TO:

Brunswick Town Board and Eau Claire County Planning and Development Department

IN REFERENCE TO:

Rezoning, Conditional Use Permits and Nonmetallic Reclamation Permit Application for Riekemann Property



Mathy Construction Company 920 10th Avenue North Onalaska, WI 54650

DATE:

January 14, 2003

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1.1 Purpose

This request for **Zoning Changes**, **Conditional Use Permits and a Nonmetallic Mining Reclamation Permit** from the Brunswick Town Board and the Eau Claire County

Planning and Development Department is submitted by Mathy Construction Company. This application describes plans for the following

- Rezoning of a five (5) acre section of land from A-1 Exclusive Agriculture to I-1 Non-sewered Industrial for the purpose of erecting a Hot Mix Asphalt plant.
- Rezoning the rest of the 157.5 acre parcel of land from A-1 Exclusive Agriculture to A-2 Agriculture-Residential for the purpose of sand & gravel excavation.
- Application for a Conditional Use Permit to allow the operation of a HMA plant on the site.
- Application for a Conditional Use Permit to allow the excavation of sand & gravel on the site.
- Application for a Non-metallic Mining Reclamation permit for the reclamation of the property.

The plan describes the progressive extraction of sand and gravel raw materials and contemporaneous reclamation of disturbed areas to residential and recreational land use. Mathy Construction has an option to purchase this property, which is presently owned by Robert & Donna Riekemann (Riekemann Property) of W5544 State Road 85, Eau Claire, Wisconsin 54701-9536. Mathy Construction will be the owner of the property, holder for all permits and responsible for all operations on the site, with company address of:

Mathy Construction Company 920 10th Avenue North Onalaska, WI 54650 Phone (608) 783-6411 /Fax (608) 783-4311

1.2 Location and Legal Description

An option to purchase the Riekemann Property was signed on August 20, 2002. The property contains 157.5 acres and is located north of State Highway 85, approximately four miles west and three miles south of the junction of Interstate 94 and State Highway 85-37, southwest of the City of Eau Claire, Wisconsin, (Please refer to Figure # 1, Site Location Map). The property is located within the Town of Brunswick, Eau Claire County, Wisconsin.



Figure #1, Site Location Map

The entire Riekemann Property is zoned A-1 Exclusive Agriculture. The adjacent properties are also zoned A-1 Exclusive Agriculture. Refer to Figure # 2, Zoning Map for the zoning status of neighboring properties.

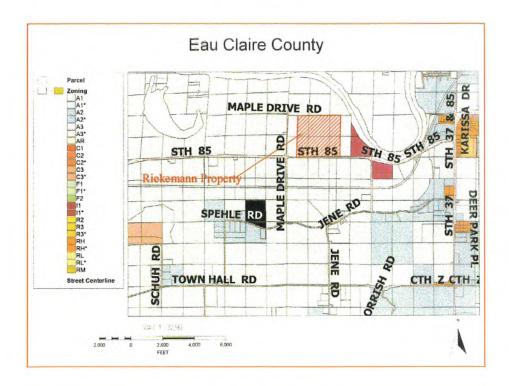


Figure #2 Zoning Map

The Tax Parcel numbers of the Riekemann Property are 26.10.4.3-1, 26.10.4.3-2-A, 26.10.4.3-3-A and 26.10.4.3-4. The legal description of the property where the extraction of sand and gravel is proposed includes the following:

The west half of the west half of the southeast quarter and the east three-fourths of the southwest quarter of section 4, Township 26 North, Range 10 West, Town of Brunswick, Eau Claire County, Wisconsin (see figure #3, plat map).

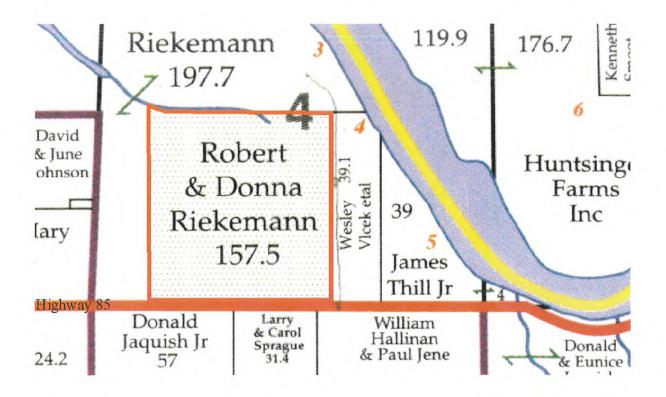
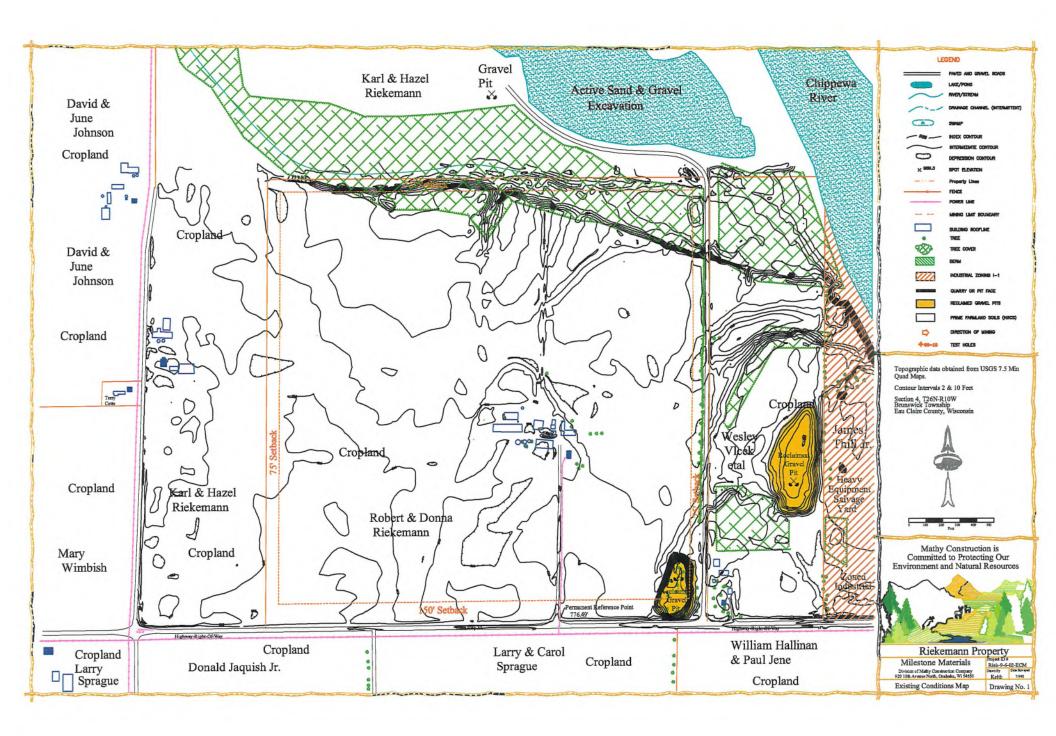


Figure #3 Plat Map

1.3 Site Characteristics and Present Land Use

The site characteristics and present land use of the Riekemann Property and surrounding areas is shown on Drawing #1, Existing Conditions Map. Shown on the map are trees and forested areas, roads, landowners, neighboring residences, outbuildings and the existing topography with both two-foot and 10-foot contour intervals.

The majority of the 157.5-acre Riekemann Property is tillable farmland. No cultural features exist on the property. The extreme southeast portion of the property has been mined and reclaimed in the past as indicated by a reclaimed gravel pit. No streams or rivers traverse the excavation area and there is little or no surface water runoff leaving the site. Nearly all precipitation on the site drains internally and percolates into the sandy topsoil and subsoil.



The closest navigable stream or river is the Chippewa River which is located about 900 feet northeast of the site. Another abandoned and reclaimed gravel pit can be found on the Wesley Vlcek property, immediately east of this site.

The land surrounding the planned sand and gravel excavation operation is primarily used for agricultural purposes, aggregate mining, industrial use and residential acreage. Refer to Figure #4, General Land Use Map. There are two neighboring residences within 660 feet of the property boundaries of the Riekemann Property. The owners of the adjacent properties are shown on Figure #3(Plat Map) and Drawing No. 1(Existing Conditions Map).

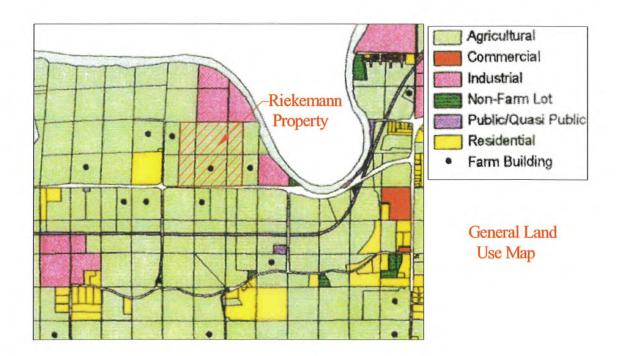


Figure #4, General Land Use Map

1.4 Soils and Geology

Soils found with the proposed excavation area are of the Menahga-Plainfield association, see figure #5, Soils Map. This soil association consists of excessively drained sands and loamy sands that are underlain by loamy sand and sand over stream terraces. The Plainfield Series (PfB) is also excessively drained with a topsoil layer of about 6 inches thick and a subsoil layer of about 23 inches thick.

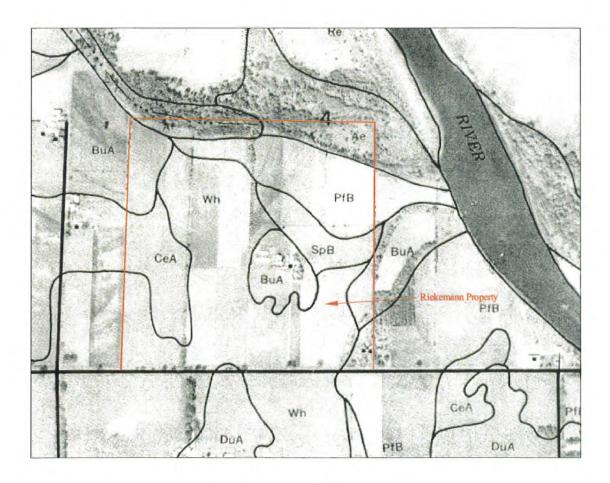


Figure #5 Soils Map

Also present on this site are specific soil types identified as the Burkhardt sandy loam (BuA), the Caryville loam (CeA), the Plainfield loamy sand (PfB), the Sparta loamy sand (SpB) and the Whitehall silt loam (Wh). The Riekemann property, as determined from test drilling, is covered with one to two (1-2) feet of black topsoil (A horizon), one to twelve (1-12) feet of brown silty sandy sub-soil (B horizon) and at least sixty five (65) feet of coarse sand and gravel.

The Robert & Donna Riekemann 157.5-acre tract of land under consideration in this plan is situated roughly in the middle of the broad meander valley of the Chippewa River. This meander valley is over two (2) miles wide and consists of alluvial deposits of silt, sand, gravel and clay deposited by the constant erosion and depositional movements of the Chippewa River through its geologic history. The river has effectively concentrated and consolidated glacial sands and gravels left by retreating glaciers ages ago throughout the extensive drainage network within the Chippewa River basin. The river has further sorted these materials into areas, which are very sandy, very rocky, and very clayey, or areas, which have a good mix of sand and gravel, see figure #6.

The Riekemann property contains a good mix of clean sand and gravel and is very well suited for construction use and HMA, materials in the Eau Claire market area. The actual depth (thickness) of the coarse sand and gravel deposit may be thicker than 65 feet depending upon the depth to the bottom of the ancient Chippewa River valley channel (up to 200' per Wisconsin Geological Survey). Surface elevations on the site range from 764 to 771 feet above sea level. The elevation of the present water table is 750.5 feet or roughly 14 to 21 feet below the surface.

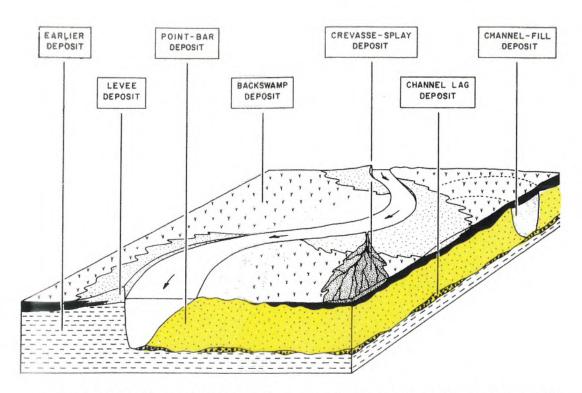


Figure #6 Block diagram of meandering-river, flood-plain and channel deposit (Allen, 1964)

The one hundred (100) year flood elevation for this area is 766 feet above sea level. Figure #7, Glacial Geology Map, shows the relationship of the Riekemann Property to mapped Pleistocene deposits in the Eau Claire County area.

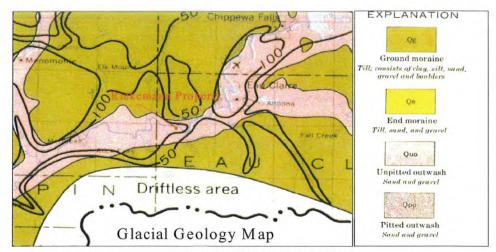


Figure #7 Glacial Geology Map

A geological exploration of the sand and gravel reserves on the Riekemann Property was conducted in May, 2002. Figure #8, Typical Geologic Cross-Section, shows the typical geologic units and their relationships below the ground surface. There are approximately 135 acres of minable sand and gravel reserves on the 157 acre property.

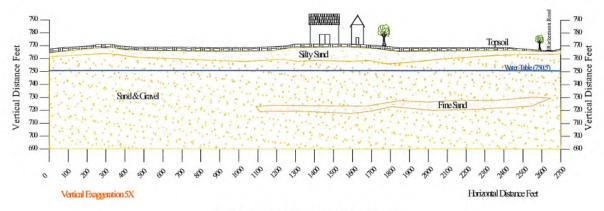


Figure #8, Geological Cross-Section

The ground water level under the Riekemann Property is predicted to be at an elevation of approximately 750.5 feet above sea level based upon a report of the Hydrogeology of the Riekemann Property¹ by Dr. John Tinker, (Appendix A). All of the known water wells of residences immediately surrounding the Riekemann Property are completed in the outwash sand and gravel. A summary of the data from the Well Constructor's Reports of wells in the area of the property is available from the Wisconsin Geological and Natural History Survey and is included in the report by Dr. John Tinker (Appendix A). Typically, the neighboring wells drilled for household use are 4 to 6 inches in diameter, average about 80 feet deep and yield from 10 to 20 gallons per minute. The alluvial aquifer is a suitable source for potable water. Dr. Tinker's report indicates that the direction of the ground water flow in the aquifer will fall within the range of N35W to N43W towards the Chippewa River.

1.5 Biologic Information

The native vegetation found on the Riekemann Property likely included mixed prairie grasses in the low areas and some white pine, jack pine and scrub oak trees on the hill slopes². Today, a mixture of deciduous trees and pine trees are found in the wooded area along the north end of the property and nearly all of the remaining land is cultivated for row crops. A line of large elm trees is found in the fence line along the existing access road on the east side of the property.

A variety of wildlife may occasionally be found on or near the property. Some of the species present include white-tailed deer, coyote, red fox, raccoon, opossum, woodchuck, skunk, fox squirrel, gray squirrel, and cottontail rabbit. Resident birds found locally include

¹ Hydrology of the Riekemann Property Town of Brunswick, Eau Claire County, Wisconsin by John R. Tinker, Jr., Ph.D., JRT Hydro, Inc., W940 County WW, Eleva, WI 54738.

² Soil Survey of Eau Claire County, United States Department of Agriculture, Soil Conservation Service, November, 1977

wild turkey, ruffed grouse, crow, pheasant, great horned owl, red-tailed hawk, blue jay, cardinal, nuthatch, chickadee, several woodpeckers and starling. Migratory birds in the area include American robin, red-winged blackbird, and killdeer. Garter snakes are also present in the area. To our knowledge, there are no threatened or endangered species of plants or animals on the property.

SECTION 2.0

HMA PLANT DEVELOPMENT PLAN

2.1 Purpose

This application package contains a request for a zoning change from A-1 Exclusive Agricultural to I-1 Non-sewered Industrial District for a five (5) acre parcel in the northeast corner of the Riekemann Property and a Conditional Use Permit for the operation of a Hot Mix Asphalt (HMA) plant. This application describes plans for the placement of the HMA plant on this section of land currently owned by Robert and Donna Riekemann. Mathy Construction along with Eau Claire Asphalt Corporation will be responsible for the operation of the HMA plant.

Mathy Construction Company requests a Conditional Use Permit and the change in zoning to address the need for present and future HMA product demand in the Eau Claire County area. Depletion of the aggregate reserve at the current HMA plant site on Porterville Road requires the relocation of the HMA plant to the Riekemann site which contains an abundant long term source of aggregate materials. This plan describes various aspects involved in creating an efficient, environmental friendly and aesthetically pleasing site.

2.2 Location and Legal Description

The entire 157.5-acre Riekemann Property is zoned A-1 Exclusive Agriculture. The surrounding properties on the north, south and west are also zoned A-1 Exclusive Agriculture and east of the Riekemann property there are several parcels of land that are zoned I-1 Non-sewered Industrial District.

The proposed HMA plant site will consist of five (5) acres, located in the northeast corner of the property, see zoning map below. Refer to Figure #9, Zoning Map for a more detailed zoning status of neighboring properties.



Figure #9 Zoning Map

A legal description of the parcel to be rezoned is as follows:

Starting at the Southeast corner of Section 4, Township 26 North-Range 10West, Brunswick township, Eau Claire County, Wisconsin, thence west 1980 feet parallel to south section line, thence north 2000 feet parallel to east section line to point of beginning. Thence west 550 feet parallel to south section line, thence south 396 feet parallel to east section line, thence east 550 feet parallel to south section line, thence north 396 feet to point of beginning.

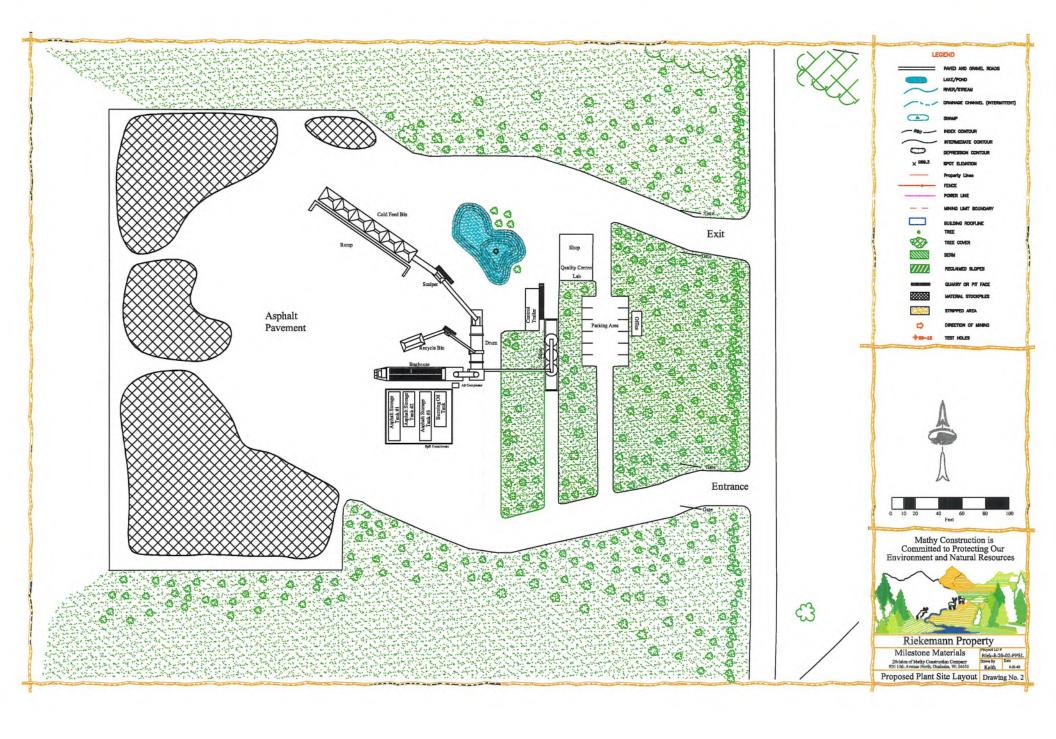
2.3 Site Development

Construction and development of the HMA plant and site will begin in the spring of 2003. The proposed site plan is shown in Drawing No. 2 (Proposed HMA Plant Site Layout). Construction will begin with the building of screening berms to the south and west of the site. Water retention dikes will also be constructed along the north side of the site to ensure storm water runoff does not leave the property. Storm water runoff will be collected in a retention pond and allowed to evaporate. An aeration fountain may be used to increase the evaporation rate of this water, see photo 1, Typical HMA Plant Layout.



Photo 1, Typical HMA Plant Layout

All berms will be seeded and planted with scattered trees to create an attractive appearance that will blend with the natural surroundings, see photo 2, Conceptual HMA Plant



Entrance. Roads and stockpile areas will be paved with HMA pavement to provide safe and stable traffic area. Seeding, plantings and permanent erosion control are more thoroughly discussed later in this section.



Photo 2, Conceptual HMA Plant Entrance

2.4 Hot Mix Asphalt Plant

Layout of the HMA plant is depicted in Drawing No. 2 (Proposed Plant Site Layout). The main components of the plant are the drum-dryer, silo(s), baghouse, tanks and control house. The aggregate is dried in the drum where it is mixed with the liquid asphalt cement. When the aggregate and asphalt cement are thoroughly mixed, the HMA product is conveyed

to the silo where it is stored until it is loaded into trucks to be delivered to the project site. The combustion gases (air) from the drying process are routed via ductwork to the baghouse. The baghouse filters the airstream as it passes through the filter media. Baghouse's are typically fitted with over a thousand filter elements to ensure adequate removal of particulate matter. Once the air is filtered through the baghouse, the clean air and steam (water vapor) exit the baghouse stack into the atmosphere.

The on-site tanks contain liquid asphalt cement, burner fuel and diesel fuel. A Portland Cement Concrete spill containment barrier will be installed under the tanks to prevent any possible contact between the product and the ground, (see photo 3, Typical Tank Containment Barrier). The liquid asphalt cement is a raw material used for hot mix asphalt. The burner fuel powers the burner used to dry the aggregate in the drum. Diesel fuel is used to fuel the on-site loader and equipment. An additional safety feature, valve lockout procedures, are employed to prevent possible leaks from entering the environment.

The control house contains all the computerized controls used to operate the HMA plant. An operator monitors the controls at all times during the operation mode to ensure proper operation of the plant and it's components. The quality control laboratory is used to ensure the asphalt mixes produced are made to specification and meet the highest industry standard for quality.

2.5 HMA Plant Access

The plant site will have access by two driveways. Separate entrance and exit points are provided to the facility to allow truck traffic to move safely to and from the plant. Locked gates will be located at all driveways to deny unauthorized vehicles entry to the



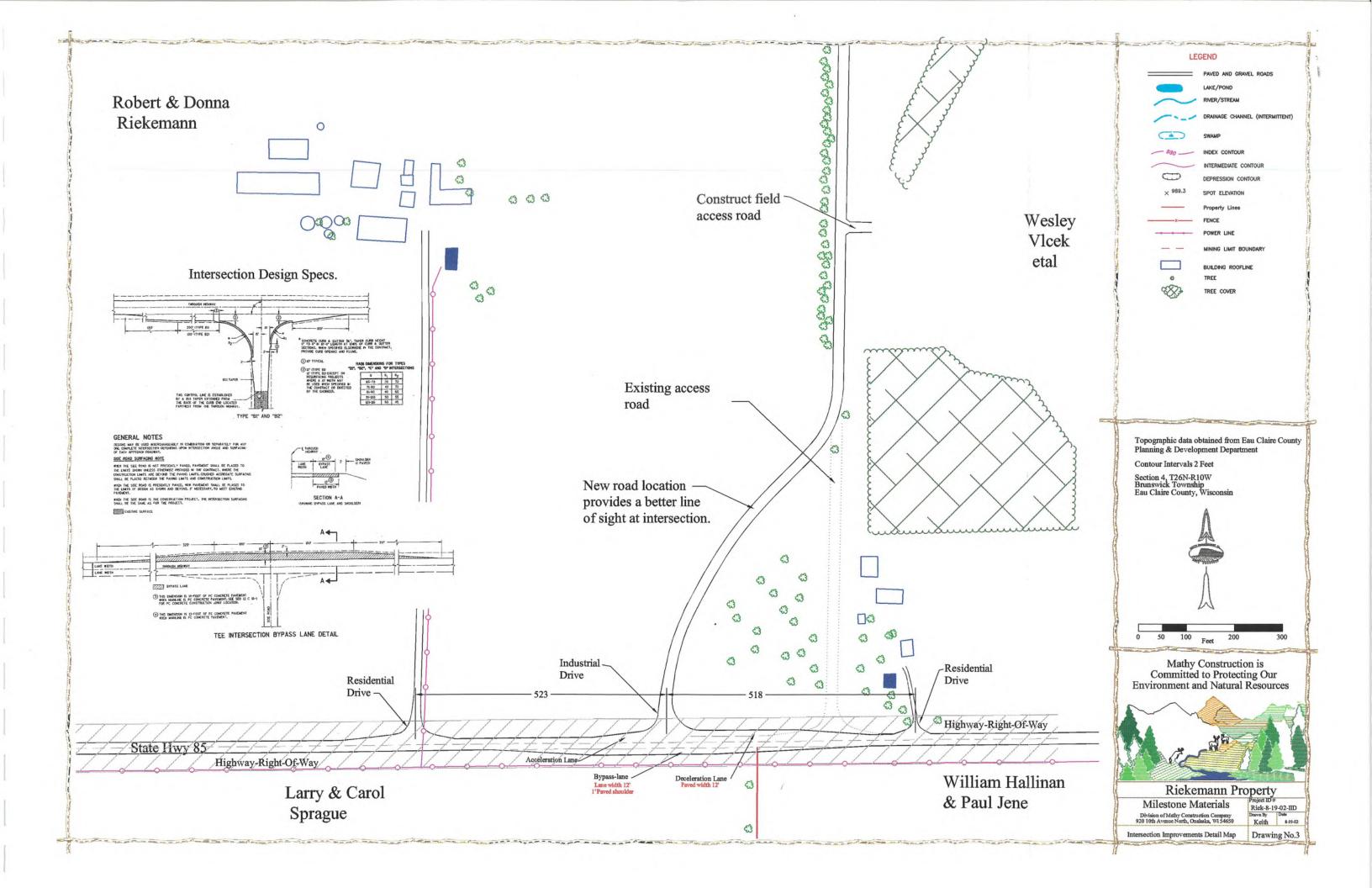
Photo 3, Typical Tank Containment Barrier

property during non-operation hours.

