

Prepared by:



Louisville Township

Merriam Junction Sands

Scoping Environmental Assessment Worksheet

Final June 3, 2014

Merriam Junction Sands, LLC proposal to mine approximately 682 acres of land for nonmetallic mineral mining and processing operations in Louisville Township, Scott County Minnesota.

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1. Parcel Identification Numbers
2. MnDNR Letter and Index Report
3. Draft Scoping Decision Document

SCOPING ENVIRONMENTAL ASSESSMENT WORKSHEET

Note to reviewers: The Scoping Environmental Assessment Worksheet (SEAW) provides information about a project that may have the potential for significant environmental effects. This SEAW was prepared by Scott County, acting as the Responsible Governmental Unit (RGU) and Louisville Township, (host township), to identify the issues to be addressed in the Environmental Impact Statement (EIS). The project proposer supplied reasonably accessible data for, but did not complete the final worksheet. Comments on the SEAW must be submitted to Scott County during the 30-day comment period, which begins with notice of the availability of the SEAW in the *Minnesota Environmental Quality Board (EQB) Monitor*. Comments on the SEAW should address the accuracy and completeness of information, and the issues that warrant further investigation in the EIS. A copy of the SEAW may be obtained from Scott County by calling (952) 496-8351. An electronic version of the completed SEAW is available on the Scott County Web site <http://www.co.scott.mn.us>.

1. Project Title

Merriam Junction Sands

(This Project and the following Scoping EAW is a redefinition of an earlier proposed mining and reclamation project and a previously published Scoping EAW. This Project was initially proposed to include land owned by three individual property owners but has been redefined to include land owned by only two individual property owners, with the third property owner no longer involved in the Project.)

2. Proposer

Merriam Junction Sands, LLC

Contact person	Kirsten Pauly, PE/PG
Title	Project Engineer
Address	Sunde Engineering, PLLC 10830 Nesbitt Ave. South
City, State, ZIP	Bloomington, MN 55437
Phone	(952) 881-3344
Fax	(952) 881-1913
Email	kpauly@sundecivil.com

6. Description.

a. Provide a project summary of 50 words or less to be published in the EQB Monitor.

Merriam Junction Sands, LLC proposes to develop approximately 682 acres of land for nonmetallic mineral mining and processing operations. Mining and processing operations include: stripping, blasting, dewatering, extraction, washing, drying, screening, truck and rail loadout and phased reclamation.

b. Give a complete description of the proposed Project and related new construction. Attach additional sheets as necessary. Emphasize construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes. Include modifications to existing equipment or industrial processes and significant demolition, removal or remodeling of existing structures. Indicate the timing and duration of construction activities.

Merriam Junction Sands, LLC (Proposer) is seeking to continue existing sand, gravel and limestone mining and processing and establish new silica sand mining of the Jordan Sandstone, and the associated processing facility(ies) (Project) on several adjacent parcels of land located in Louisville Township, Scott County, MN (Site). Some of the parcels have been mined in the past, some are currently being mined and some have not been mined. Several of the parcels have current non-mining uses. The Project includes mining, processing, loading and site reclamation. The following information provides a complete description of the Site and all Project related activities.

Existing Site Description:

The Site is composed of property currently owned by two separate entities: Malkerson Sales, Inc. (Malkerson Sales), and Bryan Rock Products, Inc. (Bryan Rock). The owners of the properties are jointly proposing the mining and processing of silica sand (Project) located on approximately 682 acres in Louisville Township, Scott County, MN. The Site lies south of State Highway 41, west of U.S. Highway 169, and east of the Minnesota River. The Site consists of 13 individual tax parcels. Figure 4, *Site Ownership*, illustrates the various parcels within the Site and their ownership.

The majority of the parcels have been mined in the past and/or are currently being mined. Mining activities have been intermittent within portions of some of the parcels included in the Site since at least 1951, before Scott County began regulating mining operations.¹ All of the properties within the Site are currently

¹ Scott County has required Conditional Use Permits for commercial mining operations since January 29, 1971. The mining performance standards were adopted on June 18, 1986.

zoned I-1, Rural Industrial. Surrounding land use is both industrial as well as public lands associated with the floodplain area of the Minnesota River.

Malkerson Sales Property:

The Malkerson Sales property includes approximately 443 acres. There is an active non-metallic mineral mining operation located on the Malkerson Sales property that is currently operating without a permit from Scott County. Past and current mining and reclamation areas include approximately 205 Acres. Based on historical aerial photographs from 1951 and 1957, portions of this property have a history of mining dating back to the 1950's, before the County adopted any mining regulations or environmental review rules were adopted by the State. Sand, gravel, and limestone are mined on the Malkerson Sales property. Mining activities include stripping topsoil and overburden, blasting, extraction, processing, stockpiling, loading and reclamation. In the past, washing was conducted on Malkerson Sales property. Previous operations also included load-out and importation of aggregates via a rail siding adjacent to the property. Historically, annual production from the Malkerson Sales property has ranged from approximately 0 tons/year to 1,500,000 tons/year, which is transported by truck onto State Highway 41 and then either west into the City of Chaska or east to U.S. Highway 169.

Other portions of the Malkerson Sales property include the original farmstead, and outbuildings, horse stables and race track. There is one main potable well associated with these buildings. The Renaissance Festival, an annual festival held in late summer and in the fall of each year operated by Mid-America Festivals, Inc. is located on a portion of the Malkerson Sales property. The festival area includes booths, festival grounds, and parking areas for the event. The active limestone mine face is currently located on the northern end of the Renaissance Festival parking area and quarrying activity is moving in a southerly direction. Parking has been recently relocated to the quarry floor as mining continued to the south through the previous parking area. There are two water supply wells associated with the Renaissance Festival grounds. The Renaissance Festival operates under a Conditional Use Permit (CUP) issued to Mid-America Festivals, Inc. by Scott County in 1988, which includes the Halloween themed Trail of Terror operated in and around buildings near the stable area, and other seasonal events.

The compatibility of the continued coexistence of the proposed mining and the Renaissance Festival will be a topic of analysis in the EIS with consideration of traffic, public safety, impacts on the Renaissance Festival wells, ambient air quality, noise and other factors. The time period for impact consideration will not be limited to the period when the Festival is open to the public since there is an ongoing presence at the facility for security, maintenance, upkeep, restoration and some extended residential use related to the Festival.

Access to the Malkerson Sales Property is from the north to State Highway 41 and to the south to 145th Street West, a Township Road. There is a truck scale, scale house and well located in the northern portion of the property near the State Highway 41 access. Truck hauling is currently limited to the access onto State Highway 41. The Union Pacific (UP) Railroad runs along the eastern boundary of most of the Malkerson Sales property. Gifford Lake borders the northwestern portion of the Malkerson Sales property. State lands, some of which are all located within the floodplain of the Minnesota River, border the western portion of the property. A wetland complex is located in part over the southwestern portion of the property.

Bryan Rock Property:

The Bryan Rock property includes approximately 239 acres. There is an active limestone quarry located on a portion of the Bryan Rock property. This mining and processing activity is regulated by a CUP issued to Bryan Rock by Scott County in 1993 for the northern 181 acres of the Bryan Rock property. An Environmental Assessment Worksheet (EAW) was prepared for the current mining activity as part of the original permitting process.

Historical aerial photographs illustrate that mining has been conducted on portions of this property since at least the 1950's. Past and current mining areas include approximately 161 acres. A portion of the active mining area was formerly owned by Valley Mining (Valley Mining parcel) and leased to Bryan Rock. Bryan Rock purchased the Valley Mining parcel in 2010. Mining activities on portions of the Bryan Rock site have involved stripping topsoil and overburden, blasting, extraction, processing (including crushing, washing, and screening,) stockpiling, loading and reclamation. There is a production well located on-site for washing activities. A Minnesota Department of Natural Resources (MnDNR) water appropriations permit has been issued for this well. The appropriation allows for the removal of up to 300 gpm/30 million gallons per year. Annual production from the Bryan Rock property ranges up to 1,500,000 tons/year which is transported by trucks via U.S. Highway 169 to local markets.

Bryan Rock's property extends to the south of the active mining operation, where approximately 58 acres are located outside of the limits of the current CUP. While not included in the current CUP, it has always been the intention of Bryan Rock for these parcels to be mined at some point in the future. The Bryan Rock parcels include frontage along, and several recorded access points to, U.S. Highway 169. The main access for the quarry is located at the northern portion of the Bryan Rock property and is a shared access with Anchor Block, the property owner immediately north of the quarry. 145th Street West, a township road, runs through the southern portion of the property. There are two active access points to 145th Street West from Bryan Rock's property located north of this township road and three active access points to this township road from

Bryan Rock's Property located south of this township road. As part of the U.S. Highway 169 Corridor Plan, and the Louisville Township Frontage Road Study, an interchange at 145th Street West and U.S. Highway 169 is planned in the future. Draft plans indicate that the future interchange will bisect Bryan Rock's southernmost parcel in some manner. In addition, long term plans call for a frontage or backage road to be extended north-south through the Bryan Rock property, allowing for the eventual closure of all private access points to U.S. Highway 169 and directing local traffic to the new interchange planned near 145th Street West. The UP railroad runs along the western boundary of most of the Bryan Rock property.

Since the proposed Project will potentially affect future options for frontage or backage roads, the EIS will evaluate and propose how connectivity between Dem-Con Drive to at least 145th St. West will be preserved and funded.

Surrounding Land Use:

Surrounding land use to the north and east is characterized by industrial land uses along the western portion of the U.S. Highway 169 corridor and State Hwy 41. Surrounding land uses include a residential property just north of the Project site across State Highway 41, located on property also owned by Malkerson Sales, a sand and gravel mining operation being operated in conjunction with an expanding demolition debris landfill, a closed MSW landfill and an active demolition landfill, a Minnesota Department of Transportation (MnDOT) transportation facility, a mobile home park, a motel, several smaller businesses, a municipal solid waste recyclable material sorting facility and a block manufacturing facility. A yard waste composting facility is located to the south of the Site. To the west is public land owned by the MnDNR. These public lands, situated predominantly within the 100 year floodplain of the Minnesota River, include the Minnesota Valley Trail Corridor, the Gifford Lake Area and the Louisville Swamp Unit of the National Wildlife Refuge, which is accessed off of 145th Street West near the southern portion of the Project. A Union Pacific rail line and associated spurs run alongside the eastern and southern portions of the Malkerson Sales property and the western portions of the Bryan Rock property. An abandoned UP line also runs along the southwestern portion of the Malkerson Sales property and through the adjacent Mid America Festivals, Inc. property. Portions of this abandoned rail line have been acquired by the County from the railroad for a future recreational trail and utility corridor.

Proposed Project:

Mining on the Project parcels in the past has included the production of sand, gravel and limestone/dolomite (from the Prairie du Chien Group). The Proposed Project involves the continuation of the production of construction aggregates from the sand and gravel and limestone deposits as well as mining silica sand associated with the Jordan Sandstone, which underlies the sand and gravel and

limestone deposits. Silica sand has many uses, including glass making, metal casting, chemical production, building products, paint and coatings, ceramics and refractories, filtration and recreational uses, but the current market demand is driven by demand from the oil and gas industry to be used in the hydraulic fracturing process. Sand injected into oil and gas wells allow for increased production by maintaining fractures in the parent rock and allowing the flow of oil and gas through the rock to the well.

The market specifications for silica sands to be used in the hydraulic fracturing process must meet strict standards, including silica content, grain size sphericity, roundness and strength, which few sandstone deposits can actually meet. Sands that do not have the correct shape, strength or size will not hold the fractures open. Geologically, older sandstones of Cambrian Age, like the Jordan Sandstone, seem to be the most suitable for current market demand. The quartz grains have been abraded through fluvial and other high energy geologic processes, and this makes it suitable for use as hydraulic fracturing sand.

Geologic Setting:

The Site is situated on a glacial river terrace, approximately 50 feet above the floodplain of the Minnesota River. Over most of the Site, a thin layer of unconsolidated material (a mix of sand and gravel and clay) rests on top of bedrock. Throughout the majority of the Site, the first bedrock contact is the Prairie du Chien Group.

The Prairie du Chien Group is a finely crystalline dolostone, sandstone, and shale that subcrops as a relatively flat, buried plateau as described in the Scott County Geologic Atlas.² The Prairie du Chien Group is composed of two units, the upper Shakopee Formation and the lower Oneota Dolomite. Both the Oneota Dolomite and overlying Shakopee Formation consist largely of carbonate components, characterized by thin to very thick, beds of dolostone, with negligible amounts of sandstone and other silica bearing rocks, except in the lowermost 5 to 20 feet, within the Coon Valley Member, the lowest member of the Oneota Dolomite, which can contain substantial quantities of sandstone, and sandy dolostone and thin partings of greenish-gray shale.³

The Prairie du Chien Group is typically 140 to 190 feet thick where past erosion has not diminished the thickness of the unit. However, in the area of the Site, it is typically 25-70 feet thick due to past erosion of the uppermost portion of this bedrock unit. It has been entirely eroded away in the northern portion of the Site

² Minnesota Geological Survey. 2006. Scott County Geologic Atlas. County Atlas Series C-17. University of Minnesota. St. Paul, MN

³ Mossler, John. 2008. Paleozoic Stratigraphic Nomenclature for Minnesota. Report of Investigations 65. University of Minnesota St. Paul, MN.

where a buried valley downcut through the Prairie du Chien Group and underlying bedrock formations. It is also absent over the very westernmost portions of the Site where glacial River Warren eroded through the Prairie du Chien Group as well as underlying bedrock formations. The Prairie du Chien Group is also absent in the very southern portion of the Site.

Underlying the Prairie du Chien Group over the majority of the Site, and forming the bedrock subcrop in the very southern portion of the Site, is the Jordan Sandstone. The Jordan Sandstone is approximately 80 to 120 feet thick within the Site. It typically contains two facies, a medium-to coarse-grained quartz sandstone and fine-grained feldspathic sandstone with lenses of siltstone and shale. The Jordan Sandstone is the source of the high quality silica sand.

Beneath the Jordan Sandstone, additional bedrock units are found. From uppermost to lowermost, the Jordan is underlain by the St. Lawrence Formation, the Tunnel City Group (formerly known as the Franconia Formation), the Wonewoc Sandstone (formerly known as the Ironton and Galesville Sandstones), and the Eau Claire Formation. The St. Lawrence Formation is a dolomite-cemented, very fine-grained sandstone and siltstone. The St. Lawrence Formation contains interbedded laminated green shale and pink to red, finely to coarsely crystalline dolostone, the latter being particularly abundant in the lower one-half of the formation. To the west of the Site, the Minnesota River flows through a bedrock valley, which is believed to be downcut into the St. Lawrence Formation and/or Tunnel City Group (MGS 2006).

Hydrogeologic Setting:

The elevation of the water table varies from approximately 725 feet above mean sea level (msl) in the eastern portion of the Site to approximately 703 feet above msl along the western portion of the Site, adjacent to Gifford Lake. Based on water level data from existing on-site and adjacent wells, the general direction of groundwater flow is from the east to the west towards the discharge region of the Minnesota River. In areas where limestone has been previously quarried, the depth to water table is approximately 2-20 feet from the floor of the quarry. Groundwater flow in the Jordan Sandstone occurs under unconfined conditions. Below the Jordan Sandstone, the St. Lawrence Formation characteristically has low vertical hydraulic conductivity and is typically considered a confining unit hydraulically separating the Prairie du Chien-Jordan Aquifer from the underlying Tunnel City aquifer. However, due to the past down cutting associated with Glacial River Warren in the present day Minnesota River Valley, a hydrologic separation between these two hydrologic units may not exist throughout the entire Site.

Concept Mine Plan:

The unconsolidated sand and gravel deposits, the limestone/dolostone of the Prairie du Chien Group and the Jordan Sandstone are economically mineable non-metallic mineral deposits. Past mining and quarrying activities have removed the overlying unconsolidated sediments and the limestone over much of the Site. Currently, there is active quarrying activity on both the Malkerson Sales and Bryan Rock Properties. Continued limestone quarrying will remove the remaining limestone in advance of sandstone mining.

Figures 5-1 – 5-6, *Concept Mine Plans*, illustrates potential plant sites and mine phasing alternatives throughout the Site. A detailed mine plan will be developed for each alternative as part of the Environmental Impact Statement (EIS) that will elaborate on how the various mining activities will be coordinated throughout the Site, sequence of mining activity, setbacks, plant layout, material staging, and other operational activities.

Construction Aggregates:

Mining will involve the continued removal of sand and gravel and limestone resources for use as construction aggregates where these resources still remain within the Project area. Virtually all mining activities are conducted behind berms or down in the quarry, so these activities are not visible from off-site. The current mining activity includes clearing of trees and vegetation as may be necessary, removal of topsoil and overburden, blasting, extraction, processing (crushing, washing, screening), stockpiling, loading, and hauling.

Active limestone mining is occurring on the Malkerson Sales property just east and south of the Renaissance Festival booth site within the area covered by the Renaissance Festival CUP, which has not been amended to reflect this activity. Bryan Rock is currently conducting the mining operations in this area through a lease agreement with Malkerson Sales. Mining is moving in a southerly direction through the existing Renaissance Festival parking lot. As limestone mining has advanced through the existing parking area, parking has been relocated into the floor of the quarry. Relocated parking areas were utilized during the 2012 Renaissance Festival and prior years. Bryan Rock is also conducting limestone mining operations within the Bryan Rock Products quarry. Although the majority of active limestone mining activity is currently taking place on the Malkerson Sales property, all washed products that Bryan Rock produces come from active mining within the Bryan Rock quarry.

Mining of limestone will also continue on the Bryan Rock property. Limestone resource remains on the northern portion of the Site, beneath the existing floor, and on property owned by Bryan Rock to the south of the existing quarry. Limestone is processed on Site and is expected to be hauled from the Site using the current northern access onto U.S. Highway 169 (shared with Anchor Block) with hauling utilizing 145th Street West only for specific jobs. These traffic patterns are consistent with the current traffic patterns at the Site. Increased use

of 145th Street West as a main access point for hauling limestone or silica sand is not anticipated.

Sand and gravel resources exist in the very northern portion and southern portions of the Malkerson Sales property and these areas will be mined at some point in the future, determined by market conditions. The remaining sand and gravel resource in the northern portion of the Malkerson Sales property does not overlie limestone or sandstone resources. Sand and gravel extracted from the property lying west of the UP railroad track will be hauled to State Highway 41 from the on-site access road. Sand and gravel extracted from the parcel of property lying east of the UP railroad track will be hauled to State Highway 41 from Dem-Con Drive.

