to lease the Project Site to the city of Red Wing to support public works operations. The City will lease the Project Site to the Proposer for 10-years with a 5-year extension option if needed. At the end of the lease or when it becomes available, the City will use the Project Site for public work activities.

Zoning and Surrounding Land Uses: The Project Site property is zoned (AR) Agriculture Residential, as is the adjacent landfill properties on the West side of CSAH #1 (Bench Street). These uses are allowed on Agriculture Residential zoned property with approval of a Conditional Use Permit by the city of Red Wing.

In 2012, the City approved an expansion of the Xcel Energy Ash Landfill operations located on the property immediately adjacent and to the north of the site located on Outlot A of Tyler Hills Second Addition. On the east side of CSAH #1 is primarily zoned (I-1) Light Industrial and includes the City's solid waste campus and other commercial trade shops. South of the City's solid waste campus lies the S.B. Foot Tanner, zoned I-2 (General Industrial). To the south and west of the proposed site is a residential, large lot, planned unit development known as the Tyler Hills subdivision. This subdivision is more than 200 feet above the elevation of the proposed site and separated from the landfill and the proposed site by a steep bluff and wooded buffer area. The nearest home in the Tyler Hills subdivision is approximately 1400 feet from the proposed development. In addition, the Tyler Hills subdivision buffered by a 250-foot scenic easement that covers the south and west border of the development parcel (Outlot A of Tyler Hills Second Addition).

Extensive open space and wooded bluff sides also buffer the Xcel Energy Ash Landfill to the north from an adjoining residential planned unit development known as the Rivers Ridge development. The nearest residential site in the Rivers Ridge development to the proposed development site is approximate 1700 feet away.

- c. **Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 9b above.**

The Process Building doorways face north, out and away from residential areas to the south which minimizes the visibility of the Process Building and its associated operations. The Proposer will maintain the forested areas to the south of the Project Site to minimize visibility of the Process Building. The 250-foot wide City scenic easement ensures screening of the site from the south.

10. Geology, Soils and Topography/Land Forms:

- a. **Geology - Describe the geology underlying the project area and identify and map any susceptible geologic features such as sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions. Discuss any limitations of these features for the project and any effects the project could have on these features. Identify any project designs or mitigation measures to address effects to geologic features.**

Based on information the Proposer obtained from the Minnesota Geological Survey (MGS) karst features website, there are no known karst features currently identified in the immediate Project Site. The uppermost bedrock at the Project Site consists primarily of sandstones and shales, therefore karst is not likely to develop.

Bedrock Geology

The Geologic Atlas of Goodhue County, Minnesota (County Atlas Series C-12, Part A; MGS, 1998) describes the bedrock surface as having sharp valleys incised into more resistant bedrock units. Valleys generally formed within bedrock fractures as softer underlying units were readily eroded away. Unconsolidated surficial deposits directly overlie bedrock in this area. Based on the Geologic Atlas (Bedrock Geology; Runkel, 1998), the uppermost bedrock in the vicinity of the Project Site, from oldest to youngest, the St. Lawrence and Franconia Formations, the Jordan Sandstone, and the Prairie du Chien Group. (Please note that as of August 1, 2014, the MGS has replaced the old stratigraphic unit designations for the St. Lawrence and Franconia Formations to the St. Lawrence-Tunnel City.)

The Prairie du Chien Group and the softer, underlying Jordan Sandstone are only present at higher elevations. Underlying the Jordan Sandstone is the more expansive St. Lawrence Formation containing silty dolomites, siltstone, and thin shale beds. Finally, the older Tunnel City Group (formerly known as the Franconia Formation) includes mostly sandstone with some shale and dolomite. The Tunnel City Group is generally coarser grained and more poorly cemented than the overlying St. Lawrence Formation.

Lithology in this area is highly variable. Due to extensive erosion of the bedrock, the Prairie du Chien, Jordan, and St. Lawrence Formation may be absent altogether in large areas. Based on the Geologic Atlas (Bedrock Geology; Runkel, 1998), the uppermost bedrock beneath the Project Site is primarily poorly cemented sandstone of the Tunnel City Group.

The Proposer drilled soil borings on March 2016, 11 as part of a geotechnical evaluation for the Project Site. The bedrock encountered in 9 of the 11 soil borings was generally described as light brown to brown, soft, highly weathered sandstone with occasional glauconitic seams (appearing green). Depth to bedrock ranged from 7 to 29.5 feet, corresponding to elevations ranging from less than 762 feet (downslope) to as high as 813.4 feet (upslope).

Surficial Geology

The Geologic Atlas of Goodhue County, Minnesota (County Atlas Series C-12, MGS, 1998) describes the local valleys as older, diversion channels of the Mississippi River, formed when glaciation blocked the main channel. The deepest sediments within the valleys are valley fill sediment consisting of pre-Wisconsin age fine to very fine sand and probably slope wash. Valley walls are often draped in colluvium formed from weathering, erosion and/or mass wasting of bedrock. Where present, the valley fill and colluvium, may be overlain by the Wisconsin age Michigan alluvium which consists mostly of silt and sand derived from upland loess, old till, and bedrock.

The Proposer prepared a geotechnical evaluation for the Project Site in March of 2016. In general, the soil borings on the Project Site encountered 7 to 29.5 feet of surficial soil overlying bedrock. Soils include units of sandy lean clay, clayey sand, and silty sand. In most soil borings, the soils directly above bedrock consist of alluvium and colluvium and are generally classified as of silty sand.

As noted, the Proposer reviewed the MGS karst features website and found no karst features currently identified at the Project Site or immediate surrounding area. Given the uppermost bedrock consists primarily of sandstones and shales, karst is not likely to develop.

- b. Soils and topography - Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability or other soils limitations, such as steep slopes, highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 11.b.ii.**

The Proposer obtained surficial soil information from the web-based Goodhue County Soil Survey developed by the Natural Resource Conservation Service (NRCS) and presented in Figure 13. Three soil types fall across the Project Site as follows:

- Dakota silt loam: 0 to 3% slopes, well drained and not subject to flooding with a low runoff class.
- Tama silt loam: 2 to 18% slopes, valleys, well drained and not subject to flooding with a medium runoff class.
- Downs silt loam: 18 to 25% slopes, valleys, well drained and not subject to flooding with a high runoff class.

The Proposer will impact soils during construction at the Project Site construction from grading the site, installing the gravel pad, and constructing the Process Building. The Proposer will use appropriate best management practices (BMPs) for erosion prevention and sediment control during construction as required by the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) - General Construction Permit and Stormwater Pollution Prevention Plan (SWPPP). The Proposer also will reuse excavated soil on site for fill or topsoil.

11. Water Resources:

- a. Describe surface water and groundwater features on or near the site in a.i. and a.ii. below.
 - i. **Surface water - lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within 1 mile of the project. Include MDNR Public Waters Inventory number(s), if any.**

The Red Wing area is characterized by steep bluffs and dissected by ravines, which rise above the level floodplains of the Mississippi River. The Project Site and all of the County drains to the Mississippi River and its tributaries. The tributaries in the Red Wing area include the Cannon River, Spring Creek, and Hay Creek. The Project Site is not in a floodplain. The floodplain of the Mississippi River is very broad, averaging about 3 miles in this area. The main river channel and the floodplains of the local tributaries contain numerous backwater sloughs, lakes and wetlands.

The Minnesota Department of Natural Resources (MNDNR) has no listed public waters or wetlands located on the Project Site. There are no water bodies capable of supporting fish populations on the Project Site. The nearest water body that supports a fish population is Hay Creek, located approximately 0.5 miles east of the Project Site. The MNDNR has designated Hay Creek in rule as a trout stream. Hay Creek provides trout angling opportunities as well as recreational access for the public in the Hay Creek Unit State Forest. Information from the National Wetlands Inventory (NWI) indicates the nearest wetlands are approximately 0.25 miles east of the Project Site. The MNDNR Public Waters Inventory and NWI are visible on Figures 14 and 15, respectively.

The Project Site lies at approximately 800 to 900 feet above mean sea level. The Project Site sits at the head of a small, intermittent stream, which flows eastward approximately 0.5 miles to join Hay Creek (Figure 2).

The Project Site currently drains stormwater runoff off-site and east into a culvert at CSAH 1. The culvert then directs its drainage to a wetland area on the east side of CSAH 1.

- ii. **Groundwater – aquifers, springs, seeps. Include: 1) depth to groundwater; 2) if project is within a MDH wellhead protection area; 3) identification of any onsite and/or nearby wells, including unique numbers and well logs if available. If there are no wells known on site or nearby, explain the methodology used to determine this.**

The Proposer's geotechnical borings show depth to groundwater at the Project Site ranges from 12 to 24.5 feet under pre-development conditions. The Proposer does not anticipate site development will change existing groundwater conditions. Following grading and

construction activities, depth to the perched groundwater is anticipated to range 10 to 30 feet below the surface. The Project Site is not located within a Minnesota Department of Health (MDH) wellhead protection area or Drinking Water Supply Management Area.

The Proposer obtained available well inventory information from the MDH County Well Index (Figure 16). The nearest wells to the Project Site are monitoring wells from the nearby Xcel Energy Ash Landfill and County/City Landfill. The nearest residential well is more than 1,000 feet south of the Project Site and is at an approximate depth of 500 feet. As indicated under Item 10, the MGS has replaced the old stratigraphic unit designations for the St. Lawrence and Franconia Formations to the St. Lawrence-Tunnel City.

The Geologic Atlas for Goodhue County, Minnesota (County Atlas Series C-12, Part B; MNDNR, 2003) indicates the upper most aquifer in the vicinity of the Project Site is the Tunnel City Group (Franconia). With the overlying, lower permeable, St. Lawrence Formation thin to non-existent, the Tunnel City Group is considered an unconfined aquifer. Below the Tunnel City Group is the aquifer associated with the Wonewac Sandstone (formerly known as the Ironton and Galesville Sandstones). The middle member (Tomah) of the Tunnel City Group appears to be an aquitard. The lowest unit of the Tunnel City Group, the Birkmose Member, is interconnected to the Wonewac Sandstone and collectively and considered a confined aquifer. As illustrated in Figure 17, research by Runkel et al., (2003: Hydrogeology of the Paleozoic Bedrock in Southeastern Minnesota, MGS RI 61) indicates that the regional groundwater flow in the Ironton Galesville Sandstone (Wonewac Sandstone) is toward the northeast.

Based on the Geologic Atlas (Bedrock and Water-Table Hydrogeology; Berg and Bradt, 2003), depth to the water table in the vicinity of the Project Site generally ranges from 20 to 50 feet at lower elevations, and from 50 to 100 feet at higher elevations. Monitoring wells and piezometers associated with Xcel Energy Ash Landfill to the north-northwest indicate a depth to groundwater ranging from 60 to 200 feet; monitoring wells associated with the County/City Landfill project indicate a depth to groundwater at the Project ranges from 12 to 24 feet suggesting depth to groundwater is highly variable due to the wide range in topographic conditions. The water table tends to mimic surface topography indicating groundwater flow generally moves from higher elevations down toward lower elevations as illustrated by Runkel et al, (2003) in Figure 17. Therefore, groundwater flow at the water table for the Project Site flows toward the north-northeast, following the existing topography illustrated in Figure 2.

- b. Describe effects from project activities on water resources and measures to minimize or mitigate the effects in Item b.i. through Item b.iv. below.**
 - i. Wastewater - For each of the following, describe the sources, quantities and composition of all sanitary, municipal/domestic and industrial wastewater produced or treated at the site.**
 - 1) If the wastewater discharge is to a publicly owned treatment facility, identify any pretreatment measures and the ability of the Project to handle the added water and waste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure.**

- 2) If the wastewater discharge is to a subsurface sewage treatment systems (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system.
- 3) If the wastewater discharge is to surface water, identify the wastewater treatment methods and identify discharge points and proposed effluent limitations to mitigate impacts. Discuss any effects to surface or groundwater from wastewater discharges.

The Process Building includes office space with restrooms. The Proposer has designed the building to convey the sanitary waste to the City's collection system for treatment at the Red Wing WWTF.

The Proposer expects the municipal solid waste combustor ash, when brought to the Process Plant for metals recovery, will have some liquid/moisture content because of water previously added at the Generating Plant or from contact with precipitation at Xcel Energy Ash Landfill. The Proposer has designed the Process Building to also convey this wastewater to the City's collection system for treatment at the Red Wing WWTF. Figure 5 shows the Proposed Building layout.

The Proposer estimates the total daily amount of wastewater from the Process Building will average less than 500 gallons per day (gpd) including both the daily sanitary needs and an estimated incidental moisture associated with the MSW combustor ash being processed. The city of Red Wing has determined that the liquid ash wastewater conveyed from the Process Building to the Red Wing WWTF is not considered a significant industrial wastewater in volume or type. As a result, the Process Building would not be a significant industrial discharger and a pretreatment permit would not be required.

- ii. **Stormwater - Describe the quantity and quality of stormwater runoff at the site prior to and post construction. Include the routes and receiving water bodies for runoff from the site (major downstream water bodies as well as the immediate receiving waters). Discuss any environmental effects from stormwater discharges. Describe stormwater pollution prevention plans including temporary and permanent runoff controls and potential BMP site locations to manage or treat stormwater runoff. Identify specific erosion control, sedimentation control or stabilization measures to address soil limitations during and after project construction.**

The Proposer has designed the Project to construct the Process Building to house all industrial activities including offloading, processing, and loading of materials. No stormwater will have contact with industrial materials or equipment within the Process Building. Because all industrial activities occur indoors, the Proposer has applied for certification of No Exposure under the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) General Permit MNR050000 for Industrial Stormwater Permit.

Stormwater runoff that drains from the Process Building, including the receiving pad, flows to a drainage ditch on the north side of the Project Site. Stormwater flows downslope to a sedimentation pond constructed by the City on its adjacent property to the east. This pond collects water from both the Project and the City's proposed laydown area to the east.

The City has sized the pond to maintain a post development runoff rate less than or equal to the pre-development runoff rate for the 2-year (2.89-inch), 10-year (4.33-inch), and 100-year (7.61-inch) storm events. The pond provides sediment storage to minimize any downstream migration of sediment from the site. The pond outlet discharges down the hill to lower elevations and continues east towards Bench Street entering the City's municipal stormwater system.

During Project construction, the Proposer will obtain a NPDES/SDS Construction Stormwater Permit for the Project construction, since it involves excavation of more than 1 acre of soil. The permit requires the Proposer to implement BMPs through a SWPPP. The SWPPP includes BMPs such as onsite infiltration, silt fences, bio-rolls, hay bales and fabric mats. Any disturbed soils and vegetation would be re-vegetated by seeding and mulching.

- iii. **Water appropriation** - Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use and purpose of the water use and if a MDNR water appropriation permit is required. Describe any well abandonment. If connecting to an existing municipal water supply, identify the wells to be used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation.

The Proposer does not need a water appropriation permit for the Project. The Project requires municipal water utility hook-up for restroom facilities. Minimal water usage occurs for processing operations to provide optimum conditions for processing and control dust as specified in state and local permits. Cleaning of equipment and the concrete floor will occur as needed.

- iv. **Surface Waters**
- a) **Wetlands** - Describe any anticipated physical effects or alterations to wetland features such as draining, filling, permanent inundation, dredging and vegetative removal. Discuss direct and indirect environmental effects from physical modification of wetlands, including the anticipated effects that any proposed wetland alterations may have to the host watershed. Identify measures to avoid (e.g., available alternatives that were considered), minimize, or mitigate environmental effects to wetlands. Discuss whether any required compensatory wetland mitigation for unavoidable wetland impacts will occur in the same minor or major watershed, and identify those probable locations.

There are no MNDNR listed public waters or wetlands located on the Project Site. The nearest public water is Hay Creek. MNDNR rules have designated Hay Creek as a trout stream, approximately 0.5 miles east of the Project Site (see Figure 14). The NWI indicates that the nearest wetlands are approximately 0.25 miles east of the Project Site (Figure 15). A drainage way (ditch) north of the Project Site follows the main east-west access road to a culvert at CSAH 1. The culvert then directs its drainage to a wetland area on the east side of CSAH 1.

- b) **Other surface waters-** Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicial ditches) such as draining, filling, permanent inundation, dredging, diking, stream diversion, impoundment, aquatic plant removal and riparian alteration. Discuss direct and indirect environmental effects from physical modification of water features. Identify measures to avoid, minimize, or mitigate environmental effects to surface water features, including in-water Best Management Practices that are to avoid or minimize turbidity/sedimentation while physically altering the water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.

Not applicable

12. Contamination/Hazardous Materials/Wastes:

- a. **Pre-Project Site conditions -** Describe existing contamination or potential environmental hazards on or in close proximity to the Project Site such as soil or ground water contamination, abandoned dumps, closed landfills, existing or abandoned storage tanks, and hazardous liquid or gas pipelines. Discuss any potential environmental effects from pre-Project Site conditions that would be caused or exacerbated by project construction and operation. Identify measures to avoid, minimize or mitigate adverse effects from existing contamination or potential environmental hazards. Include development of a Contingency Plan or Response Action Plan.

The Project does not require groundwater monitoring, as MPCA considers the Project to be a transfer and ash processing facility. In addition, the Proposer has designed the Project to completely enclose the processing equipment for metals recovery within the Process Building. The floor slab will be cast-in place concrete, designed to withstand the pressures from the waste material and the operating equipment used to move the material. The floor will consist of high 5,000 psi concrete with sealed joints and treated to reduce water absorption.

The Project is adjacent to Xcel Energy Ash Landfill (solid waste permit number SW-307) and the County/City Landfill (solid waste permit number SW-174). Directly east of the Project Site, the City is designing and planning to develop a laydown area for managing municipal construction materials. The MPCA's database did not identify any other environmental sites in the vicinity of the Project Site.

Groundwater quality program associated with the Xcel Energy Ash Landfill and the County/City Landfill ensures compliance with groundwater monitoring requirements and applicable standards. Although Xcel Energy has reported their landfill has had some influence to

groundwater chemistry, all groundwater monitoring results meet applicable drinking water standards. Portions of the County/City Landfill have required remedial action. Remedial actions have resulted in ongoing decreasing trends in groundwater impacts. As part of their solid waste permit, all land disposal facilities monitor groundwater conditions and include development of a Contingency Action Plan.

As described in Item 11.b.ii, the Project includes construction of an approximate 30,000 square foot building with a concrete foundation that houses all industrial activities including offloading, processing, and loading of materials. In addition, the use of a moisture-based processing technique inside internal walls of the Process Building contains any potential dust. No stormwater will have contact with industrial materials, waste or equipment within the Process Building. The Process Building is designed so that any excess water in the combustor ash will be collected and treated as wastewater through the City WWTF. As a result, the collection of wastewater and the diversion of stormwater eliminates the potential of groundwater contamination from the Project.

- b. Project related generation/storage of solid wastes - Describe solid wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from solid waste handling, storage and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of solid waste including source reduction and recycling.**

The Proposer has designed the Project to be capable of processing/recovering metals and can process between 100,000 and 150,000 tons of combustor ash each year or approximately 8,000 to 13,000 tons each month. The Proposer's processing will recover up to 10% by weight of the total throughput of combustor ash or approximately 10,000 to 15,000 tons of ferrous and nonferrous metals annually. Given an approximate density of 2,000 pounds/cubic yard (lbs/cy), the Project will process up to 150,000 cy of combustor ash each year and recover up to 15,000 cy of ferrous and nonferrous metals.

Primary processing operations occur Monday through Friday. The Proposer could store offloaded combustor ash several days to optimize moisture content for processing, accommodate weekend, and holiday hauling schedules. The Project layout includes up to 3,500 cy of storage in the offloading end of the Process Building.

Hoppers or bins collect separated materials within the building. The Proposer will move recovered material to segregated storage areas within the building or roll-offs by front-end loader, skid steer and/or forklift operators. The Proposer will cover roll-offs for storage in the designated storage area outside the building.

Up to 7 roll-offs are available at any one time to accommodate storage of recovered metals with up to 15 roll-offs removed from the site per week. The Proposer will transport the roll-offs containing ferrous and nonferrous material off site as a recycled commodity ready for further metals processing at another facility.

- c. **Project related use/storage of hazardous materials - Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location and size of any above or below ground tanks to store petroleum or other materials. Discuss potential environmental effects from accidental spill or release of hazardous materials. Identify measures to avoid, minimize or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.**

The Proposer uses fuels and lubricants for equipment at the Project Site. The Proposer uses no other toxic or hazardous materials at the Project Site. The Proposer will store all fuels and lubricants in accordance with MPCA permit requirements to avoid spillage.