The current access point to State Highway 85 will need to be relocated to address safety issues with truck traffic leaving the project site. The current access point is located on the east edge of the Riekemann Property provides limited sight distance and poses a potential safety hazard. Drawing No.3 (Proposed Highway Improvements) shows relocation of the access point to the west. Included in the new access plan is a by-pass lane, acceleration and deceleration lanes. This new intersection offers a better line of sight for drivers, and a safer situation for entering and exiting Highway 85. A permit application describing this plan has been sent to the Wisconsin DOT and it has been conceptually accepted, see (Appendix B).

2.6 Operation Activity

The Hot Mix Asphalt construction season, due to seasonal weather, is generally



limited to the spring, summer and fall. The hours of operation are dependent on the length of daylight, air temperature and demand for the HMA product. It is possible that night operations may be required, as more municipal and commercial contracts are requiring night paving to reduce the inconvenience of road construction to the driving public and to minimize loss to businesses during daytime construction. The typical hours of operation, however are 5:30 a.m. to 9:00 p.m. Monday through Friday and 5:30 a.m. to 5:00 p.m. on Saturday as needed.

The number of employees needed for the operation of the asphalt plant are three (3) experienced and trained full-time employees. Engineers, supervisors, mechanics, laboratory technicians and maintenance personal may be present at the site as needed.

2.6.1 Air Quality

The Wisconsin DNR Bureau of Air Management regulates the HMA plant operations and requires the plant to have an air quality permit. Computer simulated dispersion modeling of emissions from HMA operations have shown compliance with the National Ambient Air Quality Standards (NAAQS) applicable to the HMA industry. The plant operates in compliance with the permit and is required to keep daily records to show continual compliance with the permit. Some of the emission control and inspection parameters listed in the permits include baghouse stack-testing of particulate emissions, periodic burner tune-ups to ensure optimum fuel burning efficiency and emissions, seasonal opacity testing, emissions monitoring devices and daily inspections on the plant, especially the emission control equipment. The associated aroma of HMA production are controlled by a combinations of vapor condensers, stack height, air and perfume additives.

2.6.2 Erosion Control

An erosion control plan will be implemented during the construction phase of the plant site. Once construction of the plant site is complete, temporary erosion control will be utilized until vegetation is in place. The entire site will either be seeded or surfaced with Hot Mix Asphalt. The vegetation and asphalt surfaces will serve as permanent erosion control.

Inspections are performed and documented by the plant foreman to ensure that operating conditions meet the requirements of the erosion control plan. Erosion control practices are addressed in Chapter 3 of the Wisconsin Construction Site Best Management Handbook (see Appendix C) which will serve as the standard for erosion control of soils.

Erosion control nets or mats, mulching, filter fabric barriers, straw bale barriers and other erosion control devices will be used as needed to minimize soil loss during berm construction and other soil disturbance activities. These erosion control devices will be installed according to the methods and procedures described in Chapter 3 of the Wisconsin Construction Site Best Management Handbook.

Upon notice to company management, periodic on-site inspections by Brunswick Township and Eau Claire County Planning and Zoning Department will be welcomed. Erosion control measure recommended will be implemented as appropriate to prevent soil erosion from the site.

2.6.3 Spill Prevention Plan

The Wisconsin DNR Storm Water Pollution Prevention Plan and the US EPA Spill Prevention Control and Countermeasures (SPCC) plans address practices for facilities that operate around water and handle oil products. These plans address the proper storage,

handling, and use of petroleum products, as well as inspection and response procedures. The pollution prevention practices addressed in site management planning for this site minimize the opportunity for infiltrating water to carry oil products to the groundwater.

2.6.4 Sound

Sound reduction is achieved by the installation of sound buffers, plant location and modern technology and controls. This site has incorporated each of the above listed sound reduction methods to reduce the sound associated with hot mix asphalt production. The most effective sound buffer is the use of the topography of the site and vegetation. Trees, plants and earthen berms can absorb a large part of the sound generally associated with an HMA plant operation. This site will use electrical power from the local utility, thus eliminating the need for diesel generators to supply electrical power to operate the plant.

SECTION 3.0

SITE EXCAVATION DEVELOPMENT PLAN

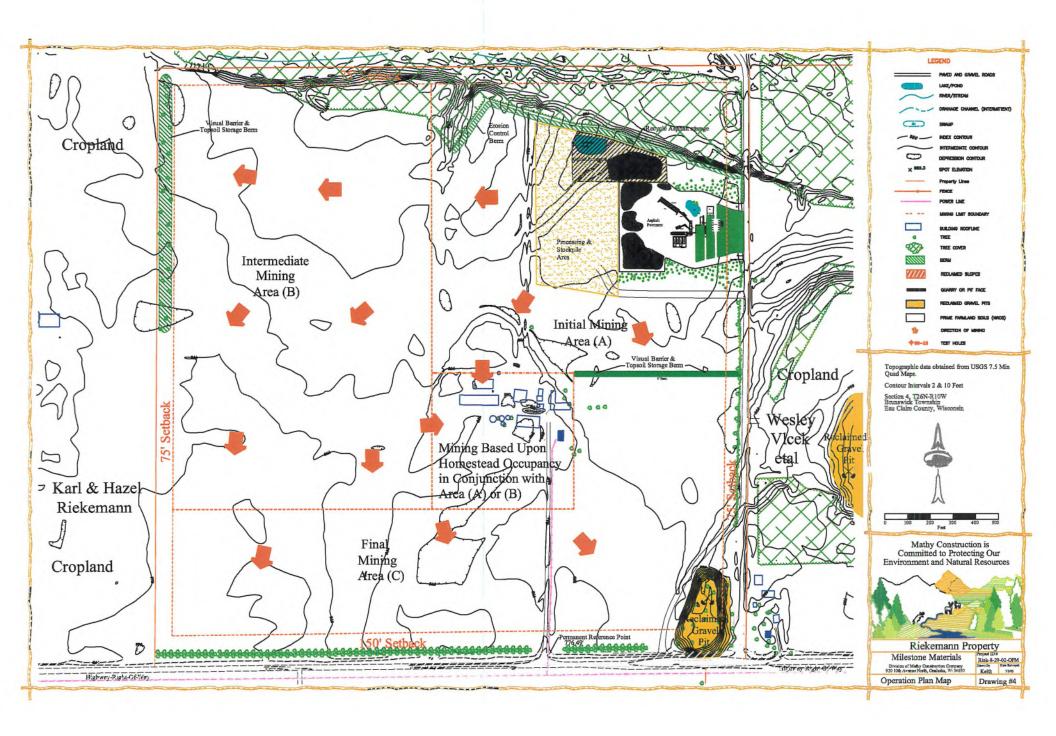
3.1 Site Layout

The proposed extent of the sand and gravel operation and future excavation area on the Riekemann Property is shown on Drawing 4, Operation Plan Map. The excavation activity is planned to occur in a continuous sequence, however it will focus upon four (4) areas. The total area to be disturbed by the excavation and processing in these areas is as follows:

Initial Mining Area (A)	38 Acres
Intermediate Mining Area (B)	49 Acres
Final Mining Area (C)	38 Acres
Homestead Area	10 Acres
Total	135 Acres

3.2 Operation Development Plan

The sand and gravel site development work will start within the next 12 months with planting of trees on the south side of the Riekemann Property and construction and relocation of the entrance road. The site of the proposed new access road intersection with State Highway 85 is shown on Drawing No. 3 (Intersection Improvements Detail Map). Other initial development at the site will include the construction of berms and installation of a HMA plant. The initial construction and development work at the site will have only minimal impact on the agricultural use of the property.



Once excavation begins, the site is expected to have enough sand and gravel reserves for many years of continuous operation. The life of the deposit is totally dependent on the rate of sand and gravel sales.

The limits of the sand and gravel operation and excavation will be defined by a minimum 75-foot setback from all neighboring property lines and a 150-foot setback from centerline of State Highway 85. All excavation boundaries will be staked with steel stakes before excavation operations begin. A permanent reference point with an elevation of 776.49 feet is established by a 3/4" steel rebar placed on the east side of the current entrance road and is identified on the Existing Conditions Map, refer to drawing #1.

The farming operation will continue on all land not affected by the aggregate extraction, berms and plant site. The area of land disturbed by the sand and gravel excavation will be kept to the minimum. In general, no more than a few acres of land will be stripped of soil ahead of mining operations to maximize the land available for agricultural production. Row crop farming of the remaining portion of the property is expected to continue until the sand and gravel excavation is completed. The mining operations plan has been to preserve the prime farmland areas for as many years as possible.

As new areas are opened, the topsoil and subsoil will be removed and stored until adequate topsoil and subsoil has been reserved in order to complete the reclamation of the property. Excess topsoil and subsoil beyond that needed to complete the total reclamation of the site will be removed for use at other locations.

3.2.1 Initial Mining Area (A) Activity

Excavation of the sand and gravel deposit will begin in the Initial Mining Area (A) see figure #10. This area of the operation will first involve the removal of the topsoil and subsoil and the storage of each in separate berms around the perimeter of the sand and gravel excavation. The berms will be constructed to store and protect the soil for future use. These berms will also direct any storm water runoff from neighboring fields around and away from the excavation. After the removal and storage of the topsoil and subsoil, the sand and gravel above the water table in this area will be excavated with wheel loaders to just above the water table. After all of the sand and gravel raw materials above the

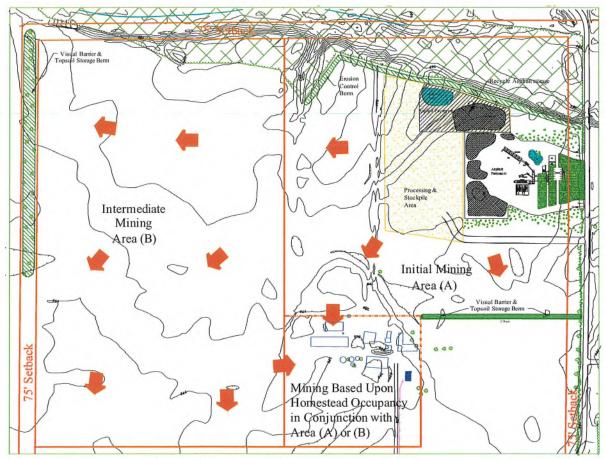


Figure #10 Initial Mining Operations Area

water table have been excavated in this area, operations will begin in the Intermediate Mining Area (B).

3.2.2 Intermediate Mining Area (B) Activity

Operations will continue with the removal of subsoil and topsoil from above the sand and gravel in a small area to the west of Initial Mining Area (A). The sand and gravel above the water table will be excavated with a wheel loader or scraper. Concurrently, excavation below the water table in the Initial Mining Area (A) will begin. Intermediate Mining Area (b) operations will continue until all of the sand and gravel raw materials above the water table in this area are excavated. The arrows on figure #11, Operations Map show the planned outward progression of the excavation.

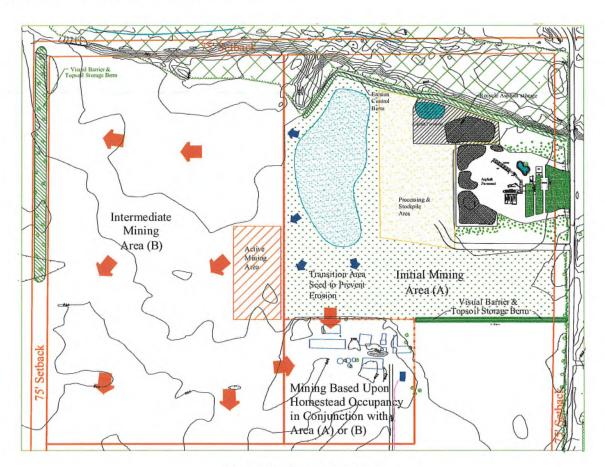


Figure #11, Operations Map

Interim reclamation will be performed on disturbed land areas not needed for operation activities. Interim seeding will occur within the transition zone between the above water table excavation and the below water excavation until these areas are further excavated. This interim vegetative cover will help to reduce soil erosion. Open and exposed soil areas within the transition zone will be kept to a minimum.

3.2.3 Final Mining Area (C) Activity

The Final Mining Area (C) will commence only after areas (A & B) are completely excavated, see Figure #12, Final Mining Area Operations Map. Mining above the water table will take place in this area and excavation below the water table will proceed from Area (B). This operation will continue until the sand and gravel raw materials have been excavated. Reclamation of the shoreline and surrounding areas will take place as excavation operations in those areas are completed.

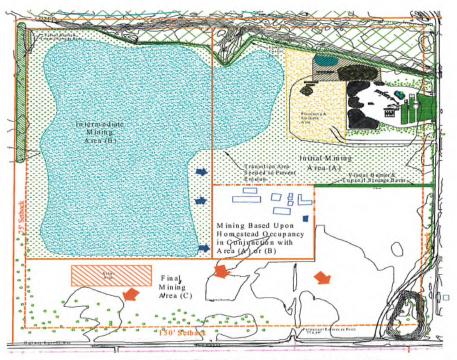


Figure #12 Final Mining Area Operations Map

3.2.4 Homestead Area Mining

Mining activity within this area will not begin until the residence and buildings are no longer occupied or being used by the Riekemann's. Timing for mining of this area therefore will determine whether this area is excavated with Area (A) or Area (B) activity.

3.3 Operation Processing Plan

The operation of the sand and gravel processing plant, product load out and scale is expected to employ anywhere between two and ten people, depending on the time of the year and activity. Normal aggregate operations will only require two to three employees for load out and scale operations. Occasionally, additional employees will be on site for temporary duties related to excavation, sand and gravel processing and other maintenance support activities.

The mining process will involve the excavation of the sand and gravel followed by further processing. The excavation above the water table will be with a wheel loader. The excavation operations below the water table will either use a cutterhead dredge, hydraulic excavator or dragline to remove material to a depth of at least 18 feet. The sand and gravel will be either hauled, conveyed or pumped to a stockpile at the onsite processing area.

After the sand and gravel has been excavated and stockpiled it will undergo further processing. A screening plant will separate the sand from the oversize gravel. The sand portion will be screened into various sand products. When sufficient oversize gravel has been stockpiled, a crushing plant will be brought to the site to crush the oversize gravel into coarse aggregate for use in HMA mixes and various other crushed stone products. A crushing plant typically includes one or more crushing units, screens and conveyors. A raw material washing plant may be used at times to further process the sand and gravel into lean

sand and gravel products for specialty uses. All of the sand and gravel processing equipment is portable and is easily moved in and out of the site as needed to replenish product stockpiles.

Wheel loaders will be used to load the aggregate products into trucks from the stockpiles. The trucks will then be weighed before leaving the site, in order to insure compliance with highway weight restrictions.

3.4 Operation Equipment List

Typical equipment which may be involved in the sand and gravel operation is listed below.

Overburden Removal:

1 backhoe

1-2 bulldozers

2-3 scrapers (optional)

1-3 haul trucks

Processing Operations:

1 crushing/screening plant (occasionally)

1 dredge, hydraulic excavator or dragline

1-2 wheel loaders

1-2 tool van/generator

1 fuel truck (occasionally)

1-3 conveyors/stackers

1 water pump (optional in association with washing operations)

1 water truck

Additional equipment may be utilized as needed.

3.5 Operation Schedule

Activity at the site will normally occur during the typical construction season from March to November. However, reduced operations may occur December through February, as supply and demand for sand and gravel aggregate products warrant.

Production hours at the site will be limited to 5:30 a.m. to 9:00 p.m. weekdays and 5:30 a.m. to 3:00 p.m. on Saturdays. No production or sales activities will occur on Sunday. Equipment maintenance hours may extend outside of these hours when required to meet project schedules. Directional lighting will be used in the production area when conditions warrant.

3.6 Sand and Gravel Use

The sand and gravel products are primarily used for new road and highway construction and maintenance work in the Eau Claire County area. The majority of the sand and gravel aggregate products sold from this site will be used in Hot Mix Asphalt mix aggregate, for township, county, state, federal and commercial projects.

3.7 Haul Routes

The primary haul route to be used by loaded commercial trucks will be over the improved onsite road, which will run along the east side of the property with direct access to State Highway 85. The proposed site of the access road entrance relocation is shown on Drawing No. 3, Intersection Improvements Detail Map. The new access point will be reconstructed to include a deceleration/acceleration lane and a bypass lane.

The trucks used for hauling HMA products to market from this site will primarily be private single to quad-axle dump trucks. These trucks will haul material from the site as HMA products are sold and transported to job locations, typically in the construction season between March and November. The number of trucks hauling each week will vary and will depend upon the number of construction projects in the market area.

ENVIRONMENTAL CONSIDERATIONS

4.1 Site Screening and Security

A mixture of White Spruce (*Picea glauca*), Red Pine (*Pinus resinosa*) or other native trees such as Silver Maple (*Acer saccharinum*), Sugar Maple (*Acer saccarum*) and Northern Red Oak (*Quercus rubra*) will be used as visual screens along the south property lines of the Riekemann Property. The trees will be planted within the 150-foot setback to help screen the operation from view along State Highway 85 to the south, see photo 4, typical mature vegetative visual screen. Existing trees along the property line will be preserved until maturity and will be replaced with new tree plantings at the appropriate time. The tree rows will be to create an effective variable-height visual and windbreak barrier. A very substantial stand of deciduous and scattered evergreen trees exist all along the north perimeter of the property and these will be left in place to visually screen the operation from view of Chippewa River.



Photo 4, Typical Mature Vegetative Visual Screen

4.2 Air Quality

The Wisconsin DNR Bureau of Air Management regulates crushing and screening operations at the site. The processing equipment is in compliance with the opacity requirements of the New Source Performance Standards and is permitted under the Aggregate Processing General Permit. Computer simulated dispersion modeling of emissions from aggregate processing operations have shown compliance with the National Ambient Air Quality Standards (NAAQS) applicable to the crushing industry.

The general permit provides flexibility for using different processing configurations and various pieces of equipment, depending on the type of aggregate product being produced. It outlines production requirements, including record keeping, employee training, malfunction prevention and abatement and fugitive dust control measures that must be maintained for compliance with the permit. The plant foreman will document the compliance activities associated with these requirements on a daily environmental tracking form. Records of daily, monthly and year-to-date production information will be available for inspection at the plant site.

Wet suppression will be used as needed to supplement insitu moisture for control of fugitive emissions from the plant equipment. Control of fugitive emissions from roads in the operation and excavation area will be provided by use of a water truck or spray system that will spray water on the roads as necessary.

4.3 Ground Water Protection

The sand and gravel excavation and processing operation will employ a variety of mechanical screening, crushing, and conveying equipment, including loaders and trucks. The lubrication, fueling, and repair practices used to maintain the equipment will be designed to eliminate petroleum products from ground contact. The Storm Water Pollution Prevention Plan and the Spill Prevention Control and Countermeasures (SPCC) plans address practices for proper storage, handling, and use of petroleum products, as well as inspection and response procedures, see (Appendix D). If fuel for mobile equipment is stored on-site, it will be stored in an above-ground tank with secondary containment, outside of the area of the pit excavation.

The pollution prevention practices addressed in site management planning minimize the opportunity for infiltrating water to carry contaminants to groundwater. Plant foremen will perform site inspections throughout the operating period. Observations and conditions will be reported daily for all applicable environmental programs.

4.4 Surface Water

The Wisconsin Department of Natural Resources Storm Water Program regulates the proposed sand and gravel excavation operation. Mathy Construction has coverage under a General Permit for Nonmetallic Mining Operations. The company has an existing storm water plan for aggregate operations that employs Best Management Practices (BMP's) for pollution prevention. The management practices listed in the plan addresses both petroleum product handling and erosion control, including the on-site containment of storm water runoff for suspended solids control.

Rain that falls on the excavation area will be contained and allowed to seep naturally into the underlying sand. When and where necessary, temporary earthen berms may be constructed to direct storm water runoff around the excavation area. These berms will be constructed according to the standards for diverting flow in Chapter 3, Section A of the Wisconsin Construction Site Best Management Practice Handbook found in (Appendix C).

With the possible exception of the access road, all storm water and spring snowmelt water from the operation will be contained within the excavation, and no runoff will leave the excavation or processing area.

4.5 Waste Disposal and Recycling

Solid wastes generated in the course of production will be disposed in dumpsters provided by licensed haulers. Regular disposal intervals will be maintained to prevent waste accumulation. There will be no hazardous wastes produced in conjunction with the excavation or processing operations. Drain oil and lubricants from equipment maintenance will be collected for recycling by a licensed drain oil contractor. The waste receptacles will be located away from active operation areas.

4.6 Safety and Health

The United States Department of Labor, Mine Safety and Health Administration (MSHA) regulates the safety and health considerations of the sand and gravel excavation and processing operation. The site will be subject to annual inspection by MSHA and must meet the sound and emission exposure limits established for personnel employed in the operation activity.

Sound will be mitigated on the site by maintaining functional mufflers and exhaust systems on all internal combustion engines and by shielding mechanical processes with sound barriers. The excavation, screening and crushing of sand and gravel will be reduced to a sound level that will allow for normal conversation to occur at or near the property boundaries.

Respirable emissions will be controlled at the site by use of wet suppression for processing aggregate materials and by eliminating fugitive emissions from peripheral activities, including trucking. Shrouds, tarps, and shields will be used to supplement wet suppression and control the emissions. The company is committed to maintaining respirable emissions within MSHA standards and provide a healthy, emission-free environment for employees and neighboring property owners.

An appropriate speed limit will be enforced at the facility for loaders and trucks to provide safe working conditions and reduce fugitive emissions. Hard hats are mandatory for all personnel within the excavation and processing areas. Berms, gates and signs will be used to direct and control traffic at the site. Visitors must have permission to enter the site and must observe all safety regulations while visiting the site.

5.1 Post-Mining Land Use

The Riekemann Property will be reclaimed to a post-mining land use of residential and recreational land use consistent with A-2 Agriculture-Residential zoning. The final topography of the site after reclamation is shown on Drawing 5, Reclamation Plan Map. Representative cross-sections of the final reclaimed property are shown on Figure 13, Typical Reclamation Cross-Section. Reclamation will occur concurrently with the development and progression of the excavation across the property.

Typical Reclamation Cross-Section

Representational Cross-section of a portion of Riekemann Property

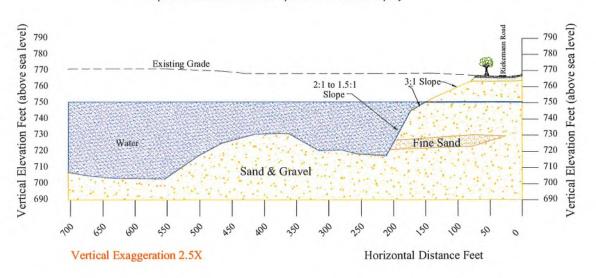
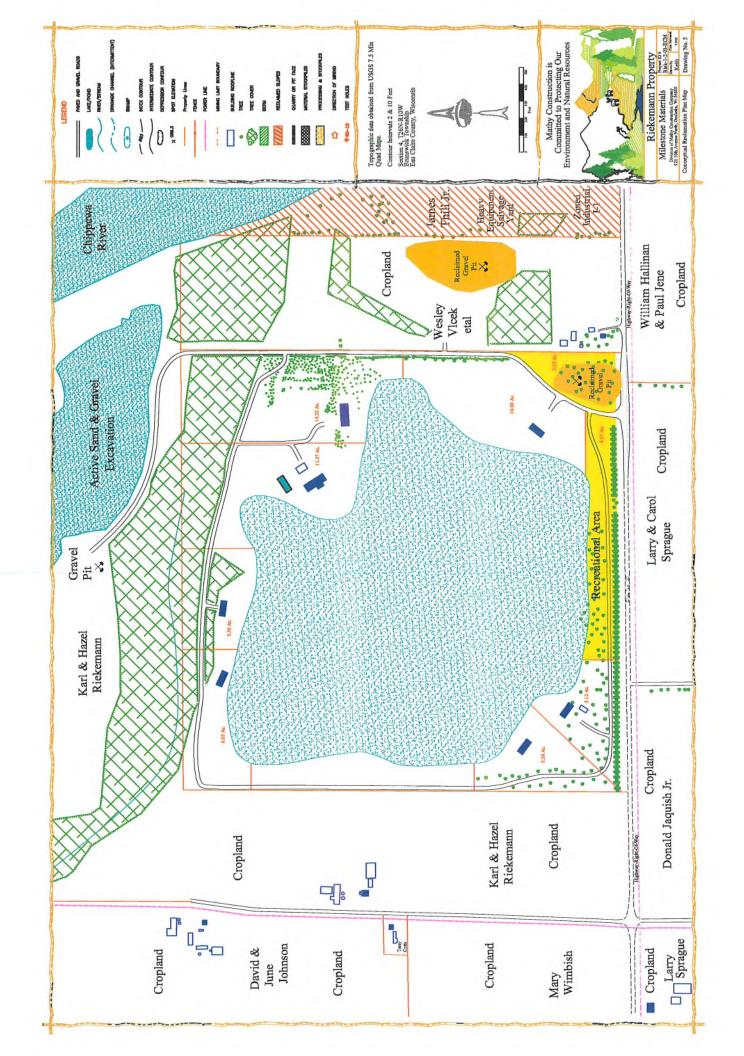


Figure #13, Typical Reclamation Cross-Section



The plan for mining and reclamation of the site has been developed using the best possible mining, environmental and development advice available. Therefore, in concert with Eau Claire County and Brunswick Township, the plan describes the final disposition of this site to include an 80 acre recreational lake and seven (7) residential building lots ranging in size from five (5) acres to just over fourteen (14) acres. The plan also proposes the creation of a recreational area consisting of approximately ten (10) acres. The recreational area includes a 6.23 acre beachfront park with walking path (see photo #5, Proposed Lakeshore Recreational Area) and a 3.25 acre picnic shelter area located in the southeast corner of the property.