Transition Material:

The basal member of the Prairie du Chien Group, the Coon Valley member, is a layer of bedrock between 5 feet and 20 feet in depth that contains layered limestone, sandstone and shale. The Coon Valley member does not contain appreciable quantities of marketable limestone or sandstone. This material is referred to as the “transition layer” in the mining plan. Sandstone mining will begin in areas of the Site where the majority of marketable limestone has been removed from previous mining activity. Phasing will be detailed in the EIS. Before sandstone mining can begin, the transition material will be removed within a given phase. (There are some areas within the proposed mining limits where the Prairie du Chien Group, including the basal transition layer, has been entirely eroded away and therefore will not require this step.) Removal of the transition layer will require blasting and extraction utilizing an excavator and/or loader. The transition material will be stockpiled for later use in reclamation, or, once a large enough mining area has been completed, the transition material will be hauled to the active reclamation area and placed directly as reclamation fill. Portions of the transition are located above the water table and portions of the transition are located below the water table. The mining plan anticipates dewatering in cells as needed to remove all of the transition material under dry mining conditions.

Sandstone Mining:

Mining of the Jordan Sandstone can begin once the transition material has been removed. The sandstone will be blasted as necessary to break up the lightly cemented sand particles without causing the fracturing of the sandstone grains. Blasting will facilitate the removal of the sandstone using wet or dry mining excavation equipment. Different levels of dewatering will be evaluated in the EIS. One option will be to dewater only the transition material and utilize wet mining methods, e.g. dragline or dredge, to remove the sandstone deposit. Another alternative will be to dewater the transition and the upper portion of the Jordan Sandstone to allow dry mining of both the transition and the upper portion of the sandstone. Wet mining methods; dragline, dredge or excavator, would then be

used to remove the sandstone in the lower portion of the formation. Under both options, dewatering will occur in phases. Water removed from dewatering the active mining area will be pumped to the processing plant and utilized in wet processing of the sand. Excess dewatering discharge will be infiltrated back to the groundwater table or discharged from the Site under a MPCA National Pollutant Discharge Elimination (NPDES) Permit.

Once the sandstone is excavated it will be fed into a small crushing spread which will remove oversized materials and reduce the material to a size that is required for transport to the wet plant(s) for further processing.

Sandstone Processing:

General processing activity is described below. The EIS will evaluate various alternatives with respect to processing and rail load out locations. The following section describes the general sandstone processing activities; wet plant and dry plant. A description of the alternatives to be evaluated in the EIS is included at the end of Item 6b. Project Description.

Wet Plant(s):

The excavated sand will be transported from the active excavation area to the wet plant(s) by conveyor or slurry. The wet plant(s) clean the sand and perform initial sizing operations by separating finer sand and silt from coarser sand. Equipment within the wet plant(s) will include scalping screens to remove oversized materials, hydrocyclones and hydrosizers to separate the coarse sand from the fine sand, and dewatering screens. In addition, attrition scrubbers to loosen and remove certain impurities may be utilized depending upon variations encountered throughout the deposit.

The wet plant(s) may be operated on a year round basis. Up to 95% of the water used in the wet plant will be recycled. Water use will depend upon wet plant capacity and production. For the greatest production levels of 2.4 M ton/yr, an estimated 1,000 to 1,500 gpm of makeup water will be required to replace water lost to the product and waste material during wet processing. Make-up water will be obtained from quarry dewatering activity. Water from the washing process will be pumped to a clarifying tank where fine materials settle out and the clean water is returned to the plant for reuse. A portion of the water that passes through the wet plant(s) will be used to make a slurry with the fine sands which is then pumped back to the reclamation area where it will be used as reclamation fill. After dewatering, the coarse sand will be transferred by conveyor to the rail loadout(s) for loading and shipment or to the dry plant(s) where it will be stockpiled for further processing.

Dry Plant(s):

The dry plant(s) will be operated on a year round basis. The dry plant(s) will include a rotary drum dryer(s) or a fluidized bed dryer(s) which will feed into an enclosed building to a series of screens to produce the necessary gradations of marketable silica sand product. Finished product will be conveyed into a series of storage silos. The storage silos will feed into the rail load loadout area or truck loadout area by conveyor. Finished product will be transferred into covered railcars or enclosed trucks for shipment to market. The dry plant(s) will be equipped with state of the art pollution control equipment. Natural gas will be brought to the Site as fuel for the dryer(s). Propane may serve as back up fuel to allow uninterrupted processing during peak demand periods.

Stockpiles:

There will be stockpiling of various materials located throughout the Site. These materials include topsoil and overburden, raw and processed limestone, raw and processed sand and gravel, transition material and raw and processed sandstone.

Topsoil and overburden stockpiles are currently located in inactive portions of the quarries and along the perimeter of mining areas and haul roads. As mining progresses into new areas, additional stockpiles of overburden and topsoil are shaped into berms along the perimeter of the new mining area, providing continuous screening of the mining activity. The location of temporary stockpiles and permanent berms will be presented in the EIS with analysis of potential impacts.

Construction aggregates will continue to be stockpiled throughout the floor of active portions of the limestone quarry. These stockpiled materials include small surge piles of raw materials that feed the existing portable processing plants, crushed and screened product as well as washed and unwashed product that is ready for delivery to market. Locations and quantities of stockpiled materials vary throughout the mining season as stockpiles of various materials are put up to serve anticipated client demand and then replenished as needed. The total volume of limestone stockpiles on the floor of the quarry typically ranges from 600,000-1,000,000 tons. The total volume of sand and gravel stockpiles ranges from 0-300,000 tons. The location of construction aggregate stockpiles will move with the phases of limestone mining as a result of the portable processing equipment that is relocated as mining progresses from one phase to the next. Figure 6, Construction Aggregate Stockpile Locations, illustrates the location of the construction aggregates as mining progresses, as well as the location of sand and gravel stockpiles.

Stockpiling of transition material will be limited to perimeter berms and the creation of one stockpile, up to 1,000,000 cy, at the onset of mining within the property when transition material is removed to expose the underlying sandstone. Once a large enough excavation of sandstone has been removed

(approximately one mining season) future removal of transition material will be placed directly as reclamation backfill in the completed mine phase. Transition material will be used predominantly as reclamation backfill and to shape the edges of end use water bodies and provide stabilization of mine faces.

Sandstone mining will result in additional stockpiles of material. The sand processing equipment is stationary, therefore the sand stockpiles will not move as mining progresses. Stockpiles related to the sandstone excavation include a small raw sand surge pile that will be located on the floor of the quarry near the active mining operation. This pile will feed a crushing and screening circuit to remove oversized material. The rest of the material, now sized for transport, will be slurried or conveyed to the wet plant(s) for processing. The oversized material will be transported to the active reclamation area and used directly as reclamation backfill.

There will be two or three smaller stockpiles associated with the wet plant area(s). Material from the quarry arriving to the wet plant(s) will be dewatered as necessary, and stacked into a surge pile of raw sand to feed the wet plant(s). The wet plant(s) will create a stockpile of coarse sand concentrate which will be conveyed to either the decanting piles at the dry plant or the winter stockpile. Fine sand concentrate will not normally be stockpiled, rather it will be slurried or conveyed back to the quarry area to be used directly in the reclamation process. During the initial mine start up on each property up to one season's worth of fine sand (up to 1.7 million tons) will be stockpiled on the quarry floor, covered with black dirt and vegetated as needed to control fugitive emissions. The fine sand will be placed directly as reclamation fill once a large enough excavation has been created from the mining process. The wet sand concentrate will be transferred directly to a rail loadout or to the dry plant(s) for additional processing. Wet sand shipped by truck or rail may be shipped in both covered and uncovered railcars or trucks. If the wet plant(s) operate year round, there will be a stockpile of raw sand (400,000 to 800,00 tons) established near the wet plant(s) to feed the wet plant during the winter months if mining is not active year round.

Stockpiles associated with the dry plant(s) will include decanting stockpiles that will feed the dry plant(s) directly. There will be a series of decanting stockpiles and the feed to the wet plant(s) will rotate through them. The decanting piles are initially stacked with a moisture content of approximately 12% which is reduced to approximately 5% by the time the pile is used as feed to the dry plant. There will be between two and four decanting stockpiles at the wet plant(s), depending upon the alternative developed. Each of the decanting piles will have a capacity of approximately 15,000 tons.

The washed sand winter feed stockpile will be the largest stockpile on the Site and will supply the dry plant(s) with coarse sand concentrate during the frozen months when the wet plant is not operating. The volume of this stockpile will be

continually added to throughout the mining season, reaching maximum volumes (500,000-1,000,000 tons depending upon the alternative developed) in mid-November. Once mining and washing shuts down for the winter, the winter feed stockpile will diminish over the course of the winter months.

A small amount of waste sand is generated from the dry plant(s). This material will be stored in an enclosure and either trucked (in winter), slurried or conveyed to the active reclamation area. Up to 1 truck load per day (20 tons) of dry sand waste will be generated. When a truck is used to haul the dry sand to the reclamation area, it will be covered.

While the transition material and waste sands will generally not be stockpiled, but used directly in reclamation activities that will occur concurrent to mining operations, temporary stockpiles of these materials on the floor of the quarry will be needed at the onset of sandstone mining operations. These temporary stockpiles will be utilized until a large enough excavation has been created to allow reclamation to begin, without interfering with the sandstone excavation process.

The EIS will further describe stockpile locations, volumes and heights associated with each alternative and identify best management practices to control dust emissions from material stockpiles.

Transport of Product:

Truck Hauling:

Sand and gravel and limestone materials are currently transported from the Malkerson Sales property to State Highway 41 on a paved internal haul road. A scale and scale house is located in the northern portion of the Malkerson Sales property. There is also a southern access to 145th Street West which is used only occasionally for aggregate hauling, for example when there is a job to the south of the Site, empty trucks enter the Site off of 145th Street West. The trucks are loaded and then exit over the scale and out to State Highway 41. (This access is used primarily to manage Renaissance Festival traffic). Limestone materials from the Bryan Rock property are hauled from the Site onto U.S. Highway 169. There is a scale and scale house and Site access located on the northern end of the property. This access is shared with Anchor Block, the property owner to the north. Bryan Rock also has two points of access onto 145th Street West. One access to the property is north of 145th Street West and is used occasionally to haul aggregates, in situations similar to the above description for the Malkerson Sales property. The other access to the property is south of 145th Street West. (Access locations are illustrated on Figure 3, *Existing Site Features*.)

Construction aggregate loads are hauled in uncovered trucks. Wet sand will be hauled in uncovered trucks. Dried sand will be hauled in covered or enclosed trucks.

The EIS will evaluate the potential impacts of truck hauling of processed sand from the Site. The traffic analysis will include an evaluation of potential impacts to the existing roadways, access points and present potential mitigation measures. The traffic analysis will take into consideration the existing truck hauling as well as vehicles related to Renaissance Festival and is further described under item 21. The EIS will include specific evaluations of each of the proposed access points, timing proposed for each as well as maximum truck numbers anticipated at each point of the Project as further defined in item 21.

Rail Loadout(s):

It is anticipated that the majority of sand will be transported from the Site by rail. The UP railroad owns the mainline track that runs adjacent to and through the Site. A rail yard and rail loadout facility(ies) will be constructed as part of the Project. Improvements will include construction of switches from the mainline and spur lines to accommodate unit trains up to 100 cars. The rail loadout facility(ies) will allow the transport of up to 2.4 million tons of sand annually. However due to the potential for market changes and final product destinations, sand may be hauled by truck to a barge or rail transloading facility or to the final market. The Project's impact to current train and vehicle traffic will be described in the EIS.

Reclamation:

Reclamation activities will be performed in phases as mining in a given area is completed. Reclamation will leave the Site with a mix of water and upland areas. Final contours and establishment of native vegetation will be developed to provide diverse wildlife habitat over portions of the Site that will complement the Minnesota River Valley and adjacent park lands. Reclamation will be performed in phases and reclamation activities will be on-going. A geotechnical report that ensures stable restoration for the proposed End Use will be provided in the EIS. The EIS will address financial security measures that will be taken should the proposed mine be abandoned prematurely.

Reclamation will begin in Phase 1 after approximately 15-25 acres of mining have been completed, opening up a large enough mining area to allow the placement of reclamation fill without interfering with continued mining operations. As sandstone mining is completed in one area, backfilling and final grading will be performed around the created water body. Backfill below the water table will consist of granular sand that is too fine to be included in marketable gradations, as well as transition material, weak limestone interbedded with sandstone and shale. Reclamation materials will be placed as hydraulic fill, below the elevation

of the natural water table to stabilize slopes and create upland areas as illustrated on the Concept Reclamation Plan.

The fine granular sand will be temporarily stockpiled adjacent to the mining area for approximately one to two mining seasons, allowing a large enough excavation to be created to permit mining without interference from backfilling. Measures will be taken as needed, such as covering the stockpile and establishing temporary vegetative cover to control fugitive dust emissions.

Final contouring and establishment of native vegetation will be performed on upland areas. Portions of the Site will be reclaimed to allow future development of the land consistent with current comprehensive guide land use policies. Areas suitable for future redevelopment will be located in the northern portion of the Malkerson Sales property, where there is no sandstone resource and in areas backfilled with structural fill to upland conditions as part of the reclamation process. The northern portion of the Bryan Rock property may also be backfilled with structural fill to allow future industrial development of portions of this property. Areas associated with the processing facilities on top of sandstone resources located on either or both Malkerson Sales and Bryan Rock properties, (depending upon the alternative that is developed), will be mined and reclaimed last. A portable wet plant would likely be established on Site to process the sand beneath the processing plants. The rail yard(s) and rail loadout(s), or portions of the track, may remain as long term uses on the property. Figure 7, *Concept Reclamation Plan*, illustrates general Site conditions upon completion of reclamation activities. A detailed reclamation plan will be developed as part of the EIS process. The detailed reclamation plan will include water basins that appear natural in shape as practical for the site.

Construction Sequence:

Initial activities will include the construction of the wet and dry plant(s) and rail loadout facility(ies). Sandstone mining will develop in phases which will be described fully in the EIS. Remaining sand and gravel resources are located primarily in the northern portion of the Malkerson Sales property beneath the stable area and on the parcel of land in the northeast corner of the Site east of the tracks. Phasing plans developed in the EIS will take into consideration future mining of these resources as well as the limestone and sandstone mining activities.

Alternatives

There will be a total of seven alternatives studied in the EIS. In addition to the No Build Alternative, other alternatives will evaluate different plant locations and capacities. The number of alternatives is necessary to provide flexibility as the Project moves forward and takes into consideration potential changes in the sand market. It is anticipated that the market will undergo a number of changes

throughout the life of the Project. Today's end markets may be located in other areas of the country than the markets 20 years from now. Sand supply, with the development of a number of recently permitted sand mines in Wisconsin, is currently meeting market demand. Silica sand mining operations that will be economically viable in the future must be able to adapt to evolving market conditions. The alternatives identified below reflect maximum plant capacity at full build out to capture worst case analysis in the EIS. With each alternative, plant production will begin at a lower production rate, increasing to maximum capacity as market conditions warrant.

Alternative 1: Two 1.2 million ton (MT)/year processing plants. "Processing plants" refers to both a wet plant and a dry plant throughout this document. One plant to be located on the Bryan Rock plant site and one plant located on the Malkerson Sales northern plant site. Alternative 1 includes two separate rail yards and loadout facilities. Plant locations and phasing are illustrated on Figure 5-1.

Alternative 2: Two 1.2 MT/year processing plants. One plant to be located on the Bryan Rock plant site and one plant located on the Malkerson Sales southern plant site. Alternative 2 includes two separate rail yards and loadout facilities. Plant locations and phasing are illustrated on Figure 5-2.

Alternative 3: One 2.4 MT/year processing plant located on the Bryan Rock plant site. Alternative 3 includes one rail yard and loadout facility. Plant location and phasing are illustrated on Figure 5-3.

Alternative 4: One 2.4 MT/year processing plant located on the Malkerson Sales northern plant site. Alternative 4 includes one rail yard and loadout facility. Plant location and phasing are illustrated on Figure 5-4.

Alternative 5: One 2.4 MT/year processing plant located on the Malkerson Sales southern plant site. Alternative 5 includes one rail yard and loadout facility. Plant location and phasing are illustrated on Figure 5-5.

Alternative 6: One 2.4 MT/year processing plant located on the Malkerson Sales northern plant site. Alternative 6 includes one rail yard loadout facility. Plant location and phasing are illustrated on Figure 5-6.

Alternative 7: No Build Alternative: This alternative considers continued limestone quarry, sand and gravel mining and processing operations. No silica sand mining, processing or rail loadout are associated with this alternative.

The EIS will include an analysis of a number of different topics. Some of the subjects of the analysis are not impacted by the number of alternatives to be studied (e.g. cultural resources, economic impact). For these topics, one study will be sufficient in characterizing the potential for environmental effects as a

result of the Project compared to the No Build Alternative. Other topics may require a separate analysis of each alternative because the location or size of the plant will elicit different results (e.g. air emissions, noise). Finally, other topics may require that more than one analysis is needed in order to evaluate potential worst case scenarios, but something less than an analysis for each separate alternative is required.

Table 6-1 summarizes the required analyses associated with each of the alternatives. Different colors each represent an individual analysis. For example, if there is only one color across a row, one analysis will be conducted which will adequately describe the potential impacts for all alternatives. If there are five different colors associated with a category, five separate analyses will be conducted. If there are two to four colors associated with a row, then a variable number of studies will be conducted with at least one study serving to describe potential impacts associated with two or three alternatives due to their similarities with respect to those potential impacts. For example, Item 7.0, Project Magnitude Data, will be addressed with two analyses, one will describe the potential effects of Alternatives 1 and 2, with two plants each producing 1.2 M tons annual production and the second will describe the potential effects of Alternatives 3, 4, 5 and 6 (with one plant only producing 2.4 MTons annual production). Although the No Build Alternative is not listed on Table 6-1, each topic will include a discussion of the No Build Alternative. The following sections of the Scoping EAW describe each of the topics considered for evaluation in the EIS. Each section includes a discussion of the appropriate analysis required for the various alternatives.

Table 6-1 Summary of EIS Analysis Relative To Alternatives

Item	Alt. 1: 1.2 BRP 1.2 MS-N	Alt. 2: 1.2 BRP 1.2 MS-S	Alt. 3: 2.4 BRP	Alt. 4: 2.4 MS-N	Alt. 5: 2.4 MS-S	Alt. 6: 2.4 MS-N	Total Number of Studies
7.0 Project magnitude data							2
8.0 Permits and approvals							1
9.0 Current and past land use							5
10. Land cover areas							1
11. Fish, wildlife and sensitive resources							1
12. Physical impacts on water							1

resources							
13. Water use							4
14. Water related land use district							3
15. Water surface use	NA	NA	NA	NA	NA	N/A	0
16. Erosion and sedimentation							1
17. Water Quality: surface water runoff							5
18. Water quality/ wastewaters							5
19. Geologic hazards							1
20. Solid and hazardous wastes and storage tanks							5
21. Traffic							3
22. Vehicle related air emissions							1
23. Stationary source air emissions							5
24. Odor, noise and dust							5
25. Nearby resources							1
26. Visual impacts							5
27. Compatibility with land use plans							1
28. Infrastructure and public services							1
29. Cumulative potential effects							1
30. Other potential impacts							1

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c. 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 purpose of this Project is to mine silica sand, limestone and sand and gravel. This Project is not being carried out by a governmental unit.

d. Are future stages of this development including development on any other property planned or likely to happen? NO

There is a permitted silica sand mine located nearby, but it is not affiliated with this Project or Proposer. The Mid-America Festival land which was initially considered for inclusion in this mining proposal is not being evaluated at this time. However it is possible that the Mid-America Festival's property could be proposed for mining in the future as the same sandstone resource exists on the Mid-America site. The proximity of the proposed constructed facilities and rail access on the Site will potentially induce mining of the Mid-America Festival's property. If this should occur, a separate environmental review would be required. The continued coexistence of the potentially conflicting uses i.e. mining and public entertainment venues will be addressed in the EIS. Aspects to be considered will be public safety, access, noise, dust traffic and timing of uses that are identified to conflict with phases of the proposed mining activities. The Mid-America site is active throughout the warm months for various activities some involving public access.