- d. **Project related generation/storage of hazardous wastes - Describe hazardous wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from hazardous waste handling, storage, and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling.**

None

13. Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (rare features):

- a. **Describe fish and wildlife resources as well as habitats and vegetation on or in near the site.**

The Project Site is located on buffer property associated with Xcel Energy Ash Landfill, but owned by the City. The forested habitat adjacent to the Project Site would not be significantly impacted or altered by the construction of the Process Building or operation of the Project. Wildlife living on or adjacent to the Project Site is currently accustomed to the daily operations of the Xcel Energy Ash Landfill. The Project is not expected to result in significant effects to wildlife or wildlife habitats.

There are no water bodies capable of supporting fish populations on the Project Site. The nearest water body that supports a fish population is Hay Creek, located approximately 0.5 miles east of the Project Site. The MNDNR has designated Hay Creek as a designated trout stream and provides trout angling opportunities as well as recreational access for the public in the Hay Creek Unit State Forest.

- b. **Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota County Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA-____) and/or correspondence number (ERDB _____) from which the data were obtained and attach the Natural Heritage letter from the MDNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.**

The MNDNR Natural Heritage Information System (NHIS) contains known records of threatened or endangered plant or animal species, as well as rare or unique biological habitats. The MNDNR provided a copy of the letter for the previous query dated January 24, 2012, from the MNDNR (Appendix A). The MNDNR stated that they had reviewed the Xcel Energy Ash Landfill expansion project (including the Project Site) for potential effects to known occurrences of rare features

and had concluded that the Project did not have the potential to adversely affect any known occurrences of rare features. The Proposer queried the NHIS database for the lands within 1-mile of the Project in May 2016 to update the information from the previous EAW. The results for the vicinity of the Project are as follows:

Scientific Name	Common Name
<i>Hieracium longipilum</i>	Long-bearded Hawkweed
<i>Besseyia bullii</i>	Kitten-tails
<i>Alasmidonta marginata</i>	Elktoe
<i>Carex crus-corvi</i>	Raven's Foot Sedge
<i>Rorippa sessiliflora</i>	Sessile-flowered Cress
<i>Lampropeltis triangulum</i>	Milksnake
Dry Bedrock Bluff Prairie (Southern) Type	Dry Bedrock Bluff Prairie (Southern)
Red Oak - Sugar Maple - Basswood - (Bitternut Hickory) Forest Type	Red Oak - Sugar Maple - Basswood - (Bitternut Hickory) Forest
Silver Maple - Green Ash - Cottonwood Terrace Forest Type	Silver Maple - Green Ash - Cottonwood Terrace Forest
<i>Buteo lineatus</i>	Red-shouldered Hawk
<i>Physaria ludoviciana</i>	Bladder Pod

Previous MNDNR rare plant surveys have documented known populations of Bladderpod (*Physaria ludoviciana*), which is a plant species listed by the MNDNR as endangered. Bladderpod is a small perennial species from the mustard family with yellow flowers found in the dry plains habitats of the western United States. The plant has a very limited known range in Minnesota, documented only on dry, sand-gravel prairies and bluff rock prairies on south facing bluffs in the immediate vicinity of the city of Red Wing. The greatest threat to Bladderpod plants in Minnesota is the encroachment of forests and shrubs, which is occurring in the absence of natural prairie fires. The MNDNR is currently undertaking a long-term monitoring program to determine the habitat management needs to sustain the Bladderpod plants.

- c. **Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species.**

During one of the previous expansions at the Xcel Energy Ash Landfill, a rare plant survey documented populations of Bladderpod at the site. The plant survey found several populations of Bladderpod plants on undeveloped property north of Xcel Energy Ash Landfill.

- d. **Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to fish, wildlife, plant communities, and sensitive ecological resources.**

Xcel Energy developed a Bladderpod protection plan (Bladderpod Plan) for their land disposal facility. The MNDNR reviewed and approved the Bladderpod Plan. The Bladderpod Plan requires minimum setback distances of at least 10 feet between known Bladderpod locations and grading or construction activities, as well as additional BMPs to protect the existing Bladderpod populations. Based on the MNDNR's previous plant survey and the disturbed nature of the site planned for the Project, the site development is not anticipated to cause adverse effects to

Bladderpod. However, under Xcel Energy's existing Bladderpod protection plan, construction of the Project will follow the approved procedures to ensure that effects to the plant would not occur.

14. Historic Properties:

Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close proximity to the site. Include: 1) historic designations, 2) known artifact areas, and 3) architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss any anticipated effects to historic properties during project construction and operation. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.

The Project will not impact any previously-recorded archaeological or to National or State Register-listed history/architecture sites.

The Proposer did a Phase 1 Archaeological Survey that included the Project Site. The Survey found no archaeological sites on the Project Site.

Between Xcel Energy and the City, the Project Site has been the subject of several searches through the SHPO through the Minnesota Historical Society (1991, 2011, and 2016 (Appendix B)).

The Proposer will immediately halt construction and contact the Minnesota Office of State Archaeologist if the discovery of cultural resources occurs during construction or operation of the Project.

15. Visual:

Describe any scenic views or vistas on or near the Project Site. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.

The Proposer's construction and operation of the Project would not significantly modify existing land use. All processing activities including offloading and loading of trucks occurs inside the Process Building. The Process Building doorways face north, out and away from the nearest residential areas to the south and will minimize the visibility of the Project and its associated operations. The Proposer will maintain the forested areas south of the Project Site to minimize visibility of the Project.

In 2012, the City required Xcel Energy to establish a Scenic Easement as part of its CUP approval for the expansion of the Xcel Energy Ash Landfill. The City required Xcel to grant the city a 250-foot buffer on Outlot-A through a conservation easement as shown in Figure 3. The Project will not impact the easement.

16. Air:

- a. Stationary source emissions - Describe the type, sources, quantities and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants, and any greenhouse gases. Discuss effects to air quality including any sensitive receptors, human health or applicable regulatory criteria. Include a discussion of any methods used assess the project's effect on air quality and the results of that**

assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effects from stationary source emissions.

The Proposer submitted an air applicability determination to the MPCA to determine if the MPCA will require an air permit for the Project. The MPCA Air Program issued a determination letter on November 28, 2016, concurring that the potential to emit from the Project is below permitting thresholds and that the Project does not require an air permit.

There are no significant stationary source emissions associated with the Project.

- b. Vehicle emissions - Describe the effect of the project's traffic generation on air emissions. Discuss the project's vehicle-related emissions effect on air quality. Identify measures (e.g. traffic operational improvements, diesel idling minimization plan) that will be taken to minimize or mitigate vehicle-related emissions.**

In addition to the current daily trucks entering the Project Site from the Xcel Generating Plant, the Proposer expects approximately 20 trucks per day to travel from the Xcel Energy Ash Landfill to the Project Site and approximately 3 trucks per day to remove roll-offs filled with recovered ferrous and nonferrous materials from the Project Site. During construction of the Project, the Proposer expects approximately 15 additional trucks per day at the Project Site; this increase is relatively small in number for only 3 to 4 months.

The effect on local and regional air quality resulting from vehicle-related air emissions associated with the Project is not anticipated to cause significant effects. Trucks idling on site when delivering loads of ash and reloaded with processed ash could cause temporary periods of idling emissions near the Project Site.

- c. Dust and odors - Describe sources, characteristics, duration, quantities, and intensity of dust and odors generated during project construction and operation. (Fugitive dust may be discussed under item 16a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize or mitigate the effects of dust and odors.**

Dust

The primary source of potential dust emissions is road dust from trucks delivering the ash to the Project Site and returning to the landfill as well as trucks entering from Bench Street to haul roll-offs. Daily traffic on internal haul roads will average 23.9 miles per day as presented in Item 18.

Excavating, offloading, processing, storage, and loading activities will not contribute any significant dust because combustor ash is not considered a dust source. In addition, offloading, processing, storage, and loading activities will occur inside the Process Building.

Combustor ash is not considered a dust source.

There is no definitive research that specifies a threshold moisture content at which exposed dried ash becomes susceptible to wind erosion. Northern States Power (NSP) has conducted air modeling at its Refuse Derived Fuel (RDF) ash landfill in the city of Becker, Minnesota. The NSP modeling results indicate that a 17 mile per hour (mph) wind would initiate wind erosion at 1% moisture content. A 20 mph wind would initiate wind erosion if the moisture content is 5% to

15%. Average wind speeds of this velocity are not common at this site for extended durations. Moisture conditions of roughly 4% or more should be sufficient enough to eliminate or minimize dust emissions. The Proposer estimates the moisture content of the ash is similar to that of moist gravel like clay (22 to 29%) and is self-cementing. Because of this, the Proposer does not anticipate the ash will become susceptible to wind erosion.

Odors

There is no history of odor issues associated with combustor ash from Xcel Energy. Combustor ash does not typically generate significant odors and not considered a potential source for this Project.

17. Noise:

Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including 1) existing noise levels/sources in the area, 2) nearby sensitive receptors, 3) conformance to state noise standards, and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.

Noise generation sources associated with the Project

- Construction equipment during construction of the Process Building
- Excavator used at the Xcel Energy Ash Landfill to obtain placed ash for processing
- Trucks delivering and removing ash to the Project Site
- Trucks removing processed materials from the Project Site
- Processing equipment consisting of conveyors, screens and a crusher inside Process Building.

Construction and excavation equipment

- Noise impacts from construction equipment will last 3 to 4 months
- Excavator used at the Xcel Ash Landfill Monday through Friday

Process traffic

- Trucks delivering and removing ash – 35 trucks per day
- Trucks removing processed material - 5 loads per day

Process equipment

- All processing equipment is inside the Process Building. Sound levels for similar processing equipment at a similar facility in Linth, Switzerland (February 12016) measured at 85 decibels peak inside the building structure. The Proposer measured the same sound level inside the Red Wing Material Recovery Facility building with a substantial 15 decibel drop measured 10 feet outside an open overhead doorway (February 2016). This is similar to the design of the Process Building.

Mitigation

Construction equipment - Construction equipment must be in proper operating condition including mufflers. Construction equipment will operate between the hours of 7 a.m. and 6 p.m.

Ash delivery from the Xcel Generating Plant – Trucks must be in proper operating condition including mufflers. Trucks will continue to operate 7 a.m. to 5 p.m., Sunday through Saturday.

Ash delivery from the Xcel Energy Ash Landfill and processing activities – Trucks and front end loaders must be in proper operating condition including mufflers. Trucks and other equipment will operate 7 a.m. to 5 p.m., Monday through Friday, and Saturdays, if required, to handle additional volumes.

Trucks hauling roll-off containers - Trucks must be in proper operating condition including mufflers. The trucks will operate Monday to Friday from 7 a.m. to 5 p.m.

The Process Building doors face north, out and away from residential areas to the south which minimizes the noise from the Process Building and its associated operations. The Proposer will maintain the forested areas south of the Project Site to buffer noise from the Process Building. The nearest receptor to the Project Site is over 900 feet south of the Process Building and over 225 feet higher in elevation.

The Project must meet state and local noise ordinance.

18. Transportation:

- a. Describe traffic-related aspects of project construction and operation. Include: 1) existing and proposed additional parking spaces, 2) estimated total average daily traffic generated, 3) estimated maximum peak hour traffic generated and time of occurrence, 4) indicate source of trip generation rates used in the estimates, and 5) availability of transit and/or other alternative transportation modes.

Because the Project Site is currently undeveloped, no established parking exists. The Project will construct and provide employee and visitor parking for up to 10 vehicles. Employee vehicle traffic occurs at the Project Site on a daily basis. Maintenance vehicle traffic occurs as needed.

See Figure 18 for anticipated truck traffic patterns for the Project. Below is a summary of the expected truck traffic associated with the Project.

Year of Operation/ Source of Traffic	Traffic Route	Days of Operation	Typical Hours of Operation	Average Daily Distance Traveled (feet)	Average Daily Traffic Count	Maximum Daily Traffic Count
<i>Xcel Energy Landfill and Generating Plant</i>						
Trucks from Xcel Energy Red Wing Generating Plant to Process Building	Internal Haul Roads and Bench Street	Sunday - Saturday	7 a.m. to 5 p.m.	48,000	10	12
Trucks from Xcel Energy Ash Landfill to Process Building	Internal Haul Roads	Monday – Friday	7 a.m. to 5 p.m.	64,000	20	23
Trucks from Process Building hauling Roll-Off containers	Internal Haul Roads and Bench Street	Monday – Friday	7 a.m. to 5 p.m.	14,000	3	5

During the 3 to 4 months of Project construction, about 15 construction-related trucks per day will enter and leave the Project through the internal haul roads and Bench Street. The construction traffic will not coincide with the Project operations included above.

- b. Discuss the effect on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the project's impact on the regional transportation system.

If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW. Use the format and procedures described in the Minnesota Department of Transportation's Access Management Manual, Chapter 5 (available at: <http://www.dot.state.mn.us/accessmanagement/resources.html>) or a similar local guidance.

Traffic that occurs on internal haul roads will not impact public use roads as shown on Figure 18. The Project Site is approximately 1-mile south of U.S. Highway 61 with a site access road off of CSAH 1 also known as Bench Street. According to the Minnesota Department of Transportation, the annual average daily traffic level on Bench Street is 8,200 vehicles per day (2007). The only new truck traffic added to Bench Street will be for roll-off container removal accounting for 3 trucks per day. Please note that ash hauling from the Xcel Energy Red Wing Generating Plant is already occurring.

The expected increase in traffic on Bench Street is 3 vehicles per day or 0.0004%.

- c. Identify measures that will be taken to minimize or mitigate project related transportation effects.

No mitigation measures are proposed because the increase to traffic on public access road by truck traffic is negligible.

19. Cumulative Potential Effects: (Preparers can leave this item blank if cumulative potential effects are addressed under the applicable EAW Items)

- a. Describe the geographic scales and timeframes of the project related environmental effects that could combine with other environmental effects resulting in cumulative potential effects.

The Project Site is in the proximity of the County/City Landfill (solid waste permit number SW-174) and Xcel Energy Ash Landfill (solid waste permit number SW-307). In addition, the city of Red Wing is in the process of developing a laydown area for municipal construction materials on the City owned property immediately to the east of the Project as shown in Figure 3.

- b. Describe any reasonably foreseeable future projects (for which a basis of expectation has been laid) that may interact with environmental effects of the proposed project within the geographic scales and timeframes identified above.

The Proposer has no plans to operate the Project past the 10-year lease agreement with the City with a possible 5-year extension. With the exception of The City's new laydown area adjacent to the Project, the City does not anticipate other projects near in time or location.

- c. Discuss the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to these cumulative effects.

The Proposer anticipates the Project will result in minimal potential environmental impacts. The Project will not change the operation of the Xcel Energy Ash Landfill. The existing landfill

operations in terms of waste acceptance, traffic, noise, and dust will remain the same. The City's new laydown area will generate dust, noise and traffic. Discussion of the potential cumulative impacts from the proposed project follows.

Traffic

The City's laydown area will add 3 new trucks per day during the 7 months out of the year it operates. The Proposer expects the Project will add 3 new trucks per day to Bench Street. The removal of roll-offs from the Project Site that contain the recovered metals obtained during processing. Roll-off trucks will enter and leave the Project Site via the eastern internal access road and the main east-west access road and Bench Street.

The annual average daily traffic level on Bench Street is 8,200 vehicles per day in 2007 according to the Minnesota Department of Transportation. The expected increase in traffic on Bench Street is 3 vehicles per day or 0.0004% of existing vehicles per day.

Trucks idling at the Project Site when delivering loads of ash and reloaded with processed ash could cause temporary periods of idling emissions near the Project Site.

During construction there will be approximately 15 additional trucks per day at the Project Site. This increase is relatively small and temporary in nature (i.e., 3 to 4 months).

Traffic that occurs on internal haul roads will not impact public use roads as shown on Figure 18.

Dust

The moisture content of the ash is similar to that of moist clayey gravel (22 to 29%).

There is no definitive research that specifies a threshold moisture content at which exposed dried ash becomes susceptible to wind erosion. Modeling done by NSP (1991) at its RDF ash landfill in Becker indicates that a 17 mph wind would initiate wind erosion at 1% moisture content. A 20 mph wind would initiate wind erosion if the moisture content is 5% to 15%. Average wind speeds of this velocity are not common at this site for extended durations. Moisture conditions of roughly 4% should be sufficient enough to eliminate or minimize dust emissions.

Land disposal operations for Xcel Energy Ash Landfill has occurred in the vicinity of the Project Site for nearly 30 years. Procedures for dust control at the land disposal facilities have followed permits conditions and Minn. R. 7035.2885 and routine landfill operations must continue to do so. There have been no reports of dust issues related to landfill operations.

Dust from truck traffic represents the greatest source of dust assuming an average 23.9 miles of traffic daily on internal haul roads. The Proposer intends to control dust on the internal haul roads on an as-needed basis. The Proposer will control dust as specified in its MPCA Solid Waste Transfer Permit.

The City is planning to use a crusher at its planned laydown area for 7 months per year

Noise

The nearby ongoing activities at the Xcel Energy Ash Landfill and the County/City Landfill will continue to generate noise in the vicinity of the Project. Landfill activities include usage of dump trucks and heavy equipment such as dozers, compactors, and graders. The landfills are in compliance with local and state of Minnesota noise standards.

The Project will see an increase in noise in some area of operation and decrease in other as follows.

- During years of processing Xcel's ash, activities will increase to include excavation and truck traffic between the Xcel Energy Ash Landfill and the proposed Project. However, the landfill will not operate on weekends and holidays as combustor ash is directed to the Process Building for storage and processed the following week. Therefore, noise associated with landfill activities may increase Monday through Friday between 7 a.m. and 5 p.m., but completely eliminated during weekends and holidays.
- During years of processing Xcel's ash, larger capacity off highway articulated dump trucks will replace the current quad axel dump trucks that haul to Xcel Energy Ash Landfill. The larger capacity off highway trucks will minimize the total number of trucks entering the landfill because of the larger capacity. In addition, use of the off highway trucks will eliminate the slamming of tail gates associated with the quad axel dump trucks.

The City is planning to use a crusher at its laydown area for 6 weeks per year. The Proposer did a sound study on the crusher activities at the City's laydown area (Figure 7). The study shows the noise generated by the crusher is below City and State noise ordinance requirements.

The City's crushing operation is the loudest and most continuous noise source in the Project area which includes the two landfills. The combination of the noise from the Project, the on-going operation of the landfills, and the City's crushing operation must be compliance with local and state noise standards.

20. Other Potential Environmental Effects: If the project may cause any additional environmental effects not addressed by items 1 to 19, describe the effects here, discuss the how the environment will be affected, and identify measures that will be taken to minimize and mitigate these effects.