Photo #5, Proposed Lakeshore Recreational Area

5.2 Reclamation Sequence and Final Site Reclamation

Reclamation of the excavation and operation areas will occur on a regular basis throughout all mining areas. Reclamation will begin as sand and gravel is depleted and the land is no longer needed for product sales, stockpiling, equipment setup or other facilities.

The reclamation process will primarily involve the grading and sloping of the shoreline. The shoreline areas below the maximum high water mark of around 766' above sea level will remain as a beach. All areas above 766' will be revegetated. Only native soil materials will be used to backfill excavated areas if required for land restoration. The subsoil will be reapplied first and then topsoil will then be applied uniformly over the area and seeded with appropriate seed mixtures as recommended in the seeding plan prescribed in Section 5.3 that follows. All disturbed land areas will be graded to a slope less than or equal to 3:1 horizontal to vertical. The beach area slope of not greater than 3:1 shall continue to a depth of 6 feet below normal lake level and a minimum of 18' from the shore. See figure #15. Lake Detail map for more details.

When possible, the topsoil and subsoil removed from newly excavated areas will be placed directly onto areas undergoing backfilling and reclamation. This one step procedure will improve the efficiency of the reclamation operation, reduce topsoil handling and help to preserve the topsoil viability for revegetation. If topsoil (A horizon) cannot be immediately reapplied on areas reclaimed to final slopes and grades, it will be saved in topsoil stockpiles that will be sloped and seeded until needed for reclamation. Subsoil (B horizon) materials removed from newly excavated areas will be stockpiled separately from the topsoil, and also sloped and seeded until needed for reclamation.

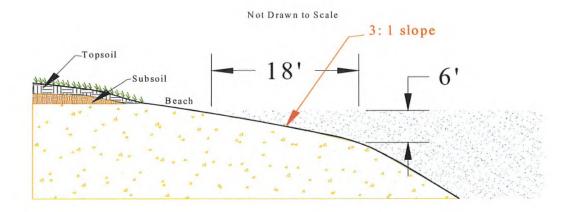


Figure 15, Lake and Shoreline Detail Map

An adequate quantity of topsoil and subsoil will be saved for future reclamation. The projected quantity of topsoil and subsoil needed to reclaim the property is calculated as follows. Using a minimum topsoil thickness of 4" and a minimum subsoil thickness of 12", the quantity of soils required for reclamation per acre is calculated at 43,560 square feet per acre multiplied by 1.33 feet of soil divided by 27 cubic feet per cubic yard or 2,145 cubic yards per acre. Excess topsoil and subsoil, not needed for reclamation, will be removed for use at other locations.

The final reclamation activity will involve the backfilling and sloping of all remaining disturbed areas and revegetation of all remaining disturbed areas. The site topography will be graded so that all slopes will be less than or equal to 3:1 (horizontal to vertical). All slopes will be blended into the surrounding topography and all areas will be graded to properly drain. No structures associated with the sand and gravel operation will remain on the site after the excavation is completed. All stockpiles of sand and gravel products will be removed.

5.3 Seeding Plan

Disturbed areas subject to erosion and reclaimed areas will be seeded with seed mixtures in Chapter 3, B.4. Seeding, Wisconsin Construction Site Best Management Handbook. (see Appendix C). A companion seeding of oats, barley or spring wheat may be used as a cover crop if seeding is necessary in the spring or early summer.

Mulching will be applied according to the standards of Chapter 3, B.3. Mulching, Wisconsin Construction Site Best Management Handbook. Areas will be checked for nutrients before seeding and fertilizer will be applied as needed.

5.4 Erosion Control

Erosion control practices are addressed in the storm water pollution prevention plan. Chapter 3, Wisconsin Construction Site Best Management Handbook will serve as the standard for erosion control of soils.

Erosion control nets or mats, mulching, filter fabric barriers, straw bale barriers and other erosion control devices will be used as needed to minimize soil loss during berm construction and other soil disturbance activities. These erosion control devices will be installed according to the methods and procedures described in Chapter 3 of the Wisconsin Construction Site Best Management Handbook.

Upon proper notice of company management, periodic on-site inspections by Eau Claire County and Brunswick Township officials and personnel will be welcomed. Erosion control measures recommended by the Eau Claire County Land Conservation Department will

be implemented as appropriate to prevent soil erosion from the site excavation.

5.5 Reclamation Cost and Financial Assurance

The estimated cost for final revegetated reclamation of this development plan should not be excessive. The banks around the perimeter of the mining areas and shoreline will have a reclamation cost calculated as follows. The projected cost per acre for an operator and heavy equipment combined is 10 hours at a rate of \$100.00 per hour or \$1,000.00. After the seedbed has been prepared, our experience hiring a commercial seeding contractor reveals an average rate of \$1,000.00 per acre to fertilize, seed and mulch reclamation areas. The projected reclamation cost is therefore approximately \$2,000.00 per acre of land. The calculated acreage requiring reclamation after all excavations are complete is about 40 acres. This acreage multiplied by \$2,000 per acre equals a projected reclamation cost of \$80,000.00.

A reclamation surety bond adequate to cover reclamation costs will be provided to Eau Claire County, Wisconsin for acres affected by the excavation operation.

5.6 Criteria for Successful Reclamation

Eau Claire County will determine the criteria for successful reclamation in the field during annual inspections with input from Mathy Construction and their consultants. During these inspections, if Eau Claire County or Brunswick Township recommends either grading, seeding, remedial repair measures or erosion control, they will be implemented as appropriate to achieve successful reclamation. The reclamation measures implemented will later reevaluated to accomplish successful reclamation and a release of bond.

5.7 Reclamation Certifications

The required signed operator and owner certifications pertaining to reclamation are provided in Appendix E.

APPENDIX A

Hydrogeology of the Riekemann Property By: John R. Tinker, Jr., Ph.D.

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JRT HYDRO, INC

John R. Tinker, Jr., Ph.D. W940 County Road WW Eleva, WI 54738 715 836-5485

October 8, 2002

Ron Garrison
Mathy Construction Company

Subject: Riekemann Property

Dear Ron:

Enclosed are three copies of the Riekemann report. Two copies are bound and one copy is unbound. The unbound copy may be used to add to your report. The two bound copies may stand alone for another use. Please call me if you have questions.

Sincerely,

John R. Tinker, Jr., Ph.D.

HYDROGEOLOGY OF THE RIEKEMANN PROPERTY TOWN OF BRUNSWICK, EAU CLAIRE COUNTY, WISCONSIN

DATE:

SEPTEMBER 8, 2002

SUBMITTED TO: RON GARRISON MATHY CONSTRUCTION COMPANY 920 10TH AVENUE NORTH **ONALASKA, WISCONSIN 54650**

SUBMITTED BY: JOHN R. TINKER, JR., Ph.D. JRT HYDRO, INC. **W940 COUNTY WW ELEVA, WI 54738**.

Wisconsin Professional Geologist #88

Certified Ground Water Professional AGWSE #264

Certified Professional Geologist AAPG #3317

INTRODUCTION

Ron Garrison of Mathy Construction Company requests an evaluation of the hydrogeology of the Robert and Donna Riekemann Property in the SW ¼, Section 4, T26N, R10W (Figure 1). The scope of work includes the description of the water-table aquifer, the construction of a water-table map, and the identification of groundwater flow direction and velocity for the Riekemann property.

METHODS OF STUDY

An analytic element groundwater flow model, GFLOW (Haitjema, 1995), is used to simulate the water-table aquifer beneath the Riekemann Property. A groundwater model is selected because the zones of contribution for municipal wells in Eau Claire County are modeled by Tinker (2002) using GFLOW for the Wisconsin Department of Natural Resources (WI DNR). This previous modeling effort provides an excellent starting point to complete the scope of work of this project. To construct an analytic element model, surface-water elevations are entered as mathematical elements or strings of elements. Elevations of surface-water features are obtained from USGS 7½ minute maps. Each element is represented by an analytical solution. Areal recharge from precipitation and lateral variations in aquifer properties are represented by areal sinks and line doublets as described by Haitjema (1995). The effects of these individual solutions are superposed or added together to arrive at a solution for the groundwater flow system, including total heads at any point within the flow system. The reader is referred to Haitjema (1995) for a detailed description of the analytic method and GFLOW.

The GFLOW model by Tinker (2001) for western Eau Claire County is calibrated to WI DNR regulated sites with water elevations referenced to mean sea level; to selected upland private wells shown on the Eau Claire County water table map (Muldoon, 1992), to a selected number of field located private wells in upland areas between the Eau Claire and Buffalo River drainage systems, and to baseflow discharges on the Chippewa River, Lowes Creek, and Otter Creek. The far-field conditions for the Riekemann Property of the Eau Claire County model (Tinker, 2001) are changed to near-field conditions and the model calibrated to water levels in selected private wells in the Riekemann study area. A sensitivity analysis is performed by increasing and decreasing the values of hydraulic conductivity and regional recharge. A stepwise modeling approach (Haitjema, 1995) is utilized.



T.26N. - R.10W.

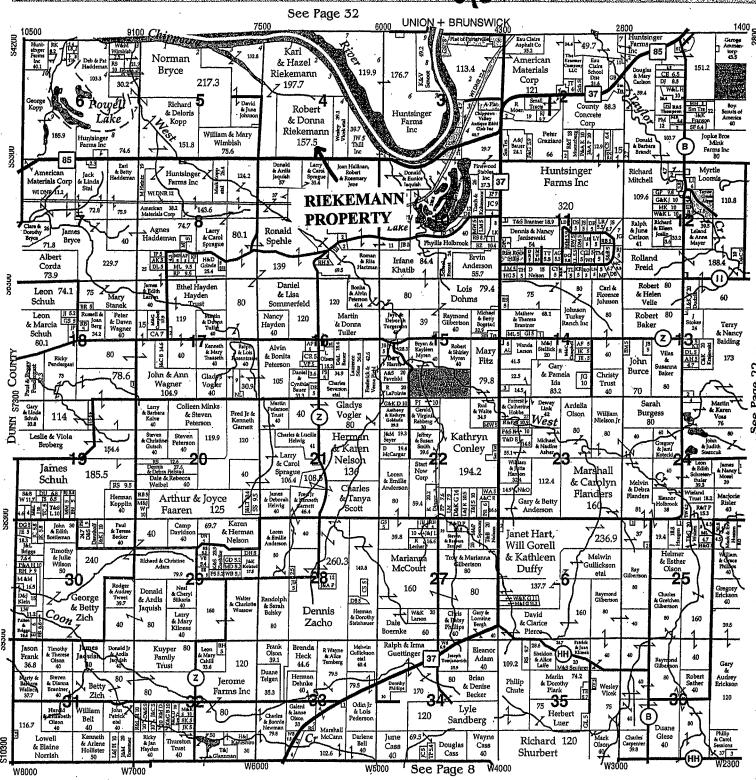


Figure 1. Location of the Robert and Donna Riekemann property in the SW 1/4 Section 4, T26N, R10W in the Town of Brunswick, Eau Claire County, Wisconsin.

INPUT DATA TO GFLOW MODEL

Surface Water Features

The Riekemann Property is located, in part, on land immediately south of the Chippewa River and, in part, on a fluvial terrace to the Chippewa River (Figure 2). A higher elevation fluvial terrace is south of Spiele Road in Section 9, T26N, R10W. South of the upper fluvial terrace are sandstone hills composed of the Mt. Simon Formation.

The GFLOW model consists of "near-field" and "far-field" elements. The near field is the area of higher data resolution and includes: the Chippewa River from the East ½, Section 1, T26N, R11W to the West ½, Section 3, T26N, R10W. The far field extends from the near field to the edge of the modeled area and includes Coon Creek and Taylor Creek (Figure 3).

Streams in both the near field and far field are modeled as strings of individual elements called "linesinks". Far-field linesinks define regional groundwater flow patterns, while near-field linesinks are more refined. Elevation of both near field and far field streams are obtained for permanent streams shown on Wisconsin USGS 7 ½ minute topographic maps: specifically, Eau Claire West, Elk Creek Lake, Rock Falls, and Mondovi NE.

Water-Table Aquifer

A water-table aquifer consisting of fluvial sands and gravel is beneath the Riekemann Property. The hydraulic conductivity of the fluvial sediment is estimated from well constructor's reports (Appendix A) using the method of Bradbury and Rothschild (1985). The background hydraulic conductivity of 8 feet/day for the sandstone aquifer of the regional model by Tinker (2002) was changed in the area of the fluvial terrace to 146 feet/day. This initial hydraulic conductivity of 146 feet per day was raised to 600 feet/day during calibration of the groundwater model. The elevation of the base of the water-table aquifer is 650 feet (Tinker, 2002) for the groundwater model.

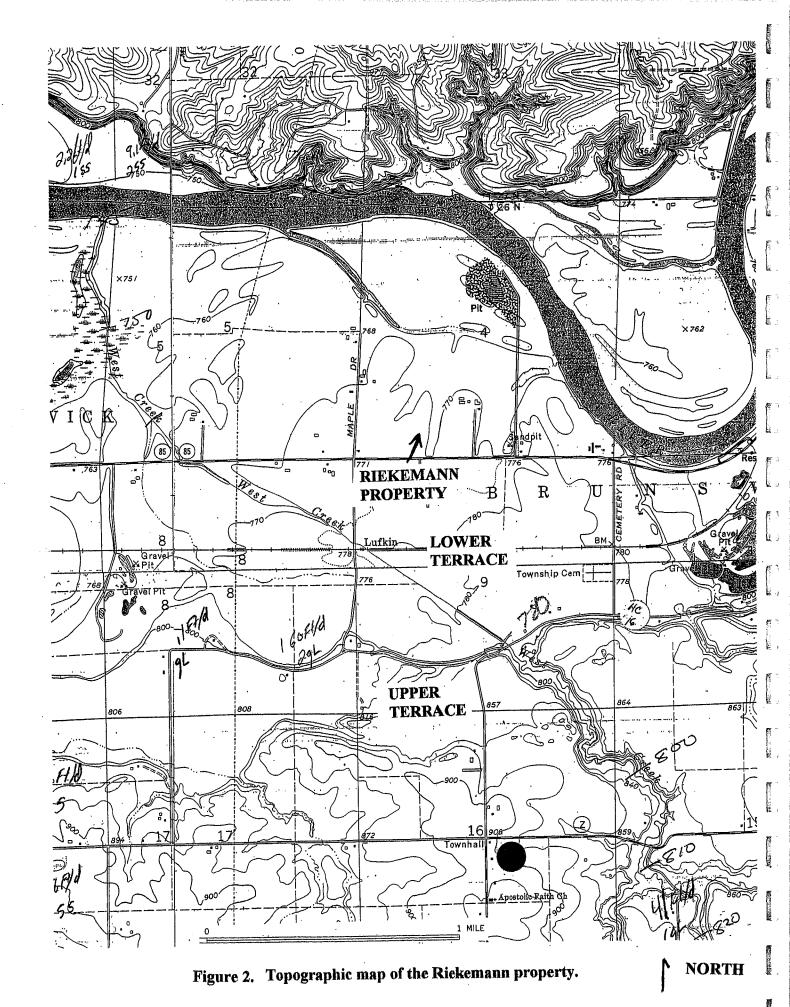
Recharge

Recharge to the groundwater model is 8 inches/year (Tinker, 2002).

MODEL CALIBRATION

Test Points - Private Water Supply Wells

The model solution is a steady state solution to represent an average water-table elevation over time. Therefore, observed water-table heads are not equal to steady-state heads but, depending on the time of measurement, may be larger or smaller (Haitjema, 1995, page 281). Seventeen calibration test points for water-table elevations are from water levels from thirty well constructor's reports from wells in the near-field area (Figure 3).



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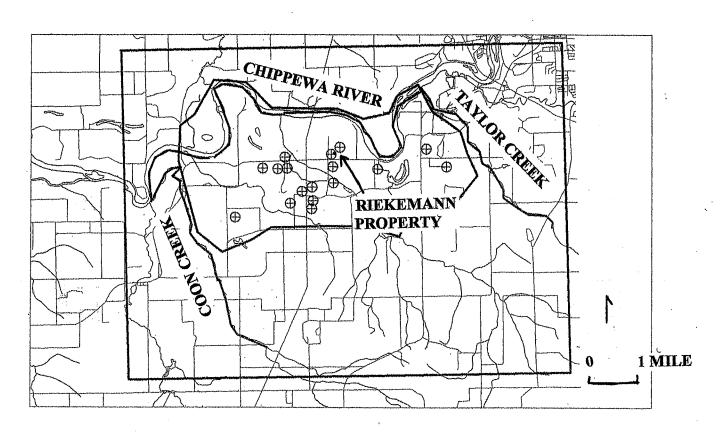


Figure 3. The Chippewa River is near field and Coon Creek and Taylor Creek are far-field linesinks. Circles are calibration points which are private water-supply wells.

During calibration, the horizontal hydraulic conductivity is adjusted in the model to obtain the best fit to the observed water-table elevations. The background hydraulic conductivity of 146 feet per day is increased to 600 feet per day during calibration.

West Creek

West Creek is shown on the topographic map as a permanent stream. Therefore, West Creek was initially modeled with near-field line sinks. Contour lines of 760 and 770 feet cross West Creek in the N ½ of Section 8, T26N, R10W and line sinks of these elevations were set for West Creek. During calibration, the line sinks for West Creek were removed to obtain better calibration to water levels in private water-supply wells. It is noted that Muldoon (1992) also does not use for the Eau Claire County water-table map the 760 and 770 contour lines crossing West Creek in the N ½ of Section 8, T26N, R10W (Appendix B, Figure 6).

RESULTS OF MODEL CALIBRATION

Figure 4 presents the calibrated water-table map for Section 4, T26N, R10W. The mean absolute error for the calibrated water-table map is 2.6 feet. Dividing the mean absolute error (2.6 feet) by the difference (121 feet) between the maximum (760 feet) and minimum groundwater elevations (639 feet) equals a 2.1 percent error for the model. This is an acceptable error for the purpose of the model.

SENSITIVITY ANALYSIS

The sensitivity analysis consists of variations in the input parameters of recharge and hydraulic conductivity. The calibrated recharge of 8 inches per year is increased to 12 and 14 inches per year and decreased to 6 inches per year. The hydraulic conductivity of the fluvial sediment is increased from 600 to 800 and 1000 feet per day and decreased to 400 and 200 feet per day. Table 1 presents the results of the sensitivity analysis. The mean absolute error (MAE) increases from 2.6 to 2.9 feet when recharge increases from 8 to 12 and 14 inches per year. The MAE decreases from 2.6 to 2.5 feet when recharge decreases from 8 to 6 inches per year. The MAE increases from 2.6 to 2.9 feet when hydraulic conductivity increases from 600 to 1000 feet per day. The MAE increases from 2.6 to 7.5 feet when hydraulic conductivity decreases from 600 to 200 feet per day.

For all changes in recharge and hydraulic conductivity values, the range in the direction of groundwater flow is from due north to N52W for the SW $\frac{1}{4}$, Section 4, T26N, R10W. The calibrated model has a groundwater flow direction of N32W. The most reasonable direction of groundwater flow is N32W for the calibrated model, for when K = 800 feet/day, and when K = 800 feet/day with R = 12 inches/year.

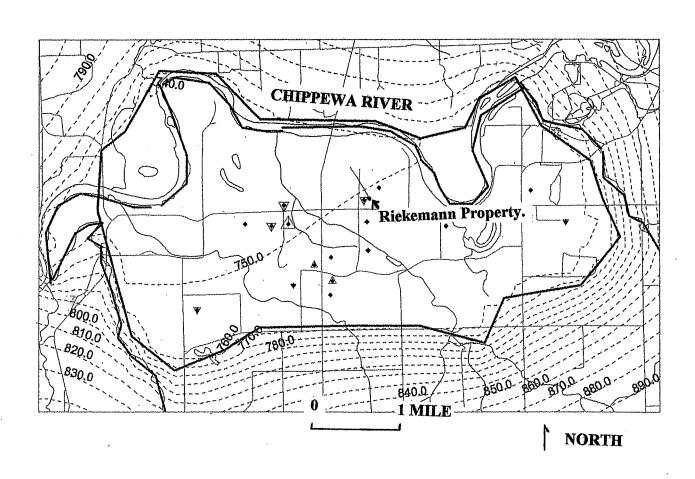


Figure 4. Water-table map for Section 4, T26N, R10W in the Town of Brunswick, Eau Claire County, Wisconsin. Red line shows the direction of groundwater flow and 5-year travel time.

TABLE 1. Results of the sensitivity analysis.

Description	Mean Diff.	Median Diff.	MAE	RMS	Flow Direction
Calibrated Model R=8 inches/yr, K=600 ft/d	-0.2	0.8	2.6	3.0	N32W
Model with R=12 inches/yr	1.1	1.8	2.7	3.3	N22W
Model with R=14 inches/yr	1.9	2.3	2.9	3.6	N20W
Model with R=6 inches/yr	-0.8	0.1	2.5	3.0	N38W
Model with K=800 ft/day	-1.3	-0.5	2.6	3.3	N42W
Model with K=1000 ft/day	-2.0	-1.5	2.9	3.7	N52W
Model with K=400 ft/day	1.9	2.2	2.9	3.6	N18W
Model with K=200 ft/day	7.5	8.0	7.5	8.4	North
Model with K=800 ft/d and With R=12 inches/yr	-0.3	0.6	2,6	3.0	N32W
DIFF = Difference					•

MAE = Mean Absolute Error RMS = Root Mean Square Error

MODEL PREDICTION

Figure 4 presents the calibrated water-table map for Section 4, T26N, R10W. The calibrated groundwater model predicts a N32W groundwater flow direction and a groundwater velocity of 1.5 feet per day for the SW 1/4, Section 4, T26N, R10W.

Velocity = <u>Hydraulic Conductivity times Hydraulic Gradient</u>
Porosity

= $600 \frac{\text{feet/day times } 0.00077}{0.3}$ = 1.5 feet/day____

The red line on Figure 4 represents 5-years of groundwater travel time.

The predicted groundwater elevation in the center of the SW ¼, Section 4, T26N, R10W is 750.5 feet above mean sea level. Bank storage during flood times for the Chippewa River may affect the local groundwater flow direction and elevation of the water table.

CONCLUSIONS

Based on the groundwater flow model, the following conclusions are presented for the Riekemann property in the SW 1/4, Section 4, T26N, R10W.

- 1. The groundwater flow direction is approximately N32W.
- 2. The groundwater elevation in the center of the SW ¼, Section 4, T26N, R10W is approximately 750.5 feet above mean sea level.
- 3. The groundwater flow velocity is approximately 1.5 feet per day.

REFERENCES CITED

Bradbury, K. and Rothschild, E., 1985, A Computerized Technique for Estimating the Hydraulic Conductivity of Aquifers from Specific Capacity Data: Ground Water, v. 23, no. 2, p. 240-246.

Haitjema, Henk, 1995, Analytic Element Modeling of Groundwater Flow: Academic Press, 394 p.

Muldoon, M.A., 1992, Generalized Water-Table Elevation Map of Eau Claire County, Wisconsin:

Tinker, Jr., John R., 2002, Groundwater Flow Model for Municipal Wells in Eau Claire County, Wisconsin, Revised June 2002: Report submitted to the Wisconsin Department of Natural Resources, July 8, 2002, 78 p.

APPENDIX A

AVAILABLE WELL CONSTRUCTOR'S REPORTS FOR STUDY AREA

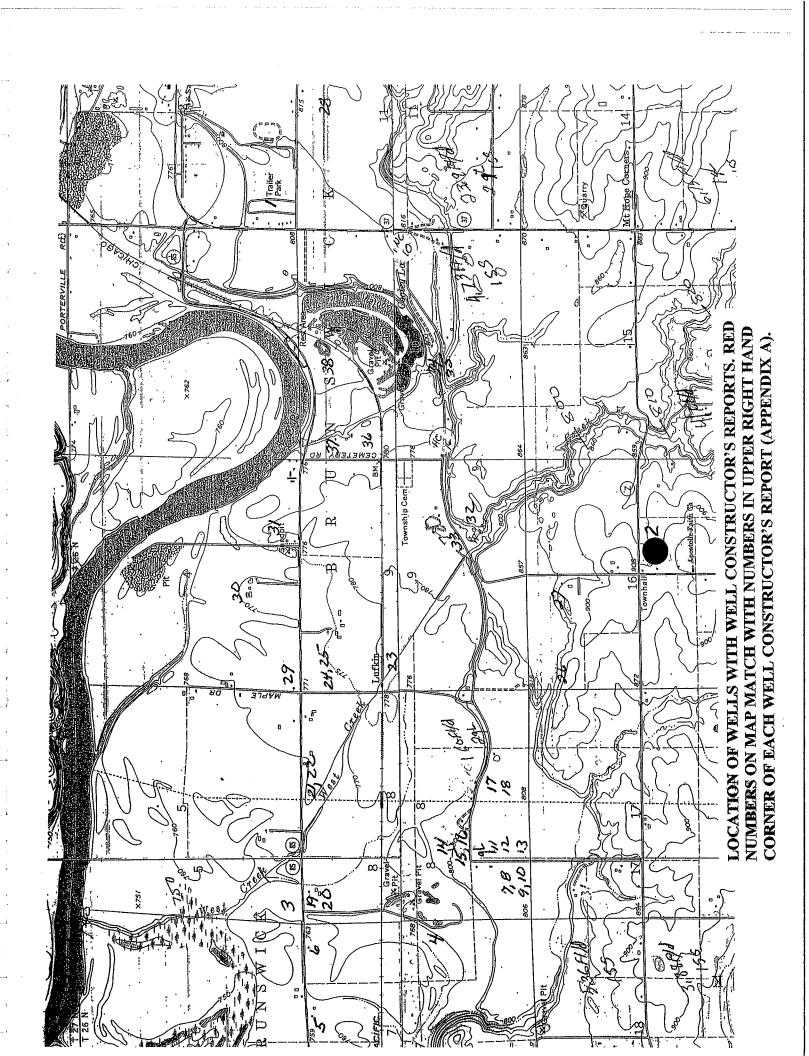
Summary of Data from Well Constructor's Reports

Number of Reports 38 includes 1 mobile home park well, 1 fire station well, 1 irrigation well, and 35 private water-supply wells (Figure 5)

4 sandstone wells and 34 fluvial sediment wells

Hydraulic Conductivity (arithmetic mean)
fluvial sediment = 146 ft/day, standard deviation = 82.4 ft/day
sandstone = 1.9 ft/day, standard deviation = 0.72 ft/day

Average Depth of Wells
fluvial sediment = 70.5 feet, standard deviation = 27.5 feet
sandstone = 166, standard deviation = 90.3 feet



Sec.