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

e. Is this project a subsequent stage of an earlier project? If yes, briefly describe the past development, timeline and any past environmental review. YES

The Project represents the continuation of an existing use – nonmetallic mineral mining – on portions of several of the parcels included in this Project. In the 1950's mining began in the northern portion of the Site on Malkerson Sales property and in the eastern portion of the Site on property currently owned by Bryan Rock. Mining has continued intermittently throughout the Project area since that time. A portion of the Project area (181 acres of the Bryan Rock property) is subject to an existing CUP, which was issued upon the completion of an Environmental Assessment Worksheet.

7. Project magnitude data.

Total Project acreage:	682
Number of residential units:	
• Unattached	3 (existing)
• attached	0
• maximum units per building	0
Commercial, industrial or institutional building area (gross floor space): (approximately)\	100,000 sf maximum resulting from the two potential plant sites.

Indicate areas of specific uses (in square feet)

Office	10,000	Manufacturing	0
Retail	0	Other industrial	0
Warehouse	0	Institutional	0
Light industrial	100,000	Agricultural	0
Other commercial (specify)	0		
Building height (If over 2 stories, compare to heights of nearby buildings)			120'-130'

The numbers presented above are estimated new construction associated with the Project. There are residential structures, stables, and storage buildings that currently exist on Site as well as multiple buildings and structures associated with the Renaissance Festival.

The proposed building height will require a variance from the Zoning Ordinance. The specific locations for the proposed taller structures relative to surrounding land uses and site visibility will be considered by the County during any variance consideration. The rail loadout structures will be situated at the same grade as the existing mainline, with a structure height of approximately 75 feet. Although not recessed on a quarry floor, the rail load out structures will still be 10 to 30 feet lower in height than the adjacent Louisville and Dem-Con Landfills. The adjacent block manufacturing facility is approximately 55 feet in height and to the north a hot-mix asphalt plant has product silos and distributors that reach approximately 65 feet and 80 feet respectively. These adjacent structures are identified on Figure 8, *Surrounding Land Use*.

7. EIS Applicability

This topic is minor, but will be discussed briefly in the EIS using the same information as included above. Any modifications to the information provided here resulting from further refinement of the Project will be addressed in the EIS. Two separate Project magnitude tables will be included in the EIS as there will be differences in the square footage of buildings among the alternatives. One table will be for the Alternatives 1-2 (two 1.2 MT/yr plants), and one table will be for Alternatives 3-6 (one – 2.4 MT/yr plant). Visual impacts will be studied in the EIS, including the potential impact of the height of the buildings within the Shoreland District, under item 26.

8. Permits and approvals required.

List all known local, state and federal permits, approvals 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.

Table 8.1 Permits and Approvals Required

Unit of Government	Type of Application	Status
U.S. Army Corps of Engineers (USACE)	Section 404 Permit, Clean Water Act	To be submitted if required
Minnesota Pollution Control Agency (MPCA)	Discharge Permit (Water Quality Permit)	To be submitted if required
	Air Emissions Permit	To be submitted
	NPDES/SDS MN G490000 General permit for non-metallic	To be submitted
	Section 401 Water Quality Certification	To be submitted if required
Minnesota Department of Natural Resources (MnDNR)	Amendment to Existing Water Appropriations Permit or new water appropriations Permit	To be submitted
Minnesota Department of Health (MDH)	Drilling/Sealing of Wells	To be submitted
Scott County	Interim Use Permit (IUP)	To be submitted
	Variance for height of buildings	To be submitted
	CUP for rail yard(s)	To be submitted if required
	Septic system, building permits, etc.	To be submitted
Union Pacific Railroad	Approval of rail yard(s) design	To be submitted
Louisville Township	Wetland Conservation Act	To be submitted
Lower Minnesota River Watershed District	Grading permit, if applicable	To be submitted
State Historic Preservation Office	Section 106 Review	To be completed if federal permits are required

8. EIS Applicability

This topic is minor, but will be discussed briefly using the same information as in the EAW. Any modifications to the information provided in the table above will be addressed in the EIS. Permits and approvals will be the same for all alternatives; therefore one table will be presented in the EIS. Any permits identified later in the process will be added to this list and addressed in the EIS.

9. Land use.

Describe current and recent past land use and development on the site and on adjacent lands. Discuss project compatibility with adjacent and nearby land uses. Indicate whether any potential conflicts involve environmental matters. Identify any potential environmental hazards due to past site uses, such as soil contamination or abandoned storage tanks, or proximity to nearby hazardous liquid or gas pipelines.

Current and Recent Past Land Use and Development:

Current and recent land use and development within the Site includes on-going mining and processing, public horse stables and agricultural land uses, outdoor storage, open space and public festivals and events. The main events include the Renaissance Festival held on weekends during the fall and the Trail of Terror held in October. Smaller events such as weddings held in one of the Renaissance Festival buildings are conducted during spring, summer and fall.

Current and recent land use in the surrounding area includes sand and gravel mining and a hot-mix asphalt plant to the north, a limestone quarry to the northeast, a Minnesota Department of Transportation (MnDOT) maintenance facility, a mobile home park, a closed municipal solid waste landfill (Louisville Landfill), an active demolition landfill (Dem-Con Landfill), miscellaneous commercial and industrial uses along the U.S. Highway 169 corridor, a recyclables processing facility, block manufacturing plant, truck repair and storage business, agricultural and rural residential lands, landscape nursery and growing fields and a yard waste composting facility. An abandoned limestone quarry is located to the southwest of the Site. There is also a permitted silica sand mine to the south, within one mile of the proposed Project that will be considered in item 29, Potential Cumulative Effects.

The Cities of Chaska and Carver are located across the river and within the Project vicinity. These areas are characterized by a mix of land uses including industrial, commercial and residential within these urbanized areas.

There are also public lands associated with a National Wildlife Refuge and the MnDNR located along the Minnesota River Corridor. The Louisville Swamp Unit

of the National Wildlife Refuge is located near the southern portion of the Site. The Louisville Swamp Unit contains 2,600 acres of land adjacent to the Minnesota River. There are several established trails through Louisville Swamp including the Minnesota Valley State Corridor Trail which runs through the Louisville Swamp Unit and continues to the north through the State lands associated with the Gifford Lake area. A public access to the Louisville Swamp Unit of the National Wildlife Refuge and parking area is located adjacent to 145th St. W., the southerly access road for the proposed mining.

The Chaska Unit and the Rapids Lake Unit of the National Wildlife Refuge are also located in the vicinity of the Project on floodplain located across the river. There is an extensive trail network associated with these units as well. Impacts to the public access and parking area associated with the Louisville Swamp unit and to the trails associated with all of these units will be assessed. Current and recent land uses of the Site and surrounding area are illustrated on Figure 8, *Surrounding Land Use*.

Zoning:

Zoning of the entire Site is I-1, Rural Industrial District. Mining is allowed as an interim use within the I-1 District. Rail yards are allowed as a conditional use within the I-1 District. Zoning of the adjacent developed properties is either I-1, Rural Industrial District or C-1, General Commercial District and zoning of the public lands is UER, Urban Expansion Reserve District. There is also an area of UER-C, Urban Expansion Reserve Cluster District, located approximately ¼ mile east of the Site which includes a low density residential development. Figure 9, *Scott County Zoning Map Excerpt*, illustrates the zoning of the Site and surrounding area.

A portion of the Site is located within the Shoreland District, a district associated with the nearby Minnesota River (agricultural river) and Gifford Lake (natural environment lake). This topic is discussed under item 14.

Project Compatibility with Adjacent and Nearby Land Uses:

The use is consistent with current zoning and appears compatible with most of the surrounding industrial and commercial land uses that are prevalent in the area. Whether or not the recreational uses associated with the National Wildlife Refuge will be compatible with the proposed mining operations will be an issue addressed in the EIS. The compatibility of the Renaissance Festival use will be evaluated in the EIS. In consideration of Minnesota Rule 4410.2300 Paragraph H, consideration will also be given in regard to the economic, employment, and sociological impacts resulting from the dislocation of the Renaissance Festival and associated entertainment attractions. Impacts to the local community and to participating vendors will be evaluated and presented. Recognizing that the proposed Project precludes the continuation of the Renaissance Festival on the

current site, the evaluation of the impact of the loss of this attraction to the community will be included in the EIS.

Residential and public land (natural wildlife refuge) uses can be compatible with mining operations when sufficient separation and operational controls are established. The Project will be an interim use, which upon completion will provide for final development of the land in a manner consistent with the Comprehensive Plan and surrounding land uses. The Reclamation Plan will be developed as part of the EIS. Final contours and establishment of native vegetation will be developed to provide diverse wildlife habitat over portions of the Site. There will be a mix of native vegetation and habitat that will be developed that will complement the Minnesota River Valley and adjacent park lands. Other portions of the Site will be reclaimed to allow future development of the land consistent with current land use policies and the Scott County Comprehensive Plan.

Potential environmental hazards due to past land uses:

Current and past land uses on the Site include fuel and heating oil storage. Agricultural uses have included fertilizer and herbicide/pesticide applications. Fill materials from off-site construction locations have also been imported into the Site. The fill materials were imported without oversight from the County. An assessment of the imported soils will be conducted to determine suitability for site reclamation and relocation of these soils to accommodate mining operations will be described in the EIS. Natural gas is available to the north of the Site. The Site is adjacent to the Louisville Landfill, a closed mixed municipal waste landfill that operated from 1968-1990. The landfill has a waste foot print of approximately 56 acres. The landfill has an active methane gas extraction system. This system includes landfill gas extraction wells and a flare. The landfill does not have a liner and collection system. Hydrologic investigations have been completed for the landfill and an extensive monitoring well network has been actively monitored for the past twenty five years. Monitoring indicates that the landfill has had some impact to down gradient water quality, including groundwater beneath a portion of the proposed Site. The Dem-Con Landfill is located adjacent to the Louisville Landfill. This landfill consists of an unlined fill area and a lined filled area and encompasses approximately 121 acres. A groundwater monitoring network is associated with the active demolition landfill as well.

9. EIS Applicability

This topic is significant and information beyond what is included in the EAW will be included in the EIS including a recent analysis of the areas around the landfills that are potentially affected by methane and groundwater contamination. Items 9.1 9.2, and 9.3 will consist of either a single assessment or multiple assessments as outlined below.

9.1 The EIS will present background information on the landfill and assess its stability and vulnerability to more frequent blasting and rail vibrations. The EIS will evaluate existing groundwater quality impacts associated with the Louisville Landfill and assess how these might be impacted by proposed dewatering, water use and excavation of the sandstone. The EIS will also address the potential impacts to water quality from the landfill after mining is completed. This evaluation will utilize the groundwater model developed under item 13. Water Use. Because the alternatives envision four different sequences of mining and reclamation, four separate analyses, similar to the Item 13 analysis, of the water quality impacts as a result of the existing landfill will be included in the EIS or a worst case identified and analyzed. Analysis supported by modeling in the EIS will describe where the existing landfill leachate plume is and the potential for contaminants from the landfill to be introduced deeper into the Jordan aquifer as a result of seepage into the excavated ponds.

9.2 The EIS will assess the impacts of Project Alternatives on the current and future land use in the areas adjacent to the Project. One assessment on the current and future land uses of areas adjacent to the Project will be included in the EIS because the various alternatives studied in the EIS will not create discernible differences in impacts on surrounding land use. An exception will be that separate assessments will be conducted to evaluate impacts to the Louisville Swamp Unit access point and parking area and to the ongoing Renaissance Festival operations as they might vary with the different alternatives.

9.3 The EIS will provide a description of planned end use of the Site and an assessment of its compatibility with surrounding land uses and recreational goals. Planned end use of the Site will be influenced by different alternatives with respect to the development of private rail yards which may be operated beyond the life of the Project. An assessment will be provided for Alternative 1 (rail yards on both Bryan Rock and Malkerson Sales-north locations), Alternative 2 (rail yards on both Bryan Rock and Malkerson Sales-south locations), Alternative 3 (rail yard on Bryan Rock only), Alternatives 4 and 6 (rail yard at Malkerson Sales-north only), Alternative 5 (Rail yard at Malkerson Sales-south only).

9.4 Develop mitigation strategies as may be necessary to address existing environmental hazards and land use compatibility issues.

10. Cover types.

Estimate the acreage of the site with each of the following cover types before and after development:

Table 10.1 Land Cover Areas

Land Cover Type	Existing (Acres)	After Reclamation ¹ (Acres)
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Types 1-8 wetlands ²	65	63
Wooded/forest	36	20
Brush/Grassland	103	20
Cropland	12	0
Lawn/landscaping ³	-	0
Impervious surfaces (buildings, rds, parking)	8	20
Stormwater Pond ⁴	-	0
Other (describe) Aggregate Mining	380	0
Other (describe) Festival grounds/parking	78	0
Other (describe) Created Water body		285
Other (describe) reclaimed upland		274
TOTAL	682	682

If **Before** and **After** totals are not equal, explain why:

¹ The acreages presented in this table under “After Reclamation” are based on the Concept Reclamation Plan, which assumes the greatest extent of mining on the properties and is the same for all alternatives, except the no build alternative. As a more detailed Reclamation Plan is developed in the EIS, these numbers will be subject to modification.

² The acreage provided for wetlands is based on National Wetland Inventory (NWI) data and includes a portion of Gifford Lake. A wetland delineation has been conducted as part of the environmental review in accordance with the US Army Corps of Engineers 1987 Wetland Delineation Manual (Environmental Laboratory, 1987) and the Midwest Regional Supplement (Environmental Laboratory, 2010) to determine actual wetland acreages. This data will be presented in the EIS.

³ Lawn and landscaping around the stable area is included in brush and grassland.

⁴ Stormwater ponds are located within mining areas and therefore are included within the category “Other (describe) Mining”.

See Figure 10, *Land Cover Map*, for locations of land cover types over the Site. The Reclamation Plan is under development and will be provided as a complete document in the EIS and will include before and after acreages for each cover type.

10. EIS Applicability

This topic is significant and information beyond what is in the EAW will be included in the EIS. The following information will be provided in the EIS: Because the alternatives will not result in substantially different extents of cover types during and after mining, only one table will be provided for the Project in the EIS.

10.1 The EIS will evaluate existing cover types, as well as projected cover types upon conclusion of the mining activity. The EIS will define cover types for the after mining condition based on the development of a detailed reclamation plan prepared in conjunction with the EIS. Table 10.1 will be updated accordingly.

11. Fish, wildlife and ecologically sensitive resources.

a. Identify fish and wildlife resources and habitats on or near the site and describe how they would be affected by the project. Describe any measures to be taken to minimize or avoid impacts.

The Minnesota River meanders through the public lands west of the Site, ranging from 700 feet to several thousand feet from the Site boundary. The Minnesota Valley State Recreation Area borders the Site to the west. The Minnesota Valley National Wildlife Refuge is located just south of 145th Street West, just south of the Site as well as along most of the floodplain areas near Chaska and Carver on the other side of the River. The Minnesota River is located west of the Site. Gifford Lake is located in part within the Site and in part west of the Site. These public lands and waters provide fish and wildlife resources and habitats. Wildlife associated with the Minnesota River Valley includes raccoons, mink, muskrat, beaver, white-tail deer, rabbits, wild turkeys, pheasants, squirrels, coyotes and red and grey fox. Song birds, raptors including Bald Eagles, and waterfowl are attracted to the wetlands in the valley. Rare fish have been documented in the Minnesota River. Stormwater Runoff Best Management Practices (BMPs) including diversion berms and swales, sedimentation ponds, riprap and other erosion and sedimentation control measures are currently in place. Additional BMPs will be developed in the EIS.

Portions of the Site are situated in an area identified by the Audubon Society as an important bird area, which runs along the Minnesota River Valley. The Important Bird Areas Program (IBA) is a global effort by the Audubon society to identify and conserve areas that are vital to birds and other biodiversity. Important Bird Areas are sites that support birds that are threatened and endangered, range restricted species, vulnerable species due to concentration of species in one general habitat or species, or groups of similar species (such as waterfowl or shorebirds), that are vulnerable because they occur at high densities

due to their congregatory behavior. There is a colonial waterbird nesting area located south of the Site.

b. Are any state-listed (endangered, threatened or special concern) species, rare plant communities or other sensitive ecological resources on or near the site?X Yes ___No

If yes, describe the resource and how it would be affected by the project. Describe any measures that will be taken to minimize or avoid adverse impacts. Provide the license agreement number (LA-___) and/or Division of Ecological Resources contact number (ERDB 20112462) from which the data were obtained and attach the response letter from the DNR Division of Ecological Resources. Indicate if any additional survey work has been conducted within the site and describe the results.

1. State Listed Species:

The Minnesota Natural Heritage Information System was queried to determine if any rare species or other significant natural features are known to occur within an approximate one-mile radius of the proposed Project. There were no state listed threatened or endangered species identified within the Project boundaries but rare features have been documented within the search area, many of these are associated with the Minnesota River and the adjacent National Wildlife Refuge. The DNR summary letter of the search results and the index report are included as Attachment 2. Table 11.1 summarizes the special concern, threatened and endangered species that have been documented in the vicinity of the Site.

Table 11.1 Special Concern, Threatened And Endangered Species

SPECIAL CONCERN	THREATENED	ENDANGERED
Vertebrates:	Vertebrates:	Vertebrates:
Blue Sucker (fish) Cerulean Warbler (bird) Bald Eagle (bird)	Paddlefish (fish)	
Invertebrate:	Invertebrate:	Invertebrate:
Regal Fritillary (butterfly) Spike (mussel) Fluted-shell (mussel) Black Sandshell (mussel) Hickorynut (mussel)	Mucket (mussel) Elktoe (mussel) Purple Wartyback (mussel) Butterfly (mussel) Washboard (mussel) Round Pigtoe (mussel) Monkeyface (mussel) Pistolgrip (mussel)	Rock pocketbook (mussel) Elephant-ear (mussel) Ebonyshell (mussel) Higgins Eye (mussel) Yellow Sandshell (mussel) Sheepnose (mussel) Winged Mapleleaf (mussel) Wartyback (mussel)
Water-hyssop	Kitten-tails	Wolf's Spike Rush

Hill's Thistle Sessile-flowered Cress		Rough-seeded Fameflower
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The EIS will evaluate the Site for the occurrence of any state listed species and due to the high incidence of state listed species within the Minnesota River, the EIS will address potential impacts to the water quality and hydrology of the Minnesota River.