None

RGU CERTIFICATION. *(The Environmental Quality Board (EQB) will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.)*

I hereby certify that:

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

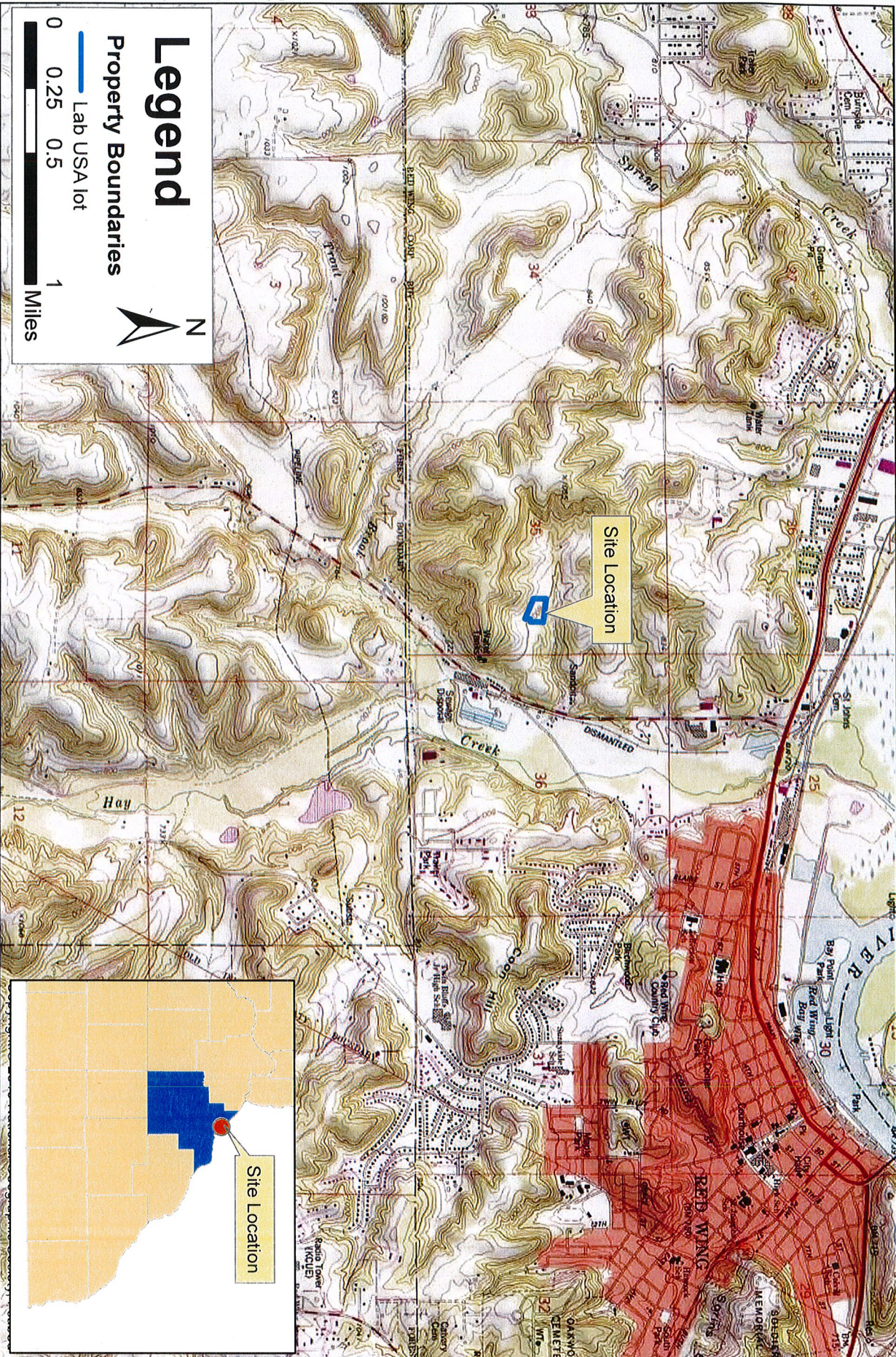
Signature: _____



Date: _____

11/29/16

**Dan R. Card, P.E., Supervisor
Environmental Review Unit
St. Paul Office
Resource Management and Assistance Division**



1200 25TH AVENUE SOUTH
ST. CLOUD, MN 56302-1717
PHONE: (320) 229-4300
www.sehinc.com

Project: LABUS 137360
Print Date: 5/24/2016
Map by: jaso
Projection: UTM 15N
Source: USA Topo, Mncgeo, and SEH

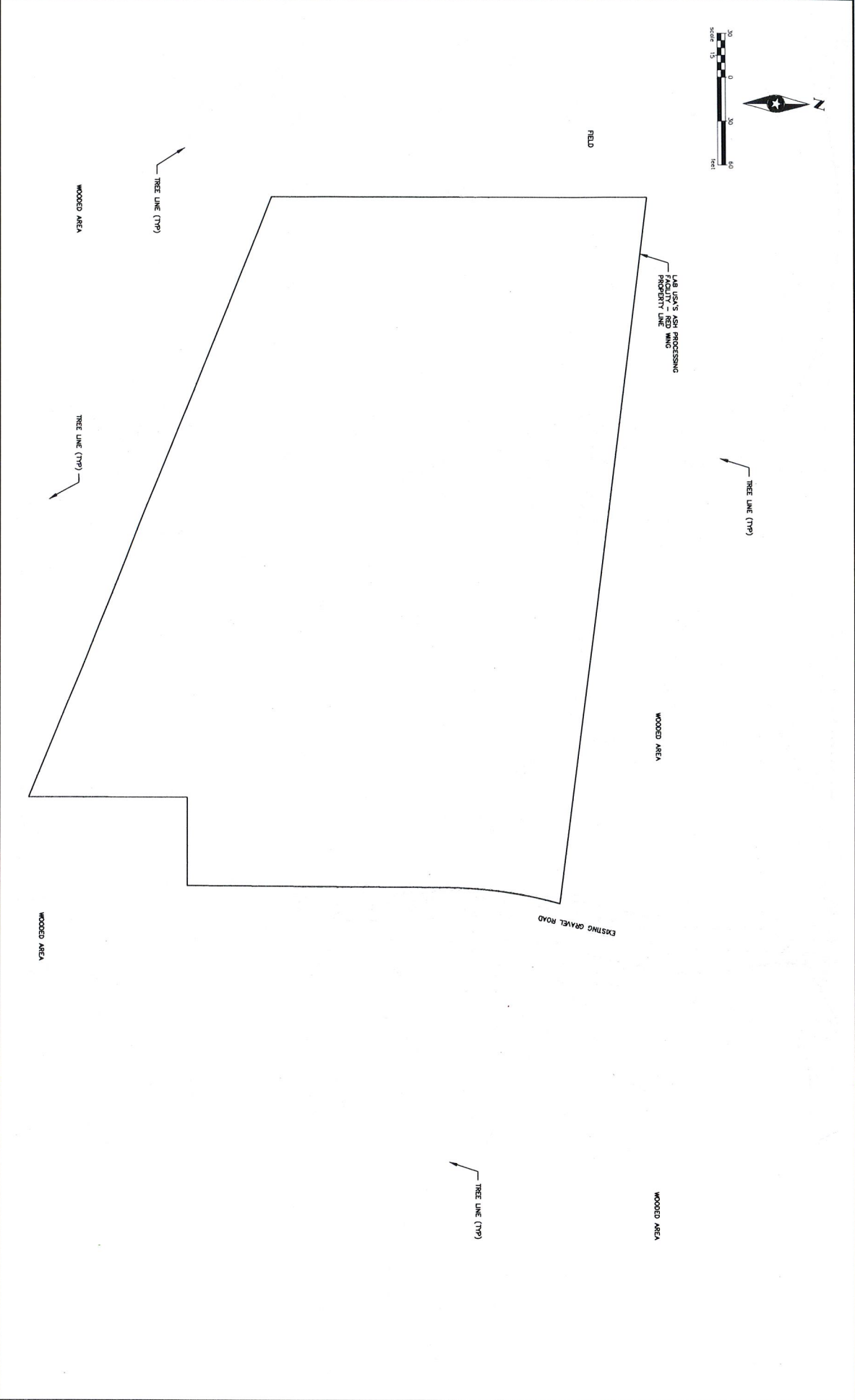


SITE LOCATION AND TOPOGRAPHIC MAP

Lab USA's Ash Processing Facility - Red Wing
Goodhue County, Minnesota

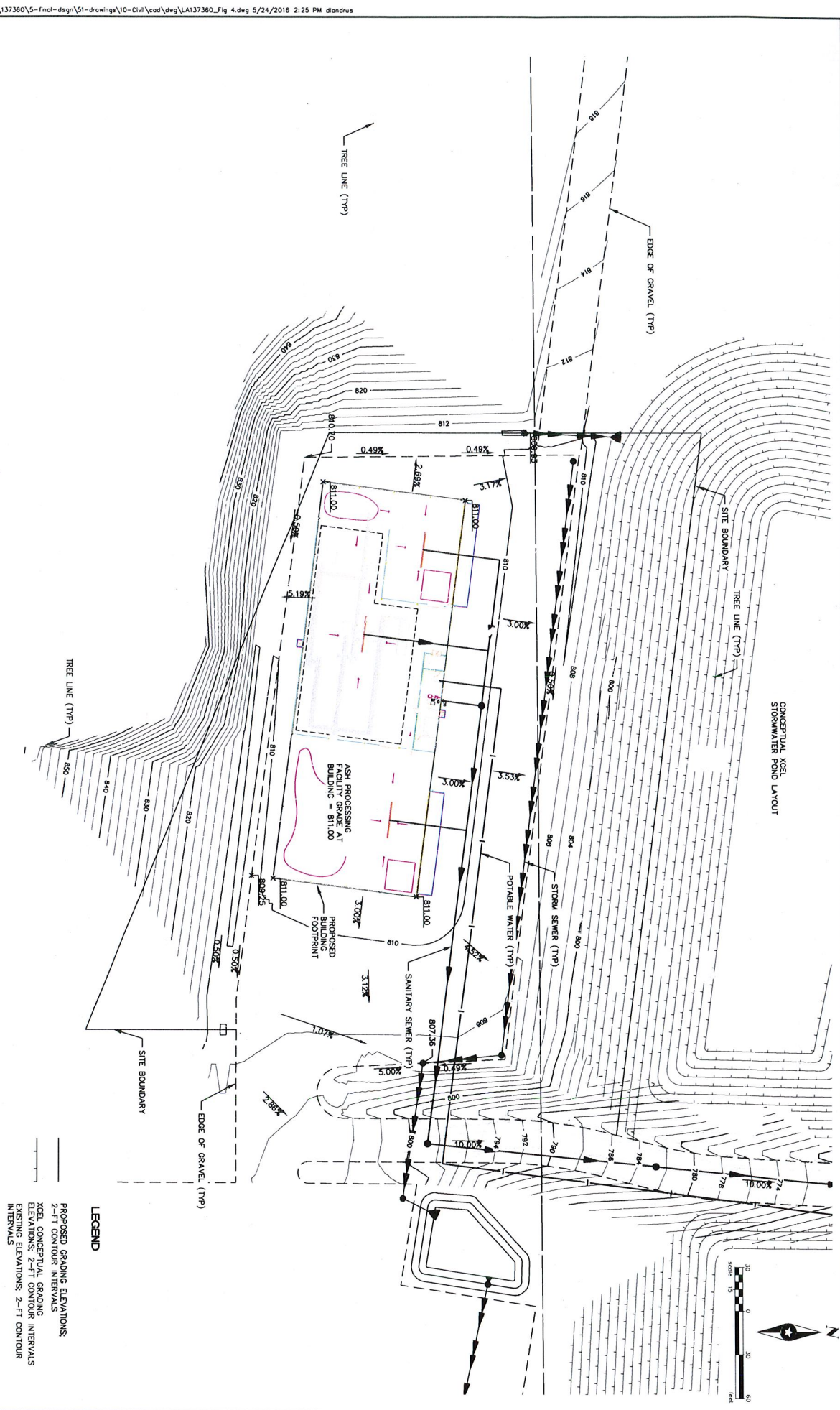
Figure
1

DESIGNED BY: DOL	NO.	BY	DATE	REVISIONS	PRELIMINARY: NOT FOR CONSTRUCTION	 PHONE: 202.228.4300 2000 25TH AVENUE SOUTH ST. CLOUD, MN 56302-1717 www.sehinc.com	 LAB USA'S ASH PROCESSING FACILITY - RED WING	EXISTING CONDITIONS	FILE NO. LABUS 137360	FIG 2
CHECKED BY: DSH										
DESIGN TEAM										

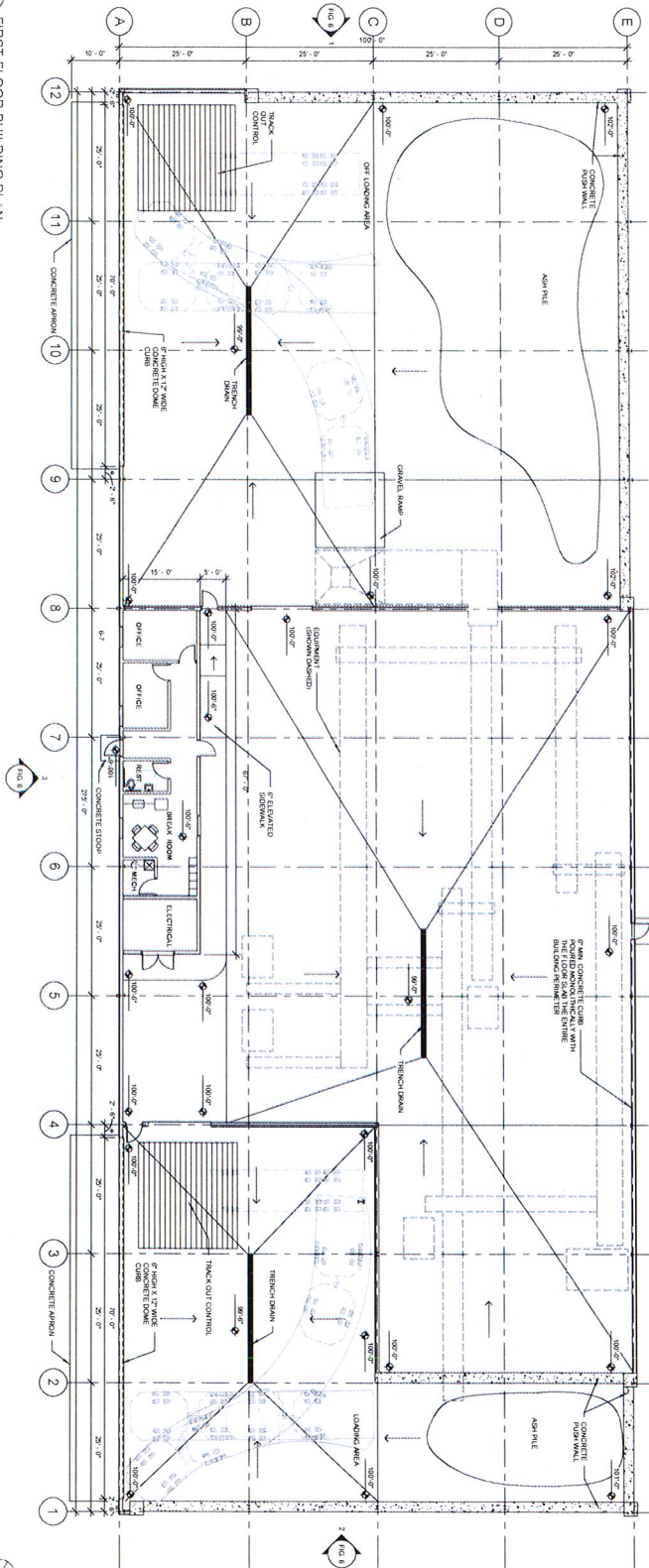




LAB USA		DRAWN BY: DOL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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2 FIRST FLOOR BUILDING PLAN
3/32" = 1'-0"



1 PERSPECTIVE

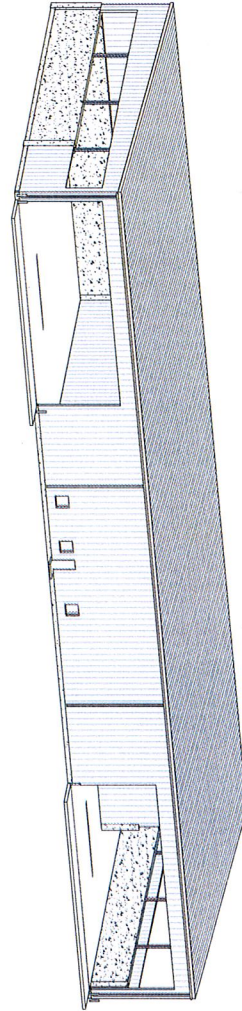


Fig. 5

SHEET CONTENTS
FLOOR PLAN AND
PERSPECTIVE

SEH FILE NO.
ISSUE DATE
DESIGN BY
DRAWN BY
PROJECT MGR

LABUS 137360
05.27.2016
M
KX
BR

Lab
USA
LAB USA'S
ASH
PROCESSING
BUILDING
RED WING, MN

MARK	DATE	DESCRIPTION

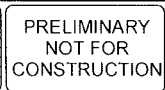
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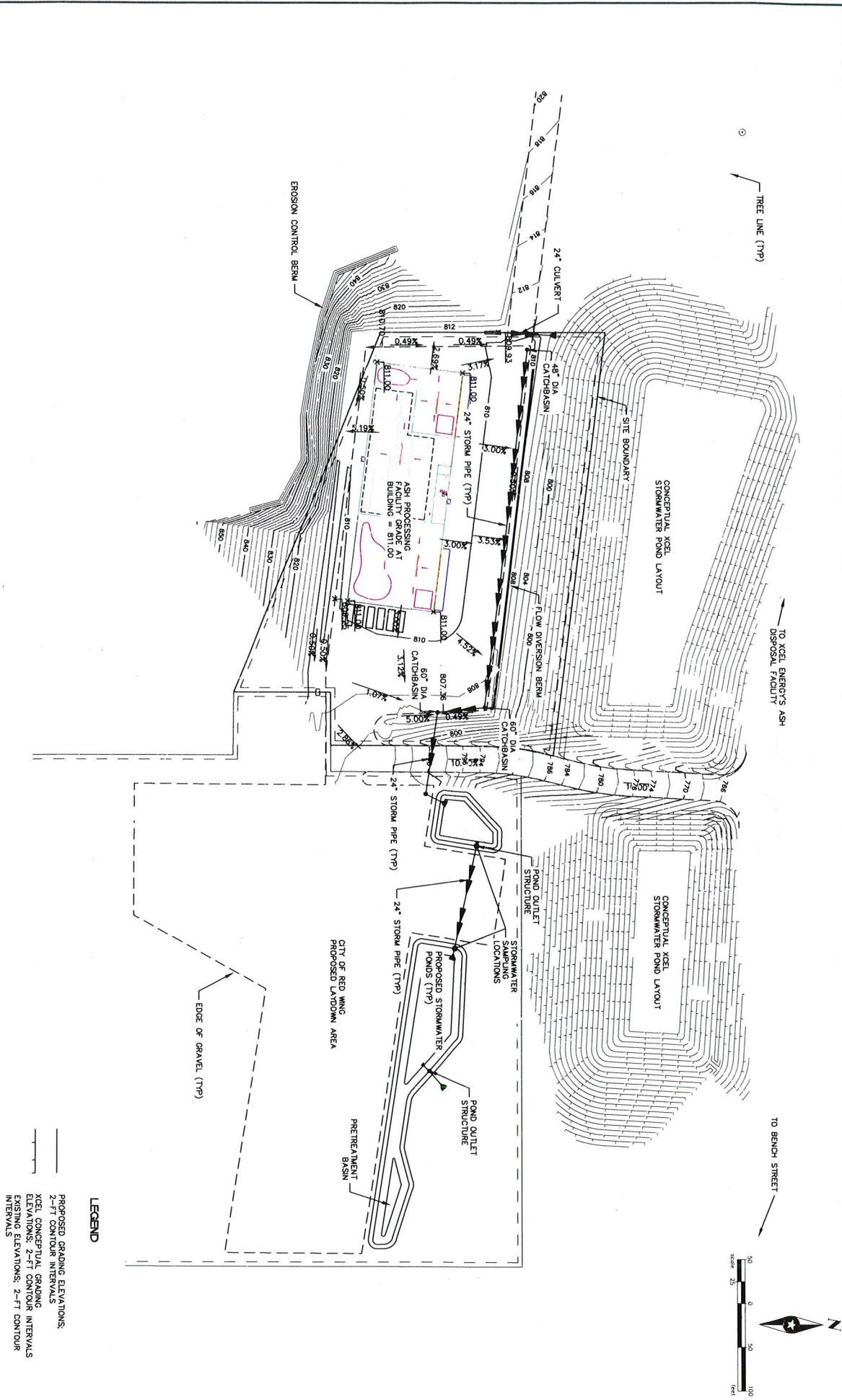
Short Elliott Hendrickson Inc.
1200 29th Avenue South
St. Cloud, MN 56302-1717
320.229.4300 main | 888.908.8166 fax
800.572.0617 toll free | www.sehinc.com