Well name Pine Edge Mobile Home Park Well County: Eau Claire .10 Town of Brunswick Completed... 11/18/70 Owner.... Pine Edge Mobile Home Park Field check. Address.. Route #4 Altitude.... 805' ETM 26 Eau Claire, WI 54701 Driller.. Olson Bros. Well Drilling Co., Inc. Use..... Potable Static w.l.. 51' Engineer. Spec. cap... 10 GPM/ft.

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Dia.	from	to	Dia.	from	ţo	Dia.	Wgt.& K		from			Wgt.& Kir	, ***	T te
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Formations: Outwash

Remarks: Well tested for 2 hours at 20 GPM with 2 feet of drawdown.

K= 0,0012 AT/see []

Issued: 1/15/85

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	Depths	Section	Type	Color.	Mode		Miscellaneous Characteristics
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	5-10		11	Yl brown	11	11	Trace gravel, silt, clay.
0	10-15		11 .	II.	- 11	l1	Same.
	<u>15-20</u>	9.0	<u>, 11 </u>	11	- 11	ti	Little gravel. Trace silt, clay. / bn snd. Tr st,cl.
U	20-25	190000000	Gravel.	Mixed	M peb	Gran/L peb	Rhy, rhy porph, volc, grnt, gtz, trap, ss(sil, lim & hem cem). Mch yl
${f T}$	25-30	· · · · · · · · · · · · · · · · · · ·	Sand	Y1 brown	VC	Vfn/VC .	Trace gravel, silt, clay. ss. Mch yl bn snd. Tr st,cl
W	30-35	600000000000000000000000000000000000000	Gravel	Mixed	S peb	Gran/L peb	Qtzt,volc,trap,rhy,rhy porph,grnt,Fe form;hem cem feldspathi
Ā	35-40		. 11	11	Gran	Gran/M peb	Rhy porph, Fe form, qtz, grnt, trap. Ltl sand. Tr silt, clay
	40-45		Sand '	Y1 brown	C .	Vfn/VC	Much gravel. Trace silt, clay.
S	45-50		tt	11	11	11	Same.
, H	50-55		tt .	11	11	11	Trace gravel, silt, clay.
	55-60	•	11	, tt -	11	tt .	Same.
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LO Grandorio 25 M T. S I M O	G OF WELI Depths 0-5 5-10 10-15 15-20 20-25 25-30 30-35 35-40 40-45	Graphic Section	Rock Type Sand II II Sandstohe II II II II II II II II II II II II II	Color Brown " " " " " " " " " " " " " " " " " "	Gra Mode M II Fn/M II Vfn&M II Fn M M/C Fn M/C II M/C II	is well in Size Range Vfn/VC II II II II II II II II II II II II II	M Trace gravel Same. II Little gravel Sang & Rnd.T Same plus tr See end of 1 Same but sig Rnd.Tr G sil See end of 1 Rnd. Tr G si Same but 1tl Rnd. Tr G si	iscell (Gran/S el(Gran/M (Gran/M r.G.sil r fos fra cg. itly less cem,G l cg. isch cg. isch cg. isch cg. yl l cem,G	peb), si peb), si cem, 6 l gs. sh ol gy im cem, 1,Fn/M ale. Mu bn yl l to bn	Trace silt. Trace silt. im cem,yl ,pl gn mid nds,mafic sh,but lt] mafic mafic snde ch frostir im cem,sec yl sil sh, im cem,sec	t. sil maty cus sh, vi incl, mid l lim str chips s s, seo qtz ng. Ltl qv c qtz qv cl, fos do atz grv	stics stics stics stics construct single stice sti	bn si r&mafic stg.Lt qtz f are) l lim/s t. cl, mice frstg.l
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LO Gradino 25 M T. S I M O	G OF WELI Depths 0-5 5-10 10-15 15-20 20-25 25-30 30-35 35-40 40-45 45-50 50-55 55-60 60-05 65-70 70-75 75-80 80-85 85-90	Graphic Section	Rock Type Sand II II Sandstohe II II II II II II II II II II II II II	Color Brown II II Pl yellow Plyellow Plyellow Brown II II Pl yellow II Brown II II II II II II II II II	Gra Mode M II Fn/M II Vfn&M II Fn M M/C Fn M/C II II II II II II II II II II II II II	is well i	M Trace gravel Same. " Little gravel Sang & Rnd.T Same plus tr See end of 1 Same but slg Rnd.Tr G sil See end of 1 Rnd. Tr G si Same but 1tl Rnd. Tr G si Same plus tr Same plus tr	iscell (Gran/S el(Gran/M r.G.sil r fos fra og. ytly less cem,6 l og. sh l cem,6 r.C. yl 1 cem,6 r.C. yl 1 cem,6 r.C. yl	peb), si peb), si cem, G i gs. sh con gy im cem, 1,Fn/M ale. Mt bn yl i to bn bn yl ic snds.	Trace silt. Trace silt. im cem,yl ,pl gn mic nds,mafic sh,but lt] mafic snds ch frostir im cem,sec yl,sil sh, im cem,sec zn,fos silt.	t. sil maty cus sh, wi incl, mic l lim str chips a s, sec qtz ng. Ltl qv c qtz grw c qtz grw ca, lt gy frags, cl	stics st	bn sil råmafic stg.[t] qtz s f are) l lim/s t. cl,mice frestg.[qtz s sh,Fn/ g.[t]
LO Gracino 25, M T. SIM ON	G OF WELI Depths 0-5 5-10 10-15 15-20 20-25 25-30 30-35 35-40 40-45 45-50 50-55 55-60 60-65 65-70 70-75 75-80 80-85 85-90 90-95	Graphic Section	Rock Type Sand II II Sandstohe II II II II II II II II II II II II II	Color Brown " " " " " " " " " " " " " " " " " "	Gra Mode M " Fn/M " Vfn&M " Fn M M/C Fn M/C " " " " " "	is well i	M Trace gravel Same. "Little gravel Sang & Rnd.T Same plus tr See end of 1 Same but sig Rnd.Tr G sil See end of 1 Rnd. Tr G si Same but ltl Rnd. Tr G si Same plus tr Same plus tr	iscell (Gran/S el(Gran/M r.G.sil fos fra og. thly less cem,6 l og. inc og. sh l cem,6 l cem,6 r.mafi clay.	peb), si peb), si cem, G] gs. sh cl gy im cem, M ale. Mt bn yl 1 to bn bn yl 1 c snds.	Trace sil- lt. Trace sil- lt. im cem,yl ,pl gn mic nds,mafic mafic snds ch frostir im cem,sec yl,sil sh, im cem,sec zr,fos silt. im cem,sec	sil material sil material sil material sil material sil material sil sil sil sil sil sil sil sil sil si	stics (/cl,strng fn-glauc&z a. Mch fr ng½ are gy,hal grw,cl,y puartz sil ,mafic in rags,Mch ,mafic mious sil .Mch frst	bn sil ræmafic stg.Ltl qtz s f are y l lim/s t. cl,mics frstg.L qtz s sh,Fn/ g.Ltl c
LOG Grando 25° MT. SIMON	G OF WELI Depths 0-5 5-10 10-15 15-20 20-25 25-30 30-35 35-40 40-45 45-50 50-55 55-60 60-65 65-70 70-75 75-80 80-85 85-90 90-95 95-100	Graphic Section	Rock Type Sand II II Sandstohe II II II II II II II II II II II II II	Color Brown " " " " " " " " " " " " " " " " " "	Gra Mode M II Fn/M II Vfn&M II Fn M M/C Fn M/C II II II II II II II II II II II II I	is well i	M Trace gravel Same. II Little gravel Sang & Rnd.T Same plus tr See end of 1 Same but sig Rnd.Tr G sil See end of 1 Rnd. Tr G si Same but 1tl Rnd. Tr G si Same plus tr Same plus tr	iscell (Gran/S el(Gran/M r.G.sil fos fra og. thly less cem,6 l og. inc og. sh l cem,6 l cem,6 r.mafi clay.	peb), si peb), si cem, G] gs. sh cl gy im cem, M ale. Mt bn yl 1 to bn bn yl 1 c snds.	Trace sil- lt. Trace sil- lt. im cem,yl ,pl gn mic nds,mafic mafic snds ch frostir im cem,sec yl,sil sh, im cem,sec zr,fos silt. im cem,sec	sil material sil material sil material sil material sil material sil sil sil sil sil sil sil sil sil si	stics (/cl,strng fn-glauc&z a. Mch fr ng½ are gy,hal grw,cl,y puartz sil ,mafic in rags,Mch ,mafic mious sil .Mch frst	bn sil ræmafic stg.[t] qtz s f are) l lim/s t. cl,mice frstg.l qtz s sh,Fn/ g.Ltl c
LO Glacio 25, 25, M T. SIM ON	G OF WELL Depths 0-5 5-10 10-15 15-20 20-25 25-30 30-35 35-40 40-45 45-50 50-55 55-60 60-65 65-70 70-75 75-80 80-85 85-90 90-95 95-100 100-105	Graphic Section	Rock Type Sand II II Sandstohe II II II II II II II II II II II II II	Color Brown II II Pl yellow II Pl yellow II Bn yl & al ay Pl yellow II II II II II II II II II	Gra Mode M II Fn/M II Vfn&M II Fn M/C Fn M/C II II II II II II II II II II II II I	is well is well is well is well is well is well is well is well is well in the second of the second	M Trace gravel Same. "Little gravel Sang & Rnd.T Same plus tr See end of 1 Same but slg Rnd.Tr G sil See end of 1 Rnd. Tr G si Same but 1tl Rnd. Tr G si Same plus tr Same plus tr Same plus tr Same plus tr Same plus tr Same. Same but 1tl Rnd. Tr G si Same plus tr Same.	iscell (Gran/M (Gran/M r.G.sil r fos fra og. ytly less cem,6 l og. inc og. sh l cem,6 l cem,6 l cem,6 l cem,6 r-mafi clay. l cem,6	peb), si peb), si cem, G] gs. sh cl gy im cem, M ale. Mt bn yl 1 to bn bn yl 1 c snds.	Trace silt. Trace silt. It. Im cem,yl ,pl gn mic nds,mafic sh,but lt] mafic mafic mafic snds ch frostin im cem,sec yl,silt. im cem,sec . frags,m	sil maty cus sh, y incl, mid l lim str chips a s, sec qtz ng. Ltl qv cqtz grw ca, lt gy frags, cl qtz grw nica, Fn/k	stics (/cl,strng fn-glauc&z ca. Mch fr ng½ ure gy,hal grw,cl,y puartz sil ,mafic in rags,Mch ,mafic mious sil .Mch frst	bn sil råmafic stg.[t] qtz s f are) l lim/s t. cl, mice frstg.[qtz s sh,Fn/ g.[t] c
Control of the contro	G OF WELI Depths 0-5 5-10 10-15 15-20 20-25 25-30 30-35 35-40 40-45 45-50 50-55 55-60 60-65 65-70 70-75 75-80 80-85 85-90 90-95 95-100 100-105	Graphic Section WG MX MCB MX	Rock Type Sand II II Sandstohe II II II II II II II II II II II II II	Color Brown II II Pl yellow II Pl yellow II Bn yl & al ay Pl yellow II II II II II II II II II	Gra Mode M II Fn/M II Vfn&M II Fn M/C Fn M/C II II II II II II II II II II II II I	is well is well is well is well is well is well is well is well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well in the well is well in the well in the well in the well in the well is well in the well in	M Trace gravel Same. I Little grave Trace gravel Sang & Rnd.7 Same plus tr See end of 1 See end of 1 See end of 1 Rnd. Tr 6 si Same but ttl Rnd. Tr 6 si Same plus tr Same but ttl Rnd. Tr 6 si Same but ttl Rnd. Tr 6 si Same but ttl Rnd. Tr 6 si Same plus tr Same but 1tl Rnd. Tr 6 si Same but 1tl Rnd. Tr 6 si	iscell (Gran/M (Gran/G (Gran/M (Gran/M (Gran/M (Gran/M (Gran/M (Gran/M (Gran/M (Gran/G (Gran/M (Gran/M (Gran/M (Gran/M (Gran/M (Gran/M (Gran/M (Gran/G (Gran/M (Gran/M (Gran/M (Gran/M (Gran/M (Gran/M (Gran/M (Gran/G (Gran/M	peb).si peb).si cem,G] gs. sl cem,G] gs. sl to bn l,Fn/M ale. Mt bn yl l to bn bn yl l c ands.	Trace silt. Trace silt. It. Im cem,yl ,pl gn mic nds,mafic sh,but lt] mafic mafic mafic snds ch frostin im cem,sec yl,silt. im cem,sec . frags,m	sil maty cus sh, y incl, mid l lim str chips a s, sec qtz ng. Ltl qv cqtz grw ca, lt gy frags, cl qtz grw nica, Fn/k	stics st	bn sil råmafic stg.[t] qtz s f are y l lim/s t. dtz s sh,Fn/ g.[t] c
LO Go Go	G OF WELI Depths 0-5 5-10 10-15 15-20 20-25 25-30 30-35 35-40 40-45 45-50 50-55 55-60 60-65 65-70 70-75 75-80 80-85 85-90 90-95 95-100 100-105	Graphic Section WG MX MCB MX	Rock Type Sand II II Sandstone II II II II II II II II II II II II II	Color Brown II II Pl yellow II Pl yellow II Bn yl & al ay Pl yellow II II II II II II II II II	Gra Mode M I Fn/M M I Vfn&M II Vfn&M II II II II II II II II II	is well is well is well is well is well is well is well is well is well in the second of the second	M Trace gravel Same. " Little grave Trace gravel Sang & Rnd.T Same plus tr See end of 1 See end of 1 See end of 1 Rnd. Tr 6 si Same but 1t1 Rnd. Tr 6 si Same plus tr Same. Same but 1t1 Rnd. Tr 6 si Same plus tr Same. Same plus tr Same. Same plus tr Same plus tr Same plus tr See end of 1 Same plus tr Same plus tr Same plus tr See end of 1 Same plus tr See end of 1	iscell (Gran/M (Gran/M (Gran/M (Gran/M (F.6.sil fos.in fos	aneou peb), si peb), si cem, 6] gs. st st ol gy im cem, 1, Fn/M ale. Mu bn yl 1 to bn bn yl 1 c snds. bn yl 1 icus st	Trace silt. It. It. It. It. It. Index silt. It. It. It. Index silt. It. Index silt. sil maty ous sh,Vi incl,mic l lim str chips a s,seo qtz ng. Ltl c c qtz grw ca,tfos i c qtz grw pa,lt gy frags,cl c qtz grw nica,Fn/M	stics (/cl,strng fn-glauc&z a. Moh fr rg½ re gy,hal grw,cl,y quartz sil mafic in mags.Moh mafic micus sil .Moh frst .mafic in zr&mafic frstg.Lt	bn.si) remaficate. t. qtz s f are y l. lim/s t. cl, mice fretg.l qtz s sh, Fn/ g. Ltl c cl, fos snds, w l qtz s	
LO Grantino 25 Mr. SIMON FORM	G OF WELI Depths 0-5 5-10 10-15 15-20 20-25 25-30 30-35 35-40 40-45 45-50 50-55 55-60 60-65 65-70 70-75 75-80 80-85 85-90 90-95 95-100 100-105	Graphic Section WG MX MCB MX	Rock Type Sand II II Sandstohe II II II II II II II II II II II II II	Color Brown II II II Pl yellow II Pl yellow II Bn yl & al ay Pl yellow II II II V pl bn	Gra Mode M " Fn/M " Vfn&M " Fn M/C Fn M/C " " " " " " " " " " " " " " " " " " "	is well is well is well is well is well is well is well is well is well in the second of the second	M Trace gravel Same. I Little grave Sang & Rnd. Trace gravel Sang & Rnd. Trace gravel Same plus tr See end of 1 See end of 1 See end of 1 Rnd. Tr 6 si Same but 1t1 Rnd. Tr 6 si Same plus tr Same but 1t1 Rnd. Tr 6 si Same plus tr Same same Same plus tr See end of 1 Same plus tr See end of 1 Same plus tr See end of 1 Same plus tr See end of 1 Same as 1000 Same plus tr Srnd&Wrnd. L	iscell (Gran/M (Gran/M r. 6.sil fog. inc og. sh cem, 6 cl. yl 1 cem, 6 cl. yl 1 cem, 6 clay. 1 c	peb), si peb), si peb), si cem, 6] gs. st st ol gy im cem, 1, Fn/M ale. Mt bn yl 1 to bn bn yl 1 c snds. bn yl 1 icus st frags.	Trace sil- lt. Trace sil- lt. It. It. im cem,yl pl gn mic mafic snds ch frostin im cem,sec yl,sil sh, im cem,sec incl,mic zr,fos silt. im cem,sec im cem,sec ly sil sh, im cem,sec im cem,sec ly sil sh, im cem,sec ly sil sh, im cem,sec ly sil sh	sil maty cus sh, Vincl, mic l lim str chips a s, seo qtz ng. Ltl c c qtz grw ca, lt gy frags, cl c qtz grw nica, Fn/M n, cl. Mcl	stics stics (/cl,strng fn-glauc&z a. Moh fr rg½ re gy,hal grw,cl,y quartz sil mafic in mags.Moh mafic micus sil .Mch frst .mafic in zr&mafic frstg.it	bn sil ræmafic stg.Ltl qtz s f are y l lim/s t. cl,mics fretg.l qtz s sh,Fn/ g.Ltl c
LO Gracio 25 MT SIMON FORMA	G OF WELI Depths 0-5 5-10 10-15 15-20 20-25 25-30 30-35 35-40 40-45 45-50 50-55 55-60 60-65 65-70 70-75 75-80 80-85 85-90 90-95 95-100 100-105	Graphic Section WG MX MCB MX	Rock Type Sand II II Sandstohe II II II II II II II II II II II II II	Color Brown "" "" Pl yellow "" Plyellow "" Pl yellow "" Pl yellow "" "" "" "" "" "" "" "" ""	Gra Mode M " Fn/M " Vfn&M " Fn M/C Fn M/C " " " " " " " " " " " " " " " " " " "	is well is well is well is well is well is well is well is well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well in the well is well in the well is well in the well in the well is well in the well in the well is well in the well in the well in the well in the well is well in the well in	M Trace gravel Same. I Little grave Trace gravel Sang & Rnd.7 Same plus tr See end of 1 See end of 1 See end of 1 Rnd. Tr 6 si Same but 1t1 Rnd. Tr 6 si Same plus tr Same but 1t1 Rnd. Tr 6 si Same but 1t1 Rnd. Tr 6 si Same plus tr Same Same but 1t1 Rnd. Tr 6 si Same plus tr Same plus tr Same plus tr See end of 1 Same plus tr Same plus tr See end of 1 Same plus tr See end of 1 Same plus tr See end of 1 Same plus tr See end of 1 Same plus tr See end of 1	iscell (Gran/M (Gran/M (Gran/M (Gran/M (F.G.sil fos.fra log. incom,6 cl.,yl 1 cem,6 cl.,yl 1 cem,6 cl.,yl 1 cem,6 fos.fra fos.fra clay. 1 cem,6 clay. 1 cem,	peb), si peb), si cem, 6] gs. st cem, 6] gs. st ol gy im cem, 1,Fn/M ale. Mu bn yl 1 to bn bn yl 1 c snds. bn yl 1 icus st frags. VG slgt viv cem	Trace silt. Trace silt. It. It. im cem,yl pl gm mic mafic snds ch frostin im cem,sec yl,sil sh, im cem,sec ly silt. im cem,sec im cem,sec im cem,sec ly silt. im cem,sec im cem,sec ly dolic c (M/C),pl g	sil maty ous sh,Vi incl,mic l lim str chips a s,seo qtz ng. Ltl c qtz grw cl,fos i c qtz grw nica,Fn/M n,cl. Mcl	stics (/cl,strng fn-glauc&z a. Moh fr rg½ re gy,hal grw,cl,y quartz sil mafic in mags.Moh mafic in zr&mafic frstg.Lt (mafic in zr&mafic frstg.Lt (mafic in zr&mafic sh,qtz st.	bn.sil ræmafic stg.Ltl qtz s f are) l lim/s t. cl,mice fretg.l qtz s sh,Fn/ g.Ltl c
LO Grantino 25 Mr. SIMON FORMAT	G OF WELI Depths 0-5 5-10 10-15 15-20 20-25 25-30 30-35 35-40 40-45 45-50 50-55 55-60 60-65 65-70 70-75 75-80 80-85 85-90 90-95 95-100 100-105 110-115 115-120 120-125	Graphic Section MERCON MERCON MINISTRACT MINISTRAC	Rock Type Sand II II II II II II II II II II II II II	Color Brown II II Pl yellow Plyellow Plyellow Plyellow II Bryl & alay Pl yellow II II II V pl bn II II II II II II II II II	Gra Mode M II Fn/M M II Fn/M M II Fn II II II II II II II II II II II II II	is well is well is well is well is well is well is well is well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well in the well is well in the well in the well is well in the well in the well in the well in the well is well in the	M Trace gravel Same. " Little grave Trace gravel Sang & Rnd. T Same plus tr See end of 1 See end of 1 See end of 1 Rnd. Tr G si Same but 1t1 Rnd. Tr G si Same plus tr Same plus tr Same plus tr Same plus tr Same see end of 1 Rnd. Tr G si Same plus tr Same plus tr Same see end of 1 Same plus tr Same plus tr See end of 1 Same plus tr See end of 1 Same plus tr See end of 1 Same plus tr See end of 1 Same plus tr See end of 1	iscell (Gran/M (Gran/M (Gran/M (Gran/M (F.G.sil fos fra .cg., inc .cg., inc .cg., sh l cem, 6 l cem, 6 l cem, 6 .cl., yl	peb).si peb).si peb).si cem,6] gs. sh cem,6] gs. sh im cem, l,Fn/M ale. Mu bn yl l to bn bn yl l c ands. bn yl l icus sh frags. VG slgt viv cem yl bn	Trace silt. Trace silt. It. im cem,yl ,pl gn mic mafic snds ch frostir im cem,sec yl,sil sh, im cem,sec incl,mic zr,fos im cem,sec frags,m sil sl	t. sil matrous sh, Vincel, mice oftz grw, cl, fos is oftz grw, cl, fos	stics (cl,strng fn-glauc&z ea. Moh fr ng½ are gy,hal grw,cl,y uartz sil mafic in rags.Moh mafic mious sél .Mch frst .Mch frst .Tr&mafic frstg.Lt mes&micus sh,qtz st .mica.Fn/f	bn.si) råmafic stg.Lt) qtz s f are y l lim/s t. cl, mice frstg.Lt qtz s sh,Fn/ g.Ltl c cl,fos snds,w l qtz s
LO Gracio 25' MT. SIMON FORMA	G OF WELI Depths 0-5 5-10 10-15 15-20 20-25 25-30 30-35 35-40 40-45 45-50 50-55 55-60 60-65 65-70 70-75 75-80 80-85 85-90 90-95 95-100 100-105 110-115 115-120 120-125	Graphic Section MERCON MERCON MINISTRACT MINISTRAC	Rock Type Sand II II II II II II II II II II II II II	Color Brown II II Pl yellow Plyl & algy Pl yellow II Bn yl & algy Pl yellow II II II V pl bn II II II II II II II II II	Gra Mode M II Fn/M II Vfn&M II Fn M M/C Fn II II II II II II II II II II II II II	is well is well is well is well is well is well is well is well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well in the well is well in the well in the well in the well in the well is well in the well in	M Trace gravel Same. " Little grave Trace gravel Sang & Rnd. T Same plus tr See end of 1 See end of 1 See end of 1 See end of 1 Rnd. Tr G si Same but 1t1 Rnd. Tr G si Same plus tr Same. Same plus tr Same. Same plus tr Same. Same plus tr Same as 100t Same plus tr Srnd&Wrnd. L Same. See end of 1 Same as 1151	iscell (Gran/M (Gran/M (Gran/M (Fr.G.sil fos fra .cg. inc .cg. inc .cg. sh l cem,6 l cem,6 l cem,6 -1	peb).si peb).si peb).si cem,6 l gs. sh ol gy im cem, il,Fn/M ale. Mt bn yl l to bn bn yl l c snds. bn yl l icus sh frags. VG slgt viv cem yl bn nds,maf	Trace silt. Trace silt. It. It. im cem,yl mafic snds ch frostir im cem,sec yl,sil sh, im cem,sec incl,mic zr,fos silt. im cem,sec frags,m sil sh ly dolic c (M/C),pl c sil cem(w/ ic incl,py ic incl,py	sil material sil m	stics (/cl,strng fn-glauc&z ea. Moh fr g½ re gy,hal grw,cl,y hartz sil mafic in rags.Moh mafic mious sil .Mch frst .mafic in zr&mafic frstg.Lt es&micus sh,qtz st mioa,Fn/i z growths.	bn.si) remafic stg.Lt qtz s sh,Fn/ g.Ltl c cl, mice frstg.l qtz s sh,Fn/ g.Ltl c cl,fos snds,w l qtz s
LO Pacino 25 MT SIMON FORMATT	G OF WELI Depths 0-5 5-10 10-15 15-20 20-25 25-30 30-35 35-40 40-45 45-50 50-55 55-60 60-65 65-70 70-75 75-80 80-85 85-90 90-95 95-100 100-105 105-110 110-115 115-120 120-125 125-130 130-135	Graphic Section	Rock Type Sand II II II Sandstohe II II II II II II II II II II II II II	Color Brown II II Pl yellow Plyl & algy Pl yellow II Bryl & algy Pl yellow II II II II II II II II II	Gra Mode M II Fn/M II Fn/M II Fn II II II II II II II II II II II II II	is well is well is well is well is well is well is well is well is well in the second of the second	M Trace gravel Same. " Little grave Trace gravel Sang & Rnd. T Same plus tr See end of 1 See end of 1 See end of 1 Rnd. Tr G si Same but 1t1 Rnd. Tr G si Same plus tr Same plus tr Same plus tr Same plus tr Same plus tr Same same Same but 1t1 Rnd. Tr G si Same plus tr Same. Same plus tr See end of 1 Same as 1000 Same plus tr Srnd&Wrnd. L Same. See end of 1 Same as 1151 Srnd&Wrnd. M	iscell (Gran/M (Gran/M (Gran/M (Gran/M (F.G.sil fos fra .og. inc .og. inc .og. sh l cem,6 l cem,6 l cem,6 l cem,6 -1051. fossil tl G to VG .og. Tr -1201.s ch G to	peb).si peb).si peb).si cem,6 l gs. sh cem,6 l gs. sh ol gy im cem, il,Fn/M ale. Mu bn yl l to bn bn yl l c ands. bn yl l icus sh frags. VG slgt viv cem yl bn nds,maf VG sil	Trace silt. Trace silt. It. im cem,yl ,pl gn mic mafic snds ch frostir im cem,sec yl,sil sh, im cem,sec incl,mic zr,fos im cem,sec frags,n sil sl ly dolic c (M/C),pl c sil cem(w/ ic incl,py cem(w/fine	acteri t. sil matrous sh, Vincl, mic l lim str chips a s, see qtz ng. Ltl c c qtz grw ca, lt gy frags, cl c qtz grw nica, Fn/A n, cl. McF cem(w/fir gn micus viv cem) vr, see qt se&sh), fr	stics st	bn sil remafic stg.Ltl qtz s f are y l lim/s t. cl, mica frstg.L qtz s sh,Fn/ g.Ltl q cl, fos snds, w l qtz s
LO Jacoro 25 MT SIMON FORMATTO	G OF WELI Depths 0-5 5-10 10-15 15-20 20-25 25-30 30-35 35-40 40-45 45-50 50-55 55-60 60-65 65-70 70-75 75-80 80-85 85-90 90-95 95-100 100-105 105-110 110-115 115-120 120-125 125-130 130-135	Graphic Section	Rock Type Sand II II II Sandstohe II II II II II II II II II II II II II	Color Brown II II Pl yellow Plyl & algy Pl yellow Broyl & algy Pl yellow II II II II II II II II II	Gra Mode M II Fn/M II Fn/M II Fn M M/C II II II II II II II II II II II II II	is well is well is well is well is well is well is well is well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well in the well in the well is well in the	M Trace gravel Same. " Little grave Trace gravel Sang & Rnd. T Same plus tr See end of 1 See end of 1 See end of 1 Rnd. Tr G si Same but 1t1 Rnd. Tr G si Same plus tr Same plus tr Same plus tr Same plus tr Same plus tr Same same. Same plus tr See end of 1 Same as 1001 Same plus tr Srnd&Wrnd. L Same See end of 1 Same as 1151 Srnd&Wrnd. M Same plus tr Same as 1151 Srnd&Wrnd. M	iscell (Gran/M (Gran/M (Gran/M (Gran/M (F.G.sil fos fra .og. inc .og. inc .og. sh l cem,6 .cl. yl l cem,6 .cl. yl l cem,6 .cl. yl toem,6 .cl.	peb).si peb).si peb).si cem,6 l gs. sh in cem, l,Fn/M ale. Mt bn yl l to bn bn yl l c snds. frags. VG slgt viv cem yl bn nds,maf VG sil sh. sh	Trace sild. It. Trace sild. It. It. It. It. Im cem,yl mafic snds ch frostin im cem,sec incl,mic zr,fos im cem,sec frags,n sil sh ly dolic co (M/C),pl co sil cem(w/fine jmica,qtz	acteri t. sil matrous sh, Vi incl, mic l lim str chips a s, see qtz ng. Ltl c qtz grw nca, fos i c qtz grw nica, Fn/A n, cl. Mch cem(w/fir gn micus viv.cem) vr, see qt se&sh), fr st.Tr G	stics (cl,strng fn-glauo&z ba. Moh fr ng½ are gy, hal grw,cl,y quartz sil ,mafic in rags.Moh ,mafic mious sil .Mch frst .Mch frst .Mch frst .mca,fn/t z growths stg.ltl p to VG viv	bn sil råmafic stg.Ltl qtz s f are y l lim/s t. cl, mice frstg.L qtz s sh,Fn/ g.Ltl c cl,fos snds,w l qtz s sh),Gt Moh fr Moh fr Moh fr dem(M/
LO Pacino 25 MT SIMON FORMATT	G OF WELI Depths 0-5 5-10 10-15 15-20 20-25 25-30 30-35 35-40 40-45 45-50 50-55 55-60 60-65 65-70 70-75 75-80 80-85 85-90 90-95 95-100 100-105 105-110 110-115 115-120 120-125 125-130 130-135	Graphic Section	Rock Type Sand II II II Sandstohe II II II II II II II II II II II II II	Color Brown II II Pl yellow Plyl & olgy Pl yellow Brown II II Pl yellow II Brown II II II Brown II II II II II II II II II	Gra Mode M II Fn/M II Vfn&M II Fn II II II II II II II II II II II II II	is well is well is well is well is well is well is well is well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well in the well is well in the well in the well in the well in the well is well in the	M Trace gravel Same. " Little grave Trace gravel Sang & Rnd. Trace gravel Sang & Rnd. Trace gravel Same plus tr See end of I Same but sig Rnd. Tr G si Same but 1tl Rnd. Tr G si Same plus tr Same plus tr Same plus tr Same plus tr Same same plus tr Same plus tr Same plus tr See end of I Same as 1001 Same glus tr Same. See end of I Same as 1151 Same as 1151 Srnd&Wrnd. M Same plus tr See end of I Same as 1151 Srnd&Wrnd. M Same plus tr See end of I	iscell (Gran/S (Gran/M (Gran/M (Gran/M (F.G.sil fos fra og. incog. incog. sh l cem, G cl. yl l cem, G cl. yl l cem, G fr-mafi clay. l cem, G pl gn m og1051. fossil tl G to wh sil og.	peb).si peb).si peb).si cem,6 l gs. sh im cem, 1,Fn/M ale. Mt bn yl l to bn bn yl l icus sh frags. VG slgt viv cem yl bn nds,maf VG sil sh. sh	Trace silt. Trace silt. It. Trace silt. It. im cem,yl pl gn mic mafic snds ch frostir im cem,sec yl,sil sh, im cem,sec incl,mic zr,fos silt. im cem,sec frags,n sil sh ly dolic c (M/C),pl c sil cem(w/ ic incl,py cem(w/fine mica,qtz n yl sil ch	acteri t. sil maty cus sh, Vi incl, mic l lim str chips a s, see qtz ng. Ltl c qtz grw ca, lt gy frags, cl c qtz grw nica, Fn/A h, cl. Mch cem(w/fir gn micus //r, see qt se&sh), fr st.Tr G cem(w/viv	stics (cl,strng fn-glauo&z a. Moh fr ng½ are gy, hal grw,cl,y quartz sil ,mafic in rags,Moh ,mafic mious sil .Moh frst dy,mafic in trags,Moh y,mafic mious sil .Moh frst y,mafic ssh,qtz st ,mioa,Fn/f z st ,mioa,Fn/f to VG viv),Fn/M mat	bn sil remafic stg.Ltl qtz s f are y l lim/s t. cl, mica frstg.L qtz s sh,Fn/ g.Ltl q ol,fos snds,w l qtz s
LO Jacoro 25 MT SIMON FORMATTO	G OF WELI Depths 0-5 5-10 10-15 15-20 20-25 25-30 30-35 35-40 40-45 45-50 50-55 55-60 60-65 65-70 70-75 75-80 80-85 85-90 90-95 95-100 100-105 105-110 110-115 115-120 120-125 125-130 130-135 135-140 140-145 145-150 150-155	Graphic Section MERCON MERCON MINISTRACT MINISTRAC	Rock Type Sand II II II Sandstohe II II II II II II II II II II II II II	Color Brown II II Pl yellow Plyl & olgy Pl yellow Brown II II Pl yellow II Brown II II II II II II II II II	Gra Mode M II Fn/M II Fn/M II Fn M M/C II II II II II II II II II II II II II	is well is well is well is well is well is well is well is well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well is well in the well in the well in the well is well in the	M Trace gravel Same. " Little grave Trace gravel Sang & Rnd. T Same plus tr See end of 1 See end of 1 See end of 1 Rnd. Tr G si Same but 1t1 Rnd. Tr G si Same plus tr Same plus tr Same plus tr Same plus tr Same plus tr Same same. Same plus tr See end of 1 Same as 1001 Same plus tr Srnd&Wrnd. L Same See end of 1 Same as 1151 Srnd&Wrnd. M Same plus tr Same as 1151 Srnd&Wrnd. M	iscell (Gran/S el(Gran/M (Gran/M r.G.sil fos fra og. ftly less cem,6 l og. sh l cem,6 cl. yl l cem,6 r-mafi clay. l cem,6 pl gn m og105! fossil tl 6 to wh sil og. og.	peb).si peb).si peb).si cem,6 l gs. sh im cem, 1,Fn/M ale. Mt bn yl l to bn bn yl l icus sh frags. VG slgt viv cem yl bn nds,maf VG sil sh. sh	Trace silt. Trace silt. It. Trace silt. It. im cem,yl pl gn mic mafic snds ch frostir im cem,sec yl,sil sh, im cem,sec incl,mic zr,fos silt. im cem,sec frags,n sil sh ly dolic c (M/C),pl c sil cem(w/ ic incl,py cem(w/fine mica,qtz n yl sil ch	sil material sil m	stics (/cl,strng fn-glauc&z a. Mch fr ng½ are gy,hal grw,cl,y puartz sil ,mafic in rags,Mch ,mafic mious sil .Mch frst interpolation inte	bn sil remafic stg.Ltl qtz s f are y l lim/s t. cl, mica frstg.L qtz s sh,Fn/ g.Ltl q ol,fos snds,w l qtz s