2. Native Plant Communities:

The Minnesota County Biological Survey (MCBS) included in the Natural Heritage Information System query results, identified a Bulrush Marsh within the Project boundary. The bulrush marsh is located in the area of the wetland complex located in the southern portion of the Site. This native plant community is considered ecologically significant, but is not subject to special protection. Other native plant communities located adjacent to, but not within the Site include Dry Sand Oak Savannah, Pin Oak-Bur Oak Woodland, and Silver Maple.

3. Sites of Biodiversity Significance:

According to the MCBS, the Site does not contain any areas ranked as Outstanding, High or Moderate Biodiversity. The MCBS has identified a Site of High Biodiversity Significance adjacent to the southern portion of the Project boundary. A high rank indicates that the area contains very good quality occurrence of rare species, and high quality examples of important functional landscapes. The area of High Biodiversity Significance adjacent to the Site is located to the southwest of the Site in the Wildlife Refuge and public lands adjacent to the Minnesota River. Rare plants within the vicinity of the Project are associated with rock outcrops and native prairie. The Project will not directly impact any of the adjacent areas ranked as a having a High Biodiversity Significance.

4. Bat Colony:

There is likely a bat colony located within the Site boundary along Gifford Lake. Both the little brown myotis (*Myotis lucifugus*) and the big brown bat (*Eptesicus fuscus*) have been documented. These two species are not currently special concern, threatened and endangered species. They are however proposed to be listed as species of special concern in Minnesota. The bat colonies are located in trees associated with the shoreline of Gifford Lake. The Project intends to leave these trees as a visual Site buffer. No lighting of the tree line or roosting area of these bats is proposed.

With the of addition of groundwater fed open water bodies there will also be a change in habitat potential for insects and wildlife. This will be discussed further in the EIS.

11. EIS Applicability

This topic is significant and information beyond what is presented in the EAW will be included in the EIS. The following items will be addressed in one evaluation because all of the alternatives have the same overall impact area.

11.1 Potential impacts to rare features will be evaluated in the EIS. A field study of the Project area will be completed to address whether the proposed Project has the potential to adversely affect threatened or endangered species that occur on or adjacent to the Site. The field study will include an assessment of state listed insects.

11.2 Indirect impacts to on-site or adjacent native plant communities including the introduction or spread of invasive species will be addressed in the EIS.

11.3 In coordination with the Minnesota DNR, a natural resources survey has recently been conducted in areas where rock outcroppings or native prairie were identified on-site that may be impacted by the Project. The field work included surveys for state listed plants and animals. The survey results, including an analysis of the biodiversity significance of the Site, will be presented in the EIS. Sufficient information will be presented to adequately describe the potential environmental impact of the Project.

11.4 Recommendations will be developed in the EIS for wildlife habitat reclamation as a component of the reclamation plan.

11.5 If necessary, the Proposer will secure permits for the taking of threatened or endangered species from the Minnesota DNR, as required under state law (Minn. Stat. § 84.0895).

11.6 Assess potential for changes in habitat with the introduction of groundwater fed ponds.

11.7 Measures to avoid, minimize or mitigate direct or indirect impacts to listed species on the Site and surrounding area, if determined to be potentially significant, will be addressed in the EIS.

12. Physical impacts on water resources.

Will the project involve the physical or hydrologic alteration — dredging, filling, stream diversion, outfall structure, diking, and impoundment — of any surface waters such as a lake, pond, wetland, stream or drainage ditch? X Yes No

If yes, identify water resource affected and give the DNR Public Waters Inventory number(s) if the water resources affected are on the PWI: Describe alternatives considered and proposed mitigation measures to minimize impacts.

Gifford Lake, public water # 70-118P is located on and adjacent to the northwestern portion of the Site. Louisville Swamp, public water # 70-209, is located approximately 2,300 feet southwest of the Site. Sand Creek and the Minnesota River are adjacent protected watercourses. A large wetland complex, is located within the Chaska Unit of the National Wildlife Refuge. Potential impacts to surface water resources will be evaluated in the EIS. Different dewatering scenarios will be evaluated in the EIS and indirect impacts to water levels in the public waters will be included in this evaluation. Figure 11, *Public Waters Inventory*, illustrates the location of public waters in the vicinity of the Site.

There is an existing constructed drainage ditch that conveys runoff from a watershed that extends east of U.S. Highway 169 through the Site. This drainage ditch will be relocated as part of this Project. An assessment of the current and future volume of water anticipated will be presented in the EIS with supportive documentation to describe how the relocated drainage features will be constructed to address current and future needs. Assumptions used to determine design parameters for this drainage channel will be provided for review. The watershed upstream of this Site will be depicted as will the future land use plans with assumptions for maximum build-out of the watershed area.

There are a variety of wetland areas located on the Site. The majority of wetland areas are associated with the 100 year floodplain of the Minnesota River and the Gifford Lake area (also within the floodplain). A large floodplain wetland complex is partially located within in the southern portion of the Project limits. Based on information from the National Wetland Inventory (NWI), the wetland encompasses approximately 22 acres within the Project boundaries with additional wetland areas extending off-site to the north and west. Drainage from this wetland complex flows from the north end of the wetland through a ditch west to the Minnesota River.

The NWI identifies a wetland complex in the northwestern portion of the Site associated with Gifford Lake, as well as several small scattered isolated wetland basins throughout the property. These basins range in size from 0.09 acres to 1.29 acres. Three or four of these isolated basins are located in areas that were previously mined. Table 12.1 lists the NWI wetlands located on-Site and Figure 12, *National Wetlands Inventory*, illustrates the location of the NWI wetlands within the Site.

Table 12.1 NWI Wetlands

	Cowardin	Circular 39	Acres
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1.	L2UBG	Type 5	12.80
2.	PF01C	Type 7	0.12
3.	PEMC	Type 3	0.67
4.	PUBG	Type 5	10.12
5.	PEMC	Type 3	3.67
6.	PF01C	Type 7	0.91
7.	PF01C	Type 7	0.80
8.	PSS1/EM C	Type 6/3	0.91
9.	PF01C	Type 7	4.53
10.	PEMF	Type 4	0.23
11.	PUSAx	undetermined	0.43
12.	PUSAx	undetermined	0.09
13.	PUBFx	Type 4	0.16
14.	PUBFx	Type 4	0.14
15.	PEMCd	Type 3	27.78
16.	PEMC	Type 3	0.90
17.	PEMCd	Type 3	0.53

Groundwater pumped for purposes of dewatering will be collected and utilized in the processing operations. Excess water may be discharged to treatment systems (stormwater management ponds, diversion swales, infiltration basins, etc.) and eventually discharged through the existing drainage system to the Minnesota River. Further review of groundwater pumping and water discharge and associated impacts will be conducted during the environmental review process. Any off-site discharge will be performed in compliance with the Proposer's NPDES permit.

12. EIS Applicability

This topic is significant and information beyond what is presented in the EAW will be included in the EIS. The effects of the Project on all water resources including conveyance of drainage through the Site as well as within and adjacent to the Project area will be addressed in greater detail in the EIS. The following items will be addressed in one evaluation because all of the alternatives will have the same overall potential to impact water resources;

12.1 A wetland delineation will be completed during the EIS process in accordance with the criteria set forth in the USACE 1987 Manual and Regional Supplements. The wetland delineation will be provided to the USACE and appropriate state and local government units. If necessary, permits will be obtained and mitigation will be completed for wetland impacts in accordance with the 1991 Minnesota Wetland Conservation Act and Section 404 of the Clean Water Act.

12.2 Impacts from dewatering and surface drainage on floodplain wetlands and Gifford Lake will be assessed.

12.3 A Natural Resources Plan will be developed which will include an evaluation of stormwater management and assess potential impacts to wetland areas as a result of proposed modifications to the existing stormwater system.

12.4 Wetland replacement plans will be prepared as may be necessary if the Project proposes to impact any regulated wetlands identified in 12.2 above.

12.5 Mitigation measures will be identified to address potential significant direct or indirect impacts identified.

12.6 The watershed draining into the Site will be defined and future anticipated drainage rates and volumes associated with existing conditions and full development of the watershed will be predicted to enable appropriate design of the changes to the conveyance system that existed on this property before mining and will be modified to accommodate this Project.

13. Water use.

Will the project involve installation or abandonment of any water wells, connection to or changes in any public water supply or appropriation of any ground or surface water (including dewatering)? X Yes ___No

If yes, as applicable, give location and purpose of any new wells; public supply affected, changes to be made, and water quantities to be used; the source, duration, quantity and purpose of any appropriations; and unique well numbers and DNR appropriation permit numbers, if known. Identify any existing and new wells on the site map. If there are no wells known on site, explain methodology used to determine.

Water Appropriations:

Bryan Rock currently has a water appropriations permit for its existing mining operations. This is permit 94-6195 which authorizes up to 300 gallons per minute (gpm) not to exceed 30 million gallons per year.

The Project will require the installation of water wells, a ground water supply sump and/or redirection of water from the dewatering operation to the wet processing plant(s). The wet plant(s) will require an appropriation of water of up to 1,500 gpm. The wet plant(s) utilizes hydrocyclones, hydrosizers and attrition scrubbers. The hydrocyclones and hydrosizers will perform an initial separation of fine sand and silt from the coarser sands by utilizing an upward flow of water. The attrition scrubbers break up agglomerated particles and remove any coating on the surface of the sand particles using a sand/water slurry.

A portion of the water from the wet plant(s) will be treated to remove the fines in a clarifying tank and/or sedimentation basins and then recycled back to the wash plant. Waste sands will be returned to the active reclamation cell by conveyor or slurry. Make up water will be required to account for losses in the process associated with loss to product. A review of the environmental impacts associated with any chemicals or flocculants used and the ultimate disposition of this material into the environment will be assessed in the EIS.

Water use will also include water for dust control and potable water for employees. The EIS will include a detailed description of water flows and estimates of required water appropriations as processing facilities are further defined.

Water appropriations will be required for some degree of dewatering of groundwater in order to efficiently mine materials below the water table. The groundwater elevation across the Site ranges from approximately 725 feet above msl to 703 feet above msl. The EIS will evaluate different levels of dewatering throughout the mining area. Dewatering may affect existing wells in the vicinity of the Project. Dewatering will also affect the characteristics of the leachate plume coming from the adjacent closed and active landfills. The degree to which individual wells may be affected is primarily dependent on the location, aquifer, well depth, and pump setting. The drawdown in groundwater levels may also potentially impact the hydrology of nearby groundwater dependent natural resources.

A MnDNR Water Appropriation Permit will be required for the Project. Total pumping rates and the potential effect on wells, groundwater flow and surface-water features in the area, including other nearby mining operations, will be assessed during the EIS process.

Existing Water Wells:

There are several wells located on the Site. These include wells associated with the current mining operations, the stable area, and the Renaissance Festival. There are also several monitoring wells that were installed many years ago as part of the Louisville Landfill's groundwater monitoring network. Additional monitoring wells were installed more recently in conjunction with the

hydrogeologic investigation and development of a groundwater model for the Site. Figure 13, *Existing Site Wells*, illustrates the locations of existing Site wells. Some wells will need to be abandoned as mining progresses through the Site.

The Site is located in an area which is not served by public utilities, therefore surrounding industrial, commercial and residential developments are served by private or community wells. The County Well Index (CWI) indicates a number of wells in the vicinity of the Site. Figure 14, *CWI Well Locations within 1 Mile of Site*, illustrates the location of wells within one mile of the Site that are listed in the CWI.

EIS will evaluate different dewatering scenarios that will look at variations in the depth of dewatering required for the type of mining determined to be feasible and the four mining sequence alternatives identified for the Project. The analysis will determine through modeling and aquifer pump tests, the potential impacts to surrounding wells and groundwater dependent surface waters.

Water to support the processing operations will come from dewatering activity associated with the mining operation or once completed, a sump in a created waterbody or production wells. It is anticipated that a new well(s) will be installed on Site for a potable water supply. All wells will be constructed and maintained in accordance with the Minnesota Well Code. In addition, wells and piezometers for hydrogeologic investigations and pump tests conducted as part of the EIS process will be installed throughout the Site. Some of these wells may remain as a monitoring well network established as part of the Project's monitoring and mitigation plan, others may be abandoned as mining progresses through the area.

Wellhead Protection Areas:

There are three public water supply wellhead protection areas in the vicinity of the Site: Carver North, Carver Central and Shakopee. There are no wellhead protection areas within the Site itself. The Carver North and Carver Central wellhead protection areas are located over one mile west of the Site, across the Minnesota River. The Minnesota River acts as a discharge point for the upper aquifers of the Site, therefore no impacts to these wellhead protection areas are anticipated. The City of Shakopee's wellhead protection area is located just less than one mile from the Site boundaries. This wellhead protection area is located upgradient of the Site; therefore there should be no impact to water quality within wellhead protection areas. Future growth of the area will require additional municipal wells to serve the areas of Jackson and Louisville Township. The Project's potential impacts to water quality of future municipal water supply wells as a result of the proximity of the Louisville Landfill to future water bodies excavated into the Jordan will be evaluated. The EIS will also include an evaluation of these potential impacts under drought conditions. Figure 15, *Wellhead Protection Areas*, illustrates the location of nearby wellhead protection

areas with respect to the Site. The Renaissance Festival also has two non-community public water supply wells that will potentially be impacted by this Project and will be evaluated further in the EIS.

13. EIS Applicability

This topic is significant and information beyond what is in this EAW will be included in the EIS. The following items will be addressed in different evaluations because the locations and sequencing of dewatering activities will vary depending upon the alternative. Alternatives 1 and 2 will have the same dewatering rates and sequence. Alternatives 3 and 5 will have similar dewatering rates and sequences, and Alternatives 4 and 6 will have similar dewatering rates but different sequences resulting in four separate dewatering assessments for each depth of dewatering scenario.

13.1 A hydrogeologic assessment will be conducted to determine any potential impacts to surface water and groundwater resources from mining activities, including mine dewatering scenarios. The hydrologic assessment will include pre-existing information and new information collected during the EIS process.

This assessment will include the installation of piezometers, geologic borings, aquifer pump testing and development of a comprehensive geologic and hydrogeologic conceptual model. A 3-D groundwater flow model will be constructed to simulate the effect of different dewatering scenarios on the groundwater system, including changes to the landfill leachate plume, nearby water supply wells and surface-water features. The groundwater flow model will also be used to help develop a mitigation plan to address potential impacts related to mine dewatering.

13.2 The impact resulting from a leveling of the groundwater table across the excavated pits/open waterbodies will be evaluated, including potential changes to flow into receiving waters such as the wetland complex, Louisville Swamp and Gifford Lake. Impacts to lateral or upgradient wetlands will also be evaluated. The analysis will assume maximum open groundwater pond areas as proposed.

13.3 A well survey will be completed including a review of wells within the CWI and other well locations not within the CWI as determined by field observations to determine the locations of water supply wells that may be impacted by mining operations. The survey will be prepared for a 1.5 mile distance from the project boundaries, and will include available well information for the wells identified. One well survey will adequately identify wells potentially affected by all of the alternatives.

13.4 Evaluation of mitigation measures that may be implemented as necessary to address potential impacts related to dewatering. A groundwater monitoring and mitigation plan will be developed that will provide a comprehensive

evaluation of water level and water quality impacts to both adjacent water supply wells and groundwater dependent surface waters throughout the life of the Project. The monitoring and mitigation plans will present estimates of annual costs associated with ongoing monitoring and mitigation throughout the duration of the proposed mining activities and thereafter when the mining operations cease.

13.5 The EIS will include an evaluation of the Project's impact on water quality and anticipated future public water supply wells and future municipal wells needed to serve future growth in surrounding communities.

13.6 The model run to evaluate the Project's potential impact on future municipal water supply wells will be run under drought conditions to determine if the Project will have any additional impacts during drought conditions when flow reversals or increased water demands could impact regional hydrogeology.

14. Water-related land use management district.

Does any part of the project involve a shoreland zoning district, a delineated 100-year flood plain, or a state or federally designated wild or scenic river land use district? Yes No

If yes, identify the district and discuss project compatibility with district land use restrictions.

Portions of the Site are located within a Shoreland District. As defined in the Scott County Zoning Code, all lands located within one thousand (1000) feet from the ordinary high water level of a lake or pond, and three hundred (300) feet from a river or stream, or the landward extent of a floodplain of a river or stream, whichever is greater are considered Shoreland. Figure 16, *Shoreland District Map*, illustrates the extent of the Shoreland District.

Site development will be consistent with the regulations governing the Shoreland District with the possible exception of the height of structures located within 1,000 feet of Gifford Lake. The sand processing plant may be located within the Shoreland District with various components of the plant reaching heights up to 130 feet. The Scott County Zoning Ordinance imposes a height limitation on structures (except churches and agricultural structures) within the Shoreland District of 35 feet. One or more variances may be requested to allow the silos storing finished product and other necessary structures to exceed 35 feet.

Portions of the Site are located within the 100 year floodplain of the Minnesota River. The elevation of the floodplain in the vicinity of the Site varies from approximately 724 feet above msl to 725 feet above msl. Most of the floodplain areas within the Site are associated with the wetland complex that is located in the southern portion of the Site and the areas adjacent to Gifford Lake. Past and current mining has lowered portions of the Site to elevations that may be subject

to flooding. Figure 17, *Flood Insurance Rate Map Excerpt*, indicates the location of the 100 year floodplain with respect to Site boundaries.

14. EIS Applicability

This topic is significant and information beyond what is in this EAW will be included in the EIS. The following will be addressed.

14.1 Processing plant layouts will be developed in more detail for Alternatives 1, 4 and 6 (These alternatives have a processing plant located within the Shoreland District) to evaluate conformance with the County Shoreland District and necessary height variances.

15. Water surface use.

Will the project change the number or type of watercraft on any water body? __Yes X No

If yes, indicate the current and projected watercraft usage and discuss any potential overcrowding or conflicts with other uses.

15. EIS Applicability

This topic is not relevant and will not be addressed in the EIS.

16. Erosion and sedimentation.

Give the acreage to be graded or excavated and the cubic yards of soil to be moved: approximately 556 acres; Approximately 80 million cubic yards of material to be removed: Describe any steep slopes or highly erodible soils and identify them on the site map. Describe any erosion and sedimentation control measures to be used during and after project construction.

- Approximately 450 acres of sandstone excavation area
- Approximately 70 acres of sand and gravel excavation area
- Approximately 100 acres of area to be graded for processing and stockpile site preparation.