SEH FILE NO	LABUS 133957
ISSUE DATE	05 27 2016
DESIGN BY	JM
DRAWN BY	KK
PROJECT MGR	SR







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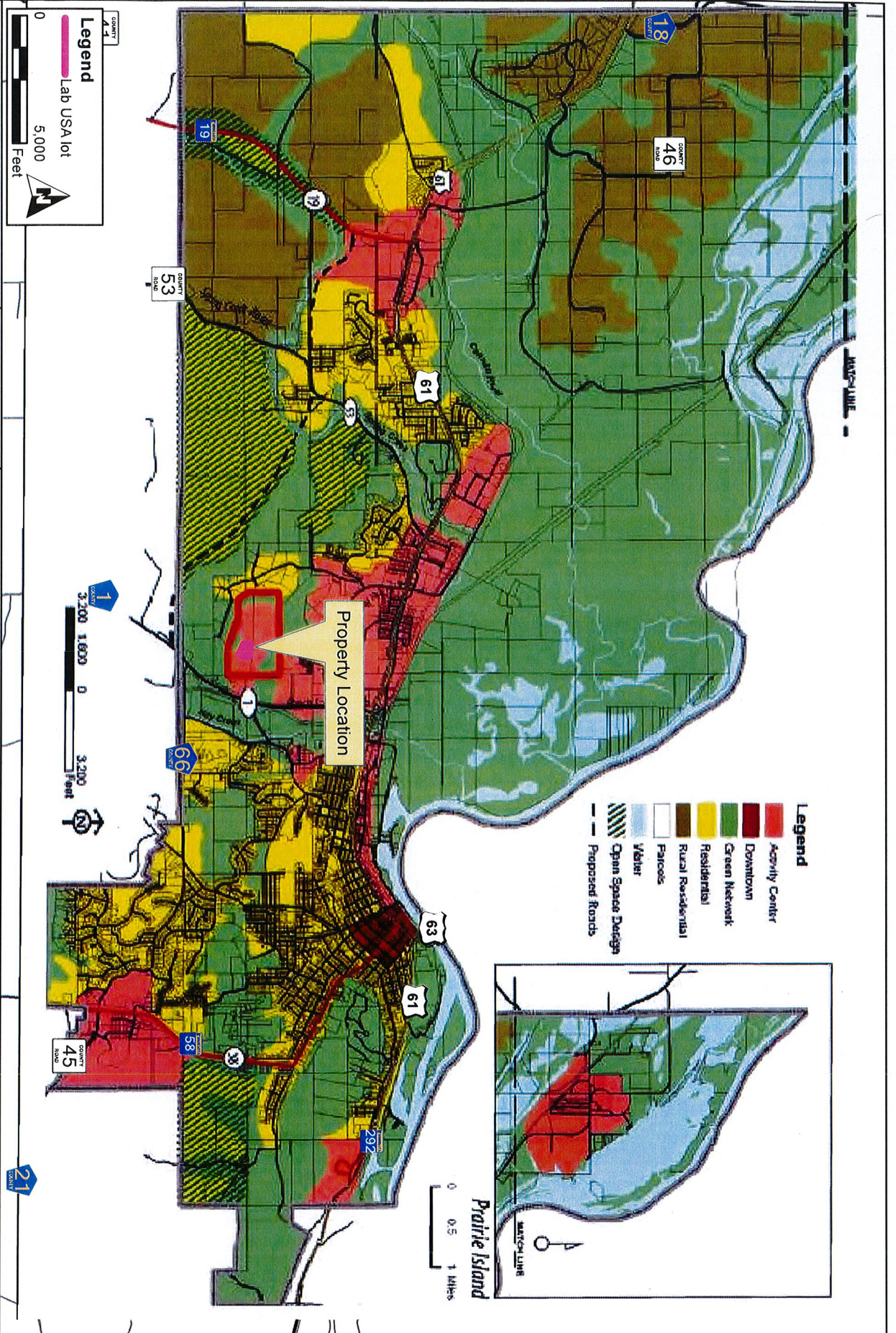
Project: LABUS 133967
 Print Date: 5/26/2016
 Map by: msherrill
 Projection: UTM Zone 15N
 Source: MDH
 Geodetic: County
 ESRI



Prime Farmland
 Lab USA's Ash Processing Facility - Red Wing
 Goodhue County MN

Figure
 9

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Legend

Lab USA lot

City of Red Wing Zoning

A-Agriculture

AC-Agriculture Conservation

AR-Agriculture Residential

B1-Local Business

B2-General Business

B2a-General Business (adj. to B3)

B3-Central Business

CI-Civic

I1-Light Industrial

I2-General Industrial

MC-Mixed Use/Industrial/Office Commercial

MCT-Mixed Use Commercial Tourism

PUD-Planned Unit Development

Prairie Island Indian Community

R1-Residential one (3-5-5 units/acre)

R2-Residential Two (5-8 units/acre)

RF-Riverfront

RM1-Residential Multi-Family One (8-16 units/acre)

RM2-Residential Multi-Family Two (+16 units/acre)

Split Zoning

0 700 1,400 Feet



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Print Date: 5/26/2016

Map by: msherrill
Projection: UTM Zone 15N
Source: MCH
Goodhue County
ESRI



City of Red Wing Zoning Map
Lab USA's Ash Processing Facility - Red Wing
Goodhue county MN

Figure
11



Path: \\sp3020-1\Projects\KOU\LABUS1339673-env-stky-regis\GIS\Drafted_Map\fig12_AdjacentPropertyOwners.mxd



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Project: LABUS 133967
Print Date: 5/25/2016

Map by: msherrill
Projection: UTM Zone 15N
Source: MDH
Goodhue County
ESRI
City of Red Wing Parcel data



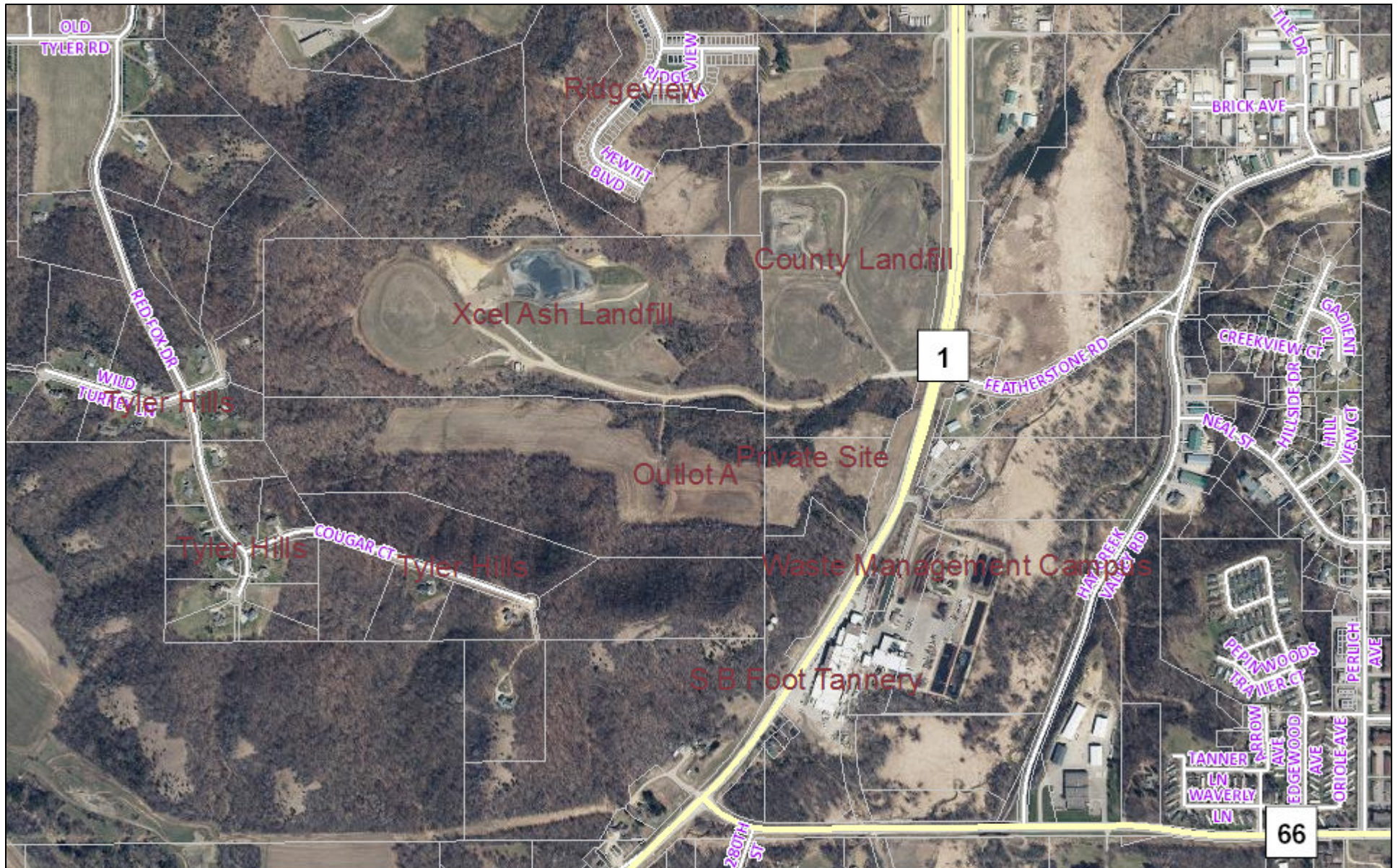
Adjacent Property Owners

Lab USA's Ash Processing Facility - Red Wing
Goodhue County, MN

Figure
12

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Area Map



February 11, 2016

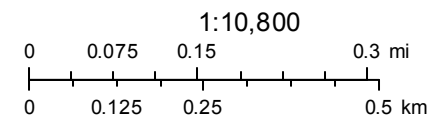
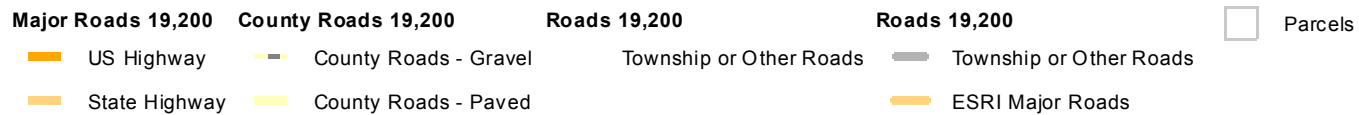


Figure 12b

Path: \\up3020-1\Projects\KOU\LABUS1339673-env-stdy-regs\99_GIS\Drafted_Maps\Fig13_SoilsMap_Updated.mxd



Legend

- Lab USA lot
- Soil Boundary



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Project: LABUS 133967
Print Date: 5/26/2016

Map by: msherrill
Projection: UTM Zone 15N
Source: MDH
Goodhue County
ESRI
SSURGO Soil Survey



SSURGO Soils Map - Percent Slope

Lab USA's Ash Processing Facility - Red Wing
Goodhue County, MN

Figure
13

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Legend

 PWI Basins

 PWI Streams

 Property Boundaries

 Lab USA lot

0 0.25 0.5 1
Miles



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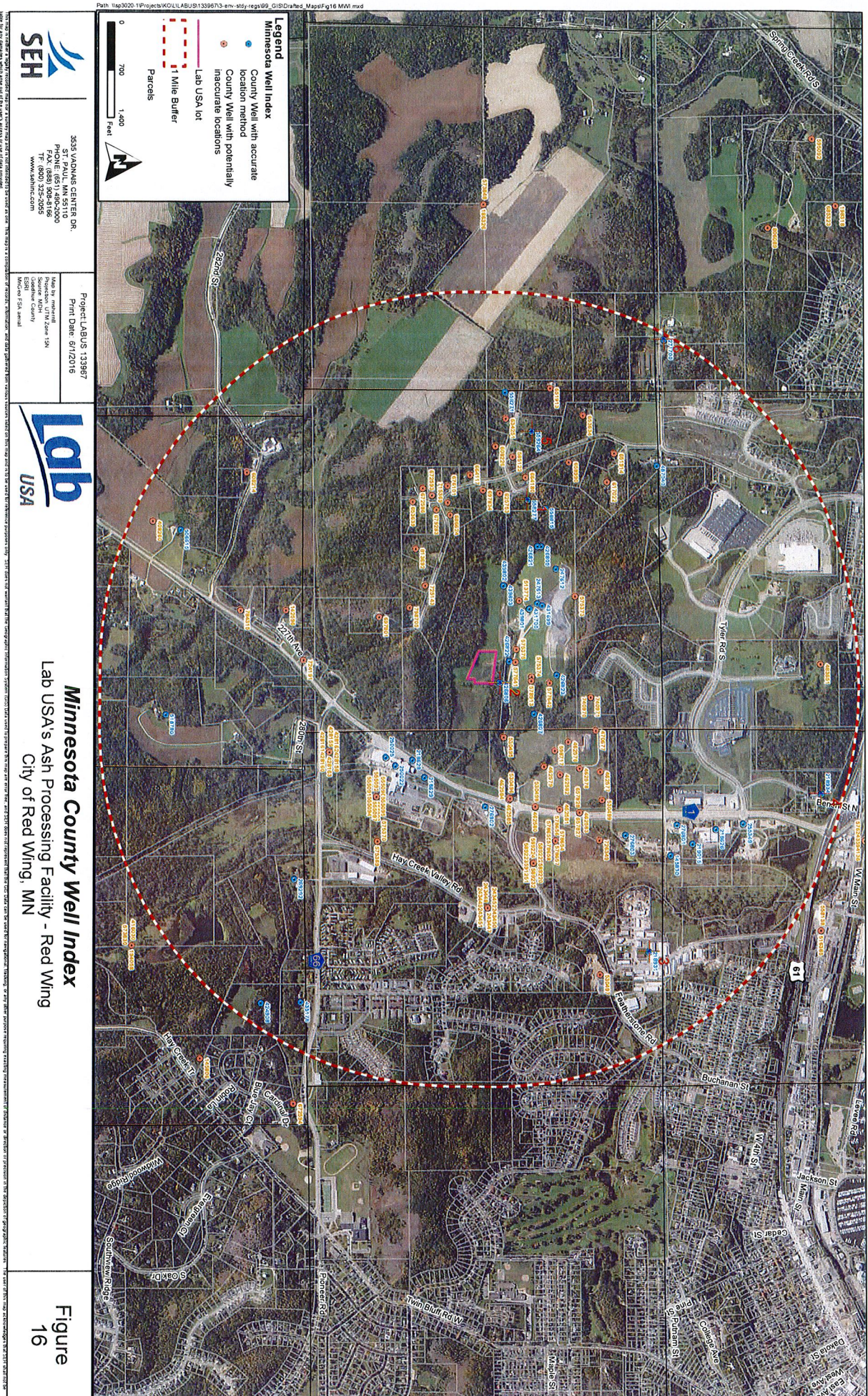
Project: LABUS 137360
Print Date: 5/24/2016

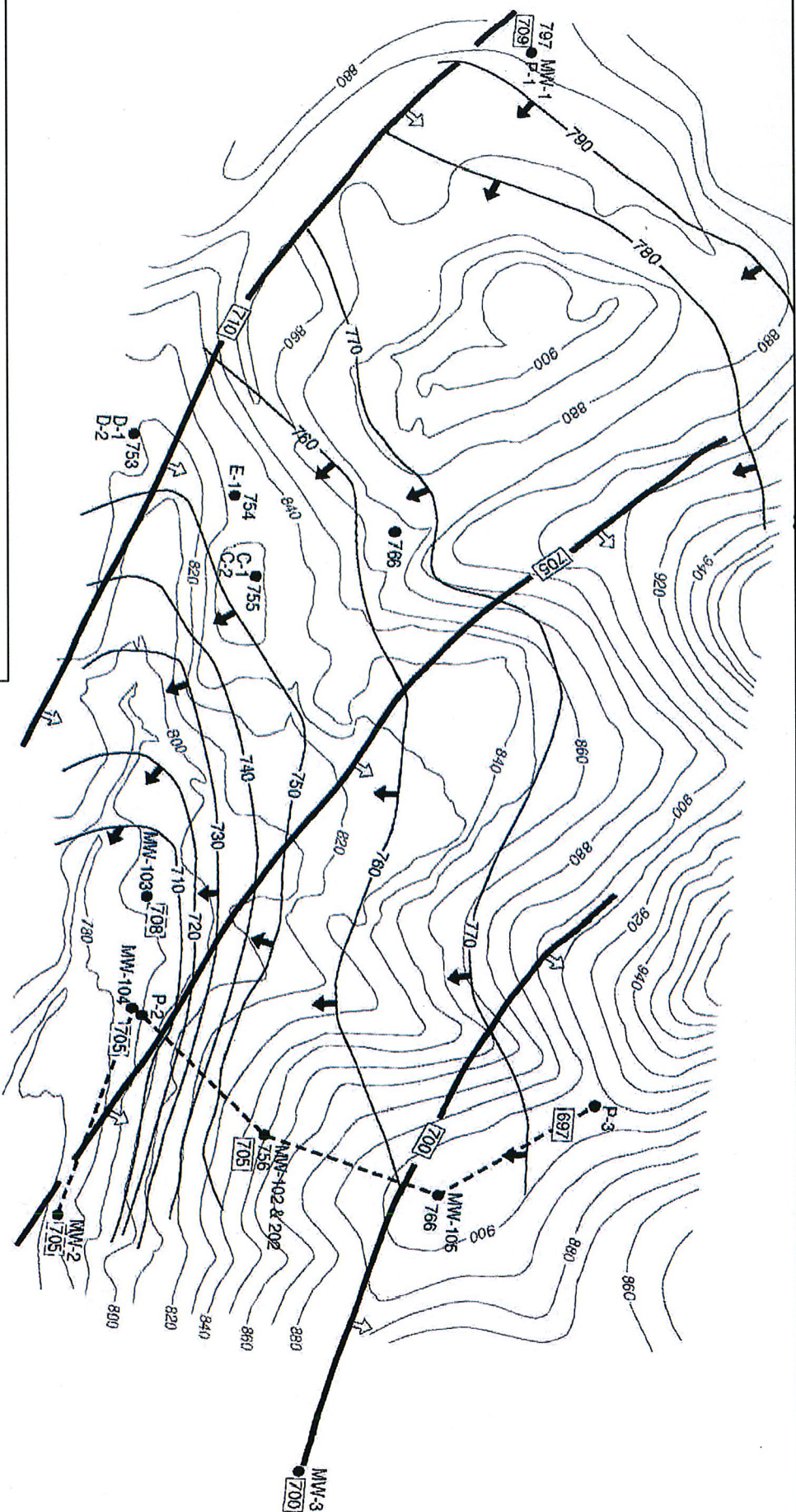
Map by: jasp
Projection: UTM 15N
Source: USA Topo, MGeo, and SEH



PUBLIC WATERS INVENTORY MAP
Lab USA's Ash Processing Facility - Red Wing
Goodhue County, Minnesota

Figure
14





Lab USA lot

- 705** Measured water level for regional aquifer (Iron-Galesville Sandstone/lowermost Franconia Formation)
- 706** Measured water level for water-table aquifer (fractured upper Franconia Formation)
- 708** Measured water level where regional and water-table aquifers have similar levels