Well name: Brunswick Fire Station Well

					.,		
	Dantha	Graphic	Rock	Color	Gra	in Size	Minorallongous Champetonichia
	Depths	Section	Type	Color	Mode	Range	Miscellaneous Characteristics
		1	7	ļ	1		
M	160-165	₩₩₽	Sandstone	V pl bn	M	Vfn/Gr	Srnd to rnd.Ltl 6 sil cem, frstg.Tr pl gn micus sh,Fn/M mafile
T.	165-170	<u> </u>	11		Fn/M	"	See end of log. snds(as abv), qtz silt, mafic inclusions, mica.
L •	170-175	66	11	11	Fn/M&C		Srnd&Wrnd.Tr 6 sil cem, mafic incl, pl gn micus sh, Fn/C mafic sr
ĺ	175-180		11 .	- 11	11	tī .	See end of log. (as abv), gtz st, mafic incl, mica, non-gtz gr
s	180-185	M A M	[]	tt .	Fn/M	11	See end of log. Ltl Wrnd gtz gravel(Gr/SP).Mch frosting.
	185-190	\ <u>M</u> -x=x-M	11	\$1	11	11	Sang to srnd. Moh G sil cem. qtz st.frstg.mica.Ltl pl gn micus
I	190-195	:::M::∧:1 :::: 1.	11	li li	M/C	11	See end of log. sh.Tr G lim cem, lim stng, rd bn hem micus sh,
M	195-200	⋄ ◊◊∞ = ◦∞		11	Fn/M	11	See end of log. Fn/M mafic snds(as abv), mafic incl.
i			-	11	111/61	11	Same as 1951-2001 but much 6 sil cem.
0	200-205	<u> </u>		<u> </u>		l	Same as 197-200 but much 6 sil cem.
N	205-210	PANOSIA EME	Ss & Shale	Ltrd bn &	11	II.	Hemio & mious(sh).Srnd to rnd.Mch G sil cem, qtz st,pl gn micus
į	210-215	6.9/0:M	! ! !	Dkrd bn	11	tī	See end of log. sh.frstg.Ltl mica, rnd qtz gyl(Gr/SP).Tr Fn/M
1	215-220		Sandstone	V pl bn	M/C	tt	See end of log. \ mafic snd(as abv), mafic incl, lim staining [
. F	220-225		11	11	Fn&C	Ħ	Srnd&Wrnd.Mch G slgtly dolic cem, frstg.Tr pl gn micus sh, wh
	225-230	100 - 1 - 1 × 100 · 100	11 ·	11	FN/MEVC	11	See end of log. sh, off wh sil matx, pyr, Fn/M-zr, mafic incl,
0	230-235		11	11	Fn/M	11	See end of log. st,rd bn hem micus sh,mica.Ltl Wrnd gtz gyl
R	235-240	≟ ∧ : .∠ ::	tí	11	11	11	Srnd to rnd.Mch G sigtly dolic cem, frstg.Ltl pl gn (Gr/SR
м	240-245	MAL WILL	11	11	11	11	See end of log. micus sh. Tr rd bn hem micus sh, mafic incl,
	045 050		 		M/C	11	
Α,	245-250		<u>"</u>	Pl pk yl			See end of log. sil sh,Fn/C-zr,qtz st,gy sil shale.
T	250-255		11	tr	11	ft	Rnd to Wrnd.Ltl G sil cem.Few pk feld arns.Mch frstg.Wrnd atz
J	255-260 ·		11	11	C.	11	See end of log. gvl(Gr/SP). Tr pl qn micus sh, mafic incl, bn yl
I	260-265		11	11	c/vc	ti .	See end of log. \micus sh.mica.Fn/M-zircon.pyrite.
. 0 [265-270	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	. 11	11,	. 11	11	Same as 2601-2651.
N	270-275		11	.11	M/C	ĦŢ,	Same but little Wrnd atz gravel (Gran/S peb).
-14	275-280		ti ·	. 11	11	, 11	Wrnd.Mch G yl to pk sil cem, frstg, Wrnd gtz gyl(Gr/MP).Few pk
ŀ	280-285	0.00	11	11	C/VC	11	See end of log. feld grns. Tr pyr cem, Fn-pyr xtls, Fn/C mafic
ŀ	285-290		11	V pl bn	11		See end of log. \snds(as abv)(Fe oxides&zr), mafic incl,V pl
ŀ	207-270		11	11	11	11	
	290-295		· · · · · · · · · · · · · · · · · · ·				See end of log. \ 'desert rose'(barite?)-w/pyr xtls between
275	295 –300	0000000	f!	11	11	11	Same as 2901-2951 \[petals',pl gn mious sh,drsy quartz.
•							minus the 'desert rose'.
- 1			E	ND OF L	OG		
. [,	}			•		
ı			'''	. :			
T t							
1							
- F			IISaa and of	lacil esmalac	ļ. i		
	3E .40	Manual	"See end of	log" samples	e En	Viện ÁIC	And Mah VC clatin dalia con al municus ah mica fusta at tan
F	3540	MGD) M	"See end of Sandstone	log" samples	. Fn	Vfn/VC	Ang. Mch VG slgtly dolic cem.ol gy micus sh.mica.frstg.st.tan
Ī	35-40		Sandstone	log" samples Plyl & olgray	. Fn	Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides),Tr G
İ	3540	MGDI ZIM	"See end of Sandstone	log" samples Plyl & olgray	. Fn	Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe—oxides),Tr & bn yl lim cem,Vfn/Fn—glauc(w/yl ss),yl sil sh,pyr.The ss chir
		MGD)=2M	See end of Sandstone	log‼ samples Plyl & olgray	Fn	Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe—oxides),Tr & bn yl lim cem,Vfn/Fn—glauc(w/yl ss),yl sil sh,pyr.The ss chir are gy or pl yl w/layers of sh throughout.more gy,yl resuf
-	35-40	MGP) SM	"See end of Sandstone	log" samples Pl yl & ol gray	. Fn	Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe—oxides),Tr & bn yl lim cem,Vfn/Fn—glauc(w/yl ss),yl sil sh,pyr.The ss chir
		MGDI EXX	"See end of Sandstone	log" samples	. Fn	Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe—oxides),Tr & bn yl lim cem,Vfn/Fn—glauc(w/yl ss),yl sil sh,pyr.The ss chir are gy or pl yl w/layers of sh throughout.more gy,yl resuf
		MgDi≡≃iM	Sandstone	Plyl & olgray	. Fn		bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe—oxides),Tr & bn yl lim cem,Vfn/Fn—glauc(w/yl ss),yl sil sh,pyr.The ss chir are gy or pl yl w/layers of sh throughout,more gy,yl resufof lim stng?The larger gtz grains are coated w/many pyr coatings & inclusions.
-		MgDJ = M	Sandstone	log" samples Pl yi & ol gray Pl yi & pl gray	. Fn	Vfn/VC Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe—oxides),Tr & bn yl lim cem,Vfn/Fn—glauc(w/yl ss),yl sil sh,pyr.The ss chir are gy or pl yl w/layers of sh throughout.more gy,yl resuf of lim stng?The larger gtz grains are coated w/many pyr
	50-55		Sandstone Sandstone	Pl yl & ol gray Pl yellow	Fn M/C	Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides),Tr & bn yl lim cem,Vfn/Fn-glauc(w/yl ss),yl sil sh,pyr.The ss chit are gy or pl yl w/layers of sh throughout.more gy,yl result of lim stng?The larger gtz grains are coated w/many pyr coatings & inclusions. Same as 451-501 plus trace pale green micaceous shale.
	50-55	MgDi≡≃iM	Sandstone Sandstone	Pl yl & ol gray Pl yellow	. Fn		bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides),Tr & bn yl lim cem,Vfn/Fn-glauc(w/yl ss),yl sil sh,pyr.The ss chir are gy or pl yl w/layers of sh throughout,more gy,yl resulting of lim stng?The larger gtz grains are coated w/many pyr coatings & inclusions. Same as 451-501 plus trace pale green micaceous shale. Sang.Mch V6 slgtly dolic cem,ol gy micus sh,mica,st,bk fos
	50-55		Sandstone Sandstone	Pl yl & ol gray Pl yellow Bnyl & ol gray	Fn M/C	Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides),Tr & bn yl lim cem,Vfn/Fn-glauc(w/yl ss),yl sil sh,pyr.The ss chir are gy or pl yl w/layers of sh throughout.more gy,yl result of lim stng?The larger gtz grains are coated w/many pyr coatings & inclusions. Same as 45'-50' plus trace pale green micaceous shale. Sang.Moh V6 slgtly dolic cem,ol gy micus sh,mica,st,bk fos frags.Ltl pyrite(cem,Vfn-grains,incl/coatings),Vfn mafic snew
	50-55		Sandstone Sandstone	Pl yl & ol gray Pl yellow	Fn M/C	Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides),Tr & bn yl lim cem,Vfn/Fn-glauc(w/yl ss),yl sil sh,pyr.The ss chir are gy or pl yl w/layers of sh throughout.more gy,yl result of lim stng?The larger gtz grains are coated w/many pyr coatings & inclusions. Same as 451-501 plus trace pale green micaceous shale. Sang.Moh V6 slgtly dolic cem,ol gy micus sh,mica,st,bk fos frags.Ltl pyrite(cem,Vfn-grains,incl/coatings),Vfn mafic snd (iron oxides & zircon & unknown).Tr & lim cem,bn yl sil sh,
	50-55		Sandstone Sandstone	Pl yl & ol gray Pl yellow Bnyl & ol gray	Fn M/C	Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides), Tr & bn yl lim cem, Vfn/Fn-glauc(w/yl ss), yl sil sh, pyr.The ss chir are gy or pl yl w/layers of sh throughout, more gy, yl result of lim stng?The larger gtz grains are coated w/many pyr coatings & inclusions. Same as 451-501 plus trace pale green micaceous shale. Sang.Moh V6 slgtly dolic cem, ol gy micus sh, mica, st, bk fos frags.Ltl pyrite(cem, Vfn-grains, incl/coatings), Vfn mafic snd (iron oxides & zircon & unknown).Tr & lim cem, bn yl sil sh, lt gy sh, mafic incl, see gtz growths.Half gy chips, half yl st
	50-55 .55-60		Sandstone Sandstone	Pl yl & ol gray Pl yellow Bnyl & ol gray	Fn M/C	Vfn/VC Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides),Tr & bn yl lim cem,Vfn/Fn-glauc(w/yl ss),yl sil sh,pyr.The ss chir are gy or pl yl w/layers of sh throughout.more gy,yl result of lim stng?The larger gtz grains are coated w/many pyr coatings & inclusions. Same as 451-501 plus trace pale green micaceous shale. Sang.Moh V6 slgtly dolic cem,ol gy micus sh,mica,st,bk fos frags.Ltl pyrite(cem,Vfn-grains,incl/coatings),Vfn mafic snd (iron oxides & zircon & unknown).Tr & lim cem,bn yl sil sh,
	50-55 .55-60		Sandstone Sandstone Sandstone	Pl yl & ol gray Pl yellow Bn yl & ol gray	M/C Fn	Vfn/VC Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides), Tr & bn yl lim cem, Vfn/Fn-glauc(w/yl ss), yl sil sh, pyr.The ss chir are gy or pl yl w/layers of sh throughout more gy, yl resured of lim stng?The larger gtz grains are coated w/many pyr coatings & inclusions. Same as 451-501 plus trace pale green micaceous shale. Sang.Mch V6 slgtly dolic cem, ol gy micus sh, mica, st, bk fos frags.Ltl pyrite(cem, Vfn-grains, incl/coatings), Vfn mafic snd (iron oxides & ziroon & unknown).Tr & lim cem, bn yl sil sh, lt gy sh, mafic incl, sec gtz growths. Half gy chips, half yl sh bn yl chips.
	50-55 .55-60		Sandstone Sandstone	Pl yl & ol gray Pl yellow Bnyl & ol gray	Fn M/C	Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides),Tr & bn yl lim cem,Vfn/Fn-glauc(w/yl ss),yl sil sh,pyr.The ss chip are gy or pl yl w/layers of sh throughout.more gy,yl resured of lim stng?The larger gtz grains are coated w/many pyr coatings & inclusions. Same as 451-501 plus trace pale green micaceous shale. Sang.Mch V6 slgtly dolic cem,ol gy micus sh,mica,st,bk fos frags.Ltl pyrite(cem,Vfn-grains,incl/coatings),Vfn mafic snd (iron oxides & ziroon & unknown).Tr & lim cem,bn yl sil sh, lt gy sh,mafic incl,sec gtz growths.Half gy chips,half yle bn yl chips. Rnd.Tr & sil cem,& bn yl lim cem,sec gtz grw,mafic incl,Fn/M
	50-55 .55-60		Sandstone Sandstone Sandstone	Pl yl & ol gray Pl yellow Bn yl & ol gray	M/C Fn	Vfn/VC Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides),Tr & bn yl lim cem,Vfn/Fn-glauc(w/yl ss),yl sil sh,pyr.The ss chip are gy or pl yl w/layers of sh throughout.more gy,yl resured of lim stng?The larger gtz grains are coated w/many pyr coatings & inclusions. Same as 451-501 plus trace pale green micaceous shale. Sang.Mch V6 slgtly dolic cem,ol gy micus sh,mica,st,bk fos frags.Ltl pyrite(cem,Vfn-grains,incl/coatings),Vfn mafic snd (iron oxides & ziroon & unknown).Tr & lim cem,bn yl sil sh, lt gy sh,mafic incl,sec gtz growths.Half gy chips,half yl to bn yl chips. Rnd.Tr & sil cem,& bn yl lim cem,sec gtz grw,mafic incl,Fn/M mafic sands,pl gy micus sh,cl,wh sil sh,mica.Mch frstg.Ltl qtz
	50-55 .55-60 100-105		Sandstone Sandstone Sandstone Sandstone	Pl yl & ol gray Pl yellow Bnyl & ol gray Pl yellow	M/C Fn	Vfn/VC Vfn/VC Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides),Tr & bn yl lim cem,Vfn/Fn-glauc(w/yl ss),yl sil sh,pyr.The ss chip are gy or pl yl w/layers of sh throughout,more gy,yl result of lim stng?The larger qtz grains are coated w/many pyr coatings & inclusions. Same as 45!-50! plus trace pale green micaceous shale. Sang.Moh VG slgtly dolic cem,ol gy micus sh,mica,st,bk fos frags.Ltl pyrite(cem,Vfn-grains,incl/coatings),Vfn mafic snd (iron oxides & ziroon & unknown).Tr & lim cem,bn yl sil sh, lt gy sh,mafic incl,sec qtz growths.Half gy chips,half yl bn yl chips. Rnd.Tr & sil cem,& bn yl lim cem,sec qtz grw,mafic incl,Fn/M mafic sands,pl gy micus sh,cl,wh sil sh,mica.Mch frstg.Ltl qtz silt:
	50-55 .55-60		Sandstone Sandstone Sandstone	Pl yl & ol gray Pl yellow Bn yl & ol gray	M/C Fn	Vfn/VC Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides),Tr & bn yl lim cem,Vfn/Fn-glauc(w/yl ss),yl sil sh,pyr.The ss chip are gy or pl yl w/layers of sh throughout,more gy,yl result of lim stng?The larger qtz grains are coated w/many pyr coatings & inclusions. Same as 45!-50! plus trace pale green micaceous shale. Sang.Moh VG slgtly dolic cem,ol gy micus sh,mica,st,bk fos frags.Ltl pyrite(cem,Vfn-grains,incl/coatings),Vfn mafic snd (iron oxides & ziroon & unknown).Tr & lim cem,bn yl sil sh, lt gy sh,mafic incl,sec qtz growths.Half gy chips,half yl bn yl chips. Rnd.Tr & sil cem,& bn yl lim cem,sec qtz grw,mafic incl,Fn/M mafic sands,pl gy micus sh,cl,wh sil sh,mica.Mch frstg.Ltl qtz silt: Srnd&Wrnd.Mch & to VG silcs cem(w/fines&sh),pl gn micus sh,
	50-55 .55-60 100-105		Sandstone Sandstone Sandstone Sandstone	Pl yl & ol gray Pl yellow Bnyl & ol gray Pl yellow	M/C Fn	Vfn/VC Vfn/VC Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides),Tr & bn yl lim cem,Vfn/Fn-glauc(w/yl ss),yl sil sh,pyr.The ss chip are gy or pl yl w/layers of sh throughout,more gy,yl result of lim stng?The larger qtz grains are coated w/many pyr coatings & inclusions. Same as 45!-50! plus trace pale green micaceous shale. Sang.Moh V6 slgtly dolic cem,ol gy micus sh,mica,st,bk fos frags.Ltl pyrite(cem,Vfn-grains,incl/coatings),Vfn mafic snd(iron oxides & ziroon & unknown).Tr & lim cem,bn yl sil sh, lt gy sh,mafic incl,sec qtz growths.Half gy ohips,half ylth bn yl chips. Rnd.Tr & sil cem,& bn yl lim cem,sec qtz grw,mafic incl,Fn/M mafic sands,pl gy micus sh,cl,wh sil sh,mica.Mch frstg.Ltl qtz silt. Srnd&Wrnd.Moh & to V6 silcs cem(w/fines&sh),pl gn micus sh, frosting.Ltl mica,qtz silt.Tr & to V6 viv cem(M/C).Tr lim silt.
	50-55 .55-60 100-105		Sandstone Sandstone Sandstone Sandstone	Pl yl & ol gray Pl yellow Bnyl & ol gray Pl yellow	M/C Fn	Vfn/VC Vfn/VC Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides),Tr & bn yl lim cem,Vfn/Fn-glauc(w/yl ss),yl sil sh,pyr.The ss chip are gy or pl yl w/layers of sh throughout,more gy,yl result of lim stng?The larger qtz grains are coated w/many pyr coatings & inclusions. Same as 45!-50! plus trace pale green micaceous shale. Sang.Moh VG slgtly dolic cem,ol gy micus sh,mica,st,bk fos frags.Ltl pyrite(cem,Vfn-grains,incl/coatings),Vfn mafic snd (iron oxides & ziroon & unknown).Tr & lim cem,bn yl sil sh, lt gy sh,mafic incl,sec qtz growths.Half gy chips,half yl bn yl chips. Rnd.Tr & sil cem,& bn yl lim cem,sec qtz grw,mafic incl,Fn/M mafic sands,pl gy micus sh,cl,wh sil sh,mica.Mch frstg.Ltl qtz silt: Srnd&Wrnd.Mch & to VG silcs cem(w/fines&sh),pl gn micus sh,
	50-55 .55-60 100-105		Sandstone Sandstone Sandstone Sandstone	Pl yellow Pl yellow Pl yellow V pl bn	M/C Fn M/C Fn&C	Vfn/VC Vfn/VC Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides),Tr & bn yl lim cem,Vfn/Fn-glauc(w/yl ss),yl sil sh,pyr.The ss chip are gy or pl yl w/layers of sh throughout,more gy,yl result of lim stng?The larger qtz grains are coated w/many pyr coatings & inclusions. Same as 45!-50! plus trace pale green micaceous shale. Sang.Mch V6 slgtly dolic cem,ol gy micus sh,mica,st,bk fos frags.Ltl pyrite(cem,Vfn-grains,incl/coatings),Vfn mafic snd. (iron oxides & ziroon & unknown).Tr & lim cem,bn yl sil sh, lt gy sh,mafic incl,sec gtz growths.Half gy chips,half yl bn yl chips. Rnd.Tr & sil cem,& bn yl lim cem,sec gtz grw,mafic incl,Fn/M mafic sands,pl gy micus sh,cl,wh sil sh,mica.Mch frstg.Ltl gtz silt. Srnd&Wrnd.Mch & to V6 silcs cem(w/fires&sh),pl gn micus sh,frosting.Ltl mica,gtz silt.Tr & to V6 viv cem(M/C).Tr lim silfn/M-mafic snds(incl iron oxides & ziroon),mafic & rutile incl,sec gtz grw,pyr.
	50-55 .55-60 100-105		Sandstone Sandstone Sandstone Sandstone Sandstone	Pl yellow Pl yellow Pl yellow V pl bn	M/C Fn M/C Fn&C	Vfn/VC Vfn/VC Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides),Tr & bn yl lim cem,Vfn/Fn-glauc(w/yl ss),yl sil sh,pyr.The ss chip are gy or pl yl w/layers of sh throughout,more gy,yl result of lim stng?The larger qtz grains are coated w/many pyr coatings & inclusions. Same as 45!-50! plus trace pale green micaceous shale. Sang.Mch V6 slgtly dolic cem,ol gy micus sh,mica,st,bk fos frags.Ltl pyrite(cem,Vfn-grains,incl/coatings),Vfn mafic snd. (iron oxides & ziroon & unknown).Tr & lim cem,bn yl sil sh, lt gy sh,mafic incl,sec gtz growths.Half gy chips,half yl bn yl chips. Rnd.Tr & sil cem,& bn yl lim cem,sec gtz grw,mafic incl,Fn/M mafic sands,pl gy micus sh,cl,wh sil sh,mica.Mch frstg.Ltl gtz silt. Srnd&Wrnd.Mch & to V6 silcs cem(w/fires&sh),pl gn micus sh,frosting.Ltl mica,gtz silt.Tr & to V6 viv cem(M/C).Tr lim silfn/M-mafic snds(incl iron oxides & ziroon),mafic & rutile incl,sec gtz grw,pyr.
	50-55 .55-60 100-105		Sandstone Sandstone Sandstone Sandstone Sandstone	Pl yellow Pl yellow Pl yellow V pl bn	M/C Fn	Vfn/VC Vfn/VC Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides),Tr & bn yl lim cem,Vfn/Fn-glauc(w/yl ss),yl sil sh,pyr.The ss chip are gy or pl yl w/layers of sh throughout,more gy,yl result of lim stng?The larger qtz grains are coated w/many pyr coatings & inclusions. Same as 45!-50! plus trace pale green micaceous shale. Sang.Moh V6 slgtly dolic cem,ol gy micus sh,mica,st,bk fos frags.Ltl pyrite(cem,Vfn-grains,incl/coatings),Vfn mafic snd. (iron oxides & ziroon & unknown).Tr & lim cem,bn yl sil sh, lt gy sh,mafic incl,see gtz growths.Half gy ohips,half yl bn yl chips. Rnd.Tr & sil cem,& bn yl lim cem,see gtz grw,mafic incl,Fn/M mafic sands,pl gy micus sh,cl,wh sil sh,mica.Moh frstg.Ltl gtz silt. Srnd&Wrnd.Moh & to V6 silcs cem(w/fines&sh),pl gn micus sh,frosting.Ltl mica,gtz silt.Tr & to V6 viv cem(M/C).Tr lim stront from from the sil cem (sincl iron oxides & ziroon),mafic & rutile incl,see gtz grw,pyr. Srnd&Wrnd.Moh & to V6 sil cem(w/fines&sh),frstg,pl gn micus sh. Srnd&Wrnd.Moh & to V6 sil cem(w/fines&sh),frstg,pl gn micus sh. Srnd&Wrnd.Moh & to V6 sil cem(w/fines&sh),frstg,pl gn micus sh. Srnd&Wrnd.Moh & to V6 sil cem(w/fines&sh),frstg,pl gn micus sh. Srnd&Wrnd.Moh & to V6 sil cem(w/fines&sh),frstg,pl gn micus sh. Srnd&Wrnd.Moh & to V6 sil cem (w/fines&sh),frstg,pl gn micus sh.