Give the cubic yards of soil to be moved:

- up to approximately 10 million cubic yards of topsoil and overburden
- up to approximately 3.0 million cubic yards of sand and gravel

- up to approximately 17 million cubic yards of limestone material (includes non-marketable)
- up to approximately 55 million cubic yards of sandstone

Excavation areas will be excavated in phases over the life of the mining operation. Mining is a continuous process with backfilling for reclamation proceeding concurrently with mining activities.

Describe any steep slopes or highly erodible soils and identify them on the Site map. Describe any erosion and sedimentation control measures to be used during and after Project construction.

Steep Slopes /Erodible Soils:

Existing Site topography varies across the Site. In the northern portion of the Site the elevation of the ground surface ranges from approximately 806 feet above msl to 702 feet above msl, sloping gently to moderately toward Gifford Lake. Slopes steepen significantly near the edge of the lake. Existing elevations of the ground surface across the southern portion of the Site range from approximately 790 feet above msl to 714 feet above msl near the wetland complex located within the southern portion of the Site. Original topography in the southern portion of the Site typically gently sloped towards the west with slopes steepening adjacent to the wetland complex. Past mining of limestone has created near vertical walls throughout the quarried areas with elevation differences of 80-90 feet. Some of these quarry walls have been backfilled to reduce slopes, some are mined in a series of steps or benches. Proposed mining would extend these slopes below the water table another 70 to 90 feet.

The Soil Erosion Factor K indicates the susceptibility of a soil to sheet and rill erosion by water and is ranked on a scale of 0.02-0.64. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water. The Soil Erosion Factor K ranges from 0.02 to 0.43 for the on-Site soils. The majority of existing Site soils which have not been disturbed by the current mining activity are stony lands. This soil group unit is not assigned a K factor by the Natural Resources Conservation Service (NRCS).

The wind erodibility group (WEG) describes soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. Stony Land, which accounts for the majority of existing Site soils is not assigned a WEG. The remaining Site soils belong to groups ranging from 1-8. Only approximately 14 % of the Site soils are included in WEG 1-3. These include minor occurrences of Sparta Soils, Dickman

sandy loam and Houghton Muck. Site soils are more fully described under Item 19.

Proposed mining activities will expose the finer currently buried silica sand to potential wind and water erosion. The location of and management of stockpiles and exposed fine grained materials will be explained within the EIS.

Erosion and Sedimentation Control Measures:

Scott County and the MPCA have extensive regulations for erosion and sediment control for construction projects and more specifically for mining operations. Stormwater will be primarily managed on Site in order to minimize erosion and sedimentation. Current mining activities operate under a general NPDES permit. This permit may be amended to include additional mining areas, or a new individual NPDES permit may be required to address stormwater management, erosion and sedimentation controls and potential discharge of mine dewatering discharge including potential risk of aquifer degradation. The Proposer will comply with all requirements of the NPDES permit including the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP).

Best Management Practices (BMPs) that will be utilized as part of an overall stormwater management plan intended to prevent or inhibit soil particles from leaving the Site, recapture fugitive soil particles, and control rates and volumes of off-site discharges will be described in the EIS.

Reaches of the Minnesota River adjacent to the Site are included on the State's 303 (d) list of impaired waters. There are two segments of the river that receive runoff from the Site each with different listed impairments. The Minnesota River from Sand Creek to Carver Creek is listed for mercury (Hg), and Polychlorinated biphenyls (PCBs). The segment from Carver Creek to RM 22 is listed for Hg, PCBs and Turbidity. A total maximum daily load (TMDL) has been established for Hg. TMDL plans are still needed for the other pollutants.

Sand Creek, located approximately 3,000 feet west of the Site is also on the State's 303(d) list of impaired waters. Sand Creek impairments are listed as B-F = Fish IBI (Index of Biological Integrity), and Turbidity (TMDLs needed). Stormwater runoff from the Site does not enter Sand Creek. Excess dewatering discharge will not be discharged into Sand Creek.

Special consideration for treatment of any stormwater runoff reaching these impaired waters is necessary. Some measures which are/will be incorporated into the mining operations to reduce or eliminate erosion and sedimentation from the Project include, phasing of mining and reclamation operations, limiting the size of stripped or exposed areas, vegetation and stabilization of perimeter berms, use of swales and diversion berms to direct stormwater from exposed areas of the Site to internal low areas or sedimentation basins, slope stabilization

measures, and energy dissipation devices at outlets. Measures will be implemented to protect the wetland complex located in the southern portion of the Site from indirect impacts as well. A discussion of specific erosion and sedimentation control measures and locations will be presented more fully in the EIS.

16. EIS Applicability

This topic is significant and information beyond what is provided in this EAW will be included in the EIS. The following items will be addressed in the EIS in one evaluation because each of the alternatives will have similar erosion and sedimentation potential:

16.1 Project magnitude data including the approximate acreage and cubic yards of overburden and rock to be excavated as presented above.

16.2 Identification of erosion & sedimentation control measures to be used within the Project. The EIS will also include the methods of how vegetation will be established and maintained on disturbed stony overburden during dry periods and how side walls with exposed sandstone faces above or below the water table will be protected from eventual erosion and undermining.

16.3 A description of potential erosion and sedimentation impacts to the Minnesota River specifically related to its status as an impaired water of the state and a discussion of appropriate mitigation measures.

17. Water quality: surface water runoff.

a. Compare the quantity and quality of site runoff before and after the project. Describe permanent controls to manage or treat runoff. Describe any stormwater pollution prevention plans.

Hydrologic modeling and watershed analysis will be developed for the Project as part of the EIS. The hydrologic modeling will evaluate pre-settlement, existing, and reclamation conditions in accordance with the Scott County Zoning Code. The Project will meet all of Scott County's stormwater management standards. The Project will be subject to an NPDES permit and a SWPPP will be prepared as part of that permit application. The EIS will describe stormwater pollution prevention practices that will be incorporated into the SWPPP.

Existing Condition:

The existing Site condition includes several separate sub-drainage areas which have been modified as a result of past mining activity. In general the direction of stormwater flow is to the west towards the Minnesota River. Past mining activity

on the Bryan Rock property has created internally drained areas. Sedimentation ponds and washwater ponds are located on this property as well. There is an established drainageway across the northern portion of the Bryan Rock property which traditionally conveyed stormwater from east of U.S. Highway 169 and treated stormwater from the Dem-Con and Louisville Landfills into a large stormwater basin in the northern portion of the Bryan Rock property. Changes to the upstream watershed in more recent years have resulted in a decrease in stormwater flowing beneath U.S. Highway 169 and into the Site. There is a trestle beneath the UP mainline that directs overflow from the stormwater management basin west onto Malkerson Sales property. The lower elevations of the Bryan Rock property do not drain off site as the floor elevations are 30 – 40 feet below the trestle under the UP railroad. Management of the “benched” watershed stormwater pond noted above adjacent to the closed Louisville Landfill will be described in more detail within the EIS.

There are several sub-drainage areas located on the Malkerson Sales property. In general, the northern portion of the Malkerson Sales property drains towards Gifford Lake and the southern portion of the Malkerson Sales property drains towards the southern wetland complex. The wetland complex drains towards the north then via a ditch to the west into the Minnesota River. Historically, this wetland flowed north into Gifford Lake. This original drainageway was diked many years ago to prevent frequent flooding of farmlands along the River. Figure 18, *Sub-Watershed Areas and Drainage Patterns*, illustrates the current sub-watershed areas and drainage patterns of the Site.

The current mining operations on the Malkerson Sales and Bryan Rock properties operate under a MPCA general NPDES permit and a SWPPP has been prepared for the existing mining activity. This plan identifies best management practices to ensure that any stormwater that has contacted significant materials, including areas that have been stripped in preparation of mining, stockpiles of raw and processed product, and newly graded areas, does not leave the Site untreated. The SWPPP also contains non-structural best management practices such as procedures for on-site fuel storage and handling, employee training and good housekeeping practices.

Mining Condition:

Mining and construction of the processing plant associated with the Project will alter existing drainage patterns. These changes and their potential impact to surface waters will be further evaluated in the EIS. Stormwater management plans will be developed for the mining operations and processing area(s). Structural controls such as sedimentation basins will be developed to treat stormwater runoff and if necessary dewatering discharges. Diversion swales will be incorporated as necessary to divert stormwater from off-site areas around

mining areas to prevent off-site stormwater from co-mingling with Site discharges or waterbodies created as a result of the mining.

Either a new NPDES permit application will be made, or an amendment to the existing permit will be applied for. The SWPPP will be updated accordingly that will incorporate best management practices for both the mining and processing areas.

Reclaimed Condition:

Mining of the sandstone, which is situated below the water table, will result in a reclamation condition of open waterbodies and upland areas. A Reclamation Plan will be developed as part of the EIS that defines these areas. The Resource Management Plan will detail the hydrologic condition after Site reclamation is complete. The upland areas may be open space that will in part drain to the created waterbodies, or developable areas that will require future stormwater management controls based on ultimate land use of those areas.

b. Identify routes and receiving water bodies for runoff from the Site; include major downstream water bodies as well as the immediate receiving waters. Estimate impact runoff on the quality of receiving waters.

Routes for Site runoff are generally from east to west towards Gifford Lake and wetland complexes associated with the Minnesota River Floodplain. The Minnesota River is the major downstream receiving water. There is a high flux of groundwater that flows from the east beneath the Site towards the west and feeds the floodplain wetlands and Minnesota River. Reaches of the Minnesota River adjacent to the Site are included on the State's 303 (d) list of impaired waters. There are two segments of the river that receive runoff from the Site each with different listed impairments. The Minnesota River from Sand Creek to Carver Creek is listed for Hg, and PCBs. The segment from Carver Creek to RM 22 is listed for Hg, PCBs and turbidity. A TMDL has been established for Hg. TMDL plans are still needed for the other pollutants.

Sand Creek is located over ½ mile to the southwest of the Project boundary. Sand Creek is also on the State's 303(d) list of impaired waters. Sand Creek impairments are listed as B-F = Fish IBI (Index of Biological Integrity), and Turbidity (TMDLs needed). The Site will not drain to Sand Creek, and no impacts to Sand Creek as a result of the Project are anticipated.

BMPs will be further developed in the EIS to minimize or eliminate the potential for impacts to downstream water quality.

17. EIS Applicability

This topic is significant and information beyond what is provided in this EAW will be included in the EIS. The following will be addressed in the EIS: The various locations of the plant sites may have drainage characteristics that have the potential for different impacts to water quantity and quality of surface water runoff. This section will include a separate analysis for each of the alternatives.

17.1 The EIS will include hydrologic modeling and watershed analysis that will include hydrologic calculations and descriptions of pre-settlement, Project development and reclamation conditions.

17.2 Evaluation of conveyance of stormwater east of U.S. Highway 169 through the Site, identifying design capacity and taking into consideration increased runoff that may need to flow through the Site as a result of future development of the contributing watershed area.

17.3 The EIS will evaluate the Project's impact on the quality of receiving waters, especially as it relates to the adjacent downstream wetland complex and the Minnesota River.

18. Water quality: wastewaters

a. Describe sources, composition and quantities of all sanitary, municipal and industrial wastewater produced or treated at the site.

The Project will generate normal domestic sanitary wastewater at the Site. The EIS will evaluate the volumes of wastewater to be generated at the Site. The Site is located in an unincorporated area and is not served by municipal sewer or water. Two septic system locations will be identified and preserved to serve office buildings and processing plant needs at each location where a processing plant is proposed. A preliminary design will be developed for the EIS. The final design of wastewater treatment systems will meet all state and county requirements. Since the Site is large, portable toilets will be used as needed at locations convenient to external mining activities while enclosed processing plants and offices will be served by on-site septic systems.

The washing process will include density media separators, pumps and screens. Wastewater will be generated from the washing process. The washing process involves washing and sorting the individual sand grains that make up the sandstone deposit. Some of the water discharged from the washing process will be conveyed or mixed with the finer reject sands and transported via a sand/water slurry back to an excavated area of the mining operation for use as reclamation backfill. Some of the washwater will be treated at the wet plant(s) to remove fine sediments and recycled back onto the clear water tank feeding the wet plant process.

b. Describe waste treatment methods or pollution prevention efforts and give estimates of composition after treatment. Identify receiving waters, including major downstream water bodies (identifying any impaired waters), and estimate the discharge impact on the quality of receiving waters. If the Project involves on-site sewage systems, discuss the suitability of site conditions for such systems.

Washwater from the wet plant operations will be treated with flocculants to enhance the removal of sediment prior to being recycled back to the wet plant(s). Washwater from the processing facility(ies) will not be discharged off-site. Management of washwater will be subject to NPDES permit requirements.

Dewatering discharge may be directed to internal infiltration areas located on site, and/or discharged off-site or through adjacent wetlands or waterbodies as part of a mitigation strategy to reduce indirect impacts to wetlands as a result of the dewatering. The volumes, treatment, quality, and locations of any dewatering discharges will be further developed and evaluated in the EIS. Discharges from mine dewatering areas would occur pursuant to the Proposer's NPDES/SDS permit, and would be required to comply with monitoring and discharge limits. Wastewater management will be fully described for each dewatering scenario evaluated in the EIS.

c. If wastes will be discharged into a publicly owned treatment facility, identify the facility, describe any pretreatment provisions and discuss the facility's ability to handle the volume and composition of wastes, identifying any improvements necessary.

Wastes will not be discharged into a publicly owned treatment facility as part of the Project.

18. EIS Applicability

This topic is significant and information beyond what is in this EAW will be included in the EIS. The following will be addressed.

18.1 The EIS will evaluate the quantities of domestic wastewater to be generated by the Project and describe the maximum amount of domestic wastewaters potentially generated by the Project. The locations of septic areas and drain fields that could meet the requirements of Scott County and the State of Minnesota will be identified for each plant site. In addition, reclaimed areas proposed for future development will include the identification of undisturbed areas suitable to accommodate a primary and alternate septic system site to serve the future building site.

18.2 The EIS will describe the quantities of industrial wastewater generated by the Project and how this water will be managed. The EIS will describe the types

of flocculants used and their potential impacts on receiving waters. Separate descriptions will be provided for the 1.2 MT/yr and 2.4 MT/yr plant capacities.

18.3 The EIS will evaluate the management of dewatering discharges within and/or from the Site including an evaluation of potential impacts to receiving waters. One evaluation for all of the alternatives will be provided utilizing the maximum dewatering rates as a basis for the evaluation of potential impacts.

19. Geologic hazards and soil conditions

a. Approximate depth (in feet) to ground water: 0' minimum 5' average in mined areas, 50' average in unmined areas.;
to bedrock: 0' minimum 5' average (except in the northern portion of site – depth to bedrock is 200+ feet)

Describe any of the following geologic site hazards to groundwater and also identify them on the site map: sinkholes, shallow limestone formations or karst conditions. Describe measures to avoid or minimize environmental problems due to any of these hazards.

The proposed Site is located in the southern region of the Twin City basin, with underlying bedrock units generally dipping to the north. Over most of the Site, a thin layer of unconsolidated material (a mix of sand and gravel and clay) rests on top of bedrock. Bedrock is near the surface throughout the majority of the Site. An exception to this is in the northern portion of the Site where a large buried valley downcut through the Prairie du Chien Group and underlying bedrock formations. This buried valley formed by stream erosion and subsequently filled with glacial drift during periods of glaciations. The glacial drift typically consists of sand, gravel and clay. Sand and gravel has been mined in the northern portion of the Site and commercially viable deposits remain under the horse stable area and on the northeastern portion of the Malkerson Sales property. The Site is situated on a glacial river terrace, approximately 50 feet above the floodplain of the Minnesota River.

The Prairie du Chien Group forms the bedrock subcrop over much of the Site. The depth to the bedrock is less than 50 feet throughout the central and southern portion of the Site. The Prairie du Chien Group is composed of two units, the upper Shakopee Formation and the lower Oneota Dolomite. Both the Oneota Dolomite and overlying Shakopee Formation consist largely of carbonate components, characterized by thin to very thick, beds of dolostone, with negligible amounts of sandstone and other silica bearing rocks, except in the lowermost 10 to 20 feet, within the Coon Valley Member, the lowest member of the Oneota Dolomite—which can contain substantial quantities of sandstone, siltstone, and shale.⁴ The Oneota Dolomite is being progressively mined and

⁴ Mossler, John. 2008. Paleozoic Stratigraphic Nomenclature for Minnesota. Report of Investigations 65. University of Minnesota St. Paul, MN.

while mining encounters small solution cavities and fracture zones, typical of this formation, there is no evidence of sinkholes or other larger karst features within the Site. The proposed Project involves the continued mining and removal of the carbonate bedrock from the Site, therefore the potential for geologic hazards related to karst features is low.

The Prairie du Chien Group is typically 140 to 190 feet thick where past erosion has not diminished the thickness of the unit. However, in the area of the Site it is typically 25-70 feet thick due to past erosion of the uppermost portion of this bedrock unit. It has been entirely eroded away in the northern portion of the Site where a buried valley downcut through the Prairie du Chien Group and underlying bedrock formations. It is also absent over the very westernmost portions of the Site where glacial River Warren eroded through the Prairie du Chien Group as well as underlying bedrock formations forming the present day Minnesota River Valley. The Prairie du Chien Group is absent in the very southern portion of the Site.

Underlying the Prairie du Chien Group and forming the bedrock subcrop in the very southern portion of the Site, is the Jordan Sandstone. The Jordan Sandstone is approximately 80 to 120 feet thick within the Site. It contains two facies, a medium-to coarse-grained quartz sandstone and fine-grained feldspathic sandstone with lenses of siltstone and shale. The Jordan Sandstone is the source of the silica sand deposit.

Beneath the Jordan Sandstone, additional bedrock units are found. From uppermost to lowermost, the Jordan is underlain by the St Lawrence Formation, the Tunnel City Group (formerly known as the Franconia Formation), the Wonewoc Sandstone (formerly known as the Ironton and Galesville Sandstones), and the Eau Claire Formation. The St. Lawrence Formation is a dolomite-cemented, very fine-grained sandstone and siltstone. The St. Lawrence Formation contains interbedded laminated green shale and pink to red, finely to coarsely crystalline dolostone, the latter being particularly abundant in the lower one-half of the formation. To the west of the Site, the Minnesota River flows through a bedrock valley, which is believed to be downcut into the St. Lawrence Formation and/or Tunnel City Group. Figure 19, *Bedrock Geology*, is a bedrock map excerpt from the Scott County Geologic Atlas. This figure represents generalized bedrock and buried valley relationships beneath the Site and surrounding area. Figure 20, *Stratigraphic Column*, is a typical stratigraphic column representative of general Site conditions. Additional data gathered during the geologic investigation of the Site will be used to further define this information in the EIS.