0 125 250 Feet

----- Line of cross-section in Figure 26



Project LABUS 133967
Print Date: 6/1/2016

ap by: msherrill

Source: MDH ESRI

el, A.C., Tipping, R.G., Alexander, E.C., Jr., Green
er, J.H., and Alexander, E.C. 2003

geology of the Paleozoic bedrock in southeastern

1950s Geological Survey

no. This map is a compilation of recor

Measurement of distance or direction or position



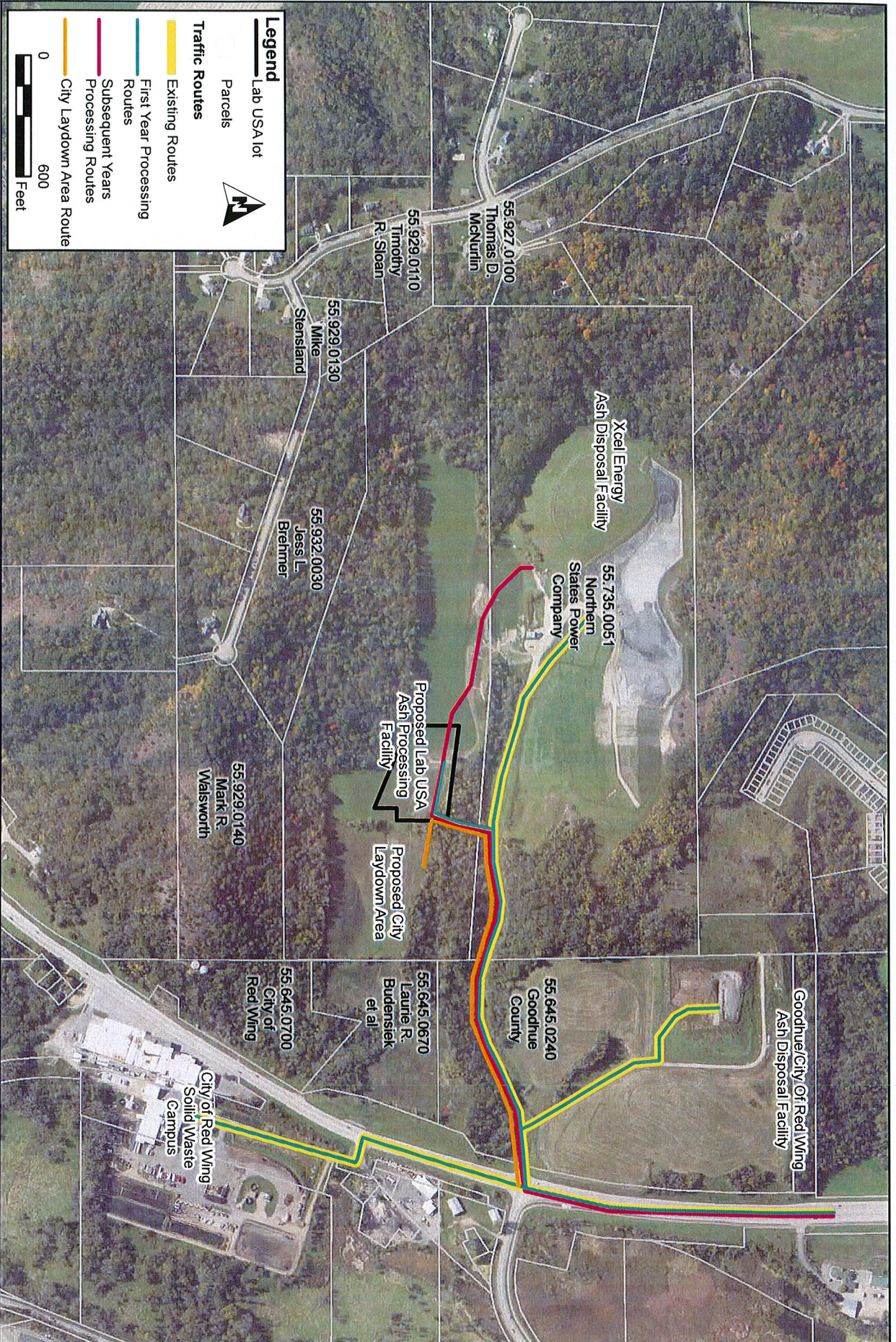
Lab
USA

Local Water Table &

Potentiometric Surface Contour Map

Lab USA's Ash Processing Facility - Red Wing
City of Red Wing, MN

Figure 17



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Project: LABUS 133967
Print Date: 6/19/2016

Map by: msherrill
Projection: UTM Zone 15N
Source: MDH
Goodhue County
ESRI



Traffic Routes
Lab USA's Ash Processing Facility - Red Wing
City of Red Wing, MN

Figure
18

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Minnesota Department of Natural Resources

Division of Ecological and Water Resources, Box 25

500 Lafayette Road

St. Paul, Minnesota 55155-4025

Phone: (651) 259-5109 E-mail: lisa.joyal@state.mn.us

APPENDIX A

January 24, 2012

Correspondence # ERDB 20120041-0002

Mr. Manuel Castillo
Xcel Energy
414 Nicollet Mall, MP 7B
Minneapolis, MN 55401

RE: Natural Heritage Review of the proposed Red Wing RDF Ash Disposal Facility Expansion;
T113N R15W Section 35; Goodhue County

Dear Mr. Castillo,

As requested, the above project has been reviewed for potential effects to known occurrences of rare features. A search of the Minnesota Natural Heritage Information System (NHIS) did identify rare features within an approximate one-mile radius of the proposed project, but these records did not include any federally listed species and were either historical or not of concern given the project details that were provided with the data request form. As such, I do not believe the proposed project will adversely affect any known occurrences of rare features.

The Natural Heritage Information System, a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist within the project area.

For environmental review purposes, the results of this Natural Heritage Review are valid for one year; the results are only valid for the project location (noted above) and project description provided on the NHIS Data Request Form. Please contact me if project details change or if an updated review is needed.

Please note that locations of the gray wolf (*Canis lupus*), state-listed as special concern, and the Canada lynx (*Lynx canadensis*), federally-listed as threatened, are not currently tracked in the NHIS. As such, the Natural Heritage Review does not address these species.

Furthermore, the Natural Heritage Review does not constitute review or approval by the Department of Natural Resources as a whole. Instead, it identifies issues regarding known occurrences of rare features and potential effects to these rare features. Additional rare features for which we have no data may be present in the project area, or there may be other natural resource concerns associated with the proposed project. For these concerns, please contact your DNR Regional Environmental Assessment Ecologist (contact information available at http://www.dnr.state.mn.us/eco/ereview/erp_regioncontacts.html). Please be aware that additional site assessments or review may be required.

Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources. An invoice will be mailed to you under separate cover.

Sincerely,

A handwritten signature in black ink that reads 'Lisa Joyal'.

Lisa Joyal
Natural Heritage Review Coordinator

From: [Joel Asp](#)
To: [Melanie Niday](#)
Subject: Fw: Database Query - Red Wing location
Date: 05/26/2016 08:08 AM

Sent from IBM Verse

Thomas Cinadr --- Re: Database Query - Red Wing location ---

From: "Thomas Cinadr" <thomas.cinadr@mnhs.org>
To: "Joel Asp" <jasp@sehinc.com>
Date: Thu, May 26, 2016 7:26 AM
Subject: Re: Database Query - Red Wing location

THIS EMAIL IS NOT A PROJECT CLEARANCE.

This message simply reports the results of the cultural resources database search you requested. The database search produced results for only previously known archaeological sites and historic properties. Please read the note below carefully.

No archaeological sites or historic structures were identified in a search of the Minnesota Archaeological Inventory and Historic Structures Inventory for the search area requested.

The result of this database search provides a listing of recorded archaeological sites and historic architectural properties that are included in the current SHPO databases. Because the majority of archaeological sites in the state and many historic architectural properties have not been recorded, important sites or structures may exist within the search area and may be affected by development projects within that area. Additional research, including field survey, may be necessary to adequately assess the area's potential to contain historic properties.

If you require a comprehensive assessment of a project's potential to impact archaeological sites or historic architectural properties, you may need to hire a qualified archaeologist and/or historian. If you need assistance with a project review, please contact Kelly Gragg-Johnson in Review and Compliance @ 651-259-3455 or by email at kelly.graggjohnson@mnhs.org.

The Minnesota SHPO Survey Manuals and Database Metadata and Contractor Lists can be found at <http://www.mnhs.org/shpo/survey/inventories.htm>

Tom Cinadr

Survey and Information Management Coordinator
Minnesota Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. West
St. Paul, MN 55102

651-259-3453

On Tue, May 24, 2016 at 2:04 PM, Joel Asp <jasp@sehinc.com> wrote:

Good Afternoon,

We are requesting a search of the Minnesota Archaeological Inventory and Historic Structures Inventory for T-113 North, R-15 West, Section 35 and 36. The project area is located near the eastern boundary of Section 35.

Please contact me with any questions.

Thank you,

Joel D. Asp
Restoration Ecologist
SEH
1200 25th Avenue South
P.O. Box 1717
St. Cloud, MN 56302-1717
320.229.4316 direct
320.248.7021 cell
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December 16, 1991



Mr. Marshal Braman
Donohue
7200 Harlock Lane North
Maple Grove, Minnesota 55369

Dear Mr. Braman:

Re: EAW for expansion of NSP Refuse Derived Fuel Ash Disposal Facility
S/2 NE/4 S35, T113, R15; near Red Wing, Goodhue County
MHS Referral File Number: 91-0044

Thank you for consulting with our office during the preparation of an Environmental Assessment Worksheet for the above-referenced project.

Your letter states that the existing landfill is located in the S1/2, NE1/4, Sec 35, T113N, R15W. Although we cannot state with certainty that there are no significant unreported historical or archaeological properties in this parcel, we feel that the probability of such properties being present is low. We do note, however, that a number of archaeological properties have been recorded in the immediate vicinity. If the entire expansion is confined to this parcel, we do not believe that an archaeological survey of the project area is necessary.

We also note that we commented on several proposed disposal sites in November of 1990, in response to a request from Goodhue County. Have the sites other than the one in Section 35 now been eliminated from consideration?

Please contact me if you have any questions on our comments.

Sincerely,

Dennis A. Gimmetstad
Government Programs and Compliance Officer

DAG:dmb

cc: Christy Caine, State Archaeologist, Research Lab Building
University of Minnesota, Duluth, Minnesota 55812

From: Cinadr, Thomas [Thomas.Cinadr@MNHS.ORG]
Sent: Wednesday, August 24, 2011 7:07 AM
To: Amy J. Denz
Subject: RE: Database Query - Red Wing Site

Attachments: Archaeology.rtf

THIS EMAIL IS NOT A PROJECT CLEARANCE.

This message simply reports the results of the cultural resources database search you requested. The database search produced results for only previously known archaeological sites and historic properties. Please read the note below carefully.

No historic structures were identified in a search of the Minnesota Archaeological Inventory and Historic Structures Inventory for the search area requested. A report containing the archaeological sites identified is attached.

The result of this database search provides a listing of recorded archaeological sites and historic architectural properties that are included in the current SHPO databases. Because the majority of archaeological sites in the state and many historic architectural properties have not been recorded, important sites or structures may exist within the search area and may be affected by development projects within that area. Additional research, including field survey, may be necessary to adequately assess the area's potential to contain historic properties.

If you require a comprehensive assessment of a project's potential to impact archaeological sites or historic architectural properties, you may need to hire a qualified archaeologist and/or historian. If you need assistance with a project review, please contact Kelly Gragg-Johnson in Review and Compliance @ 651-259-3455 or by email at kelly.graggjohnson@mnhs.org.

The Minnesota SHPO Survey Manuals and Database Metadata and Contractor Lists can be found at <http://www.mnhs.org/shpo/survey/inventories.htm>

SHPO research hours are 8:00 AM – 4:00 PM Tuesday-Friday.

The Office is closed on Mondays.

Tom Cinadr
Survey and Information Management Coordinator
Minnesota State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. West
St. Paul, MN 55102

651-259-3453

From: Amy J. Denz [mailto:adenz@wenck.com]
Sent: Monday, August 22, 2011 12:38 PM
To: Cinadr, Thomas

Subject: Database Query - Red Wing Site

Mr. Cinadr,

Please find attached a letter requesting information from the Minnesota Archaeological Inventory and Historic Structures Inventory for a property located near Red Wing, Minnesota, along with a site location map. Please contact me with any questions you may have.

Thank you,
Amy

Amy Denz
Environmental Planner
Wenck Associates
1800 Pioneer Creek Center
Maple Plain, Minnesota 55359
(763) 479-5148
(763) 479-4242 (fax)

Archaeological Site Locations

Site Number	Site Name	Twp.	Range	Sec.	Quarter Sections	Acres	Phase	Site Description	Tradition	Context	Reports	NR	CEF	DOE
County: Goodhue														
21GD0042	Water Tanks Mounds	113	15	35	E-NE-NE-SE	14.5	1,4	EW		W-2				
	Water Tanks Mounds	113	15	36	W-NW-SW, NW-NE-NW-SW, C-S-SW-NW	14.5	1,4	EW		W-2				
21GD0043	Broad Long Mound	113	15	36	NW-NE-NW, C-N-SW-NE-NW	1	1	EW		W-2				
21GD0255	Coon Hill	113	15	36	N-NE-NE-SE	0.1	1	EW		W-1				
21GD0258	McClelland Site A	113	15	35	NW-SW-SW	20	1	AS		A-1, W-1, M-1	O-2			
21GDbh	City Mill	113	15	36	C-S-SW	1		HD						
21GDj	Hancock Mounds	113	15	36	NE-NE-NE, NE-NW-NE-NE	19		EW		W-2				

Legend

- Property Lines
- Archaeological Points
- Water Tank Mound Area



XCEL ENERGY - RED WING RDF ASH DISPOSAL FACILITY

Archaeological Site Locations


Engineers - Scientists
Business Professionals
www.wenck.com

Wenck
1800 Pioneer Creek Center
Maple Plain, MN 55359-0429
1-800-472-2232

DEC 2011

Figure 14

STATE HISTORIC PRESERVATION OFFICE

October 1, 2015

Mr. Austin Jenkins
Bolton & Menk
12224 Nicollet Avenue
Burnsville, MN 55337

RE: Construct Bench Street Materials Handling Facility
T113 R1S S35
Red Wing, Goodhue County
SHPO Number: 2015-3055

Dear Mr. Jenkins:

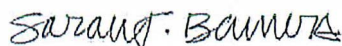
Thank you for the opportunity to comment on the above project. It has been reviewed pursuant to the responsibilities given to the Minnesota Historical Society by the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act.

We have reviewed the cultural resources survey report that was prepared for this project. Based on the results of the survey, we conclude that there are no properties listed in the National or State Registers of Historic Places, and no known or suspected archaeological properties in the area that will be affected by this project, provided the cemetery site (21GD0042) is avoided.

Please note that this comment letter does not address the requirements of Section 106 of the National Historic Preservation Act of 1966 and 36CFR800, Procedures of the Advisory Council on Historic Preservation for the protection of historic properties. If this project is considered for federal assistance, or requires a federal permit or license, it should be submitted to our office by the responsible federal agency.

Please contact our Compliance Section at (651) 259-3455 if you have any questions on our review of this project.

Sincerely,



Sarah J. Beimers, Manager
Government Programs and Compliance

cc: Lynn Nardinger, City of Red Wing Public Services



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Consulting Engineers & Surveyors

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September 1, 2015

Sarah Beimers
Government Programs and Compliance
Minnesota Historical Society
345 Kellogg Boulevard West
Saint Paul, MN 55102

RE: Bench Street Materials Handling Facility
Phase I Archaeological Survey

Dear Ms. Beimers,

The City of Red Wing (the City) proposes to develop a materials handling facility in Section 35, T113N, R15W (**Figure 1**), west of Bench Street. The facility is not expected to exceed 10 acres and is directly adjacent to a previously recorded mound group and a habitation site that constitute archaeological site 21GD0042 (**Figure 2**). Previous investigations have predicted the presence of archaeological resources west of the mapped boundary of 21GD0042.

The City had previously considered development that would take place within the boundary of the mound group as it was mapped by T.H. Lewis in 1887¹. Following coordination between the City and the Office of the State Archaeologist (OSA), a setback that is between 75' and 50' of the estimated location of Mound 23 (see **Figures 2 & 3**) was accepted as a provisional cemetery boundary. The provisional cemetery boundary has been staked by City surveyors and it will be avoided by the proposed development.

The proposed improvements will be constructed on land that is leased by the City, therefore archaeological resources must be taken into consideration in accordance with the Minnesota Field Archaeology Act. OSA had previously recommended that a Phase I Archaeological Survey be completed for the remainder of the project area that is outside the provisional cemetery boundary in accordance with the Minnesota Field Archaeology Act. This letter report includes the findings of a Phase I Archaeological Survey that is intended to satisfy that recommendation.

Austin Jenkins served as Principal Investigator and Aaron Erickson assisted in fieldwork. Dr. Constance Arzigian of the Mississippi Valley Archaeological Center participated in the survey in order to lend her expertise in mortuary and regional contexts.

Archaeological Survey Area

The archaeological survey area includes the footprint of the proposed materials handling area. Topographic constraints and the provisional cemetery boundary limit the proposed development to a convoluted area that is depicted in **Figure 2**.

¹ Winchell, N.H. (1911). *Aborigines of Minnesota*. Minnesota Historical Society, St. Paul, Minnesota.



The survey area consists of agricultural fields which had most recently been used for hay production. Small, eroded drainage features are present along the northern margin of the project area. Historic aerial photographs from 1938 and 1949 (**Figure 4**) depict driveways and two homesteads that were in and adjacent to the project area. These features were removed by the time aerial photographs were taken in 1991.

Areas that were previously plowed and that were recently in hay production were plowed prior to the archaeological survey, providing excellent (nearly 100%) ground surface visibility across most of the survey area (**Figure 5**).

Recorded Sites & Archaeological Investigations

The State Historic Preservation Office (SHPO) database contains the records of 13 known archaeological sites and one site lead (alpha site) within one mile of the survey area. Twelve of the known sites and the site lead are precontact sites with confirmed or suspected Woodland components; all but two contain earthworks. The final known site is a historic dump.

As noted above, the proposed development is directly adjacent to 21GD0042. Site 21GD0042 was first surveyed by Lewis in 1887¹. Since that time, Goltz², O'Brien³ and Artz *et al.*⁴ have investigated the site. Goltz², with in-field observations, and Artz *et al.*⁴, using a 1-meter digital elevation model, observed features that appeared to be remnants of mounds within 21GD0042, however, these observations are treated as preliminary for management purposes.

O'Brien³ (with Amanda Gronhøvd licensed as Principal Investigator) conducted a burial authentication on what is thought to be mound 10 (**Figure 3**). O'Brien³ confirmed the presence of intact burial deposits, and, therefore, the mound group is considered to be a burial ground.

Fieldwork Results

Bolton & Menk conducted the archaeological survey on July 30, 2015. A pedestrian walkover of the survey area utilized transects spaced at approximately 5-meter intervals within the eastern portions of the survey area, and up to 10-meters in the western portion of the survey area. Three shovel tests (**Figure 2**) were excavated to investigate the possibility of deeply-buried Holocene soils. A scatter of highly fragmented glass was present surrounding the location where historic aerial photography depicts

² Goltz, Grant (1995). *Data Collection for Condition Assessment: Authenticated Cemetery Site 21-GD-42, SW ¼, NW ¼, Section 36, T113N, R15W, Goodhue County, Minnesota*. Prepared by Soils Consulting. Submitted to Red Wing Port Authority. Available at the Minnesota Office of the State Archaeologist.

³ O'Brien, Mollie M. (2008). *Report of Burial Investigation at 21GD42 for the Proposed Road Reconstruction on C.S.A.H. 1 Between 285th Street and Featherstone Road (S.P. 25-601-027) Red Wing, Goodhue County, Minnesota*. Prepared by 10,000 Lakes Archaeology, Inc. Submitted to the Minnesota Department of Transportation. Minnesota Department of Transportation Contract No. 92931. Available at the Minnesota Office of the State Archaeologist.

⁴ Artz, Joe Alan, Emilia L. D. Bristow, and William E. Whittaker (2013). *Mapping Precontact Burial Mounds in Sixteen Minnesota Counties using Light Detection and Ranging (LiDAR)*. Prepared by the Iowa Office of the State Archaeologist. Iowa Office of the State Archaeologist Contract No. 1976. Submitted to the Oversight Board of the Statewide Survey of Historical and Archaeological Sites. Available at the Minnesota Office of the State Archaeologist.



the homestead. Naturally-occurring and fractured limestone and chert was observed; none was found to be cultural.

An unplowed strip of field, featuring sudden topographic relief of approximately 0' to 2', remains along a former east-west driveway. This strip separates the northern and southern fields in the east half of the survey area. Heavy mottling observed in Shovel Test 1 indicated previous disturbance that appears to be related to this driveway (see **Figure 4**).

Plowing that took place ahead of the survey scoured the underlying C-horizon in most areas due to past erosion that has deflated the Ap horizon; this condition allowed for the survey to confidently conclude that no subsurface features are present in the survey area. The survey did not identify any archaeological materials.

Recommendations

No archaeological sites were identified during the archaeological survey. The project will not result in impacts to any previously-recorded archaeological or to National or State Register-listed history/architecture sites. For these reasons no additional investigation is recommended.

Your review and comment, pursuant to the Minnesota Field Archaeology Act would be greatly appreciated. If you have any questions, please feel free to contact me.

Lynn Nardinger is the contact at the City and his contact information is below:

Lynn Nardinger
Deputy Director Public Services
229 Tyler Road N.
Red Wing, MN 55066
(651) 385-3654
lynn.nardinger@ci.red-wing.mn.us

Sincerely,

A handwritten signature in blue ink that reads 'Austin Jenkins'.