	50-55 .55-60 100-105		Sandstone Sandstone Sandstone Sandstone Sandstone	Pl yellow Pl yellow Pl yellow V pl bn	M/C Fn M/C Fn&C	Vfn/VC Vfn/VC Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides),Tr & bn yl lim cem,Vfn/Fn-glauc(w/yl ss),yl sil sh,pyr.The ss chip are gy or pl yl w/layers of sh throughout,more gy,yl result of lim stng?The larger qtz grains are coated w/many pyr coatings & inclusions. Same as 45'-50' plus trace pale green micaceous shale. Sang.Mch V6 slgtly dolic cem,cl gy micus sh,mica,st,bk fos frags.Ltl pyrite(cem,Vfn-grains,incl/coatings),Vfn mafic snd (iron oxides & ziroon & unknown).Tr & lim cem,bn yl sil sh, lt gy sh,mafic incl,sec gtz growths.Half gy chips, half yl bn yl chips. Rnd.Tr & sil cem,& bn yl lim cem,sec gtz grw,mafic incl,Fn/M mafic sands,pl gy micus sh,cl,wh sil sh,mica.Mch frstg.Ltl gtz silt. Srnd&Wrnd.Mch & to V6 silcs cem(w/fines&sh),pl gn micus sh,frosting.Ltl mica,gtz silt.Tr & to V6 viv cem(M/C).Tr lim silten,sec gtz grw,pyr. Srnd&Wrnd.Mch & to V6 sil cem(w/fines&sh),frstg,pl gn micus tincl,sec gtz grw,pyr. Srnd&Wrnd.Mch & to V6 sil cem(w/fines&sh),frstg,pl gn micus tincl,sec gtz grw,pyr.
	50-55 .55-60 100-105		Sandstone Sandstone Sandstone Sandstone Sandstone	Pl yellow Pl yellow Pl yellow V pl bn	M/C Fn M/C Fn&C	Vfn/VC Vfn/VC Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides),Tr & bn yl lim cem,Vfn/Fn-glauc(w/yl ss),yl sil sh,pyr.The ss chip are gy or pl yl w/layers of sh throughout,more gy,yl result of lim stng?The larger qtz grains are coated w/many pyr coatings & inclusions. Same as 45!-50! plus trace pale green micaceous shale. Sang.Mch V6 slgtly dolic cem,ol gy micus sh,mica,st,bk fos frags.Ltl pyrite(cem,Vfn-grains,incl/coatings),Vfn mafic snd. (iron oxides & ziroon & unknown).Tr & lim cem,bn yl sil sh, lt gy sh,mafic incl,see gtz growths.Half gy chips,half yl bn yl chips. Rnd.Tr & sil cem,& bn yl lim cem,see gtz grw,mafic incl,Fn/M mafic sands,pl gy micus sh,cl,wh sil sh,mica.Mch frstg.Ltl gtz silt. Srnd&Wrnd.Mch & to V6 silcs cem(w/fines&sh),pl gn micus sh,frosting.Ltl mica,gtz silt.Tr & to V6 viv cem(M/C).Tr lim sl Fn/M-mafic snds(incl iron oxides & zircon),mafic & rutile incl,see gtz grw,pyr. Srnd&Wrnd.Mch & to V6 sil cem(w/fines&sh),frstg,pl gn micus tl mica,gtz st,Wrnd gtz gyl(Gr/SP).Tr & to V6 viv cem(M/C). Ltl mica,gtz st,Wrnd gtz gyl(Gr/SP).Tr & to V6 viv cem(M/C). lim stng,Fn/M-mafic snds(incl iron oxides & zircon),mafic
	50-55 .55-60 100-105 125-130	MGDJECIM MGDJEC	Sandstone Sandstone Sandstone Sandstone Sandstone Sandstone	Pl yl & ol gray Pl yellow Bnyl & ol gray Pl yellow V pl bn V pl bn	M/C Fn M/C Fn&C Fn&C/VC	Vfn/VC Vfn/VC Vfn/Gr Vfn/Gr	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides), Tr & bn yl lim cem, Vfn/Fn-glauc(w/yl ss), yl sil sh, pyr.The ss chir are gy or pl yl w/layers of sh throughout more gy, yl resu of lim stng?The larger gtz grains are coated w/many pyr coatings & inclusions. Same as 45!-50! plus trace pale green micaceous shale. Sang.Mch V6 slgtly dolic cem, ol gy micus sh, mica, st, bk fos frags.Ltl pyrite(cem, Vfn-grains, incl/coatings), Vfn mafic snd. (iron oxides & ziroon & unknown).Tr & lim cem, bn yl sil sh, lt gy sh, mafic incl, sec gtz growths.Half gy chips, half yl bn yl chips. Rnd.Tr & sil cem, & bn yl lim cem, sec gtz grw, mafic incl, Fn/M mafic sands, pl gy micus sh, cl, wh sil sh, mica.Mch frstg.Ltl gtz silt. Srnd&Wrnd.Mch & to V6 silcs cem(w/fines&sh), pl gn micus sh, frosting.Ltl mica, gtz silt.Tr & to V6 viv cem(M/C).Tr lim strongly from the strongly from the sil cem (sec gray, pyr. Srnd&Wrnd.Mch & to V6 silc cem(w/fines&sh), frstg, pl gn micus the incl, sec gtz grw, pyr. Srnd&Wrnd.Mch & to V6 sil cem(w/fines&sh), frstg, pl gn micus the incl, sec gtz grw, pyr. Srnd&Wrnd.Mch & to V6 sil cem(w/fines&sh), frstg, pl gn micus the incl, sec gtz grw, mafic snds(incl iron oxides & zircon), mafic incl, sec gtz growths.
	50-55 .55-60 100-105 125-130		Sandstone Sandstone Sandstone Sandstone Sandstone	Pl yellow Pl yellow Pl yellow V pl bn	M/C Fn M/C Fn&C	Vfn/VC Vfn/VC Vfn/VC	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides), Tr & bn yl lim cem, Vfn/Fn-glauc(w/yl ss), yl sil sh, pyr.The ss chip are gy or pl yl w/layers of sh throughout, more gy, yl result of lim stng?The larger qtz grains are coated w/many pyr coatings & inclusions. Same as 45!-50! plus trace pale green micaceous shale. Sang.Mch V6 slgtly dolic cem, cl gy micus sh, mica, st, bk fos frags.Ltl pyrite(cem, Vfn-grains, incl/coatings), Vfn mafic snd (iron oxides & ziroon & unknown).Tr & lim cem, bn yl sil sh, lt gy sh, mafic incl, see qtz growths.Half gy chips, half yl bn yl chips. Rnd.Tr & sil cem, & bn yl lim cem, see qtz grw, mafic incl, Fn/M mafic sands, pl gy micus sh, cl, wh sil sh, mica.Mch frstg.Ltl qtz silt. Srnd&Wrnd.Mch & to V& silcs cem(w/fines&sh), pl gn micus sh, frosting.Ltl mica, qtz silt.Tr & to V& viv cem(M/C).Tr lim strong.see qtz grw, pyr. Srnd&Wrnd.Mch & to V& sil cem(w/fines&sh), frstg, pl gn micus Ltl mica, qtz st, Wrnd qtz gvl(Gr/SP).Tr & to V& viv cem(M/C). lim stng,Fn/M-mafic snds(incl iron oxides & zircon), mafic incl, see qtz growths. Sang&Wrnd.Mch & to V& sil cem(w/fines), frstg,Ltl qtz st,pl gr
	50-55 .55-60 100-105 125-130	MGDJECIM MGDJEC	Sandstone Sandstone Sandstone Sandstone Sandstone Sandstone	Pl yl & ol gray Pl yellow Bnyl & ol gray Pl yellow V pl bn V pl bn	M/C Fn M/C Fn&C Fn&C/VC	Vfn/VC Vfn/VC Vfn/Gr Vfn/Gr	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides), Tr & bn yl lim cem, Vfn/Fn-glauc(w/yl ss), yl sil sh, pyr.The ss chir are gy or pl yl w/layers of sh throughout more gy, yl resu of lim stng?The larger gtz grains are coated w/many pyr coatings & inclusions. Same as 451-501 plus trace pale green micaceous shale. Sang.Mch V6 slgtly dolic cem, ol gy micus sh, mica, st, bk fos frags.Ltl pyrite(cem, Vfn-grains, incl/coatings), Vfn mafic sndt (iron oxides & ziroon & unknown).Tr & lim cem, bn yl sil sh, lt gy sh, mafic incl, sec gtz growths. Half gy chips, half yl bn yl chips. Rnd.Tr & sil cem, & bn yl lim cem, sec gtz grw, mafic incl, Fn/M mafic sands, pl gy micus sh, cl, wh sil sh, mica. Mch frstg.Ltl gtz silt. Srnd&Wrnd.Mch & to V6 silcs cem(w/fines&sh), pl gn micus sh, frosting.Ltl mica, gtz silt.Tr & to V6 viv cem(M/C).Tr lim strongly from the strongly frags and sincl iron oxides & zircon), mafic & rutile incl, sec gtz grw, pyr. Srnd&Wrnd.Mch & to V6 sil cem(w/fines&sh), frstg, pl gn micus tl mica, gtz st, Wrnd gtz gvl(Gr/SP).Tr & to V6 viv cem(M/C) lim stng, Fn/M-mafic snds(incl iron oxides & zircon), mafic incl, sec gtz growths. Sang&Wrnd.Mch & to V6 sil cem(w/fines), frstg.Ltl gtz st, pl grm micus sh, mica.Tr & to V6 viv cem(M/C), Fn/M mafic snds(incl micus sh, mica.Tr & to V6 viv cem(M/C), Fn/M mafic snds(incl
	50-55 .55-60 100-105 125-130	MGDJECIM MGDJEC	Sandstone Sandstone Sandstone Sandstone Sandstone Sandstone	Pl yl & ol gray Pl yellow Bnyl & ol gray Pl yellow V pl bn V pl bn	M/C Fn M/C Fn&C Fn&C/VC	Vfn/VC Vfn/VC Vfn/Gr Vfn/Gr	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides), Tr & bn yl lim cem, Vfn/Fn-glauc(w/yl ss), yl sil sh, pyr.The ss chip are gy or pl yl w/layers of sh throughout, more gy, yl result of lim stng?The larger qtz grains are coated w/many pyr coatings & inclusions. Same as 45!-50! plus trace pale green micaceous shale. Sang.Mch V6 slgtly dolic cem, cl gy micus sh, mica, st, bk fos frags.Ltl pyrite(cem, Vfn-grains, incl/coatings), Vfn mafic snd. (iron oxides & ziroon & unknown).Tr & lim cem, bn yl sil sh, lt gy sh, mafic incl, see gtz growths.Half gy chips, half yl bn yl chips. Rnd.Tr & sil cem, & bn yl lim cem, see gtz grw, mafic incl, Fn/M mafic sands, pl gy micus sh, cl, wh sil sh, mica.Mch frstg.Ltl gtz silt. Srnd&Wrnd.Mch & to V& silcs cem(w/fines&sh), pl gn micus sh, frosting.Ltl mica, gtz silt.Tr & to V& viv cem(M/C).Tr lim silt. Fn/M-mafic snds(incl iron oxides & zircon), mafic & rutile incl, see gtz grw, pyr. Srnd&Wrnd.Mch & to V& sil cem(w/fines&sh), frstg, pl gn micus Ltl mica, gtz st, Wrnd gtz gvl(Gr/SP).Tr & to V& viv cem(M/C). Im stng, Fn/M-mafic snds(incl iron oxides & zircon), mafic incl, see gtz growths. Sang&Wrnd.Mch & to V& sil cem(w/fines), frstg.Ltl gtz st, pl gr
	50-55 .55-60 100-105 125-130 145-150	MGDJESIM MGDJES	Sandstone Sandstone Sandstone Sandstone Sandstone Sandstone Sandstone	Pl yl & ol gray Pl yellow Bnyl & ol gray Pl yellow V pl bn V pl bn	M/C Fn M/C Fn&C Fn&C/VC Fn&C	Vfn/VC Vfn/VC Vfn/Gr Vfn/Gr	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides), Tr & bn yl lim cem, Vfn/Fn-glauc(w/yl ss), yl sil sh, pyr.The ss chir are gy or pl yl w/layers of sh throughout more gy, yl resu of lim stng?The larger gtz grains are coated w/many pyr coatings & inclusions. Same as 45!-50! plus trace pale green micaceous shale. Sang.Mch V6 slgtly dolic cem, ol gy micus sh, mica, st, bk fos frags.Ltl pyrite(cem, Vfn-grains, incl/coatings), Vfn mafic snd (iron oxides & ziroon & unknown).Tr & lim cem, bn yl sil sh, lt gy sh, mafic incl, see gtz growths. Half gy chips, half yl bn yl chips. Rnd.Tr & sil cem, & bn yl lim cem, see gtz grw, mafic incl, Fn/M mafic sands, pl gy micus sh, cl, wh sil sh, mica. Mch frstg.Ltl qtz silt. Srnd&Wrnd.Mch & to V6 silcs cem(w/fines&sh), pl gn micus sh, frosting.Ltl mica, gtz silt.Tr & to V6 viv cem(M/C).Tr lim strong. Srnd&Wrnd.Mch & to V6 sil cem(w/fines&sh), frstg.pl gn micus Ltl mica, gtz st, Wrnd gtz gyl(Gr/SP).Tr & to V6 viv cem(M/C). In stng, Fn/M-mafic snds(incl iron oxides & zircon), mafic incl, see gtz growths. Sang&Wrnd.Mch & to V6 sil cem(w/fines&sh), frstg.Ltl gtz st, pl gm micus sh, mica.Tr & to V6 viv cem(M/C), Fn/M mafic snds(incl iron oxides & zircon), mafic incl, see gtz growths. Sang&Wrnd.Mch & to V6 sil cem(w/fines), frstg.Ltl gtz st, pl gm micus sh, mica.Tr & to V6 viv cem(M/C), Fn/M mafic snds(incl iron oxides & zircon), mafic incl, see gtz grw, lim stng.
	50-55 .55-60 100-105 125-130 145-150	MGDJECIM MGDJEC	Sandstone Sandstone Sandstone Sandstone Sandstone Sandstone	Pl yellow Bnyl & ol gray Pl yellow V pl bn V pl bn V pl bn	M/C Fn M/C Fn&C Fn&C/VC	Vfn/VC Vfn/VC Vfn/Gr Vfn/Gr	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides), Tr & bn yl lim cem, Vfn/Fn-glauc(w/yl ss), yl sil sh, pyr.The ss chip are gy or pl yl w/layers of sh throughout more gy, yl result of lim stng?The larger gtz grains are coated w/many pyr coatings & inclusions. Same as 451-501 plus trace pale green micaceous shale. Sang.Mch V6 slgtly dolic cem, ol gy micus sh, mica, st, bk fos frags.Ltl pyrite(cem, Vfn-grains, incl/coatings), Vfn mafic snd (iron oxides & ziroon & unknown).Tr 6 lim cem, bn yl sil sh, lt gy sh, mafic incl, see gtz growths. Half gy chips, half yl bn yl chips. Rnd.Tr 6 sil cem, 6 bn yl lim cem, see gtz grw, mafic incl, Fn/M mafic sands, pl gy micus sh, cl, wh sil sh, mica. Mch fratg.Ltl qtz silt. Srnd&Wrnd.Mch 6 to V6 silcs cem(w/fines&sh), pl gn micus sh, frosting.Ltl mica, gtz silt.Tr 6 to V6 viv cem(M/C).Tr lim strong. Fn/M-mafic snds(incl iron oxides & zircon), mafic & rutile incl, see gtz grw, pyr. Srnd&Wrnd.Mch 6 to V6 sil cem(w/fines&sh), fratg, pl gn micus th stng. Fn/M-mafic snds(incl iron oxides & zircon), mafic incl, see gtz grw, pyr. Srnd&Wrnd.Mch 6 to V6 sil cem(w/fines&sh), fratg, pl gn micus sh, mica, gtz st, Wrnd gtz gyl(Gr/SP).Tr 6 to V6 viv cem(M/C) micus sh, mica, gtz st, wrnd gtz gyl(Gr/SP).Tr 6 to V6 viv cem(M/C) micus sh, mica, gtz st, wrnd gtz gyl(Gr/SP).Tr 6 to V6 viv cem(M/C) micus sh, mica, gtz st, wrnd gtz gyl(Gr/SP).Tr 6 to V6 viv cem(M/C) micus sh, mica, gtz st, wrnd gtz gyl(Gr/SP).Tr 6 to V6 viv cem(M/C) micus sh, mica, gtz st, wrnd gtz gyl(Gr/SP).Tr 6 to V6 viv cem(M/C) micus sh, mica, gtz st, wrnd gtz gyl(Gr/SP).Tr 6 to V6 viv cem(M/C) micus sh, mica, gtz st, wrnd gtz gyl(Gr/SP).Tr 6 to V6 viv cem(M/C) micus sh, micus sh, mica, gtz st, wrnd gtz gyl(Gr/SP).Tr 6 to V6 viv cem(M/C), pl gn micus sh, micus
	50-55 .55-60 100-105 125-130 145-150 150-155	MGDI SIM	Sandstone Sandstone Sandstone Sandstone Sandstone Sandstone Sandstone Sandstone	Pl yellow Pl yellow Pl yellow V pl bn V pl bn V pl bn	M/C Fn M/C Fn&C Fn&C/VC Fn&C/VC	Vfn/VC Vfn/VC Vfn/Gr Vfn/Gr Vfn/Gr	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides), Tr & bn yl lim cem, Vfn/Fn-glauc(w/yl ss), yl sil sh, pyr.The ss chip are qy or pl yl w/layers of sh throughout, more gy, yl result of lim stng?The larger qtz grains are coated w/many pyr coatings & inclusions. Same as 45'-50' plus trace pale green micaceous shale. Sang.Mch VG slgtly dolic cem, ol gy micus sh, mica, st, bk fos frags.Ltl pyrite(cem, Vfn-grains, incl/coatings), Vfn mafic snd. (iron oxides & ziroon & unknown).Tr & lim cem, bn yl sil sh, lt gy sh, mafic incl, sec qtz growths. Half gy chips, half yl bn yl chips. Rnd.Tr & sil cem, & bn yl lim cem, sec qtz grw, mafic incl, Fn/M mafic sands, pl gy micus sh, cl, wh sil sh, mica. Mch frstg.Ltl qtz silt. Srnd&Wrnd.Mch & to V& silcs cem(w/fines&sh), pl gn micus sh, frosting.Ltl mica, qtz silt.Tr & to V& viv cem(M/C).Tr lim silt incl, sec qtz grw, pyr. Srnd&Wrnd.Mch & to V& sil cem(w/fines&sh), frstg, pl gn micus thin stng, Fn/M-mafic snds(incl iron oxides & zircon), mafic incl, sec qtz growths. Sang&Wrnd.Mch & to V& sil cem(w/fines), frstg, tl qtz st, pl gr micus sh, mica.Tr & to V& viv cem(M/C), Fn/M mafic snds(incl iron oxides & zircon), mafic incl, sec qtz growths. Sang&Wrnd.Mch & to V& sil cem(w/fines), frstg, tl qtz st, pl gr micus sh, mica.Tr & to V& viv cem(M/C), Fn/M mafic snds(incl iron oxides & zircon), mafic incl, sec qtz grw, lim stng. Srnd.Ltl & sil cem, frstg.Tr & to V& viv cem(M/C), pl gn micus sh Fn/M mafic snds(as abv), qtz st, mafic incl, mica.
	50-55 .55-60 100-105 125-130 145-150 150-155	MGDJESIM MGDJES	Sandstone Sandstone Sandstone Sandstone Sandstone Sandstone Sandstone	Pl yellow Bnyl & ol gray Pl yellow V pl bn V pl bn V pl bn V pl bn	M/C Fn M/C Fn&C Fn&C/VC Fn&C	Vfn/VC Vfn/VC Vfn/Gr Vfn/Gr	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides), Tr & bn yl lim cem, Vfn/Fn-glauc(w/yl ss), yl sil sh, pyr.The ss chip are gy or pl yl w/layers of sh throughout, more gy, yl result of lim stng?The larger gtz grains are coated w/many pyr coatings & inclusions. Same as 45'-50' plus trace pale green micaceous shale. Sang.Mch V6 slgtly dolic cem, ol gy micus sh, mica, st, bk fos frags.Ltl pyrite(cem, Vfn-grains, incl/coatings), Vfn mafic snd. (iron oxides & zircon & unknown).Tr & lim cem, bn yl sil sh, lt gy sh, mafic incl, sec gtz growths. Half gy chips, half ylth bn yl chips. Rnd.Tr & sil cem, & bn yl lim cem, sec gtz grw, mafic incl, Fn/M mafic sands, pl gy micus sh, cl, wh sil sh, mica, Mch frstg.Ltl gtz silt. Srnd&Wrnd.Mch & to V6 silcs cem(w/fines&sh), pl gn micus sh, frosting.Ltl mica, gtz silt.Tr & to V6 viv cem(M/C). Tr lim st incl, sec gtz grw, pyr. Srnd&Wrnd.Mch & to V6 silc cem(w/fines&sh), frstg, pl gn micus llim stng, Fn/M-mafic snds(incl iron oxides & zircon), mafic & rutile incl, sec gtz grw, pyr. Srnd&Wrnd.Mch & to V6 sil cem(w/fines&sh), frstg, pl gn micus llim stng, Fn/M-mafic snds(incl iron oxides & zircon), mafic incl, sec gtz growths. Sang&Wrnd.Mch & to V6 sil cem(w/fines), frstg, Ltl gtz st, pl gm micus sh, mica.Tr & to V6 viv cem(M/C), Fn/M mafic snds(incl iron oxides & zircon), mafic incl, sec gtz grw, lim stng. Srnd.Ltl & sil cem, frstg.Tr & to V6 viv cem(M/C), pl gn micus sh Fn/M mafic snds(as abv), gtz st, mafic incl, mica. Srnd to rnd.Ltl & sil cem, frstg, Wrnd gtz gvl(&r/SP).Tr pl gn
	50-55 .55-60 100-105 125-130 145-150 150-155	MGDI SIM	Sandstone Sandstone Sandstone Sandstone Sandstone Sandstone Sandstone Sandstone	Pl yellow Pl yellow Pl yellow V pl bn V pl bn V pl bn	M/C Fn M/C Fn&C Fn&C/VC Fn&C/VC	Vfn/VC Vfn/VC Vfn/Gr Vfn/Gr Vfn/Gr	bk fos frags.Ltl Vfn/Fn mafic snds(incl zr & Fe-oxides), Tr & bn yl lim cem, Vfn/Fn-glauc(w/yl ss), yl sil sh, pyr.The ss chip are qy or pl yl w/layers of sh throughout, more gy, yl result of lim stng?The larger qtz grains are coated w/many pyr coatings & inclusions. Same as 45'-50' plus trace pale green micaceous shale. Sang.Mch VG slgtly dolic cem, ol gy micus sh, mica, st, bk fos frags.Ltl pyrite(cem, Vfn-grains, incl/coatings), Vfn mafic snd. (iron oxides & ziroon & unknown).Tr & lim cem, bn yl sil sh, lt gy sh, mafic incl, sec qtz growths. Half gy chips, half yl bn yl chips. Rnd.Tr & sil cem, & bn yl lim cem, sec qtz grw, mafic incl, Fn/M mafic sands, pl gy micus sh, cl, wh sil sh, mica. Mch frstg.Ltl qtz silt. Srnd&Wrnd.Mch & to V& silcs cem(w/fines&sh), pl gn micus sh, frosting.Ltl mica, qtz silt.Tr & to V& viv cem(M/C).Tr lim silt incl, sec qtz grw, pyr. Srnd&Wrnd.Mch & to V& sil cem(w/fines&sh), frstg, pl gn micus thin stng, Fn/M-mafic snds(incl iron oxides & zircon), mafic incl, sec qtz growths. Sang&Wrnd.Mch & to V& sil cem(w/fines), frstg, tl qtz st, pl gr micus sh, mica.Tr & to V& viv cem(M/C), Fn/M mafic snds(incl iron oxides & zircon), mafic incl, sec qtz growths. Sang&Wrnd.Mch & to V& sil cem(w/fines), frstg, tl qtz st, pl gr micus sh, mica.Tr & to V& viv cem(M/C), Fn/M mafic snds(incl iron oxides & zircon), mafic incl, sec qtz grw, lim stng. Srnd.Ltl & sil cem, frstg.Tr & to V& viv cem(M/C), pl gn micus sh Fn/M mafic snds(as abv), qtz st, mafic incl, mica.