The Site is underlain by several bedrock aquifer systems, including the Prairie du Chien-Jordan aquifer. The underlying St. Lawrence Formation is considered a regional confining bed hydraulically separating the overlying Prairie du Chien-

Jordan aquifer from the underlying Tunnel City-Wonewoc (Franconia-Ironton-Galesville) aquifer. The Eau Claire Formation; a shale, siltstone, and very fine-grained sandstone, averaging about 75 feet in thickness acts as a confining layer hydraulically separating the overlying Wonewoc from the underlying Mt. Simon-Hinckley aquifer. In addition to the bedrock aquifers, sand layers in the glacial drift may be used as a source of water supply by some residents in the vicinity of the Site. The Prairie du Chien-Jordan aquifer is the most extensively used aquifer in the Twin Cities area. The groundwater flow direction is from east to west beneath the Site, towards the discharge area of the Minnesota River. There are several non-community public water supply wells associated with the Renaissance Festival, and several what appear to be monitoring wells located on the state records associated with the UP Railroad at what used to be Merriam Junction. There are also water wells and monitoring wells on the Malkerson Sales property. Some of these may be downgradient of the Proposed Project. The EIS will provide more details on these wells. Potential impacts to water levels in surrounding wells as well as adjacent groundwater dependent natural resources are discussed in Section 13, Water Use.

b. Describe the soils on the Site, giving NRCS (SCS) classifications, if known. Discuss soil texture and potential for groundwater contamination from wastes or chemicals spread or spilled onto the soils. Discuss any mitigation measures to prevent such contamination.

The NRCS Web Soil survey is based on aerial photographs from 1951 when mining was just getting underway on the Site. Almost all of the original Site soils have therefore been mapped. The majority of original Site soils are classified as Stony Land. Stony Land accounts for approximately 55% of the Site Soils, including almost all of the Bryan Rock and the entire southern portion of the Malkerson Sales property. Stony Land is described in the Scott County Soil Survey as located chiefly on terraces⁵ within St. Lawrence and Louisville Townships. Limestone or sandstone underlies this soil at depths of 6" – 36". Numerous large granitic boulders are at the surface and throughout the profile. In some places the bedrock is exposed.

Other predominant Site soils include the Estherville sand and sandy loam, which account for close to 10% of the original Site soils. These soils are prevalent in the northern portion of the Malkerson Sales property. Estherville Soils are described as developing on gravelly and sandy outwash plains and terraces. Site soils with more minor occurrences within the Site are listed in Table 19.1.⁶ Figure 21, *Soil Survey Map*, illustrates soil occurrences over the Site.

⁵ Soil Survey of Scott County United States Department of Agriculture Soil Conservation Service October 1959, and May 1997 update. Washington D.C.: U.S. Government Printing Office, 1959, 1997.

⁶ Note that the Area of interest is somewhat larger than the total Site as it includes portions of railroad and road right of ways and is not an exact duplication of Project boundaries.

Mining over the course of the last 60 years has removed many of the original Site soils. Based on review of historical aerial photographs, approximately 359 acres of the Site have been disturbed by past mining activity. Figure 22, *Areas of Past Mining Activity*, illustrates the areas on the Site where original soils have been removed by past mining operations.

Table 19-1: Soil Types

Map Unit Name	Percent of Soil Type on Site
Alluvial land	0.1
Copaston silt loam	2.4
Dickman sandy loam	5.8
Dorchester	0.5
Estherville loam and sandy loam	12.6
Salida gravelly sand loam	2.3
Pits, gravel	0.9
Sparta loamy fine sand	3.2
Marsh	0.5
Oshawa silty clay loam	0.2
Houghton muck	4.7
Stony Land	54.8
Terrace escarpments	4.8
Terril loam	3.2
Water	3.6
Waukegan silt loam	0.4

The majority of Site soils are hydrologic soil group B soils, indicating that they are fairly permeable. Based on the Scott County Groundwater Susceptibility Map⁷, the Site is located in an area considered to be highly susceptible to groundwater contamination due to the shallow, highly permeable cover over the bedrock aquifer. The EIS will address mitigation measures that can be adopted as part of Site operations to reduce the potential for groundwater contamination. These will include items such as development of a spill prevention and response plan, secondary containment for fuel storage, as well the development of a comprehensive groundwater monitoring and mitigation plan that continues beyond completion of final reclamation.

⁷ Scott County Environmental Health. Scott County, MN Groundwater Susceptibility Map. 2007. Web. <http://www.co.scott.mn.us/ParksLibraryEnv/geology/Pages/SusceptibilityGroundWaterContamination.aspx>.

The EIS will also include a slope stability analysis of the unconsolidated materials and the underlying bedrock units. This analysis will be used to properly design mine walls and establish sufficient setbacks from property lines, railroad tracks, roadways, structures, etc. with an appropriate factor of safety.

19. EIS Applicability

This topic is significant and information beyond what is in this EAW will be included in the EIS. A single slope stability analysis will be provided in the EIS because all of the alternatives will result in the same general reclamation plan and overall potential environmental impacts.

The following will be addressed:

19.1 The EIS will also include a slope stability analysis of the unconsolidated materials and the underlying bedrock units remaining above and below the water table. This analysis will be used to properly design mine walls and establish sufficient setbacks from property lines, railroad tracks, roadways, structures, etc. with an appropriate factor of safety.

19.2. The EIS will address mitigation measures that can be adopted as part of Site operations to reduce the potential for groundwater contamination. These will include items such as development of a spill prevention and response plan, evaluation of imported material to prevent aquifer contamination, and the development of a comprehensive groundwater monitoring and mitigation plan that continues for a period of time beyond completion of final reclamation. The monitoring and mitigation plans will present estimates of annual costs associated with ongoing monitoring and mitigation throughout the duration of the proposed mining activities and thereafter when the mining operations cease.

20. Solid wastes, hazardous wastes, storage tanks

a. Describe types, amounts and compositions of solid or hazardous wastes, including solid animal manure, sludge and ash, produced during construction and operation. Identify method and location of disposal. For projects generating municipal solid waste, indicate if there is a source separation plan; describe how the project will be modified for recycling. If hazardous waste is generated, indicate if there is a hazardous waste minimization plan and routine hazardous waste reduction assessments.

The Project will generate limited amounts of mixed municipal solid wastes from approximately 45 employees at the Site. These materials will be stored on-site in dumpsters and picked up by a licensed hauler for recycling or disposal at a solid waste facility. No solid animal manure, sludge or ash will be produced during construction and operation.

The Project will require the removal of all of the structures and equipment associated with the Renaissance Festival and some of the buildings on the Malkerson Sales property. All demolition debris and solid waste will be removed from the site and properly disposed of or recycled at licensed waste processing facilities. No waste or buildings will be burned or buried on the property. There are a number of above and partially below ground waste water tanks and propane tanks on the Renaissance property that will be properly managed.

Limited amounts of hazardous materials such as wastes associated with materials used to service vehicles and maintaining equipment may be generated during Project operations. Any hazardous wastes generated by the Project will be managed according to Scott County, MPCA and the federal Environmental Protection Agency (EPA) requirements. Relevant products will be addressed in the Proposer's Spill Prevention Control and Countermeasures (SPCC) Plan.

Flocculants may be used as a means of removing suspended solids from washwater, allowing for a more efficient washwater recycling process.

b. Identify any toxic or hazardous materials to be used or present at the site and identify measures to be used to prevent them from contaminating groundwater. If the use of toxic or hazardous materials will lead to a regulated waste, discharge or emission, discuss any alternatives considered to minimize or eliminate the waste, discharge or emission.

Petroleum products and hazardous materials associated with servicing vehicles and maintaining equipment may be used or generated during Site operations. This potentially includes fuel, lubricants, filters, and petroleum-based products. Spills of these materials will be handled according to the SPCC Plan which will be reviewed and updated as needed. The majority of vehicle and equipment maintenance will occur in an enclosed building. BMPs will be implemented for spill prevention. The EPA, Scott County and MPCA have specific regulations in place regarding the handling, transport, and disposal of various hazardous waste materials. Spills of these materials are not planned, but would be handled according to the SPCC Plan, which will be reviewed annually and updated as needed.

Blasting agents are used as part of the mining process. The typical blasting event utilizes a high explosive primer to initiate an explosion of a mixture of ammonium nitrate and fuel oil (ANFO). The ammonium nitrate is formed into small pellets called prills which contain void spaces. The voids are filled when mixed with fuel oil. The end product, ANFO, is 94% ammonium nitrate and 6% fuel oil. The blast consumes the blasting agent, possibly leaving a small residue of ammonium nitrate on soil particles. The residue from blasting agents contains concentrations of ammonium nitrate. An assessment of the impact on the groundwater and surface water affected by the blasting agents will be included in the EIS.

There is potential for exposure to respirable silica dust at the Site. According to the World Health Organization, silica dust is classified by the International Agency for Research on Cancer (IARC) as a Group 1 human lung carcinogen. Silica (silicon dioxide) exists abundantly in nature, it is normally found within sand and rock where it cannot be inhaled. The most common form of silica is quartz, and it is found in a variety of rocks including sandstone where individual sand particles are predominantly composed of quartz. Beach sands are another example of abundant silica.

Construction activities, such as sand blasting, or jack hammering, can create respirable silica dust as a byproduct. Mining activities such as drilling, crushing and stone cutting can create respirable silica as a byproduct as well. The EIS will address both worker exposure and ambient air levels of respirable silica dust (See Item 23).

If other toxic or hazardous materials are identified as potentially being used as part of the proposed Project, these materials will be addressed during the EIS process.

c. Indicate the number, location, size and use of any above or below ground tanks to store petroleum products or other materials, except water. Describe any emergency response containment plans.

Materials associated with servicing vehicles and maintaining equipment may be used or stored during Site operations. These materials potentially include fuel, lubricants, and petroleum-based products which will be stored in storage containers or in above ground storage tanks located in the maintenance area. If storage tanks are anticipated to be used at the Project, these tanks will include double-wall construction, and/or be equipped with secondary containment with bermed impervious filling areas or portable drip pans, and will be installed to MPCA and EPA standards.

Petroleum products will be stored in the maintenance storage area for servicing vehicles and maintaining equipment for Site operations. The maintenance storage area will be addressed in the Site's SPCC Plan. The SPCC Plan will include emergency response procedures to be implemented in the event of any spills associated with equipment repair, fluid 'top-offs', or similar incidents. Proper notification and remediation will be followed in accordance with the SPCC plan and MPCA guidelines. Liquid absorbent materials for spill cleanup will also be made available to help prevent contamination to soil and/or groundwater from run-off or infiltration into the soil.

20. EIS Applicability

Some of the information within this topic is minor, but will be discussed briefly in the EIS using the same information as in the EAW. Other information within this topic is significant and information beyond what is provided in this EAW will be included in the EIS. Generation rates of solid and hazardous waste will not vary among the different alternatives, however, tank sizes and locations may differ among the various plant site locations. Therefore, some of the following items to be evaluated in the EIS will require multiple analyses and a single evaluation will be sufficient for other items as described below:

20.1 The EIS will address the management of existing buildings, equipment and solid waste remaining from the closing of the Renaissance Festival and from the prior uses of the Malkerson property and generation of solid or hazardous wastes and materials related to the proposed project including a plan for the minimization of waste and containment of contamination. Generation rates will not be significantly impacted by alternative plant locations, so the discussion will be limited to the overall Project.

20.2 The EIS will address existing and proposed storage tanks associated with the Project including a discussion as to the extent that the sizes and locations of various storage tanks may vary among each alternative.

20.3 The EIS will address potential impacts to groundwater and surface water from agents introduced through the mining process. A single assessment will be provided in the EIS because all of the alternatives will result in the same overall potential impacts to groundwater and surface water quality as a result of chemicals used in the mining and processing operations.

21. Traffic

a. Parking spaces added: up to 65

Existing spaces (if project involves expansion): The EIS will describe the existing parking for the mining operation and will include seasonal parking associated with Renaissance Festival in open fields for the first two years of operation.

Estimated total average daily traffic generated: 90-120 additional employee/vendor trips/day if processed sand is shipped by rail. 576 truck trips per day or 24 trips per hour (24-hour hauling) if all processed sand is hauled via truck from Site. The EIS will include traffic generated from the Renaissance Festival and an evaluation of the simultaneous or temporarily interruptible mining operation impacts.

b. Estimated maximum peak hour traffic generated and time of occurrence: Traffic levels associated with past limestone mining vary with market demand and have ranged from an average of 25 truck trips per hour to 75 truck trips per

hour (average not peak), based on data from the past several years. Looking at historical data from the past 10 years, averaging 3rd quarter data (typically busiest quarter) indicates that up to 750 truck trips per day have been generated from the limestone mining activity on peak days. Total potential trips per day, given a construction aggregate market recovery, and shipping all sand by truck would generate maximum daily traffic from combined mining operations of approximately 1,500 trips/day.

c. Indicate source of trip generation rates used in the estimates. Estimates are based on past load counts associated with the existing mining operation and projected maximum sand production.

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. Using the format and procedures described in the Minnesota Department of Transportation's Traffic Impact Study Guidance available at: <http://www.oim.dot.state.mn.us/access/pdfs/Chapter%205.pdf> or a similar local guidance, provide an estimate of the impact 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.

Although the majority of the processed sand is anticipated to be shipped from the Site to market in railcars, the worst case scenario of transporting all of the material from the Site in haul trucks will be evaluated in the EIS. The existing traffic generated from limestone and sand and gravel mining as well as Renaissance Festival and Trail of Terror event traffic will be considered in the EIS.

The Site currently generates traffic from the on-going mining operations, festival events and other Site operations. The majority of Site traffic will remain the same, with the exception of the addition of employee and vendor traffic associated with the additional mining and processing activities. Only limited amounts of sand are expected to be hauled in trucks from the Site. However, the EIS will also consider the potential impact if all of the processed sand is trucked from the Site.

The Malkerson Sales property has three Site access points. One is located to the north which is a paved access to Highway 41. This is the main access for mining haul trucks and includes a scale and scale house. The Site also has access to 145th Street West which is used when there are jobs located south on U.S. Highway 169. The triangular shaped parcel, east of the tracks, has access to Highway 41 via Dem-Con Drive. The Renaissance Festival generates seasonal traffic. The festival is held during weekends in the late summer and fall generating high volumes of traffic during daylight hours on Saturday and Sunday and Labor Day Monday. One-way traffic control is established during the Festival where patrons enter from 145th Street West and exit to State Highway 41. The

mining operators have the ability to limit truck hauling during the Renaissance Festival hours of operation. The Trail of Terror traffic utilizes the State Highway 41 access as well. The stable area generates a minimal amount of traffic.

Bryan Rock's mining facility generates traffic from its on-going mining operations. The Bryan Rock Property has multiple access points, two of which are currently utilized. The main Site access is to U.S. Highway 169 via a paved entrance. The scale and scale house are located near this access point. There is also an access point onto 145th Street West from the main mining area. The very southern Bryan Rock parcel also has access to 145th Street West.

21. EIS Applicability

This topic is significant and information beyond what is in this EAW will be included in the EIS. Because the various alternatives will result in different traffic patterns depending upon which plant sites are developed, three individual traffic impact analyses will be prepared to adequately represent traffic generation associated with the various alternatives including: Alternatives 1 and 2 (these two alternatives will generate the same traffic volume and patterns with hauling sand from both Bryan Rock and Malkerson Sales Properties); Alternative 3, hauling sand from Bryan Rock Property only, and Alternatives 4, 5 and 6 (these three alternatives will generate the same traffic volumes and patterns with hauling sand from Malkerson Sales property only.) The following will be addressed:

21.1 Perform a Site specific traffic impact analysis on each of the access options that will provide an estimate of proposed Project activities and take into consideration traffic generated from existing mining operations, the Renaissance Festival, Trail of Terror as well as impacts to area traffic from the additional truck and rail car traffic at key rail intersections within Scott County, and neighboring municipalities (Shakopee and Chaska), and access to the wildlife refuge parking lot off of 145th Street West. This will include a review of how the Dem Con Dr. connection will be made through private property, internal siding and circulation to accommodate a frontage road and future ponds outside of the US169 clear zone, and the ability to remove any direct traffic off of US169. The EIS will define the Project alternatives to include different percentages of trucked and railed product. Impacts to planned improvements of roads in the immediate area such as improvements along State Highway 41, U.S. Highway 169, 145th Street West and Dem-Con Drive will be considered and the associated effects.

21.2 Identify potential roadway improvements and/or other mitigation measures which may be necessary to mitigate traffic conditions as determined in the traffic analysis.

22. Vehicle-related air emissions.

Estimate the effect of the project's traffic generation on air quality, including carbon monoxide levels. Discuss the effect of traffic improvements or other mitigation measures on air quality impacts.

Traffic associated with the Project is anticipated to have minimal impact on air quality in the area as the majority of sand produced is expected to be transported from the Site via rail, however, the EIS will also evaluate a worst case analysis of hauling all material out by truck. The evaluation will include a discussion of suggested traffic improvements and potential vehicle related air emissions. Additional vehicle trips added by employee traffic and potential truck hauling are not expected to be significant relative to existing traffic on the adjacent highway. Off road vehicles front end loaders and other earth moving equipment will operate on the Site, however, the small number of vehicles will not generate enough emissions to have a significant impact on air quality.

The evaluation of air emissions described in Item 23 will also assess exposure of silica dust from haul trucks on their haul route.

Fugitive dust generated from the mining and the Renaissance Festival will be addressed in Item 23. Stationary source air emissions.

22. EIS Applicability

The information within this topic is potentially of major importance considering the volume of traffic associated with existing uses on the Site, some of which have not been previously evaluated. This issue will be discussed in a single assessment for all alternatives in the EIS and additional air quality information will be acquired with guidance sought from the MPCA.

23. Stationary source air emissions.

Describe the type, sources, quantities and compositions of any emissions from stationary sources of air emissions such as boilers, exhaust stacks or fugitive dust sources. Include any hazardous air pollutants (consult EAW Guidelines for a listing) and any greenhouse gases (such as carbon dioxide, methane, nitrous oxide) and ozone-depleting chemicals (chloro-fluorocarbons, hydrofluorocarbons, perfluorocarbons or sulfur hexafluoride). Also describe any proposed pollution prevention techniques and proposed air pollution control devices. Describe the impacts on air quality.

Stationary source and fugitive dust air emissions will be generated from the mining, stockpiling and processing operations. These include emissions from crushers and dryers. Fugitive dust may be generated from mining operations, including extraction, loading and transporting raw and/or finished product. Fugitive dust may contain silica in size ranges (PM₄) that are respirable and in

concentrations that are potential health hazards. The Mine Safety and Health Administration (MSHA) regulates worker exposure to silica, however crystalline silica concentrations in ambient air are currently not regulated in Minnesota or at the federal level. The Minnesota Department of Health (MDH) is currently developing an exposure limit for respirable crystalline silica in the ambient air. The MDH recommended an exposure limit last year though it has not yet been established in Rule. Although air monitoring data associated with silica sand mining and processing is becoming more readily available as facilities in Minnesota and Wisconsin begin adopting ambient air monitoring plans, reliable emission factors for crystalline silica are not available. An ambient air monitoring plan will be required as part of the air permit which will include PM₄ Silica. It is anticipated that by the time the Project is permitted, the state will have identified an exposure limit for PM₄ Silica and may have adopted an ambient air standard.