Austin Jenkins
Archaeologist

Enclosures:

- Figure 1: USGS Location
- Figure 2: Project Area & Results
- Figure 3: T. H. Lewis 1885 Map of Site 21GD0042
- Figure 4: 1949 Aerial Photograph
- Figure 5: Eastern Survey Area, Facing East-Southeast

Cc: Lynn Nardinger, City of Red Wing
Scott Anfinson, Minnesota Office of the State Archaeologist

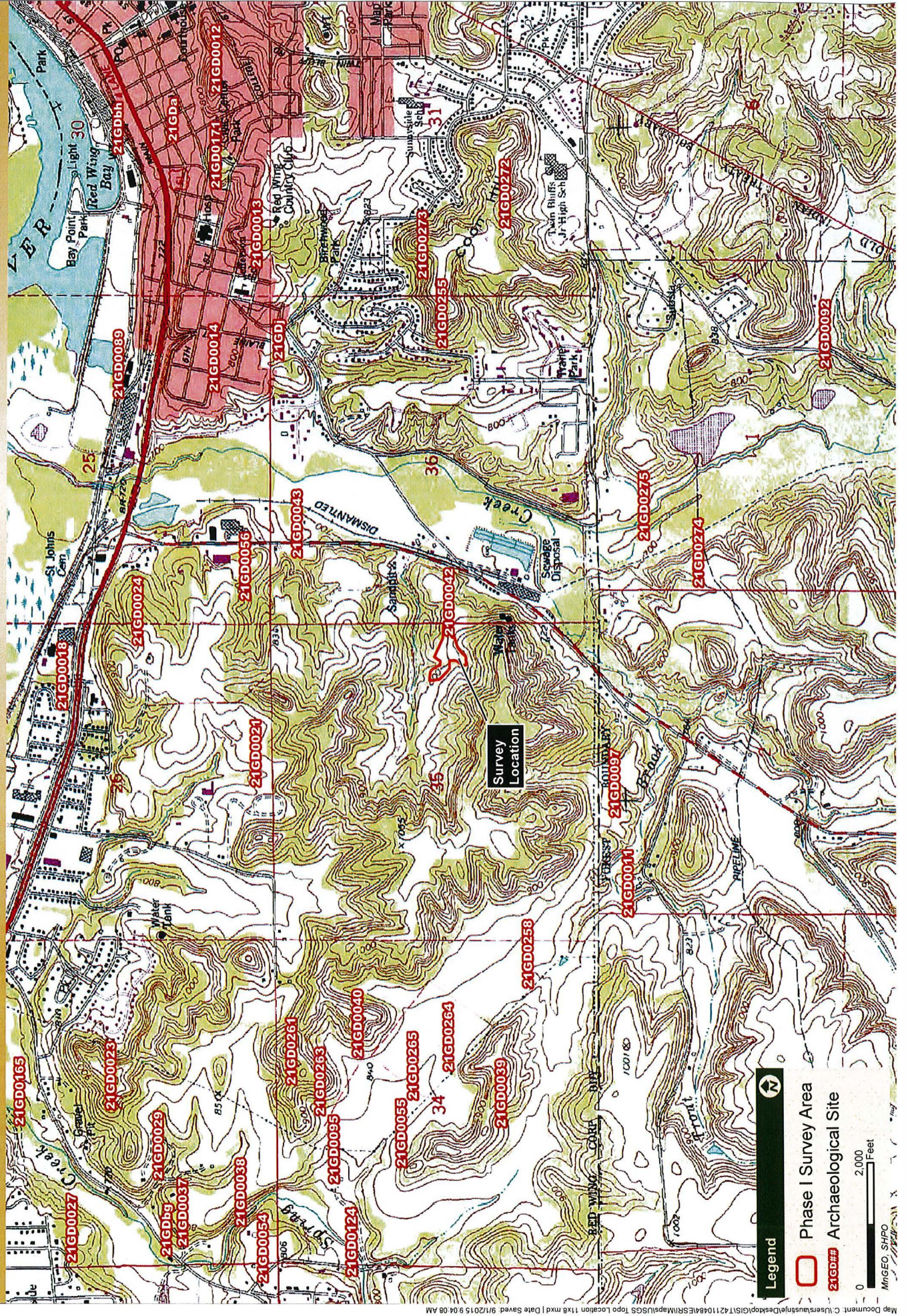


Phase I Archaeological Survey

Materials Handling Site

Figure 1: USGS Location

September 2015





Phase I Archaeological Survey

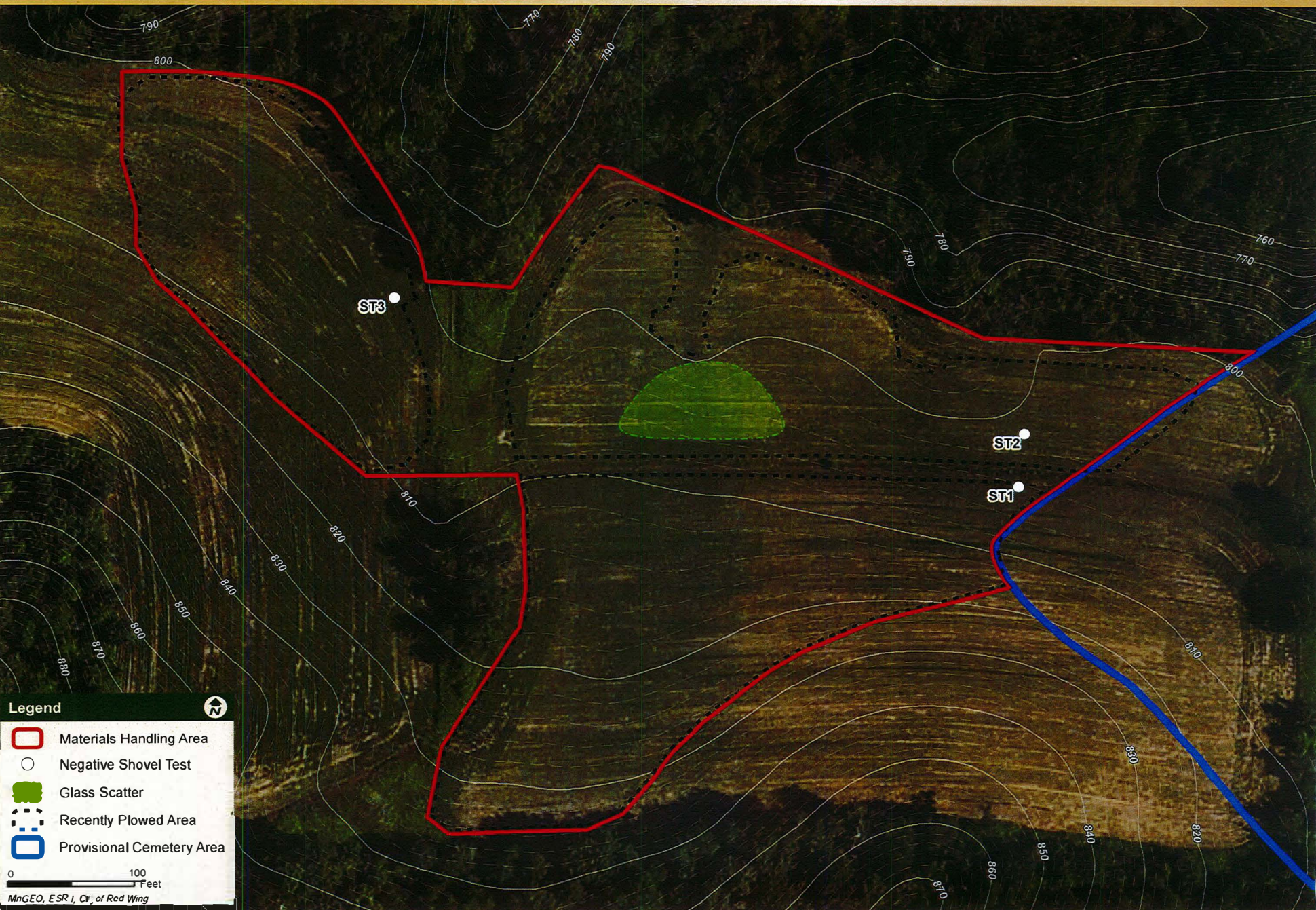
Materials Handling Site

Figure 2: Project Area & Results

September 2015



Map Document: C:\Users\jlaustin\Desktop\GIS\121104\MEGR\Maps\Project Area_Results 11x8.mxd | Date Saved: 9/20/15 9:04:58 AM



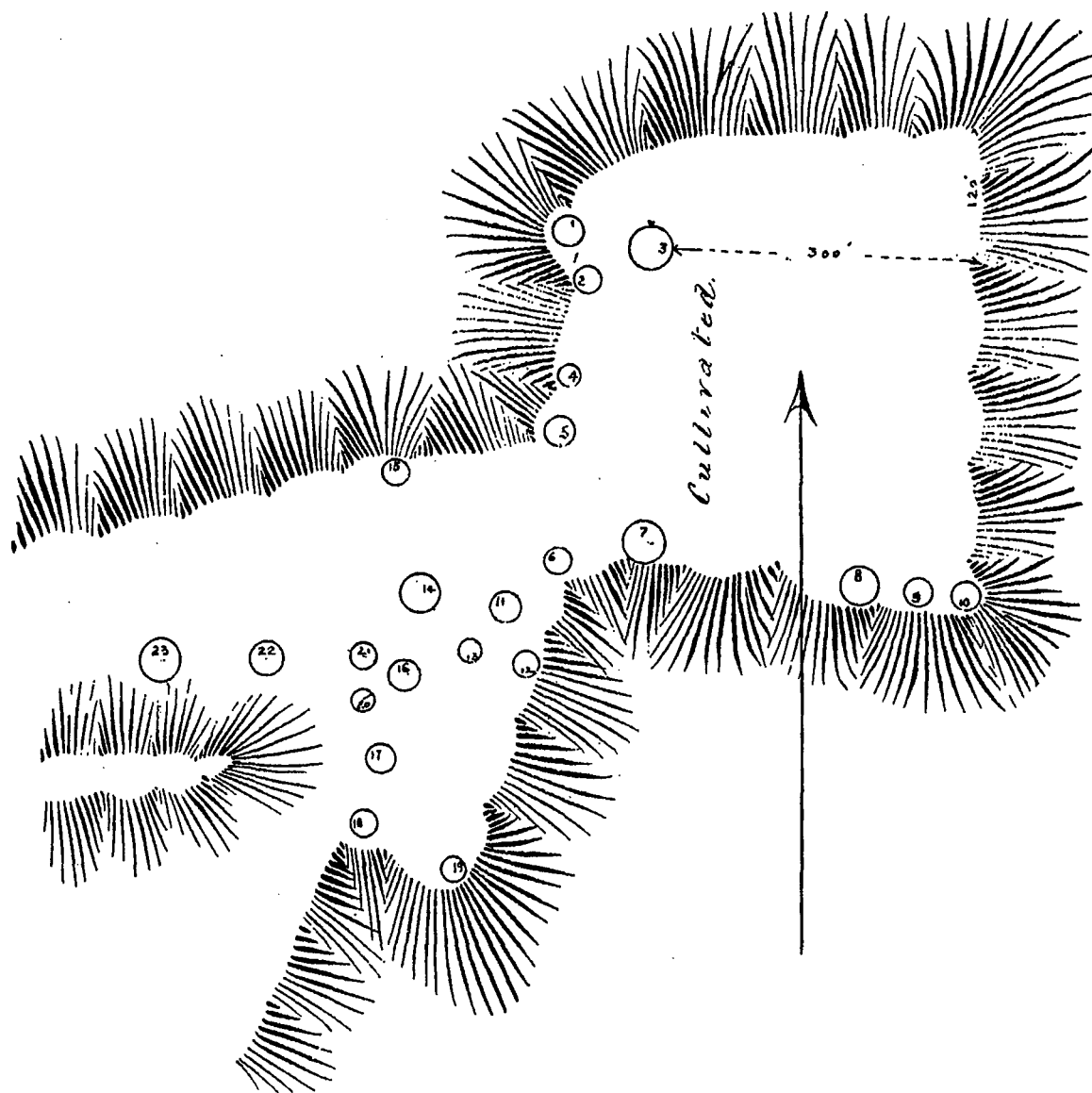


Figure 3: T. H. Lewis 1885 Map of Site 21GD0042 (from Winchell 1911)

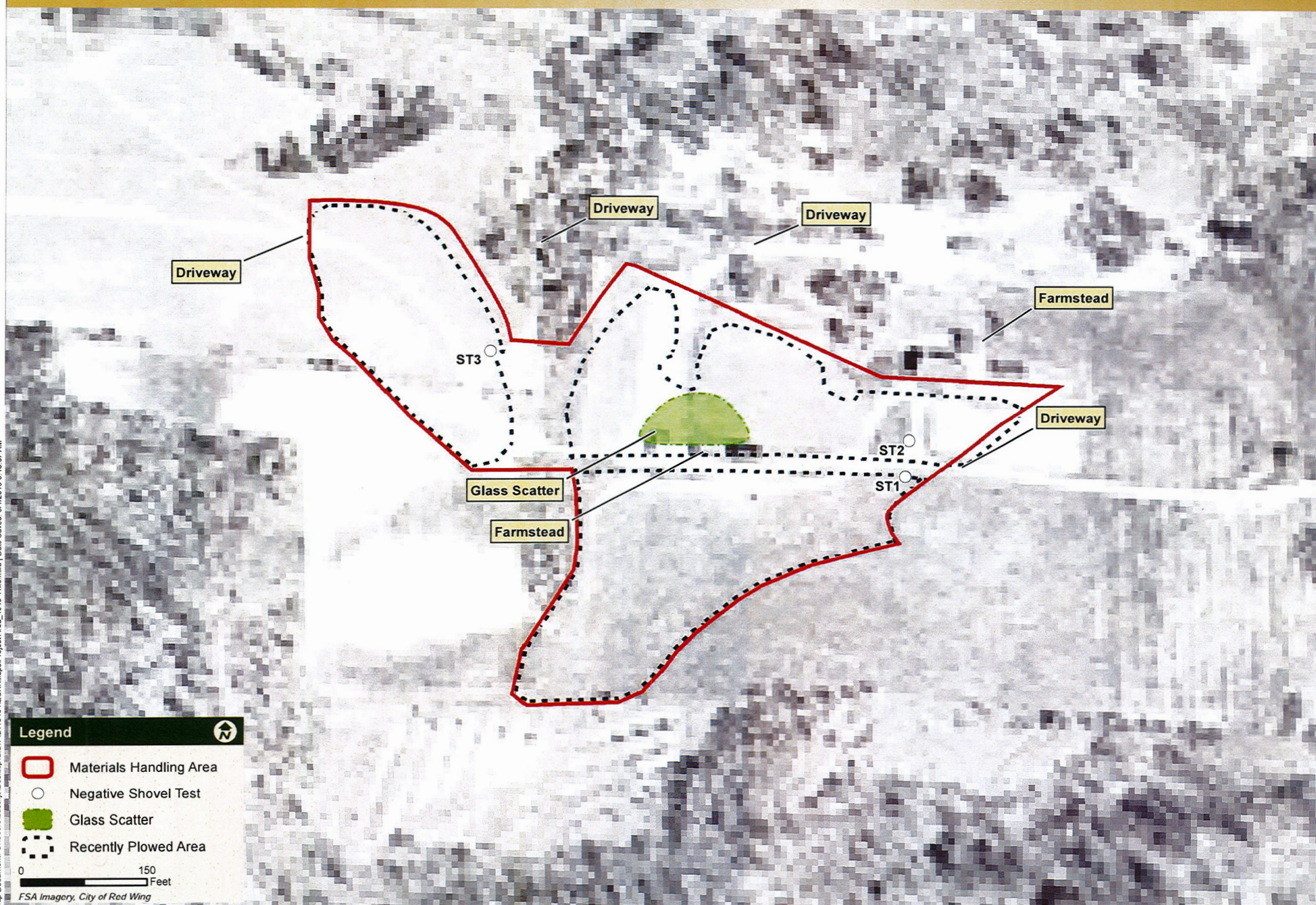




Figure 5: Eastern Survey Area, Facing East-Southeast



31 March 2016

MEMORANDUM

TO: Daryl Heaps

FROM: David Braslau

RE: City of Red Wing Concrete Crusher – Noise Assessment

This memorandum presents findings of a noise assessment of potential noise levels associated with the proposed crushing operation along Bench Street in Red Wing, Minnesota. Predicted sound levels are based upon a computer model that takes into account the sound source frequency spectrum, distance from the source (crusher) to receptor sites (homes and selected property line), atmospheric absorption (standard atmospheric pressure, temperature and humidity assumed here), and shielding by intervening topography. Model calculations are then adjusted by attenuation provided by intervening tree cover.

Location of the crusher and potentially impacted homes and property line receptors are shown on **Exhibit 1**. Distance from the crusher to each of the receptor sites are presented in **Table 1**.

Table 1 Distance from Crusher to Receptor Sites

Receptor	Type	Dist (ft)
#1	Home	2061
#2	Home	1659
#3	Home'	1428
#4	Prop Line	593

Based on a review of photographs of Cedar Rapid Crushers, the sound source height for the crusher is assumed to be 15 feet above grade. The home and property line receptors are assumed to be 5 feet above grade. Ground profiles between the crusher and four receptors have been provided by S.E.H. and are shown on Exhibit 2. These have been supplemented with detail from the USGS topographic map for the area. Topographic shielding is calculated for terrain elevations that project above the "line-of-sight" between the crusher and receptors.

Tree cover between the receptors (as shown on **Exhibit1**) was assumed to be mixed deciduous with leaves or conifer and also deciduous trees with no leaves. Tree attenuation is based upon International Standard Organization standard 9613-2. This amount of attenuation is based upon the distance that sound passes through trees between the source and the receiver. The sound path is assumed to be curved slightly upward with radius of 5 kilometers because of ground level atmospheric conditions.

All of the above assumptions are shown schematically on **Exhibit 3** to **Exhibit 6** and defined on **Exhibit 3**. In these figures, the vertical scale is greatly exaggerated to emphasize factors assumed in the analysis.

The sound source for the concrete crusher has been taken from our database of sound levels developed for over 40 years. The assumed frequency spectrum and overall dBA (A-weighted) level is shown for 100 and 200 feet and compared with the measurements of the Red Wing crusher taken by the City is shown on Table 2.

Table 2 Assumed Octave Band Spectrum for Crusher

Freq (Hz)	100 ft	200 ft
31	78	72
63	81	75
125	87	81
250	83	77
500	81	75
1000	83	77
2000	73	67
4000	75	69
8000	66	60
16000	60	54
dBA	85	79
Red Wing	81	75

The Red Wing readings are seen to be 4 dBA lower than the spectrum used in our model. Therefore, the results presented here can be assumed to be worst case or conservative prediction of sound level at the four receptor sites.

Predicted crusher sound levels at the four receptor sites are presented in **Table 3**.

Table 3 Predicted Crusher Sound Levels (dBA)

Receptor	w/Leaves	wo/leaves
1	41	46
2	41	46
3	49	51
4	68	69

Assuming that the crusher will only operate during daytime hours as defined in the state noise rules, the applicable noise standard for residential sites is L50 60 dBA. The L50 is the median hourly sound level or level not to be exceeded for 50% of the hour or 30 minutes. If the crusher operates for less than 30 minutes of an hour, then the L10 65 would apply. L10 is the level not to be exceeded for 10% or 6 minutes of an hour. The state noise standards are “receiver” standards and not property line standards, but for purposes of this report, the property line receptor is included along with the residential receptors.

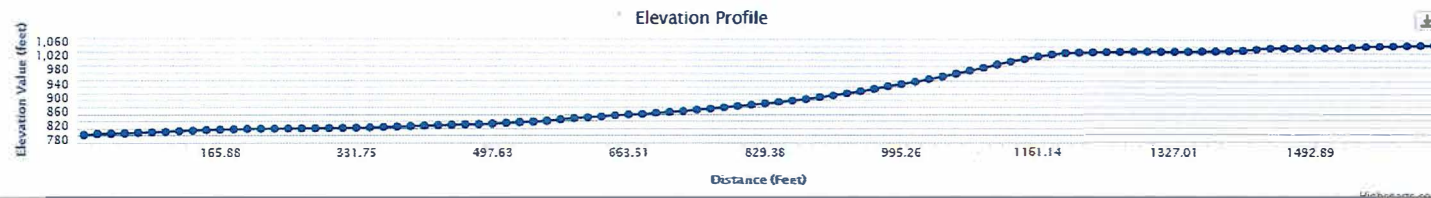
It should also be noted that the 60 dBA limit is consistent with the Red Wing noise ordinance if the crusher operates in daytime hours for more than 2 hours.

It can be seen from **Table 3** that the three residential receptor sites fall well below the daytime noise standard of 60 dBA at all seasons of the year. Therefore, the crusher should be able to operate as planned without exceeding the state standards or the Red Wing noise ordinance.