Well name: Brunswick Fire Station Well

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Depths	Graphic Section	Rock Type	Color	Gra	in Size	Miscellaneous Characteristics
175-180		I	V pl bn	Fn/M&C	J	Srnd&Wrnd.Tr G sil cem, mafic incl,rd bn hem mica sh,lim stn
180-185	M:MAX	Sandstone	V pl bn	Fn/M	Vfn/Gr	qtz st,mafic incl,mica.Ltl pl gn micus sh.Mch frosting. Sang to srnd.Ltl G sil cem,qtz st.Mch frstg,mica.Tr lim cem
	<u>-</u>					stng.pl gn micus sh.rd bn hem.micus sh.mafic incl.Fn/M-maf.sands(as above).
190-195	· · · · · · · · · · · · · · · · · · ·	Sandstone	V pl bn	M/C	Vfn/Gr	Sang to rnd.Ltl G sil cem,qtz st,mica.Moh frstg.Tr G lim cel pl qn micus sh,rd bn hem micus sh,Fn/M mafic snds(as abv),
195-200		Sandstone	V pl bn	Fn/M	Vfn/Gr	incl,wh sil shale. Sang to srnd.Ltl G to F sil cem.Moh qtz st.frstg.pl gn micus Few Wrnd qtz grans.Tr rd bn hem micus sh.Fn/M mafic snds(a.
210-215	#More Michigan	Ss & Sh	Lt ved by -ss Dk red by-shalt	Fn/M	Vfn/Gr	above), mafic incl, lim staining, mica. Same as 205!-210! but pl gn micus shale makes up half shale
215-220	:::::::::::::::::::::::::::::::::::::	Sandstone	V pl bn	M/C	Vfn/Gr	Srnd to rnd.Mch 6 sil cem, frstg.Ltl gtz st.pl gn micus sh. Tr
225-230	WW0.21=0	Sandstone	V pl bn	Fn/M&VC	Vfn/Gr	sil sh,rd bn hem micus sh,Fn-zr,mafic incl,mica. Same as 220'-225' but little pl gn micus shale.
230-235		Sandstone	V pl bn	Fn/M	Vfn/Gr	Same as 2251-2301 but tr pl on micus sh.qtz gvl(Gr/SP).
240-245	WM##¥W	Sandstone	V pl bn	Fn/M	Vfn/Gr	Srnd to rnd. Mch G slgtly dolic cem, frstg.Ltl pl gn micus sh, qtz st, mica. Tr rd bn hem micus sh, mafic incl, wh sil sh, gy s
245-250	. o : \\ . o : \\ . \\ . \\ . \\ . \\ .	Sandstone	Pl pk yl	M/C	Vfn/Gr	sh matrix,pyr,Fn/M—zr. Srnd to Wrnd.Moh G pl pk or sil cem.frstq.Few pk feld grains Wrnd qtz grans.Tr pyr cem,mica,pl gn micus sh,mafic incl,wh
255-260	<u>`</u> ≣%%.0.∧.o.	Sandstone	Pl pk yl	С	Vfn/Gr	sil sh,Fn/M-ziroon,qtz silt. Wrnd.Moh G sil cem,Wrnd qtz gvl(Gr/SP),frstg.Few pk fled gra
						Ltl pl gn micus sh.Tr pyr,Fn/M mafic sands(zircon & iron ox mafic inol,bn yl micus shale.
260-265	80% 8 % AG	Sandstone	Pl pk yl	c/vc	Vfn/Gr	Same as 255'-260' but tr pl gn micaceous shale.
280-285	**************************************	Sandstone	Pi pk yl	c/vc	Vfn/Gr	Wrnd.Tr G yl to pk sil cem,pk feld grns,pyr,Fn-pyr xtls,wh s sh,rd bn hem micus sh,Fn/C mafic snds(as abv), mafic incl,
285-290	60.00	Sandstone	V pl bn	c/vc	Vfn/Gr	'desert rose' petals. Mch Wrnd qtz gvl(Gr/MP), frosting. Same as 280:-285! plus tr 'desert rose' w/pyr xtls between 'petals' (barite?).
290295	20 O 60 6	Sandstone	V pl bn	c/vc	Vfn/Gr	Wrnd.Tr G yl sil cem,pk fåld grains,pyr cem,pyr,wh sil sh/ma mafic incl,Fn/C mafic sands(as abv),pl gn micus sh, desert
	; }			<u>-</u>		rose'(barite?).Mch frosting,Wrnd qtz gvl(Gr/MP).
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State of Wisconsin Department of Natural Resources Private Water Supply Box 7921 Madison, Wisconsin 53707

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NOTE:

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4. Distance	e in feet from	n well to nea	arest: B		NITARY SEW C. I. TIL		DRAIN		UNDATIO			WASTE-V	VATER DRAI
(Rec	ord answer in	appropriate b	lock)	-									
CLEAR WAT	TER DRAIN	SEPTIC TAN	K PRIVY S	EEPAGE PIT	ABSORPTI	ON FIELD	BARN	SILO	ABAN	DONED '	WELL	NK HOLE	
OTHER POL	LUTION SOU			ch as divolp, o	quarry, drainag	ge well, stream	ım, pond	i, lake, etc	:.)	· · · · · · · · · · · · · · · · · · ·			
5. Well is in	ntended to s		for:	t .					•	•			· · ·
6. DRILLI	IOI É		do	ne '		la FOI	RMATI	ONE					
Dia. (in.)	From (ft.)	To (ft.)``	Dia. (in.)	From (ft.)	To (ft.)	3. 10	LIMA II	Kind	1	•	,	From (ft.) To (ft.)
. 5	Surface	72				12	a feet	il.	•		•	Surface	
/				.	In alat.	1		D		,			9
7. CASING			1		demain of	en	9	d or	<u> </u>	0		0	170
Dia, (in.)	, K	ind and Weigh سند	it 🕜	From (ft.)	To (ft.)	1	der A	<u> </u>	gran	uel.	3 4	assessment parts	100
_ 5	Stee	<u>L</u> 20	20	Surface	69	5			· · · · · · · · · · · · · · · · · · ·	- Market	Parish rate branch		ļ
	new b	lack.	15 #pe	wft	-	W. 1	Dy	<u> </u>	- Children and the Children	Agg Establish backeter			
• •	2"X	3'20	seen.	69	02		09	The state of the s				Hom	1
.	ASTI	M AS	53	~			AND THE PERSON NAMED IN	. ,	4 - 5 L	· ·	16	v	
`	Guins	etown	Steel	7	· ·			1	1		7	•	
B. GROUT	<i></i>			· · · · · ·		10. TY	E OF I	DRILLIN	IG MACI	HINE U	SED	************	
	Kinç			From (ft.)	To (ft.)	Cable				rect Rota	·		rse Rotary
	no	ne _		Surface			ry – air Illing mu	ıd		tary — ha Irilling mu		∐ Jettin	ig with r □Water
				.		Well con	structio	on compl	eted on	0	ct	25	19 75
l1. MIŞCEL Yield test:	LANEOUS	DATA	Hrs. at	· · /	O GPM	Well is to	erminate	eđ .	18	inches		above below	final grade
Depth from s	urface to no	rmal water l	evel		/ ft.	'Well disi	nfected	upon co	mpletion	ı '		¥ Ye	s . 🔲 No
Depth to wat	er level whe	n pumping		5	5 ft.	Well seal	ed wate	rtight up	on comp	letion		∠ Ye	s 🔲 No
Vater sample	sent to	oaw 1	Plais	٠		,		labo	ratory o	n!	Oct	27	19 75
our opinion pe of casing given on re	concerning of joints, meth	other polluti	ion hazards, ing the well	information , amount of	cement used	difficultie I in groutir	s encou ng, blast	intered, a ting, sub-	nd data surface p	relating oumproo	to nearb	y wells, sc ess pits, etc	reens, seals, c., should
IGNATURE		. <u></u>			•	COMPLET	E MAIL	ADDRES	SS	_ ::	<u> </u>	 	-
enne	th B	. Ole	AND Regis			3909	Las	La	ree-	Paul	Ol	ue e	wie)
A791	י. ጥ πተፅ ପ ପ ጥፅ		1-076	Please	do not writ	ARAURS		ONFIRM	ED	l R F	MARKS	54	701

State of Wisconsin Department of Natural Resources Box 450 Madison, Wisconsin 53701

NOTE:

WELL CONSTRUCTOR'S REPORT Form 3300-15 Rev. 10-75

Department of Natural Resources Box 450	White Copy — Green Copy —	- Division's Copy Form 3300-1 - Driller's Copy Rev. 10-75	.5
Madison, Wisconsin 53701	Yellow Copy -	- Owner's Copy is the same	F
	HECK (Å) ONE: ''. ☑ Town ☐ Villeg	ge City Dunacul	(6)
. 1/4 Section Section To		B. NAME OWNER CAGENT AT TIME	OF DRILLING CHECK () ONE
OR - Grid or Street No. Street Name	26n 10%	ADDRESS,	
OR - Gild of Street No. As deet Maine		6.4	, Bà -
AND - If available subdivision name, lot & blo	ck No.		758
4. Distance in root in wom	/ Bldg, Orain Sanitary Bl	Connected to:	Bidg, Dräin Storm Bidg, Sewen
to nearest: (Record answer in appropriate	Other C.I.	Other C.I. Sewer Other Sewer C.I.	Other C.I. Other
Street Sewer Other Sewers Foundation Drain			
San. Storm C.I. Other Sewer St	imp ^ C.I.	Seepage He	d 70
Dr	ump	rn Animal Animal Silo Glass Lined Siter Barn Yard With Pit Storage W	
Waste Pit Well - Non	conforming Existing Gut	Pen Facility Pi	
Pump Tank			w ,
Manure Liquid Manure Storage Gaso	urface Waste Pond or Land line or Disposal Unit ank (Specify Type)	d Other (Give Description)	
Stack Tank Structure On I			
5. Well is intended to supply water for:	9.	FORMATIONS	172 (CL) 1 TT (CL)
6. DRILLHOLE	e e	Kind	From (ft.) To (ft.)
Dia, (in.) From (ft.) To (ft.) Dia, (in.) From	n (ft.) To (ft.)	Jopsall	Surface
5 Surface 33		Sand & gravel	/ 33
T. CASING TIMEP CURRING AND SCREEN 2//	Y" Tohou Crolle		T-
7. CASING, LINER, CURBING AND SCREEN 3 // Material, Weight, Specification Dia. (in.) & Method of Assembly From	1 (ft.) To (ft.)		<u> </u>
		, D	
5 Steel J&C Sur	face 30	769	27/104
Reublack 15 per \$		1 33	Mon
		11 11/2 3	7
.258 wall Astm A5	3 / /	- V	
Surietono metal Ind	1xtD		
• • • • • • • • • • • • • • • • • • • •	74 B3 10). TYPE OF DRILLING MACHINE USED Rotary-hammer	
8: GROUT OR OTHER SEALING MATERIAL		Rotary-hammer w/drilling mudr& air	Jetting with
Kind From	(ft) To (ft.)	Rotary-air Rotary-hammer w/drilling mud	Air
none Surf	ace	Rotary-w/drilling Reverse Rotary	Water
÷-	We	ell construction completed on Queg.	3 1976
11. MISCELLANEOUS DATA			above final grade
Yield Test: 2 Hrs. at		ell is ferminated inches	below
Depth from surface to normal water level	13 Ft. Wel	Il disinfected upon completion	Yes □ No 15028
Depth of water level	zed 🗷 Yes 🗌 No Wel	Il sealed watertight upon completion	Yes No
793 Water sample sent to <u>Caw Cl</u>	ackl_	laboratory onQu	9 19 <u>76</u>
Your opinion concerning other pollution hazards, info finishing the well, amount of cement used in grouting;	Diasting, etc., and on old		is, screens, seals, method of
Signature	SEE O HELL ON GR	mplete Mail Address	·
V . A R MI	sinternal Wall Deillar	909 Lack Por Bare	Placins Miland

WELL CONSTRUCTOR'S REPORT FORM 3300—15

72795 COLIFORM TEST RESULT

JUL 2 2 1975

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
BOX 450

FORM 3300)-15 · · ·	IN S NO	SPURI		WHITE	NOTE	V400 2111C	DEPAR		NATURAI ox 450	L RESOURCE
					GREEN	COPY - DIVISIO COPY - DRILLI COPY - OWNE	ER'S COPY	٠	Madison, W	/isconsin E	53701
1. COUNTY		20.	-	C	CHECK ONE	Village V	City	NAME	,		· · · · · · · · · · · · · · · · · · ·
2. LOCATI	ON - 145	Section. S	APRIL .	wnship	Range		ATTIMEOF	DRILLING	MADU L	<u> </u>	
OR - Grid o	r street no.	St	reet name	6n	10 %	ADDRES	L Z	alle-	estimal.		
	***					5/03	5 Des	fere.	Rd.		
AND —If ava	ailable subdivi	ision name, lo	t & block no.			POST OF	FICE	- "א <i>וקיית</i> בע	به به زندید	54	ファノ・
4. Distance	in feet fron	n well to ne	arest: B		NITARY SEWI	C. I. TILE		DUNDATION I	RAIN DEPENDEN	WASTE C. I.	WATER DRA
	ord answer in			5		·	this) date	٠		
CLEAR WAT	TILE	SEPTIC TAN	K PRIVY S	EEPAGE PIT	ABSORPTIO	NEELD BA	RN SILO	ABANDON	ED WEEL S	SINK HOL	E .
			Flot			9	9 126		Water		
OTHER POL	LUTION SOU	JRCES (Give o	description su	ch as dump, o	quarry, drainag	e well, stream, po	ond, lake, etc	.)			
5. Well is in	tended to su	upply water	for:					and the second second		** ************************************	*
6. DRILLH	OLE	·	-100	mes_		9. FORMA	TIONS	<u> </u>			
Dia. (in.)	From (ft.)	To (ft.)	Dia, (in.)	From (ft.)	To (ft.)		Kind	<u> </u>		From (f	ft.) To (ft.
_5	Surface	39				Tops	fil			Surfac	e /
		ţ		, .		LI	1	. •	a.		17
7. CASING	•	•	i				100	. 1	**************************************	117	29
Dia: (in.)		ind and Weigh مند ام		From (ft.)	To (ft.)	Jana	C & 92	and.	·		
<u> </u>	Stee	L To	E.C	Surface	36	-		,	•	· ,	
	newb	lack.	15 4	w fl		1.5	•				
	2"8	3/20	seem	36	39	763		6,29	J gr/d	m	
	936 0	m 10 as	of Onto	ממומה מלח	een 1	753	,		16.1		
				DV GET AV			•		,		
8. GROUT	OR OTHER	SEALING N	/ATERIAL	<u></u>		10, TYPE O	F DRILLIN	IG MACHIN	E USED		
. 	Kind	<u> </u>		From (ft.)	To (ft.)	Cable Too	oi .	☐ Direct	Rotary.	☐ Re\	verse Rotary
	Ron	eer ':		Surface		Rotary — - w/drilling	air mud •		— hammer g mud & air		ting with Air Water
	. /	•		. 1	1	Well construc	ction compl	eted on	Jely	17	19 \$3
11. MISCELI Yield test:	LANEOUS [DATA ご	Hrs. at		J. GPM	Well is termin	nated	12 inth	es 🖺	above below	final grade
Depth from s	urface to no	rmal water l	evel	10	g ft,	Well disinfect	ted upon co	mpletion	H-19-1	[Z] \	Yes N
Dépth to wate	er level wher	n pumping		12	ft,	Well sealed w	atertight up	on completí	on .	X	es 🗌 N
Nåter sample	sent to	an C	Pairo	•	•		labo	oratory on:	July	21	19 75
our opinion	concerning o	other poliuti	on hazards,	, amount of	cement used	difficulties end in grouting, b	lasting, sub-	surface pump	ing to hear prooms, acc	by wells, eess pits, e	screens, seals etc., should
IGNATURE				act	OTHERS	MOMPLETE MA	AIL ADDRES	SS			
timet	L. B.	Ober	ريب Regi	stered Well	Driller	39092	ask	ave-	Can !	Place	er Celi

Please do not write in space below HRS. | GAS - 48 HRS. |

|GAS - 24 HRS.

CONFIRMED

REMARKS

·4 ()

State of Wisconsin tement of Natural Resources

Signature

NOTE:

WELL CONSTRUCTOR'S REPORT Form 3300—15

Box 450 Box 450 Wigdison, Wisconsin 53701	Gre	ite Copy en Copy Iow Copy	 Division's C Driller's Co Owner's Co 	рy	Form Rev. 1	330015 075		
14 Section V Section	CHECK (√) ON	Vojen	lläge w	City	Name)	nau	in h)	
1/2 Section / Section 2 100 C WION SWY SWY		nge 10 %	3. NAME S	OWNER.	□AGENT A	تر بر	F DRILLING	CHECK (V) ON
Grid or Street No.7 Street Na		M12. (5)	ADDRESS A.25		lial of	400	Ω .	
AND Visavailable subdivision name, l	ot & block No.		POST OFFI	CE () () : .		/, i,).	- 54	201
4. Distance nineer from well Building	Sanitary Bidg. Drain		Bldg, Sewer	Floor Connec			ldg. Drain	Storm Bldg. Se
to near the second answer the plock) to be a second block).	C.I. Other	C.1.			Other Sewer	C.I.	Other	C.I: Other
San. Stories Call Sother Sewer		Sewage Su C.I. Ot	mp Clearwate her Sump	er Septic Tank	ļ	page Pit		<u> </u>
Clearwate Dr.	r _ ClearWater Sump	_ .			See	page Bed page Tren	ich .	
Privy Pet Waste Pit Pump Privo	Subsurface Pumpro Nonconforming Ex		Barn Animal A utter Barn Pen	nimal Silo Yard Wit	Glass Li Storage Facility	ned SIIo W/o Pit	Earthen Sila Storage Tre Pit	age hch Or
Temporary Manure Liquid Manure Storage Structure	e Subsurface Waste Gasoline or Dispos Oil Tank (Speci	Pond or La al Unit ify Type)	nd Other (Give	e Descriptio	in)			
		-	9. FORMATIO	NIC			 	
5. Well is intended to supply water for:	uses & Sh	ap.	J. PORMATIO	Kind			From (ft.)	To (ft.)
6. DRILLHOLE Dia. (in.) From (ft.) To (ft.) Dia. (in.)	From (ft.) To	(ft.)	Laps	wil			Surface	··/
- C/			San	A				6
Surface 86			- Land	n w	Company of the second			81
7: CASING, LINER, CURBING AND SCREEN Material, Weight, Specification	il		_ Dand	· Co Chi	and the		<u> </u>	06
Dia. (in.) & Method of Assembly	From (ft.) To	(ft.)						
: 5. Steel Ix C	Surface	13	- Andrews -					ļ
newblack 15 per	J.C.		856		8 kg		13/14	1 bi
258 wall AS+M	733		75		130		5	<u> </u>
Sumitary motel	Rid LAB	.		b	<i>d</i>	P	· · · · · · · · · · · · · · · · · · ·	
My 3' Thinkey.	83 86		10. TYPE OF D	RILLING N	ACHINE US	ED ammer	1 .	
8. GROUT OR OTHER SEALING MADERIZ	Ľ,		Cable T	-	Rotary-t W/drillin mud & a		☐ Jef	tting with
Kind	From (ft.) To	(ft.)	Rotary-		Rotary-l	ammer] Air] Water
none	Surface	<u> </u>	☐ Rotary-	w/drilling	Reverse	Rotary		
		\	Well construction	completed	on Q	beil	<u> </u>	_19 <i>22</i>
11. MISCELLANEOUS DATA	Hrs. at	_ GPM V	Vell is ferminated	<u> </u>	inches		ove final g	rade
Yield Test: Yield Test:			/ell disinfected up	on comple		Ø Y€		
Depth from surface to normal water lev				,				
when pumping 6/ Ft.	Stabilized X Yes	□ No W	ell sealed waterti	ght upon co	mpletion	<u>1≥2</u> Ye	× L No	
79 4Water sample sent to Care	luise	1 4000	145	laboratory		for walls	screens seals	19 method of
Your opinion concerning other pollution hazar finishing the well, amount of cement used in g	os, information concerr routing, blasting, etc., sl	ung auticu wuld be giv	mes encountered ven on reverse sid	e. G.	remit to nea	TOJ WOLLS	Percedul oversi	

omplete Mail Address

State of Wisconsin
Department of Natural Resources
Private Water Supply
Box 7921
Madison, Wisconsin 53707

NOTE:

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WELL CONSTRUCTOR'S REPORT Form 3300-15 Rev. 2-79