Emissions of dust and other pollutants during the sand processing and stockpiling operations, including emissions from the dryer(s) will be strictly controlled. The sand dryer(s) will be equipped with pollution control devices, such as baghouses. The sand drying operation will be completely enclosed. All emissions from these processes will be subject to the MPCA air emissions permit. Once the sand has been dried, all product transfer points, the screening operation, storage, and rail loading operations will be enclosed to effectively control fugitive dust emissions. Enclosure of the material after drying is necessary to prevent the dried sand from becoming contaminated with moisture or other foreign materials and to prevent air emissions that would exceed permit limits.

Best management control measures to be used to control dust emissions from the Site include regular sweeping of paved internal haul roads, regular watering of unpaved internal roadways, perimeter screening, recessed mining operations, and stockpile height limitations. The same best management practices that control fugitive dust also control concentrations of respirable silica in the ambient air.

23. EIS Applicability

The topic is significant and information beyond what is provided in this EAW will be included in the EIS. The EIS will include the following:

23.1 Assessment of the area that may be impacted by air emissions from the proposed Project. As air impact assessment will be developed in the EIS for each of the five operational scenarios. Air modeling analysis will be one of the tools utilized in this analysis. The modeling protocols and monitoring requirements will be discussed with the MPCA as part of the process.

23.2 Identification of the quantity, the type, sources and composition of emissions. These may vary depending upon plant location and size, therefore

each alternative processing plant location combination will require a separate analysis (5 analyses total).

23.3 Identify pollution prevention techniques and controls on the processing operations. These controls will be the same for all alternatives.

23.4 Identify fugitive dust prevention and control measures. These measures will be the same for all alternatives.

23.5 Preparation of the parameters of a draft ambient air monitoring and mitigation plan. The plan will identify the parameters of testing, equipment, schedule, frequency, etc. The final details of the plan, including the location of monitors will be developed as part of the MPCA air permit. Prior to the release of the DEIS Draft, the Project Proposer will meet with MPCA air quality staff to review the project details.

24. Odors, noise and dust.

Will the project generate odors, noise or dust during construction or during operation? X Yes ___No

If yes, describe sources, characteristics, duration, quantities or intensity and any proposed measures to mitigate adverse impacts. Also identify locations of nearby sensitive receptors and estimate impacts on them. Discuss potential impacts on human health or quality of life. (Note: fugitive dust generated by operations may be discussed at item 23 instead of here.)

Odors:

Odor generation from the Project is expected to be minimal. Potential odor source include diesel exhaust from mining equipment and exhaust from product processing. Mining equipment will operate in compliance with setbacks from property lines as established by the Scott County Zoning Code and are expected to have no odor impacts. Emissions from the processing facility(ies) are not expected to have any significant odor. No other odor impacts are expected from the Project.

Noise:

The operation of equipment associated with topsoil and overburden stripping, blasting, extraction, processing and transportation of product will generate noise. The equipment may include scrapers, excavators, haul trucks, blast drill, conveyors, dredge or dragline, crushers, screeners, rail car movement and washplant. Mining and processing equipment will operate in compliance with setbacks from property lines as established by the Scott County Zoning Code. The setbacks will minimize the impact of noise on nearby receptors. Mining activity will typically take place in recessed portions of the Site, with surrounding

topography shielding and attenuating noise emissions. Much of the processing equipment will be located in a building. This will further reduce noise emissions from the Site.

The Project must comply with the State of Minnesota noise standards. The standards establish allowable noise levels to protect people at nearby receptors including; residences, commercial and industrial areas, parks and open space. The EIS will include modeling of noise sources to assess the potential for the exceedance of any of the noise standards relative to receptors. The rules establish acceptable noise levels for both the L50, the sound level that must not be exceeded for more than 50% of any given hour (30 minutes) and the L10, the sound level that must not be exceeded for more than 10% of any given hour (6 minutes). Noise levels are expressed in decibels A-weighted (dBA). This is a measure of the relative loudness of sounds in A weighted frequencies to account for human perception of sound at various levels. The standards established by the State of Minnesota depend upon the nature of the land use defined in the rules by Noise Area Classifications (NAC). The standards for NAC 1 are the strictest and apply to residential receptors, as well as farm houses, nature exhibitions, and designated camping and picnicking areas. NAC 2 includes commercial land uses, parks and recreational activities (except designated camping and picnicking areas) and NAC 3 includes industrial land uses and agricultural and related activities. The noise analysis in the EIS will properly treat land uses in accordance with the State’s noise standards. The SLUCM Manual and the 1974 noise standards may be referenced to support conclusions regarding NAC classifications used within the analysis. The noise standards are given below.

Table 24.1 Minnesota Noise Standards

NAC	Daytime		Nighttime	
	L ₅₀	L ₁₀	L ₅₀	L ₁₀
1	60 dBA	65 dBA	50 dBA	55 dBA
2	65	70	65	70
3	75	80	75	80

The Minnesota Noise Standards define daytime hours as 7:00 a.m. to 10:00 p.m. and nighttime from 10:00 p.m. until 7:00 a.m. Some mining related activities will operate up to 24-hours-per-day; therefore, both Minnesota daytime and nighttime standards will apply to the Site and will be included in the noise analysis performed in the EIS.

The EIS will include noise analysis that will also consider noise impacts that may not be addressed by the State Rules. These may include noise, such as impulse

noise and short duration noise like that expected from blasting and equipment with backup alarms and rail operations. Noise impacts needing to be addressed in the EIS are not limited to impacts to people, but also may include noise impacts to the stable and surrounding wildlife within the National Wildlife Area adjacent to the Site.

Distance to Receptors:

The Site is located in an area that is surrounded by various NACs.

The nearest residential receptors include:

- four residences on the Malkerson Sales property (three to the north by Gifford Lake and one by the Renaissance Festival
- the Renaissance Festival and associated residential and camping area on the Site,
- a mobile home park, Jackson Heights, located approximately 250 feet from Site Boundaries and over 2,000 feet from the proposed processing area,
- Single family residential homes are also located west of U.S. Highway 169 at distances from Site boundaries of 900 feet or more,
- Residential land uses across the River in the City of Carver as well as Riverside Park which has designated picnicking and overnight camping sites that are subject to NAC 1 standards.

The industrial land uses that surround the Site are located predominantly immediately east of the Site boundaries and include:

- a demolition landfill which uses similar heavy equipment and haul trucks in their operations,
- a block manufacturing facility, and a
- commercial yard waste composting facility.

Park lands are located immediately south and west of the Site. The parking area for access to the Louisville Swamp Unit of the National Wildlife Refuge (NWR) is located off 145th St. just south of the Site. There is also a parking lot for access to the Minnesota Valley Trail located just west of Gifford Lake. The Minnesota Valley State Corridor Trail is located immediately west of the Project area. The Chaska Unit of the National Wildlife Refuge is located just over ¼ mile from proposed processing areas. The proposed processing area will be located approximately 1,000 feet or more from the State Trail system. There is a State Access trail to the Louisville Swamp unit of the NWR immediately south of the Project Site. Figure 23, *Noise Receptor Map*, illustrates the location of nearby receptors with respect to Site boundaries.

The Site also includes a public stable and a seasonally used campground used by Renaissance Festival staff and exhibitors. This and the Renaissance Festival itself fall into a noise area classification as does the Trail of Terror. A discussion of the planned continuation of the uses associated with the NAC 1 classified locations will be included in the EIS.

Blasting:

The mining process includes the use of explosives to break up dolomite and occasional cemented sandstone layers. Blasting activities can generate noise, dust, and vibration. The current mining operations blast approximately two to three times per week. Blasting frequency is anticipated to increase as a result of the Project to account for blasting of the transition material above the sandstone as well as of the sandstone itself. Blasting is performed by an independent blasting contractor. Sound level meters and seismographs are set out to record ground vibrations and airblast levels during each blast.

A blast monitoring plan will be developed as part of the EIS. The blast monitoring plan will continue the practice of sound level meter and seismograph monitoring during each blast to verify that vibrations do not exceed levels established to protect potentially affected structures in the vicinity. Locations of monitoring points change as mining progresses to provide comprehensive monitoring of all adjacent structures. The blast monitoring plan will outline pre-blast survey requirements for structures adjacent to the Site. If any structural damage should occur as a result of blasting activity, it will be the sole responsibility of the operator.

Dust:

The potential for fugitive dust generation at non-metallic mineral mining operations and recognized dust control measures is well documented. Dust generation is associated with different aspects of the mining operation. Stripping operations, which involve removing vegetation, topsoil and overburden soils, create dust when the vegetation is removed and underlying soils are exposed. Stripping operations have already occurred throughout the majority of the Site with only smaller areas remaining that will require stripping in the future. Remaining original topsoil on this Site is largely Stony Land, with very shallow topsoil depths. Other areas of the Site have been backfilled with imported topsoil and organic material which will be removed to access the underlying sandstone in this area. Stripping is conducted in phases and in as short of a timeframe as possible to reduce the potential for dust generation. Topsoil and overburden from stripping operations are shaped into perimeter berms, stockpiled on Site or used as reclamation backfill. The berms and overburden stockpiles are vegetated as quickly as practical, limiting the exposure and potential for wind and water erosions. The vegetation stabilizes the topsoil, reduces exposure and minimizes dust.

Another potentially significant source of dust is from truck traffic traveling on internal haul roads. Frequent watering of the internal haul roads effectively controls this source of dust. A water truck is available to water haul roads as needed. In the event that frequent watering of haul roads is ineffective, additional controls such as calcium chloride over main haul roads may be utilized. The access to U.S. Highway 169 from the Bryan Rock quarry is paved. The main access road to the Malkerson Sales Property is from State Highway 41 and is also paved. Paving substantially reduces the dust generation. Regular sweeping of the paved internal haul roads and access points further reduces fugitive dust emissions and tracking of materials onto public roadways.

Windblown transport of stockpiled materials also has the potential to generate dust. Mitigation measures to control wind erosion from stockpiled materials such as limited heights, locations, volumes, watering stockpiles and composition will be evaluated in the EIS.

24. EIS Applicability

Portions of this topic related to odors are minor and will be discussed in the EIS using the same information as presented in the EAW. Portions of this topic are significant and information beyond what is provided in this EAW will be included in the EIS. The EIS will include the following:

Noise:

24.1 Noise modeling will be performed to demonstrate that anticipated noise emissions will comply with State Standards applicable to all NACs including residential receptors, public lands, surrounding industrial uses and the Renaissance Festival and related activities/land uses. A noise analysis will be provided for each alternative, except alternative 4 and alternative 6, which will have the same processing plant location and size, the variations in phasing will effect the timing of potoentail sound levels related to mining activity, but not the actual sound levels.

24.2 Impulse and nuisance noise emission resulting from blasting, back up alarms and other mining related sources will be evaluated. Impulse and nuisance noises specific to the processing plants and rail yard will be included in the individual noise analysis in 24.1 provided for alternatives as described in 24.1 as may be applicable.

24.3 Sufficient information will be provided to address potential nuisance noise during nighttime operations.

24.4 Mitigation measures to reduce or minimize noise as may be needed to comply with State noise standards will be developed.

24.5 A noise assessment of impacts to wildlife and to Refuge visitors will also be conducted with an analysis of susceptible wildlife such as colony nesting birds and raptors will be provided in the EIS. Active eagle nests within the immediate area will be mapped and considered. This will be coordinated with the U.S.F.W.S.

Dust:

24.6 Fugitive dust will be addressed together with air emissions in item 23 above. If calcium chloride is proposed to be used for dust control, it will be evaluated as a part of the mitigation measures to reduce the potential for groundwater contamination described in Item 19.

24.7 Mitigation measures will be identified to control fugitive dust emissions.

25. Nearby resources.

Are any of the following resources on or in proximity to the site?

- a. Archaeological, historical or architectural resources? Yes No**
- b. Prime or unique farmlands or land within an agricultural preserve? Yes No**
- c. Designated parks, recreation areas or trails? Yes No**
- d. Scenic views and vistas? Yes No**
- e. Other unique resources? Yes No**

If yes, describe the resource and identify any project-related impacts on the resource. Describe any measures to minimize or avoid adverse impacts.

a. Archaeological, historical or architectural resources:

The Minnesota Historical Society's State Historic Preservation Office (SHPO) was contacted to conduct a review of the Historic Structures Inventory and Minnesota Archaeological Inventory databases for known resources in the Project area. This search identified fifteen archeological, historical or architectural properties within the search area. The majority of these resources are located off the Site, however, some of the identified sites are located within or in part within the Project boundaries. The identified cultural resources include Indian mounds, archeological sites and structures of potential historical significance. The SHPO review only provides results for known archaeological sites and historic properties, and does not include an assessment of archaeological site potential or provide a listing of all potential historic architectural properties. It represents only known and recorded archaeological sites and historic architectural properties from the current SHPO databases. Reports on the historic or architectural sites in the vicinity of the Project are summarized below.

The Walnut Street National Historic District in the City of Chaska is located just under 1 mile from the project boundary. The Carver Historic Distric is located just

over 1 mile from the Project boundaries. These Historic Districts include a number of buildings and cultural resources of special historical interest and value. Figure 24, *Cultural Resources*, illustrates the general location of these sites with respect to the Site.

1. (21SC28) 44 Mounds *Located off-site approximately 1 mile southwest of Project*

This site includes information on 44 mounds near Merriam Junction, about 35 feet above the river.

2. (21SC29) 22 mounds *Located off-site approximately 1,200 feet west of mining activity*

This site includes a group of mounds 25 to 35 feet above the Minnesota River.

3. (21SC21) 3 mounds *Located approximately 1,400 feet west of mining activity.*

This site includes three mounds approximately 100 feet above the Minnesota River, surveyed in 1889. These mounds were potentially located in an area that has been disturbed by past mining or agricultural activity.

4. (21SC30) 33 Mounds *Located approximately 1,400 feet west of mining activity.*

This Document gives information on a set of 33 mounds 60 to 80 feet above the Minnesota River. The report indicates that the majority of mounds have been destroyed by agricultural practices; however, 9 mounds may still be recognizable, but disturbed.

5. (SC-LOU-011) Historic Bridge Inventory *Located off-site northwest of the Project*

This document is an evaluation of bridge no. 006763's eligibility for the national register and was found to be *not eligible*. The bridge was designed by the State Highway Department in 1951 and constructed a year later on State Highway 41; it crossed the Minnesota River flood plain about one mile southeast of Chaska. The bridge's recent construction date and overall lack of significance excludes it from National Register Consideration.

6. (21SCi) Louisville Ghost Town *Located approximately 1,450 feet west of mining activity*

This document gives a brief historical background on the village of Louisville. The founder Louis La Croix, a Frenchman built a log cabin and established a trading post on the bank of the river about the year 1850. In 1853 H. H. Spencer

established a grocery store there and bought the claim and buildings of Mr. La Croix and moved his family there from Louisville Kentucky. In 1854, Mr. Spencer built a new two story frame house, and conducted his business there. Also in 1854, J. O. Fuller surveyed the village. Mr. Spencer named the village in honor of Louisville Kentucky (although later in the document there is note which says the town was not in fact named after Louisville Kentucky, but Capt. Louis Roberts, who first claimed the site. They may be referring to Louis La Croix). In the fall of 1854, a post office was established and Mr. Spencer was appointed postmaster. In 1855, he built a store on the bank of the nearby river. In 1856, Mr. Spencer built a grist-mill. Two saw-mills were built by Ezra Gibbs and J. W. Sencerbox. Mr. Sencerbox's mill was removed in 1860, and Mr. Spencer's in 1863. Mr. Spencer gave lots to anyone who would build on it. He gave lots for a church and school-house. In 1856, a schoolhouse was constructed. The first sermon in Louisville was preached by Rev. Stevens in Mr. Spencer's house. Other Reverends would give sermons in Mr. Spencer's house nearly every week, but no church edifice was ever constructed. At one time there were thirty houses in Louisville, but about 1858 it began to rapidly decline in population, with people closing their place of business and moving to other towns. In 1859, Mr. Spencer sold his store, the last store in Louisville. As the primary land owners, Mr. Spencer and Frank Gifford by mutual consent had the town vacated.

7. (21SC0062) Louisville Lithic Scatter/Structural Ruin *Located West of the Site*

This site consists of a scatter of artifacts. The materials present include flaked stone tools and debitage, as well as the foundation of a structural ruin. The topographic settings include general upland, bluff edge, and stream-stream junction. There are rumors of unrecorded earthworks in the immediate vicinity; therefore any survey in the vicinity should be aware of this possibility.

8 (21SC64) Malkerson Lithic Scatter *Located off-site on Malkerson Sales Property northeast of State Highway 41*

This lithic scatter is on property owned by the Malkerson family, but located off-site, northeast of the Project. The land uses include grassland and pasture. The types of materials present include EuroAmerican ceramics, as well as debitage and metal. The artifacts are Chert flakes, white ware fragments and one iron fence staple.

9. Malkerson Stables *Located on northern portion of Project*

This Site is described as the Malkerson Stables. The report evaluates the house and barn as historical structures. The National Register Eligibility recommendation is **not eligible**, as the Malkerson Stables do not possess architectural distinction, significant characteristics of design or construction. The construction date is 1890. This site is a former farmhouse. There are several reasons listed for this recommendation including painted Chaska brick,

deterioration of wood features, the barn's corrugated steel and stucco additions and removal of original features.

10. Merriam stage coach line/Ghost Town *Located adjacent to southern portion of Project*

This document describes houses and a stage coach line associated with Merriam Junction located at near the southern portion of the Project. Although the outline of the site runs north into the Project, diagrams within the report indicate that the buildings and stage coach line are located south of the Project itself. According to a text excerpt, the village of Merriam was surveyed in 1800. Only two buildings ever put up on the site were the agent's house and the depot. In 1871, the depot was moved south two miles to the intersection between the stage road and the Minneapolis St. Louis railroad. A post office was started in 1871, and the first postmaster was H. H. Spencer. William Burke then took over until 1873, when the office was discontinued. The post office was re-established in 1880. There were then two hotels built in 1879 and 1881.

11. (SC-LOU-001) Merriam Junction Depot *Located south of Project*

This site consists of the Merriam Junction Depot which includes a railroad station and pump station. The depot is described as a building/structure, in good condition with local significance, restricted to the public, visible from the road, and occupied.

12. (SC-LOU-007) Stone residence and Barn (Site 1) *Located off-site south of Project*

This site includes a stone residence and barn, with the barn in ruins, dated ca. 1860 – 1870. Due to the extent of deterioration of the structures, the site does not appear to be eligible for nomination to the National Registrar of Historic Places. Discoloration of the stone on the interior of the barn indicates that it may have been destroyed by a fire. The barn ruin is divided into three sections with one possibly being a second story. The ruins appear to be in sound condition with the exception of one crumbling corner. The residence is a one and one-half story stone structure. The plan of the building consists of a central hallway with staircase flanked by one room on each side. The second level is one room. There is also a full basement/cellar.