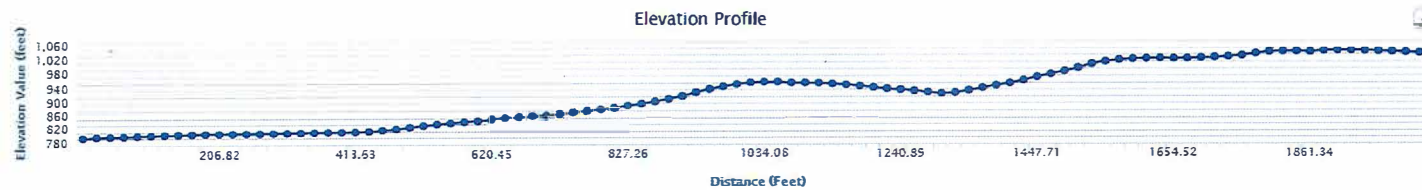


EXHIBIT 1 LOCATION OF CRUSHER AND CRITICAL RECEPTOR SITES

Profiles for site 1 and 2



Profile for Site 3



Profile o Ste 4

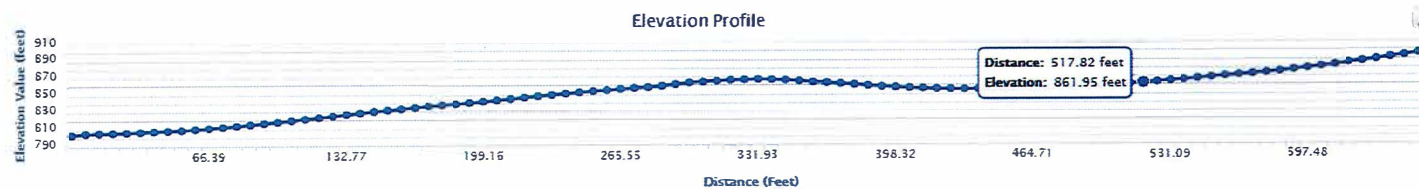


EXHIBIT 2 GROUND PROFILES BETWEEN THE CRUSHER LOCATION AND RECEPTOR GROUND ELEVATION

Home 1 Profile

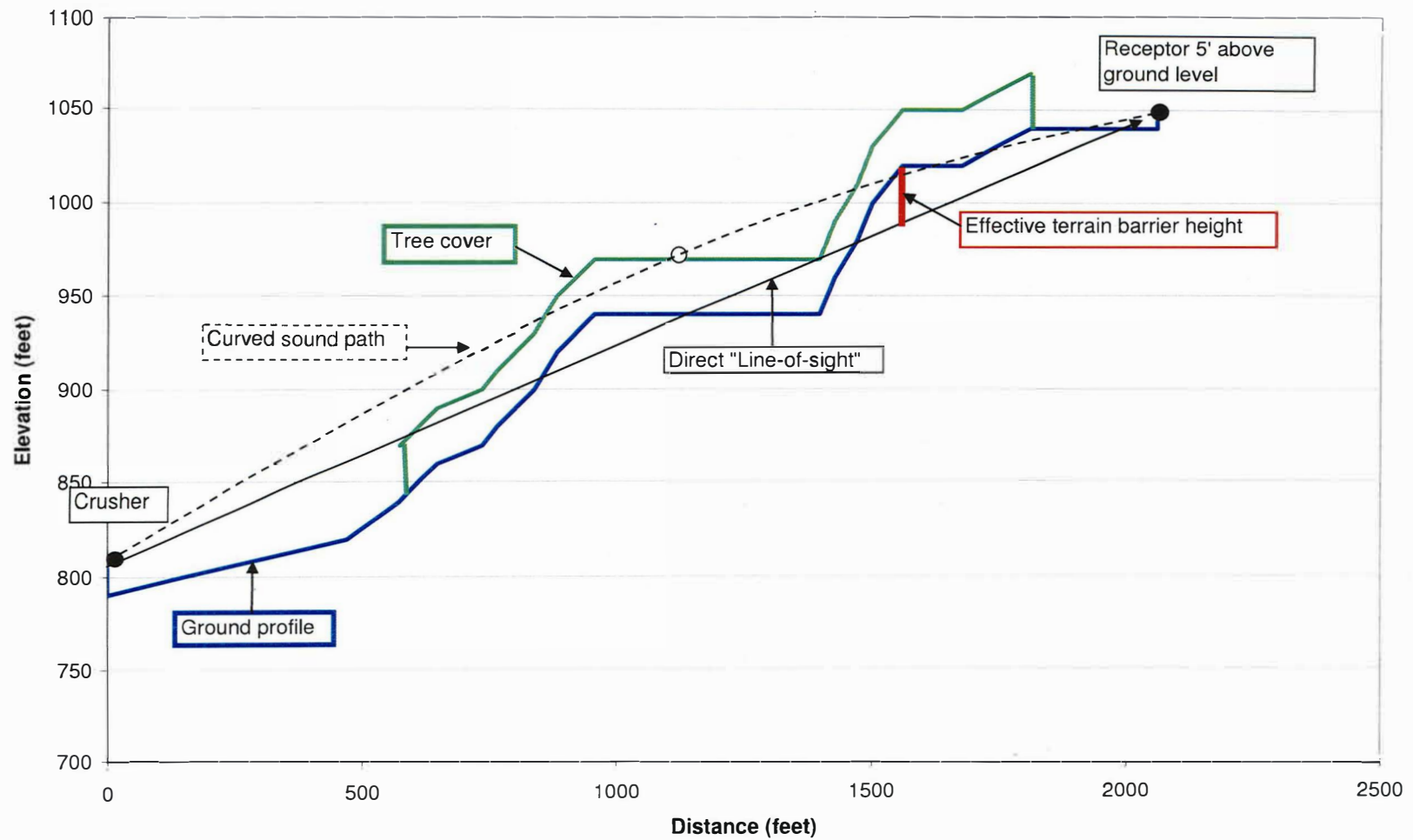


EXHIBIT 3 HOME 1 PROFILE

Home 2 Profile

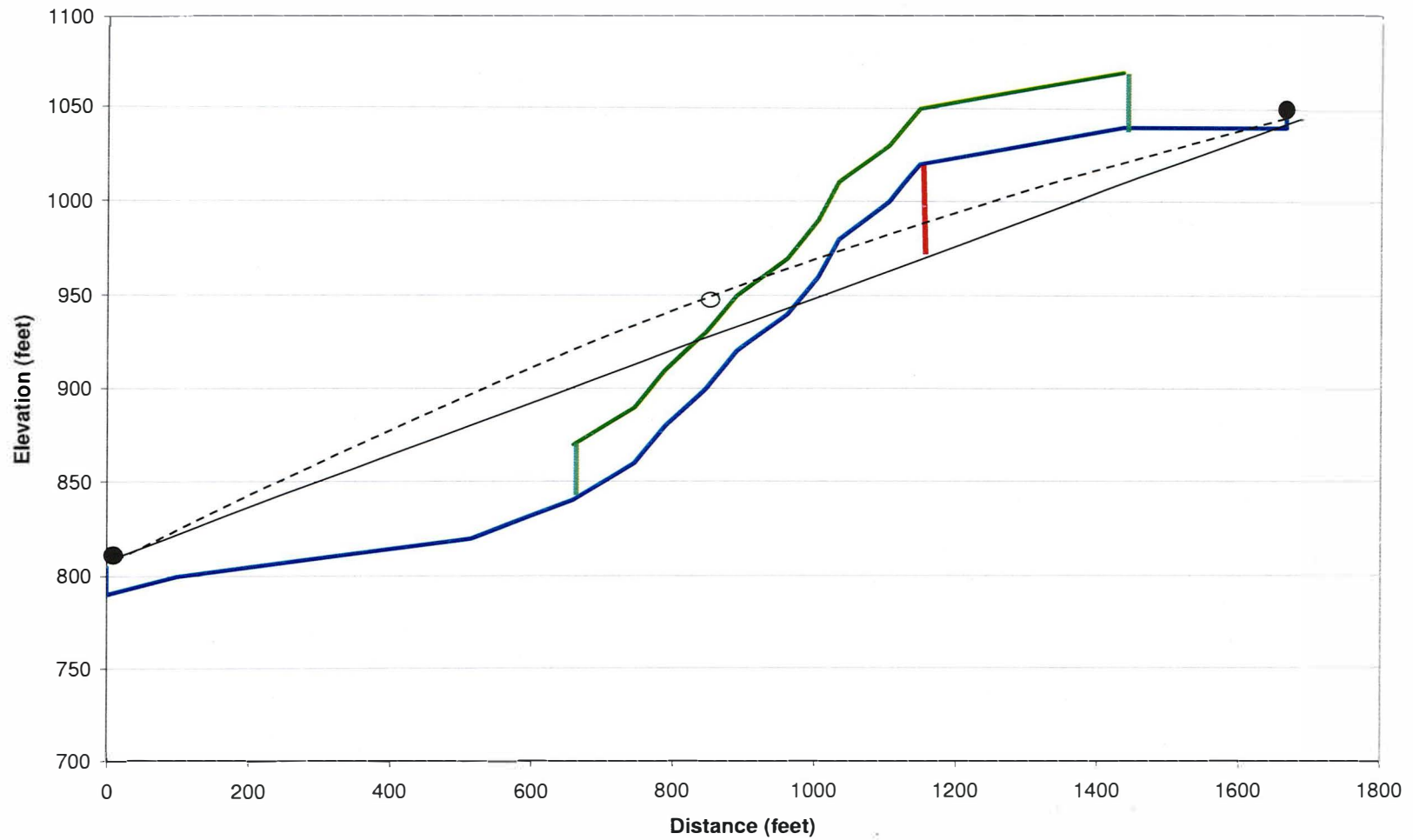


EXHIBIT 4 HOME 2 PROFILE

Home 3 Profile

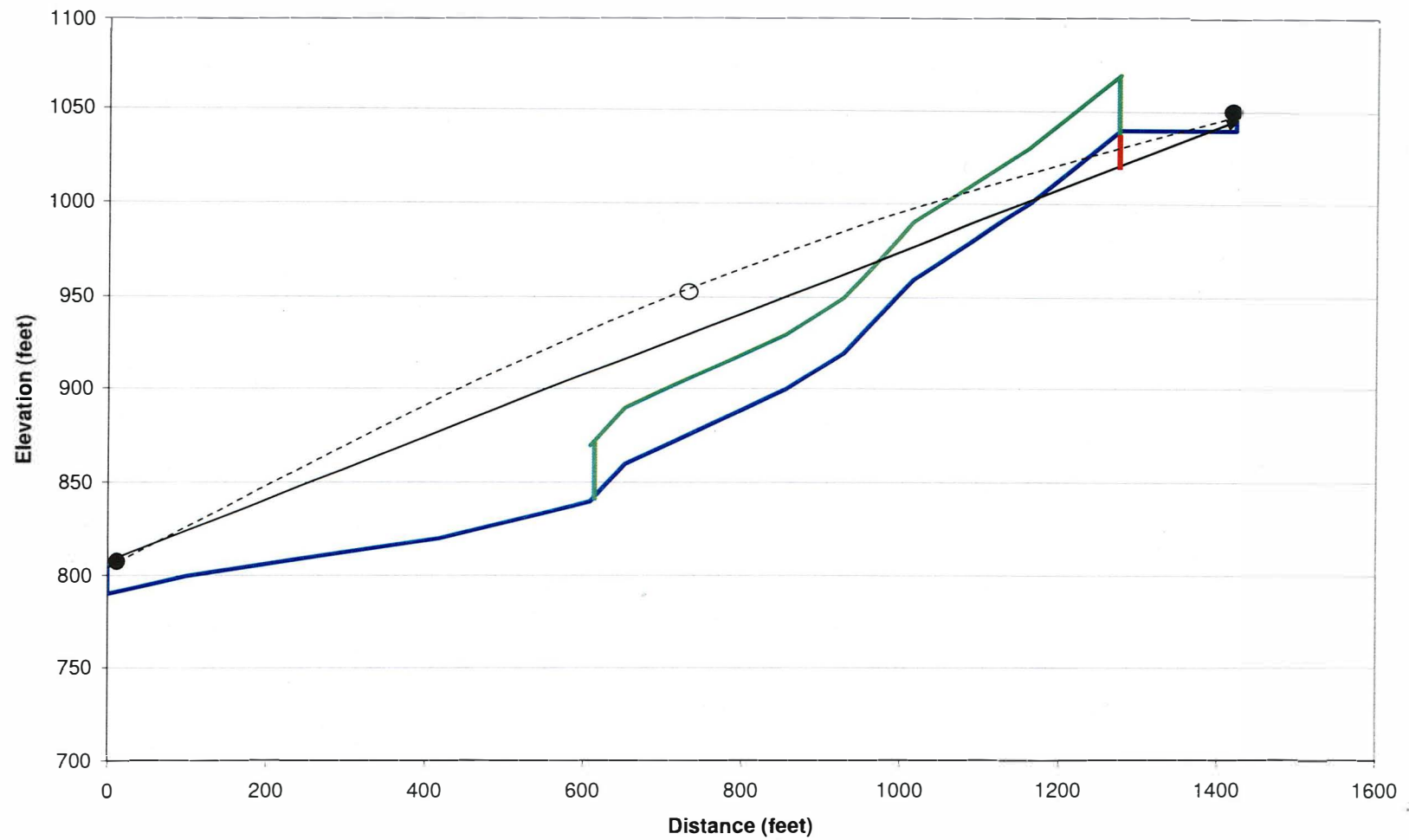


EXHIBIT 5 HOME 3 PROFILE

Home 4 Profile

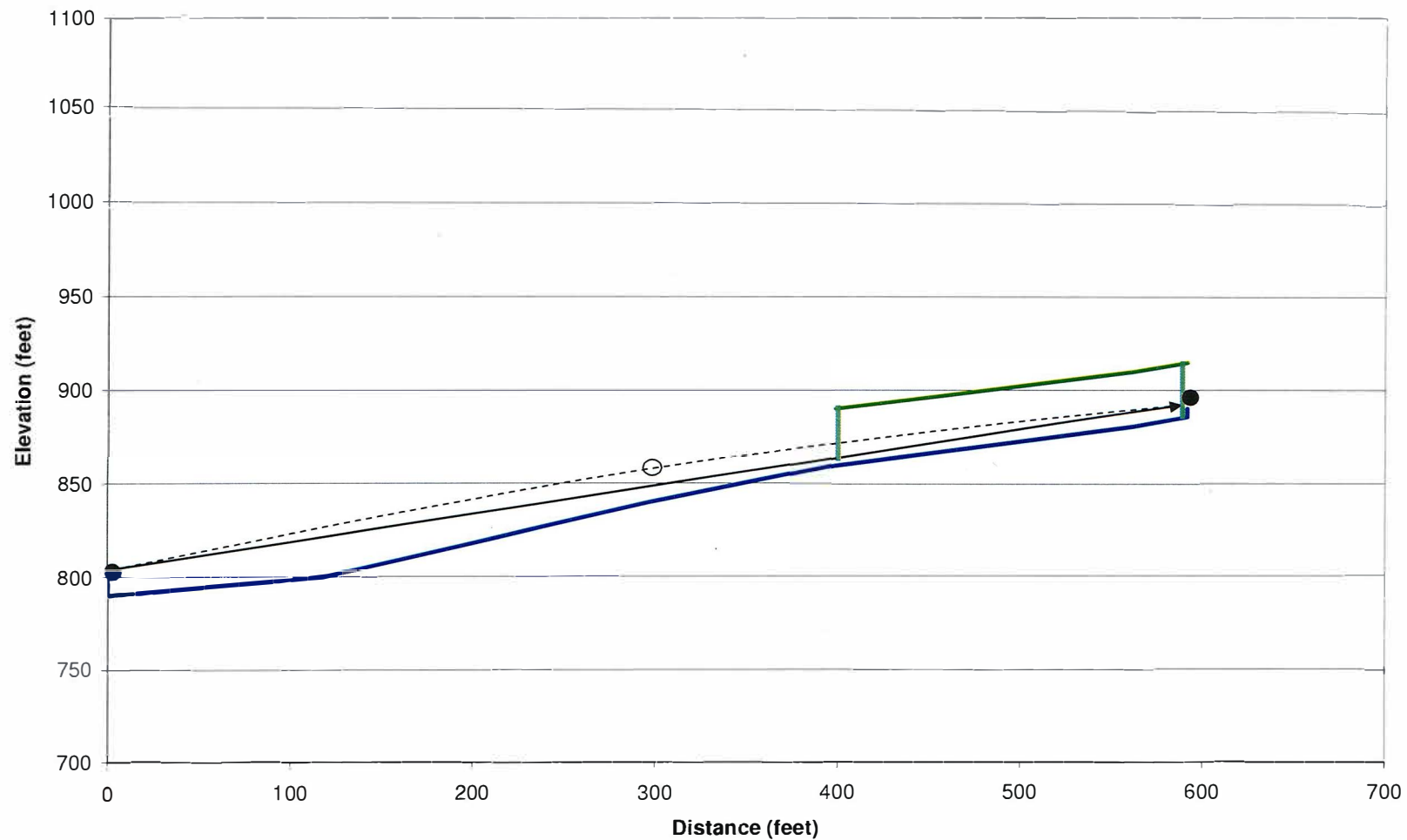


EXHIBIT 6 RECEPTOR 4 (PROPERTY LINE) PROFILE



Minnesota Pollution Control Agency

APPENDIX D

520 Lafayette Road North | St. Paul, Minnesota 55155-4194 | 651-296-6300

800-657-3864 | Use your preferred relay service | info.pca@state.mn.us | Equal Opportunity Employer

November 28, 2016

Mr. Brent DuBois
President and Chief Executive Officer
Lab USA
130 East Walnut Street, Suite 903
Green Bay, WI 54301

Dear Mr. DuBois:

The Minnesota Pollution Control Agency (MPCA) received an Applicability Determination Request from Lab USA Ash Processing Facility – Red Wing (Lab USA) on August 15, 2016. Lab USA is seeking agreement with their assessment that the proposed ash processing facility is not required to obtain a stationary source air permit. The MPCA conducted a review of the August 15, 2016, request and additional supporting information received by email on September 30, 2016 and October 18, 2016.

Lab USA proposes to construct and operate a facility to recover ferrous and non-ferrous metals from municipal solid waste (MSW) incinerator bottom ash. The proposed facility will be located at 1540 Bench Street, Red Wing, Minnesota. This property will be leased from the city of Red Wing, and is adjacent to the Xcel Red Wing Refuse Derived Fuel (RDF) Ash Disposal Facility and the Red Wing Land Disposal Facility. These landfills are independently owned and operated by Xcel Energy and the City of Red Wing, respectively. In the proposed operation, Lab USA will process ash from the two adjacent ash landfills. Additionally, ash will be received directly from the Xcel Energy Red Wing Plant, an RDF combustor, located at 801 E. 5th Street, Red Wing, Minnesota.

Incinerator ash will be brought to the facility by truck and unloaded into piles indoors. All ash processing operations for the proposed facility will occur indoors. Ash will be loaded from the piles into the process equipment with a diesel front end loader. The ash will pass through four conveyers, a crusher, three screens, a magnetic separator, and an eddy current separator. By the end of the process, the ash is separated into two piles: refined ash (ash containing ferrous and non-ferrous metals) and processed ash (which will go to a landfill as waste). The refined ash is estimated to make up about 10% of the inlet ash, while the processed ash (waste) makes up the remaining 90%. The temporary piles of refined and processed ash will also be located indoors. Both the refined ash and the processed ash will be loaded into trucks with a diesel front end loader and shipped off site.

In order to determine if an individual operating permit is required for this proposed facility, the MPCA evaluated the status of the proposed facility as a single stationary source; compared the project potential emissions to state and Part 70 permit thresholds; and reviewed the proposed activities at Lab USA for New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) applicability.