13. (SC-LOU-006) 3 Standing Stone Structures (Site 2) *Located off-site southwest of Project*

This report describes three structures for consideration for the National Register and concludes that the site is probably eligible. There is a residence, barn, and granary ca. 1860 - 1870. There is also evidence of later vintage, concrete foundation in the vicinity. Of the three, only the barn is in an advanced state of

ruin, probably due to fire, vandalism, or the removal of structural timbers by a previous owner. The residence is a one and a half story building, rectangular in plan. The cedar shingled roof exists, but is deteriorated. Door and window openings are inserted with brick arches. The barn is large and rectangular in plan, with a rear lean-to addition. The roof and wooden loft are missing. The granary is a two story building set on a high foundation. The crawl space is ventilated by arched brick openings on either end of the gable. The oak floors and loft are still intact, and the cedar roof is in fairly sound condition. The property would probably be eligible for nomination to the National Register of Historic Places.

14. (SC-LOU-XXX) Single Stone Structure (Site 3) *Located off-site west of Project*

This report involves a single stone structure ca. 1860 in a state of extensive deterioration. The report concludes that the site is probably not eligible for listing in the National Registrar listing. Examination shows that the structure was destroyed in a fire charred plaster and wood are strewn about the place. The remaining sections of wall are precarious, and there are several sections of second story floor that are unsupported laterally from the foundation up. An interior chimney of later vintage has separated from the wall.

15. (SC-LOU-004) Structures in extreme State of ruin (Site 4) *Located on or adjacent to the Project*

This document describes five structures, all in an extreme state of ruin. The buildings are said to be not eligible for the National Register, despite early photographs of the structures, due to the advanced state of ruin. There is a machine shed, stone barn, wooden barn, a silo, of later construction, and a residence. The locations of the machine shed and wood barn are noted by piles of rotten lumber. The stone barn is rectangular in plan. It is without a roof or any remnant of structural timbers. The stone walls, however, are sound. The residence is a ca. 1850 Greek Revival Style frame structure in an advanced state of ruin. It was formerly two stories in height with a one story kitchen lean-to.

The EIS will include the appropriate archeological studies including necessary field work to determine if any of the Sites identified above, or others that may be found in the course of the investigation, have the potential to be impacted as a result of the Project. If sites of archaeological, historical or architectural resources are encountered on the Site, appropriate mitigation measures will be evaluated in the EIS to avoid or minimize impacts.

b. Prime or unique farmlands or land within an agricultural preserve:

The Site is not located within an agricultural preserve area. The majority of Site soils are not considered prime farmland. There are however areas on the Site

that have soils that are considered Prime farmland by the National Resources Conservation Service (NRCS). The NRCS defines prime farmland as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses to produce economically sustained high yields of crops when treated and managed according to acceptable farming methods.⁸ Figure 25, *Prime Farmlands*, illustrates the area of the Site that includes prime farmland soils.

Although there are soils designated as prime farmland on the Site, these areas are incompatible with agricultural uses due to existing uses, land covers, and long-range planning goals. The Scott County Prime Farmland Mapping Project mapped out areas within the County that although may have soils that are designated as prime farmland, are excluded from consideration as available for agricultural purposes due to incompatible land uses and land covers.⁹

c. Designated parks, recreation areas or trails:

The Site is located adjacent to the Minnesota Valley Trail and the Louisville Swamp Unit of the National Wildlife refuge. The Chaska Unit and Rapids Lake Unit are also located in the vicinity directly across the Minnesota River from the Project. The Louisville swamp unit contains 2,600 acres of land adjacent to the Minnesota River. There are several established trails through all of these national wildlife refuge units.. The Minnesota Valley State Trail Corridor Trail runs through the Louisville Swamp Unit and continues to the north through public lands associated with the Gifford Lake area. The Minnesota River Bluffs Regional Trail is planned to be extended from Chaska to Carver and eventually across the river and along a portion of the western boundary of the Site. Figure 26, *Public Lands and Trails*, illustrates the location of the Minnesota Valley Trails and the trails associated with the National Wildlife Refuge with respect to the Site.

The City of Carver maintains Riverside Park, which is actively utilized for community events, archery, a boat landing, campsites and other recreational uses as well as the Minnesota River itself which is provides a source of recreational use.

d. Scenic views and vistas:

The Site is located on a river terrace within the Minnesota River valley with the closest portion of the river channel located approximately 850 feet from the Site boundary. The elevation of the Minnesota River is approximately 695 feet above

⁸ Natural Resources Conservation Service. (2007). National soil survey handbook, title 430-VI. Available online at: <http://soils.usda.gov/technical/handbook/download.html>

⁹ Greg Schweser (June 2009) Scott County Prime Farmland Mapping Project. Prepared for the Scott County Planning Department and Jordan Area Visioning Alliance (JAVA) University of Minnesota

msl with the northern portion of the Site ranging in elevation from approximately 730 feet above msl to 750 feet above msl. The very eastern portions of the Bryan Rock property reach elevations of 790 feet above msl. Views from Hwy 41 include the northern portion of the Project Site, which is currently developed land used as a stables and horse training area..

e. Other unique resources:

The Mid-America Renaissance Festival which has been an active local attraction for over 42 years is located on the Malkerson property on the southern part of the Malkerson portion of the Project. With or without the Project, the Renaissance Festival will eventually be relocated from the Site due to either continued limestone mining on the Malkerson Sales Property, or the limestone and sandstone mining associated with the Project. This is the second largest Renaissance Festival in the United States with an annual attendance of 300,000. To accommodate the proposed mining the Renaissance Festival will be dislocated, in either case, the buildings will be properly disposed of, wells sealed and all solid waste and debris associated with this facility will be properly removed and managed. The Mid-America Corporation owns land adjacent to the current leased location that might be considered as an alternate location, but there have been no discussions as to whether this establishment will be relocated or discontinued and destroyed. The Site and surrounding area is unique in its abundance and accessibility of marketable mineral resources. Both construction aggregates and silica sand resources are readily available for extraction in this area due to the past actions of mining, glaciers and the Glacial River Warren.

25. EIS Applicability

Portions of this topic are minor and will not be discussed in the EIS. Portions of this topic related to; archaeological, historical or architectural resources, designated parks, recreation areas or trails, scenic views and vistas are significant and information beyond what is provided in this EAW will be included in the EIS. The following topics will be presented in the EIS as a single analysis of potential impacts associated with the overall Project.

25a. Archaeological, historical or architectural resources

25.1 A Phase I cultural resources survey was performed by a qualified archaeologist in order to adequately define the proposed Project's potential to impact unidentified cultural resources including historic properties, architectural history sites, and archaeological resources. The results of this survey will be submitted to the State Historical Preservation Office and presented in the EIS.

25.2 The EIS will identify strategies to avoid, minimize or mitigate identified potential impacts as a result of the Project to cultural resources, including the

historic districts in Carver and Chaska, deemed to be protected by state or federal laws.

25b. Prime or unique farmlands or land within an agricultural preserve

This topic is considered minor and will not be addressed in the EIS.

25c. Designated parks, recreation areas or trails

25.3 The potential for impacts to nearby parks, recreation areas, and trails will be further evaluated in the EIS.

25d. Scenic views and vistas

25.4 The potential for impacts by the Project on the visual quality and integrity of the surrounding area will be addressed in the EIS, as discussed under item 26. Visual Impacts.

25e. Other unique resources

25.5 The current location of the Renaissance Festival and parking facilities are within the proposed mining area and will eventually be removed under the No Build Alternative as well as the Project Alternatives. The timing of the removal under the no build and other Project alternatives will be discussed in the EIS as well as a general discussion regarding economic impacts to the surrounding communities resulting from a difference in timing in the closure of the Renaissance Festival.

26. Visual impacts.

Will the project create adverse visual impacts during construction or operation? Such as glare from intense lights, lights visible in wilderness areas and large visible plumes from cooling towers or exhaust stacks? X

Yes ___ No

If yes, explain.

Visual impacts include normal on-going mining operations. New processing facilities will be constructed at the Site which will include washing and drying components. The dryers will be equipped with exhaust stacks which may emit visible plumes of water vapor driven off of the washed sand particles as part of the processing operations. The wash plant(s), dry plant(s) and storage silos may each have components that reach heights up to 130 feet. The EIS will evaluate screening of the processing plants for alternatives that consider processing facilities on both the Malkerson Sales property and the Bryan Rock Property as well as a single processing plant on either the Malkerson Sales property or the

Bryan Rock Property. Vegetation along the Minnesota Valley trail system will also provide screening of the Site from trail users during summer months.

Mining and processing operations may run 24 hours/day. Exterior lighting as necessary for compliance with MSHA regulations will be installed. Security lighting will also be required. All lighting will be downcast and meet the requirements of the Scott County Zoning Code.

26. EIS Applicability

This topic is significant and information beyond what is in the EAW will be included in the EIS. Topics to be addressed in the EIS include: This section of the EIS will include a separate analysis for each alternative.

26.1 The effect of lighting will be addressed in the EIS, including potential impacts to scenic views and vistas as mentioned in item 25 above.

26.2 A viewshed analysis will be performed that addresses key view areas (likely to be the trail system, trail access parking areas, State Highway 41 and U.S. Highway 169 corridors, Carver County Road 40 in the City of Carver, The River itself, and the bluffs across the Minnesota River in Carver County). The analysis will include the development of a model of Site specific conditions such as topography, vegetation, equipment, stockpiles and proposed Site structures. Key view areas will be represented through drawings, photos or other imaging methods.

26.3 The EIS will identify the strategies to avoid, minimize or mitigate visual impacts to key viewing areas.

27. Compatibility with plans and land use regulations.

Is the project subject to an adopted local comprehensive plan, land use plan or regulation, or other applicable land use, water, or resource management plan of a local, regional, state or federal agency? X Yes No.

If yes, describe the plan, discuss its compatibility with the project and explain how any conflicts will be resolved. If no, explain.

Scott County has land use authority in the Project area. The Project is subject to the Scott County 2030 Comprehensive Plan Update (2030 Plan). The Project is located on lands that are guided Commercial/Industrial. The Project is compatible with this guidance document. Specifically Goal #V-22 Preserve and protect non-metallic mineral deposits, illustrates the County's recognition of the necessity to preserve and protect aggregate resource based activities that provide for a diverse, regional, and sustainable economy and environment. The 2030 Plan recognizes non-metallic mineral mining as an interim use within the

Commercial/Industrial Planning category. The 2030 Plan also recognizes the need to consider the compatibility with adjoining land uses and to consider mitigation measures to reduce nuisance concerns such as noise, dust, hours of operation and traffic. Lastly, the 2030 Plan encourages aggregate resources to be extracted from an aggregate rich site prior to development due to the increasing demand and shrinking supply of aggregates. In the case of this project, silica sand is not in high local demand, but appears to be in national if not global demand for purposes of extraction of natural gas and oil, a practice receiving national attention due to the environmental and economic issues involved.

The Site is located within the Shoreland District and as discussed under item 14, the Project will require a height variance and a variance from the site restoration timing requirements.

The Project is subject to the Scott County Zoning Ordinance. The Site is zoned I-1, Rural Industrial. Mining is an allowed interim use within the I-1 Rural Industrial District. Though mining is generally defined as an interim use based on the general practice of reclamation of a site to accommodate future land uses compatible with the underlying zoning and Comprehensive Land Use Plan the past unpermitted grandfathered mining activity has lowered portions of the Site to below the elevation of the 100 year floodplain, resulting in no or limited options for commercial or industrial future uses in some portions of the site. In addition to development limitations created by the end use elevations under the No Build Alternative, current mining activity has disturbed the majority of site soils limiting the potential to develop individual sewage treatments systems throughout the Site. The rock floor of the existing and future quarry areas, under the No Build Alternative makes future extension of municipal utilities expensive, if not economically infeasible. The EIS will compare the development potential of the Site under the No Build and Proposed Reclamation Condition of the remaining Alternatives taking into consideration the limitations that will exist in areas that will be left as open water bodies.

The northern portion of the Project is located within the Lower Minnesota River Watershed District. The southern portion of the Project is located within the Scott Water Management Organization (WMO). This portion of the Project will be subject to the Scott WMO's Comprehensive Water Resources Management Plan. The entire Site will be subject to the stormwater management standards included in the Scott County Zoning Ordinance. Figure 27, *Watershed District Boundaries*, illustrates the Scott WMO and the Lower Minnesota River Watershed District Boundaries with respect to the Site.

The Scott County Comprehensive Land Use Plan and the Highway 169 Interregional Corridor study call for frontage or backage roads parallel to Hwy 169 to serve local businesses. The extension of Dem-Con Drive to County Road 14 will be discussed in the EIS with the identification of a corridor for this

connecting road along the west side of Hwy 169. Recognizing that there will be limited future development options along portions of this frontage/backage road along portions of the proposed Project site, both the location for this road, its relevance, and the means to fund its construction will be identified in the EIS. The closing and timing of current access points onto Hwy 169 that currently serve the Project site will also be presented.

27. EIS Applicability

This topic is significant and will be discussed in more detail within the EIS with an analysis of the development potential of the Site under the No Build and remaining Project Alternatives including a review of the long term economic impacts to the community as a result of removal of portions of the Site from potential future uses compatible with the Comprehensive Land Use Plan.

28. Impact on infrastructure and public services.

Will new or expanded utilities, roads, other infrastructure or public services be required to serve the project? X Yes ___No. If yes, describe the new or additional infrastructure or services needed. (Note: any infrastructure that is a connected action with respect to the project must be assessed in the EAW; see EAW Guidelines for details.)

The Project will include the construction of a rail yard(s) for the loading and transport of the majority of the processed silica sand product to market. This is a private utility. Natural gas will be extended to the Site from the north and additional electrical service will be brought to the Site to serve the mining and processing needs. These are all private utilities. The Project will not require public services. The EIS will explain how long term connecting roadway improvements identified in local and regional plans will be located and funded as well as the closing of current direct accesses onto Hwy 169. (See item 21.2)

The Project may eliminate options for future infrastructure. The reclamation and end use plan will provide sufficient detail to allow local jurisdictions to evaluate future infrastructure needs and negotiate easements and funds for them as appropriate.

28. EIS Applicability

This topic will be discussed in one evaluation within the EIS using the additional details related to the reclamation plan and end use plan.

29. Cumulative potential effects.

Minnesota Rule part 4410.1700, subpart 7, item B requires that the RGU consider the "cumulative potential effects of related or anticipated future

projects" when determining the need for an environmental impact statement.

Identify any past, present or reasonably foreseeable future projects that may interact with the Project described in this EAW in such a way as to cause cumulative potential effects. (Such future projects would be those that are actually planned or for which a basis of expectation has been laid.)

Describe 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 (or discuss each cumulative potential effect under appropriate item(s) elsewhere on this form).

The Project is located on property where active mining operations are currently well established on portions of the Site. All of the studies to be undertaken, identified throughout this document, will consider the cumulative impacts of the existing mining operations. The Site is located in an industrial area and adjacent land uses will be considered in evaluating air emissions, ground water resource impacts, road interconnectivity and the additional traffic including rail impacts. Some of the land uses in the vicinity which may be included in the air emissions evaluation include the adjacent hot mix asphalt plant, the closed Louisville Landfill, the composting facility, and air emissions from the proposed silica sand processing plant located approximately one mile south of this Site.

One other silica sand mining project, Shakopee Sand, formerly named Great Plains Sand, is currently operating in the vicinity as well. Another construction aggregate mine, Jordan Aggregates, is proposed further to the south. Both of these sites are located along the Minnesota River Valley. Cumulative impacts to ground and surface water resources will be considered in the EIS. Cumulative traffic and rail related impacts will also be evaluated taking into consideration the current traffic impacts from the existing seasonal entertainment uses on the subject Site as well as the increased mining related traffic. The cumulative impacts of silica sand mines to the south that also utilize the Union Pacific Railroad will be considered acknowledging that the Proposed Project will be adding to the increasing use of the Union Pacific Railroad for transport of frac sand. The combined impact to the Railroad of several unit trains per day potentially resulting in traffic delays on Highway 41 and through Shakopee will be included in this assessment. The issue of incompatible land use activities between the Renaissance Festival and related Mid-America entertainment events and the proposed increased mining associated with the Project will be explained and evaluated.

29. EIS Applicability

This topic is significant and information beyond what is in the EAW will be included in the EIS. Topics to be addressed in the EIS include the following which will be presented in one evaluation within the EIS as potential cumulative effects associated with the overall Project:

29.1 Identify the potential direct and indirect cumulative impacts associated with the existing mining operations on the Project.

29.2 Identify and evaluate adjacent land uses that may contribute to a cumulative impact related to air emissions, air quality, noise, groundwater and traffic (road and rail).

29.3 Identify and evaluate potential cumulative impacts associated with the proposed Project and two other proposed mining projects located along the Minnesota River (Shakopee Sand and Jordan Aggregates) within the County, including specifically potential cumulative impacts associated with groundwater and surface water resources as well as those that may result from the additional rail or truck traffic associated with these projects.

29.4 Identify and evaluate potential cumulative traffic impacts from existing entertainment uses on the Site, expanding mining operations proposed for the area and expanded reliance of rail transport of product from this mining operation and Shakopee Sand. Recognizing that silica sand mine expansions to the south in Le Sueur and Blue Earth Counties also served by the same Union Pacific Railroad will increase rail traffic on this railroad through Scott County, an analysis of the cumulative impact in this regard will be conducted. The need for improvements to the UPR and associated crossings within Scott County will be assessed.

30. Other potential environmental impacts.

If the Project may cause any adverse environmental impacts not addressed by items 1 to 28, identify and discuss them here, along with any proposed mitigation.

In addition to the potential environmental impacts addressed in Items 1 through 28 the EIS will include a single assessment of the potential economic, employment, sociological adverse and/or beneficial impacts that could result from the proposed Project.

30. EIS Applicability

This topic is significant and information beyond what is in the EAW will be included in the EIS. Topics to be addressed in the EIS include:

30.1 The EIS will determine the areas and types of potential economic and social impacts of the proposed Project.

30.2 EIS will quantify the social and economic impacts on the local community, including impacts to the local economy and property values.

31. Summary of issues.

Do not complete this section if the EAW is being done for EIS scoping; instead, address relevant issues in the draft Scoping Decision document, which must accompany the EAW. List any impacts and issues identified above that may require further investigation before the Project is begun. Discuss any alternatives or mitigative measures that have been or may be considered for these impacts and issues, including those that have been or may be ordered as permit conditions.

RGU CERTIFICATION. (The Environmental Quality Board 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 9b and 60, respectively.

Copies of this EAW are being sent to the entire EQB distribution list.

Signature Date June 3, 2014



Title
Scott County Environmentalist II