Source Determination. The MPCA reviewed whether or not the proposed facility should be considered a single source due to its proximity to the Xcel Red Wing Plant (air emission permit no. 04900005-002), and because the facility plans to process materials from Xcel Energy. Three criteria must be met in order for two or more facilities to be considered a single source under Prevention of Significant Deterioration (PSD) and Minnesota air permitting rules. The facilities must: have the same SIC code or be a support facility; be under common control; and be located on contiguous properties. The proposed ash processing facility has an SIC code of 5093 (Scrap and Waste Materials), and the Xcel Red Wing Plant has an SIC code of 4911 (Electric Services). Furthermore, the MPCA determined that the proposed ash processing facility is not a support facility because the facility may receive incinerator bottom ash from multiple sources and because Xcel Red Wing Plant's bottom ash may continue to be sent to the landfill without first being processed for metals recovery. Xcel has entered into a legal agreement with Lab USA for the processing of their landfill ash. Due to this agreement, the Xcel Red Wing Plant may be considered under common control with the proposed ash processing facility. However, the proposed ash processing facility will not be located on contiguous properties with the Xcel Red Wing Plant. Because the two facilities do not share SIC codes or have a support relationship and are not located on contiguous properties, the two facilities are not a single source.

Two criteria must be met in order for two or more facilities to be considered a major source of hazardous air pollutants (HAPs) under 40 CFR pt. 63. The facilities must: be located within a contiguous area; and emit or have the potential to emit 10 tons per year or more of any HAP or 25 tons per year or more of any combination of HAPs. The total potential HAP emissions from the proposed facility and the adjacent landfills do not exceed the major source thresholds for single or total HAPs (as shown in Table 1), and the proposed facility will not be located on contiguous properties with the Xcel Red Wing Plant. Based on this information, the MPCA has determined that the proposed facility is not a major source of HAPs.

Comparison of Emissions to State and Federal Permit Thresholds. The MPCA reviewed potential emission calculations submitted by Lab USA for the proposed facility. The proposed facility does not belong to one of the 27 source categories listed in 40 CFR § 52.21(b)(1)(iii), therefore fugitive and secondary emissions were not counted as described in the definition of potential emissions under Minn. R. 7005.0100, subp. 35a. Vehicle exhaust emissions from the two diesel front end loaders are considered mobile sources and are not regulated under Minnesota air permitting rules. Table 1 is a summary of the emissions rates reviewed by the MPCA.

The potential-to-emit (PTE) was calculated using emission factors from EPA AP-42 sections 11.19.2 (Crushed Stone Processing and Pulverized Mineral Processing), 13.2.2 (Unpaved Roads), and 13.2.4 (Aggregate Handling and Storage Piles). The following assumptions were made for the PTE calculations:

1. The ash moisture content is assumed to be 15%. Lab USA provided annual moisture content data for the bottom ash from the Xcel MSW incinerator, the average moisture content between 1997 and 2013 was 34.2%, with a minimum value of 17.0%. Therefore, the 15% moisture content is considered a conservative assumption resulting in worst-case emission rates.
2. The maximum capacity for each piece of equipment is 66 tons of ash per hour.
3. The process will not use any pollution control equipment.
4. The combined area of temporary storage piles will be 0.1 acres (4,350 square feet) and includes no wind shields/barriers. This is considered a conservative assumption, because actual temporary storage piles will be located indoors and shielded from the wind.
5. PM_{2.5} emissions were conservatively assumed to be equal to PM₁₀ emissions.

Table 1: Total Facility Potential to Emit in tons per year (tpy)

Pollutant	Facility Total (tpy)	State Permit Threshold (tpy)	Federal (Part 70) Permit Threshold (tpy)	Subject to Permit?
NOx	0	-	100	No
SOx	0	50	100	No
VOC	0	100	100	No
PM	3.67	-	100	No
PM-10	1.44	25	100	No
PM-2.5	1.44	-	100	No
CO	0	-	100	No
Lead	0.006	0.5	10	No
Single HAP	0.006	-	10	No
Total HAPs	0.009	-	25	No

Applicability of NSPS. Lab USA stated that the proposed facility would not be subject to any New Source Performance Standards (NSPS) under 40 CFR pt. 60 which would require the facility to obtain an air permit. Additionally, the MPCA reviewed the promulgated NSPS and did not identify any standards that would likely apply to this facility.

Applicability of NESHAP. Lab USA stated that the proposed facility would not be subject to any National Emission Standards for Hazardous Air Pollutants under 40 CFR pt. 63 which would require the facility to obtain an air permit. Based on the potential to emit calculations that were provided, the highest single Hazardous Air Pollutant (HAP) emission rate is 0.006 tpy and the emission rate of total HAPs is 0.009 tpy. As discussed in the source determination section, the total combined potential HAP emissions from the proposed facility and the adjacent landfills do not exceed the major source thresholds for single or total HAPs. The proposed facility would thus be considered an area source of HAPs. The MPCA reviewed the list of promulgated NESHAPs and did not identify any area source standards that would likely apply to this facility.

Air Permit Applicability Decision. Based on the information submitted by Lab USA and the requirements listed in Minn. R. 7007.0100-1850, the MPCA agrees that the proposed facility does not require an air emissions permit at this time.

This determination is specific to Lab USA and the proposed facility as described in the August 15, 2016, submittal, with supplemental information received on September 30, 2016 and October 18, 2016; any changes to information (such as increases in rated equipment capacity or additional equipment or processes) provided for MPCA review or discrepancies between the information provided and actual facility operation may impact this determination.

If you have any questions regarding this determination, please contact Joseph Carlson at 651-757-2539 or by email at Joseph.Carlson@state.mn.us.

Sincerely,

Toni Volkmeier

This document has been electronically signed.

Toni Volkmeier, P.E.
Supervisor, Air Quality Permits Unit 3
Air Quality Permits Section
Industrial Division

TV/JC:lao

Red Wing Solid Waste Boiler Facility**Combined Ash Annual Test Results Statistical Summary****Annual Total Composition Testing Parameters for COMBINED Ash**

Test Data in Accordance with Minn. Rules Part 7035.2910 Subp. 4 (A)(1) & (2) as amended by the 1996 MSW Combustor
Ash Testing Variance

Average of 1997-2013 Results

Test Parameter	Federal HAP (Y/N)	Average (mg/kg)	Average Value (%)
Aluminum	N	33,381	
Arsenic	Y	19	0.002%
Barium	N	443	
Boron	N	94	
Cadmium	Y	28	0.003%
Calcium	N	73,299	
Chloride	N	11,648	
Chromium	Y	173	0.017%
Copper	N	1,840	
Iron	N	38,086	
Lead	Y	1,727	0.173%
Magnesium	N	7,579	
Manganese	Y	519	0.052%
Mercury	Y	2	0.0002%
Nickel	Y	82	0.008%
Selenium	Y	5	0.0005%
Silver	N	23	
Sodium	N	10,430	
Strontium	N	1,400	
Sulfate	N	5,478	
Tin	N	120	
Zinc	N	4,827	
Total HAPs	8 of 22	2,555	0.26%

November 16, 2016

Lab USA Ash Processing - Red Wing, MN
Air Permit Applicability Determination
PM Emissions (assuming 15% moisture ash)

Process	Control	Maximum Hourly Production	Maximum Daily Production	Annual Capacity	PM Emission Rate	Hourly Emissions ¹	Annual Emissions	Comments on Emission Factors
		ton/hour	ton/day	ton/yr	lb/ton	lb PM/hr	ton PM/yr	
Bottom Ash Processing Plant								
EU 01 - Truck Unloading	Moisture Present in Ash	66	1584	578,160	0.00037	0.02	0.11	AP-42 13.2.4 (1): EF = $k * 0.0032 * (U/5)^{1.3} / (M/2)^{1.4}$ U = 10.5 mph; k = 0.74 (PM); k = 0.35 (PM10); M = 15%
EU 02 - Loading into Processing Equipment	Moisture Present in Ash	66	1584	578,160	0.00037	0.02	0.11	AP-42 13.2.4 (1): EF = $k * 0.0032 * (U/5)^{1.3} / (M/2)^{1.4}$ U = 10.5 mph; k = 0.74 (PM); k = 0.35 (PM10); M = 15%
EU 03 - Conveyor Transfer Points (assume 4)	Moisture Present in Ash	264	6336	2,312,640	0.00014	0.04	0.16	AP-42 Table 11.19.2-2. Controlled Crushing
EU 04 - Crusher	Moisture Present in Ash	66	1584	578,160	0.0012	0.08	0.35	AP-42 Table 11.19.2-2. Tertiary Crushing (controlled)
EU 05A - Screen #1	Moisture Present in Ash	66	1584	578,160	0.0022	0.15	0.64	AP-42 Table 11.19.2-2. Screening (controlled)
EU 05B - Screen #2 & #3	Moisture Present in Ash	132	3168	1,156,320	0.0022	0.29	1.27	AP-42 Table 11.19.2-2. Screening (controlled)
EU 06 - Drop Points onto bin/piles	Moisture Present in Ash	66	1584	578,160	0.00037	0.02	0.11	AP-42 13.2.4 (1): EF = $k * 0.0032 * (U/5)^{1.3} / (M/2)^{1.4}$ U = 10.5 mph; k = 0.74 (PM); k = 0.35 (PM10); M = 15%
EU 07 - Small Temporary Storage Piles	Moisture Present in Ash					0.19	0.83	See Table A.
EU 08 - Truck Loading	Moisture Present in Ash	66	1584	578,160	0.00037	0.02	0.11	AP-42 13.2.4 (1): EF = $k * 0.0032 * (U/5)^{1.3} / (M/2)^{1.4}$ U = 10.5 mph; k = 0.74 (PM); k = 0.35 (PM10); M = 15%
Totals =						0.838	3.67	

State Permit threshold - PTE (ton/yr) -
Part 70 Permit threshold - PTE (ton/yr) 100

PM Fugitive Emissions (Not Included in Permit Applicability)

Fugitive Source	Control	Maximum Hourly Production	Maximum Daily Production	Annual Capacity	PM Emission Rate	Hourly Emissions ¹	Annual Emissions	Comments on Emission Factors
		ton/hour	ton/day	ton/yr	lb/ton	lb PM/hr	ton PM/yr	
F 01 - Vehicle Traffic Unpaved	Natural Moisture + Wetting	66	1584			7.5	33.1	See Table B.

<i>ash composition</i>
EU 01 - Truck Unloading
EU 02 - Loading into Processing Equipment
EU 03 - Conveyor Transfer Points (assume 4)
EU 04 - Crusher
EU 05A - Screen #1
EU 05B - Screen #2 & #3
EU 06 - Drop Points onto bin/piles
EU 07 - Small Temporary Storage Piles
EU 08 - Truck Loading
Totals (ton/yr)

State Permit threshold - PTE (ton/yr)
Part 70 Permit threshold - PTE (ton/yr)

HAP Emissions (ton/yr) - based on HAPs contents from ash testing

Arsenic	Cadmium	Chromium	Lead	Manganese	Mercury	Nickel	Selenium		Highest Single HAP	Total HAPs
0.00190%	0.00280%	0.0173%	0.173%	0.0519%	0.0002%	0.0082%	0.0005%		0.173%	0.256%
0.0000020	0.0000030	0.0000185	0.000185	0.0000555	0.0000002	0.0000088	0.0000005		0.000185	0.0002733
0.0000020	0.0000030	0.0000185	0.000185	0.0000555	0.0000002	0.0000088	0.0000005		0.000185	0.0002733
0.0000031	0.0000045	0.0000280	0.000280	0.0000840	0.0000003	0.0000133	0.0000008		0.00028	0.0004136
0.0000066	0.0000097	0.0000600	0.000599	0.0001800	0.0000007	0.0000284	0.0000017		0.000599	0.0008863
0.0000121	0.0000178	0.0001100	0.00110	0.0003301	0.0000013	0.0000522	0.0000032		0.00110	0.0016249
0.0000242	0.0000356	0.0002200	0.00220	0.0006601	0.0000025	0.0001043	0.0000064		0.00220	0.0032498
0.0000020	0.0000030	0.0000185	0.000185	0.0000555	0.0000002	0.0000088	0.0000005		0.000185	0.0002733
0.0000157	0.0000232	0.0001432	0.00143	0.0004296	0.0000017	0.0000679	0.0000041		0.00143	0.0021151
0.0000020	0.0000030	0.0000185	0.000185	0.0000555	0.0000002	0.0000088	0.0000005		0.000185	0.0002733
0.0000698	0.000103	0.000635	0.00634	0.00191	0.000007	0.000301	0.0000184		0.00634	0.00938

- - - 0.5 - - - - - - - -
10 10 10 10 10 10 10 10 10 10 25

Lab USA Ash Processing - Red Wing, MN

Air Permit Applicability Determination

PM₁₀/PM_{2.5} Emissions (assuming 15% moisture ash)

Process	Control	Maximum Hourly Production	Maximum Daily Production	Annual Capacity	PM10 Emission Rate	Hourly Emissions ¹	Annual Emissions	Comments on Emission Factors
		ton/hour	ton/day	ton/yr	lb/ton	lb PM10/hr	ton PM10/yr	
Bottom Ash Processing Plant								
EU 01 - Truck Unloading	Moisture Present in Ash	66	1584	578,160	0.00017	0.01	0.05	AP-42 13.2.4 (1): EF = k * 0.0032 * (U/5) ^{1.3} / (M/2) ^{1.4} U = <u>10.5 mph</u> ; k = 0.74 (PM), k = 0.35 (PM10); <u>M = 15%</u>
EU 02 - Loading into Processing Equipment	Moisture Present in Ash	66	1584	578,160	0.00017	0.01	0.05	AP-42 13.2.4 (1): EF = k * 0.0032 * (U/5) ^{1.3} / (M/2) ^{1.4} U = <u>10.5 mph</u> ; k = 0.74 (PM), k = 0.35 (PM10); <u>M = 15%</u>
EU 03 - Conveyor Transfer Points (assume 4)	Moisture Present in Ash	264	6336	2,312,640	0.000046	0.01	0.05	AP-42 Table 11.19.2-2. Controlled Crushing
EU 04 - Crusher	Moisture Present in Ash	66	1584	578,160	0.00054	0.04	0.16	AP-42 Table 11.19.2-2. Tertiary Crushing (controlled)
EU 05A - Screen #1	Moisture Present in Ash	66	1584	578,160	0.00074	0.05	0.21	AP-42 Table 11.19.2-2. Screening (controlled)
EU 05B - Screen #2 & #3	Moisture Present in Ash	132	3168	1,156,320	0.00074	0.10	0.43	AP-42 Table 11.19.2-2. Screening (controlled)
EU 06 - Drop Points onto bin/piles	Moisture Present in Ash	66	1584	578,160	0.00017	0.01	0.05	AP-42 13.2.4 (1): EF = k * 0.0032 * (U/5) ^{1.3} / (M/2) ^{1.4} U = <u>10.5 mph</u> ; k = 0.74 (PM), k = 0.35 (PM10); <u>M = 15%</u>
EU 07 - Small Temporary Storage Piles	Moisture Present in Ash	66	1584			0.09	0.39	See Table B.
EU 08 - Truck Loading	Moisture Present in Ash	66	1584	578,160	0.00017	0.01	0.05	AP-42 13.2.4 (1): EF = k * 0.0032 * (U/5) ^{1.3} / (M/2) ^{1.4} U = <u>10.5 mph</u> ; k = 0.74 (PM), k = 0.35 (PM10); <u>M = 15%</u>
Totals =						0.330	1.44	

State Permit threshold - PTE (ton/yr) 25
Part 70 Permit threshold - PTE (ton/yr) 100

PM₁₀ Fugitive Emissions (Not Included in Permit Applicability)

Fugitive Source	Control	Maximum Hourly Production	Maximum Daily Production	Annual Capacity	PM10 Emission Rate	Hourly Emissions ¹	Annual Emissions	Comments on Emission Factors
		ton/hour	ton/day	ton/yr	lb/ton	lb PM10/hr	ton PM10/yr	
F 01 - Vehicle Traffic Unpaved	Natural Moisture + Wetting	66	1584			2.0	8.92	See Table B.

Table A
Storage Piles - Potential PM Emissions

Material Handling factors (AP-42, Sect. 13.2.4, Aggregate Handling and Storage Piles, 2006)

Assume PM30 as presented in AP-42 equates to total PM.

k = 0.053 for PM 2.5
k = 0.35 for PM 10
k = 0.74 for PM 30

<u>Emission Factors</u>	<u>Emission Calculations</u>
<p><u>Active Piles</u></p> <p>Emission Factor = $0.72 * u$ lb PM 30/acre/hr (disturbed area) <i>From Fifth Edition of AP-42, Table 11.9-1, Chapter 11.9, "Western Surface Coal Mining", 1998</i> Note: No scaling factors available for PM 2.5 & 10; use ratio of 'k' factors (above) $u = 10.5$ mph (average wind speed for Minneapolis-St. Paul, MN) (from http://lwf.ncdc.noaa.gov/oa/climate/online/ccd/avgwind.html) EF = 0.54 lb PM 2.5/acre/hr (uncontrolled) EF = 3.58 lb PM 10/acre/hr (uncontrolled) EF = 7.56 lb PM 30/acre/hr (uncontrolled)</p> <p><u>Inactive Piles</u></p> <p>Emission Factor = 0.38 ton PM/acre/yr (undisturbed area) <i>From Fifth Edition of AP-42, Table 11.9-4, Chapter 11.9, "Western Surface Coal Mining", 1998</i> Note: No scaling factors available for PM 2.5 & 10; use ratio of 'k' factors (above) EF = 0.03 ton PM 2.5/acre/year (uncontrolled) EF = 0.18 ton PM 10/acre/year (uncontrolled) EF = 0.38 ton PM 30/acre/year (uncontrolled)</p>	<p>**Calculations assume a 75% control efficiency from ash moisture and natural moisture</p> <p><u>Active Piles</u></p> <p>Disturbed area = 0.1 acres PM Emissions = Area * Active Storage Pile EF * Disturbed Hours/yr PTE worst case: Disturbed hours = 24 hr/day x 365 day/yr = 8760 hr</p> <p>PM 2.5 Emissions = 0.01 lb/hr 0.06 ton/yr PM 10 Emissions = 0.09 lb/hr 0.39 ton/yr PM 30 Emissions = 0.19 lb/hr 0.83 ton/yr</p> <p><u>Inactive Piles</u></p> <p>Inactive pile area = 0.00 acres PM Emissions = Area * Inactive Storage Pile EF * yr</p> <p>PM 2.5 Emissions = 0.00 lb/hr 0.00 ton/yr PM 10 Emissions = 0.00 lb/hr 0.00 ton/yr PM 30 Emissions = 0.00 lb/hr 0.00 ton/yr</p>

ANNUAL EMISSIONS	ton PM 2.5/yr	ton PM 10/yr	ton PM 30/yr
Active Storage Piles =	0.06	0.39	0.83
Inactive Storage Piles =	0.00	0.00	0.00
SITE TOTALS =	0.06	0.39	0.83

HOURLY EMISSIONS	lb PM 2.5/hr	lb PM 10/hr	lb PM 30/hr
Active Storage Piles =	0.01	0.09	0.19
Inactive Storage Piles =	0.00	0.00	0.00
SITE TOTALS =	0.01	0.09	0.19

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Table B
Fugitive Source: Vehicle Traffic on Unpaved Roads

(based on AP-42 Section 13.2.2 Unpaved Roads, 2006)

$E = k(s/12)^a(W/3)^b * [(365 - P)/365]$ Particulate emission factor, lb/VMT

Where:

k (PM 10) = 1.5
a = 0.9
b = 0.45

k (PM 30) = 4.9
a = 0.7
b = 0.45

constant for PM-10, lb/VMT

constant for PM-30, lb/VMT

s = 6.4

surface material silt content, %
(from AP-42 Table 13.2.2.1 for MSW Landfill)

W = 34

Mean weight of vehicles, tons
(Truck weight: 25 tons empty, 25+18 tons full)

P = 115

(Figure 13.2.1.2 for days with >0.01 in precipitation)

EF = 1.7

PM-10 lb/VMT

EF = 6.4

PM-30 lb/VMT

Control Efficiency from watering = 75%

Annual Emission Rates

Ash Trips = 88

Distance = 6,200

Roll-off Trips = 10

Distance = 4,800

Total VMT = 112.4

41,035

Number of daily round trips (City Landfill to Lab USA)

Distance per trip, feet

Number of daily round trips (Roll-offs)

Distance per trip, feet

Average vehicle miles traveled per day

Average vehicle miles traveled per year

Uncontrolled

35.7 tpy PM 10

132.2 tpy PM 30

Controlled (with watering)

8.9 tpy PM 10

33.1 tpy PM 30

Estimated Maximum Hourly Emission Rates

VMT = 4.7

Vehicle miles traveled per hour

Uncontrolled

8.1 lb/hr PM 10

30.2 lb/hr PM 30

Controlled (with watering)

2.0 lb/hr PM 10

7.5 lb/hr PM 30

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