. 1	Madison,	Wiscon	nsin 53	3707					Yell	ow Co	ру —	Owne	er's C	opy				DEC	3	1934		
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			au C					own			Villag			City			-1312	LOD-	· 181	RUNI	(W) cx	<u> </u>
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OR	- G	rid or i	Street 1	Vo.	Street or			•				ADDI		} ∍ 4							Ĵ	
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4. Dis	tance in f	eet fro	om well	В	uilding	Sanlt	ary Bl	dg. Dr	ain	Sani	tary Blo					Drain ted To:			ldg, D	ıln	Storm	Bldg.Se
to r	nearest: wer in ap	(Re	cord ate		7	c,		, Oti	her	c.	Ι.	Othe	er	C.I.S	ewer	Other Se	wer	C,I,	S th	er	C.I.	Other
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San.	Storm	c.i.	Othe		Sewer		Sewa	je .		c.i.	Other	7	Sump	ר י	ank	Tank	Seepa	ge Pit	A			n or Ic Tank
	-	1			Clearwat Dr.	er	Clear	water							45		S.eepa	ge Bed ge Tr <u>e</u>	nch 정			
Privy	Pet Waste		Voncon	form	ing Existi		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	ace Pu			Barı Gutt	er Ba	rn	Anima Yard	i Sile Wit	h Pit Sto Fac	ss Line rage	d Sillo W o Pit	Earti	hen Sila age Tre	ige Eat	rthen nure Bas
	,Pit	Well Pump	<u>, </u>			□ "	Uncon	formir	ig EX	ISTILIA	'	Pe	n j	•		Fac	шту		Or Pi	IT		
Tembo	rary Man	Tank	Waterti	aht L	lauld M	lanure	Sub	surface	w	aste Po	nd or L	 _and	Man	ure Sto	orage I	<u> </u>	. 01	the (D	escribe)			
Stäck o	or Platfor	m i	Manure Basin	Tank	cor P	ressure Ipe	Gas	oline o Fank	r D	sposal	Unit y Type)		Con	crete F	loor C	only			•			
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5. Well	l·is intend	led to	supply	watei	for:	· FT	mar	ì			9.	FOR	MAT.	IONS	Kind				From	(ft)	1. 7	o (ft.)
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11. 1	MISCEL	LAN	EOUS.	DAT	Ά				150			,	1)		,		XXX ₃	bove	final g	rrade	
• •	Yield Tes	t:	7		<u> </u>	Hrs	<u> t _1</u>	5		2.GPM	1 · Wel	l is terr	niñat	ed'	1	6incl	hes	□ t	elow	·		
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	Water san		044	r poil	ution haz	orde in	d Te	fion to	oncer	ning di	fficultie	enco	unter	ed. and	orator data		o nearb			s, seals,		
finishin	g the well	l, arnot	unt of c	emen	t used in	grouti	ıg, bla	sting, e	tc., s	hould l	ne Brion	. 011 101									·	
Signature	e D	1 "	*	1			,				. Busi	•			-	Mailing A			r *r			
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OCT. 19 1971

WELL CONSTRUCTOR'S REPORT FORM 3300-15

NOTE
WHITE COPY - DIVISION'S COPY
GREEN COPY - DRILLER'S COPY
VELLOW COPY - OWNER'S COPY

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCE
Box 450 Madison, Wisconsin 53701

•					· YELLOV	COPY - OW	NER'S COPY				
1. COUNTY	1 10	1		Ž.	CHECK ONE	J Village	City	NAME .	week	l)	
2. LOCATI	ON - 14 S	ection S	Section To	wnship	Range	3. OWNE	R AT TIME O	F DRILLING			· ·
25 Th 1	4 1	11-14	8 0	6/1	10 JF 2000	ADDRI	<u>rainos</u>	r pens	all the same		
or NW	retreet no.	St	reet name			600	1/2 3	rd St.	AND THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED I		
AND -If av	ailable subdivi	sion name, lo	t & block no.			BOST O	FFICE	40) 118 M	ے رہے	5470	/
4. Distance	in feet fron	n well to ne	arest:	BUILDING	ANITARY SEW.		LE SEWER C	OUNDATION DR ONNECTED INDI	ebendeni Ain	WASTE W. C. I.	ATER DRAI
	ord answer in			8		<u> </u>	1/2	this do	te.	TOUR TOOL W	<u>l. </u>
OLEAR WAT	TILE	SEPTIC TAN	K PRIVY	SEEPAGE PI	T ABSORPTION	N FIELD)	SE	D ABANDONEI	WELL	INK HOLE	Œ.
					g else			<u> </u>			
OTHER POL	LUTION SOU	IRCES (Give	description su	uch as dump,	quarry, drainag	e well, stream,	pond, lake, et	c.)			2
5. Well is in	ntended to s										·
			0/1/2	me	· · · · · · · · · · · · · · · · · · ·	I Q FORM	/ATIONS				
6. DRILLI Dia. (in.)	From (ft.)	To (ft.)	Dia: (in.)	From (ft.)	To (ft.)	9, 10111	Kir	rd <u>. </u>		From (ft.)	To (ft.)
4/	Surface	76	.,			1	1000	<i>f</i>	•	Surface	1
·	<u> </u>				.	10	7	,		1	4
7. CASING	LINER CI	IRRING A	ND SCREE	N·		. sa	nd_		<u> </u>	. /! .	
Dia. (in.)		ind and Weigl		From (ft.)	To (ft.)	San	ed V	graves		4	16
· if.	14.	1, 19	xe.	Surface	13			<i>O</i> .			
			11#1	01.			C			7)1.0	
	ew to	ack /	per	773	01	40	13/		47	10-1	. 6
	2 X	3 1	creen	13	16		5 7 L	1/2	14.		
	936	no 10	sot f	hnon	poreen	1	57	3 . 1			ļ
•	•		*			ľ	111		<u> </u>		
8, GROUT	OR OTHER	SEALING	MATERIA			10. TYPE	OF DRILLI	NG MACHINE	USED		佳
· · ·	. ·Kin	d <u>; · </u>		From (ft.)	To (ft:)	Cable 7	Fool	Direct Ro			se Rotary
· `;	non	ر ما		Surface		Rotary w/drifii	– air ' ing mud	Rotary - with drilling	hammer mud & air	Jetting	g with · □Wqto
<i>:</i> ,		•				Well const	ruction comp	pleted on \mathcal{Q}	chs		19 7/
11. MISCEI	LANEOUS	DATA	3 u	<u> </u>	10 GPM.	Well is terr	ninated	// inches		above below	final grace
Yield test:		٠ .				Well disinf	ected upon c	ompletion		⊠ Yes	s. 🔲 N
Depth from	surface to n	ormal water	level .		13 ft.					521 Va	
Depth to wa	ter level whe	n pumping			55 ft.	Well sealed	watertight t	pon completion	·	Yes	
Wäter sampl	e sent to	Baw	Mark	مغ	•			oratory on:	2ch	11	19 7
Your opinior	concerning		tion hazard hing the we	s, informati II, amount o	on concerning of cement use	difficulties din grouting	encountered, , blasting, su	and data relation b-surface pumpr	g to near ooms, acc	by wells, sci less pits, etc	reens, seat. ;,, should
oe given on r SIGNATURE	everse side.	· · · · · · · · · · · · · · · · · · ·			•	COMPLETE	MAIL ADDRI	ESS	:		
V.	100	A) A			i paris	3919	La. h.	Cino 1	9	Plaine	Wis
Jenner	NB.	Obso	Re Re	gistered Wel	Il Driller se do not writ	te in space be	iow	inver (•	5	4701
COLIFORM T	EST RESULT		GA	S – 24 HRS.	GAS	- 48 HRS.	CONFIR	MED,	REMARKS		

GAS – 24 HRS.

WELL	CONSTRU	UCTOR'S R	EPORT		•		AUG 201	971 DEPART	STATE OF	WISCONSII	N ESOURCES
Wel-6		,		WHI GRE YEL	TE COPY - EN COPY - LOW COPY	DIVĪSION'S C DRILLER'S - OWNER'S C	COPY COPY COPY	•	Box Madison, Wi	450. sconsin 537	70,1
I. COUN	w Cla	5 . L			K ONE	:	NAME ity	*	D's		
2. LOCAT	TON (Number	and Street or 1	section, se	oction, townshi			division name, l	ot and block m	mbers when	vailable.)	
, 8. OWNE	R AT TIME O	F DRILLING	<u> </u>	ic d	Lever	ahyd)	3677	Kange	10 24	_/_	·
4. OWNE	RECOMPLET	Dozellere E MAIL ADDI) æss	·			S Bridge				
Ro	ck Fa	elli 1	dia)	RI			: 1Q4	A page and		<u> </u>	
	answer in app	rom well to	nearest	BUILDING S		WER FLOOR LE C. I.		CONNECTED I		T C. I.	VATER DRAI
O. I.	THE	SEPTIC TANI	2	seepage p	gele	C INC	att	le da	Tel WELL	SINK HOLE	
OTHER PO	OLLUTION SO		description	such as dugy	5, quarry, dr	inage well, st	tream, pond; lake	a, etc.)	/		
6. Well i	s Intended	to supply v		Llon	Z.C.,	· .			/		
7. DRILLH	OLE From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	1 7. (1)	10. FOR	MATIONS Kind				1 - :-
Dia. (in.)	Surface	10 (11.)	Dia. (in.)	From (rr.)	To (ft.)	1. 1	Kind	a		From (ft.) Surface	To (ft.)
<u> </u>		/3				Jag	E Dack	d		,	
8. CASIN	.l	URBING, AN	D SCREE	<u> </u> N	<u> </u>	- Id	nd de				6
Ďia. (in.)	, k	and Weight	•	From (ft:)	. To (ft,)	San	ed & G	rivel		6_	23
4	Steel	l IV	<u> </u>	Surface	70		, , , , , , , , , , , , , , , , , , ,	••	·		· · · · · · · · · · · · · · · · · · ·
"报告	new b	lack 1	1 the	M							
	2"X 3	3' scre	ent	70	73						.,,
******	9367	#10 slo	1. Tol	motor a	ineen	LS	&	······································	110	M	i
· <u>· *· \</u>						4.1	1 9'	3	73:11		
9. GROUT	OR OTHER	SEALING A	AATERIAL	From (ft.)	To (ft.)	71	5	2 1			
	non	e	,	Surface			,	P		·	
						Well con	struction com	npleted on	aug	10	19 71
Yield test:	LLANEOUS	DATA <u>ئ</u>	ਤੋਂ Hrs. a	t /	Z GPM	Well is to	erminated	18.1		above below fir	nal grade
Depth from	surface to	normal wat	er level	.5	2 ft.	Well disi	nfected upon	n completion		X Yes	☐ No
Depth to w	ater level w	vhen pumpir	ng	· 5	4. ft.	Well seal	led watertigh	t upon com	pletion	X Yes	□ No
Water sam	ple sent to	Can	, cl	ure			lak	oratory on:	aug	11.	197/
wells, scree	ens, seals, i	ng other po type of cas ccess pits, e	ing joint	s, method	of finishi	ng the we	difficulties all, amount o	encountered of cement us	, and data sed in gro	relating t	ting, sub-
SIGNATURE	· · · · · · · · · · · · · · · · · · ·					COMPLETE	MAIL ADDRES	SS .		•	· · · · · · · · · · · · · · · · · · ·
Sennes	LB.	Olser	Reg رح	istered We	il Driller	3909	Lark	aus-	Law Cl	aire le	Jeal.
<u> 2796</u>	ייי יויסמיוי	<u> </u>	1 740	Please		ite in spac	ce below	2)./IPY)	DENTADIFO	54	701

Well Construction Report For WISCONSIN UNIQUE WELL NUMBER		GE712	State of Wisconsin Private Water Supply - WS/2 Department of Natural Resources	JAN 2 1 1994
Property	elephone	-) 831-1140	Box 7921 Madison, WI 53707 (Please type or using a black)	rprint pen.)
Mailing Address 2929 Blakely Auc			1. Well Location Please use decima	
City		Code	X Town □ City □ Villag Of Brunswick	e Fire # (If avail.)
County of Well Location Co. Well Permit	Well Completi	Y 70/ on Date (mm-dd-yy)	Grid or Street Address or Road Na	
Fau Claire No. W 8982	12-	15-93		ot# Block#
Well Constructor (Business Name) KEN 0150N Well Oxilling	نا سرزدرا	Mark well location with a dot in correct 0-acre parcel of	CSM VOI 1 Pg 232	2
Addréss	s	ection. N	Gov't Lot # or SE	
	Zip Code	W B	Section 8 , T 26 N; R 3. Well Type New	_ /º ∐ E ⊠ W
Eau Claire Wi S	54703.		Replacement Reconstru	ction
·	· · · · · · · · · · · · · · · · · · ·	S	of previous unique well # Reason for new, replaced or recons	_ constructed in 19
4. Well serves # of homes and or	Well		new home:	
(Ex: barn, restaurant, church, school, industry, etc.) 5. Well located on highest point of property, consistent w			Drilled Driven Point Jett gs? Yes No If no, explain on	ed Other
Well located in floodplain? Yes X No	9. Downspou	ayout and surrounding	17. Wastewater Su 18. Paved Animal	mp
Distance in Feet From Well To Nearest: 1. Landfill	10. Privy11. Foundation	n Drain to Clearwater		
		n Drain to Sewer	20. Silo - Type 21. Barn Gutter	
3. Septic or Holding Tank (circle one) 4. Sewage Absorption Unit		on or Plastic 🔲 Othe	er 22. Manure Pipe [Gravity Pressure
5. Nonconforming Pit 6. Buried Home Heating Oil Tank		ewer [Gravity [on or Plastic [Othe		Plastic Other
7. Buried Petroleum Tank	15. Collector of	r Street Sewer	Other NR 112 V	Waste Source
	16. Clearwater	· -	24. nothing a	
6. Drillhole Dimensions From To Method of constructing up enlarged drillhole only.	per .	DNP 9. USE ONLY Typ	Geology e, Caving/Noncaving, Color, Hardness,	From To Btc. (ft.) (ft.)
Dia. (in.) (ft.) (ft.) 1. Rotary - Mud Circula	tion	I Top		Surface
6 surface 86 2. Rotary - Air				
3. Rotary - Foam 4. Reverse Rotary		San	<u>d</u>	
5. Cable-tool Bit 6. Temp. Outer Casing	in. d	1000000010000	d agravel	7 86
Removed? Ye	s No		. ,	
If no, explain		- 13	55, P/d	4
Casing Liner Screen	From To	103	5/31 4 8/6	- - - - - - - - - -
Material, Weight, Specification Dia. (in.) Manufacturer & Method of Assembly	(ft.) (ft.)	151	1 /2	
6 Steel TIC new black	surface 83		<i>1</i> ~	
19.45 # see St. 280 wall			;	
2 140 54	0	10. Static Water I	1	Above Code
ASTM AS3 Sawhell Ste	¥ 13.		above ground surface below ground surface	in. Below Grade
	77:-5:	11. Pump Test	Developed? 60 ft. below surface Disinfected?	☐ Yes ☐ No ☐ Yes ☐ No ☐ No ☐ No ☐ No ☐ No ☐ No ☐ No ☐ No
Dia. (in.) screen type, material & slot size	Brom To 83 86	Pumping Level	Capped?	Yes No
8 Grout or Other Sealing Material	# .	Pumping at 20	GPM for 2 hours	r msafe wells?
Method NA Prom Kind of Scaling Material (ft.)	To Sacks (ft.) Cemen	t Yes 1	No If no, explain	
surface		14. Signature of Poi	int Driver or Licensed Supervisory Dril	ler Date Signed
		Signature of Drill R	ig Operator (Mandatory unless same as	
			<i>:</i> : : : : : : : : : : : : : : : : : :	والأوران المراجع المرا

Make additional comments on reverse side about geology, additional screens, water quality, etc. Comments on reverse side _____ (Check v, if yes)

WELL CONSTRUCTION REPORT 351
Form 3300-77A Rev. 11-92

NOTE:

White Copy - Division's Copy Green Copy - Driller's Copy Yellow Copy - Owner's Copy

WELL CONSTRUCTOR'S REPORT Form 3300-15 Rev. 2-79

JAN 10192

1. COUNTY CHOILE	CHECK (V) ONE:	lage □ City	Narrie Allm	swicks	
14 Section or Gov't. Lot		3. NAME QWATE	R AGENT AT TI	ME OF DRILLING CHECK (4)	ONE
2. LOCATION SE SW	8 2011/010	al It	Anman		
OR - Grid or Street No. Street or Road	Name	ADDRESS	in 1. Alice	Af Af d	
1.10	21 1 1 N	POST DEBICE A	NO CAGE	ZIP CODE	
AND If available subdivision hame, lot	block No.	POST OFFICE	wife!	64701	
4 Distant in feet from well Building San	itary Bidg, Drain Sanitary	Bldg, Sewer Conr	or Drain Sto	rm Bldg, Drain Storm Bldg.	Sev
to nearest: (Record # 3 / C	.1: Other C.I.		er Other Sewer C.	I, Other C.I. Oth	her
answer in appropriate					
Street Sewer Other Sewers Foundation Dr	ain Connected to: Sewage Su Sewage C.I. Ot	mp Clearwater Sept her Sump Tan	tic Holding Sewage ik Tank Seepage	Absorption Unit Manure Hoppe Retention or Ppuematic Tar	eror nk
San. Storm C.I. Other Sewer Clearwater	Sump Clearwater	- TIA	Seepage	Bed / CF /	172
Dr.	Sump	Barn Animal Animal	Seepage Silo Glass Lined		
Waste	Subsurface Pumproom Nonconforming Existing	Barn Animal Animal Surter Barn Yard Surter Pen	With Pit Storage Facility	Silo Earthen Silage Earthen Storage Trench Manure.	Basiı
Pump					
Tank Temporary Manure Watertight Liquid Manur	e Subsurface Waste Pond	or Land Manure Stora	ge Basin Oth	er (Describe)	
Stack of Platform Manure Tank or Pressur Basin Pipe		t Concrete Floo			
<u></u>		Partial Concre		· · · · · · · · · · · · · · · · · · ·	
5. Well is intended to supply water for:	allald.	9. FORMATIONS	المالة المالة المالة المالة المالة المالة المالة المالة المالة المالة المالة المالة المالة المالة المالة المالة	From (ft.) To (ft	<i>t</i>)
100	acourter.	1 1	ind	Prom (11.)	
6. DRILLHOLE Dia. (in.) From (tt.) To (ft.) Dia. (in.) 1	From (ft.) To (ft.)	Sand	The state of the s	Surface 5	
Dia: (in.) From (it.) 10 (it.) Dit. (in.)		1		11	/
Surface 104		Sands	ravel	15 109	<i></i>
		A STATE OF THE STA			
					
7. CASING, LINER, CURBING AND SCREEN Material, Weight, Specification	- (0) \ 1 m (0) \				•
Dis: (in:) Mfg. & Method of Assembly	From (ft.) To(ft.)	804		J32 Plan	
to some realized the	Surface 100	1 BUY		27/	<u>:</u>
	1. 1. 2. 1/2		2/ 104	43"	
A53 12 YEGS 15-19	45#34	175	10	29	
MAR WAR THAT	3-10-00		h.		
ASD Wall / Y		/- /		01	
The transfer of the latter of	Minterior	Til Deriv	n 15%	Slot	
Jamson me sugar	2 Carrier Con Col	10. TYPE OF DRILLI	NG MACHINE USED		
5XII KARKRIK	100 104		Rotary-ham	mer	
8. GROUP OTHER SEALING MATERIAL		Cable Tool	mud'& air	11	
Kind 1	From (ft.) To (ft.)	· Rotary-air w/drilling mud	Rotary-ham	mer Water	
		Rotary-w/drill mud	ing Reverse Ro		
1	Surface	i iii iii ii	<i></i>		<i>y</i>
:		Well construction compl	leted on	ril 27 1981	
11. MISCELLANEOUS DAŢA	4			above final grade	•
<i>.</i>	s. at GPM	Well is terminated	27 inches	below .	+
:				Yes I No 900	1
Depth from surface to normal water level	.69 Ft.	Well disinfected upon con	mpletion	4 16 110	
Depth of water level	tabilized I Ves I No.	Well sealed watertight up	on completion	Yes 🗆 No	
when pumping Ft. S	tabilized Yes No	HOLE SORICE WARDLUGAE UP		2 7 . 8	7
Water sample sent to	Walks #8		ratory on	8-/19 <u>0/</u>	<u></u>
	, information concerning diffi	culties encountered, and o	data relating to nearb	y wells, screens, seals, method of	ζ.
Your opinion concerning other pollution hazards finishing the well, amount of cement used in ground the concerning other pollution hazards.	titlig, ometrig, ores, and	6 · · · ·	\$250ff		
Signature A A	1166	Business Name and Comp	plete Mailing Address	oxo Olson Drive	D \
Signature Canushalabn 17	TU	•	tav	Claire, Wis. 54701	plot
o Julian	Registered Well Driller				<u> </u>

STATE OF WISCONSIN WELL CONSTRUCTOR'S REPORT DEPARTMENT OF NATURAL RESOURCES NOTE Box 450 WHITE COPY - DIVISION'S COPY GREEN COPY - DRILLER'S COPY Madison, Wisconsin 53701 YELLOW COPY - QWNER'S COPY TEHECK ONE 1, COUNTY Township OWNER AT LOCATION -1/2 Section Section Grid or street no. Street name 122 AND -If available subdivision name, lot & block no. POST OFFICE 70 4. Distance in feet from well to nearest: BUILDING SANITARY SEWER TER DRAIN SEWER CONNECTED INDEPENDENT TILE TILE C. I. C, I. TILE (Record answer in appropriate block) CLEAR WATER DRAIN | SEPTIC TANK | PRIVY | SEEPAGE PIT ABSORPTION FIELD BARN SILO ABANDONED WELL | SINK HOLE C. I. OTHER POLLUTION SOURCES (Give description such as dump, quarry, drainage well, stream, pond, lake, etc.) none 5. Well is intended to supply water for 9. FORMATIONS 6. DRILLHOLE To (ft.) Dia. (in.) From (ft.) To (ft.) Kind From (ft.) Dia. (in.) From (ft.) To (ft.) Surface Surface 7. CASING, LINER, CURBING, AND SCREEN To (ft.) Kind and Weight From (ft.) Surface akmats 10. TYPE OF DRILLING MACHINE USED 8. GROUT OR OTHER SEALING MATERIAL From (Direct Rotary - Reverse Rotary Cable Tool Surface w/drilling mud with drilling mud & air □ Air I] Water 19 Well construction completed on চিত্ৰ above 11. MISCELLANEOUS DATA final grade inches Well is terminated below **GPM** Yield test: Hrs. at No Well disinfected upon completion X Yes ft. Depth from surface to normal water level M No Yes. Well sealed watertight upon completion ft. Depth to water level when pumping laboratory on: Water sample sent to Your opinion concerning other pollution hazards, information concerning difficulties encountered, and data relating to nearby wells, screens, seals, type of casing joints, method of finishing the well, amount of cement used in grouting, blasting, sub-surface pumprooms, access pits, etc., should be given on reverse side. COMPLETE MAIL ADDRESS SIGNATURE Dlam Registered Well Driller Please do not write in space below REMARKS CONFIRMED GAS - 48 HRS. COLIFORM TEST RESULT GAS - 24 HRS.

State of Wisconsin
Department of Natural Resources
Private Water Supply
Box 7921
Madison, Wisconsin 53707 NOTE: WELL CONSTRUCTOR'S REPORT Form 3300-15 Rev. 2-79 Rev. 2-79 SFP 7 1983 1. COUNTY CHECK (V) ONE: Y Town ☐ Village City 3. NAME OWNER LAGENT ATTIME OF DRIVEING CHECK (1) ONE Township Range Street or Road Name ADDRESS wei

Jawa Wa	
AND - If available subdivision name, lot & block No.	POST OFFICE ZIP CODE
4. Distance in feet from well Building Sanitary Bldg, Drain Sani	tary Bldg, Sewer Floor Drain Storm Bldg.,S
to nearest: (Record C.I. Other C.	tary Bidg, Sewer Connected to: Storm Bidg. Drain Storm Bidg.s Other C.I. Sewer Other Sewer 1. Other C.I. Other
answer in appropriate block)	Other C.I. Other
Street Sewer Other Sewers Foundation Drain Connected to: Sewage	Sump Clearwater Septic, Holding Sewage Absorption Unit Manure Hopper
San. Storm C.I. Other Sewer Sump C.I.	Other Sump' Tank Tank Sepage Pit Retention or Phuematic Tank
Clearwater Clearwater	Seepage Bed
Privy Pet Pit: Nonconforming Existing Subsurface Pumproom	Seepage Trench Seep
Waste Pit Well Nonconforming Existing	Gutter Barn Yard, With Pit Storage w/o Storage Trench Manure Ba
Pump	Pen , facility Pft Or Pit
Tank Subsurface Waste Po	nd or Land Manure Storage Basin Other (Describe)
Temporary Manure Watertight Liquid Manure Subsurface Waste Po Pressure Gasoline or Oli Tank Cipecify Ci	Unit Concrete Floor ONV
(Specify	Concrete Floor and Partial Concrete Walls
5. Well is intended to supply water for:	9. FORMATIONS
Human	Kind . From (ft.) To (ft.)
6. DRILLHOLE	
· Dia. (in.) From (ft.) To (ft.) Dia. (in.) From (ft.) To (ft.)	Surface & To
	January January W. J.
Surface 675	
7. CASING, LINER, CURBING AND SCREEN Material, Weight, Specification	
Material, Weight, Specification Dia, (in.) Mfg. & Method of Assembly From (ft.) To (ft.)	
Il vi al la	20
5 New That Merally Surface 64	40,0
Husolo 115 Place	350
Martin Alle	2
And FIT Wille How the	No.
rul all dillar	10. TYPE OF DRILLING MACHINE USED
1 for the What is directed to 10 615	
8: GROUT OR OTHER SEALING MATERIAL	Rotary-hammer Wydrilling With
Kind From (ft.) To (ft.)	Rotary-air Rotary-hammer Air
	w/drilling mud & air Water
Must Surface	Rotary-W/drilling Reverse Rotary
	Well construction completed on
11. MISCELLANEOUS DATA	a shove
Yield Test: / Hrs. at GPM	Well is terminated inches below final grade
Depth from surface to normal water level Ft.	Well disinfected upon completion Yes No
Depth of water level vinen pumping Ft. Stabilized Yes No.	Well scaled watertight upon completion Yes No
Water sample sent to Minutes	laboratory on 5-10 1983
Your opinion concerning other pollution hazards, information concerning diffinishing the well, amount of cement used in grouting, blasting, etc., should be	ficulties encountered, and data relating to nearby wells, screens, seals, method of given on reverse side.
Signature	Business Name and Complete Mailing Address,

2 Em Claire Ulis. Notry Wellete Registered Well Driller

Department of Natural Resources Box 7921

Dr Eau Claire W.F.

Division's Copy
Driller's Copy White Copy Green Copy

WELL CONSTRUCTOR'S REPORT Form 3300-15 Rev. 12-76

Madison, Wisconsin 53707	Yellow Copy	- Owner's Copy			P 3 10
1. COUNTY	CHECK (V) ONE:		Name AUG	\$7 1880	
Equ Claire		/illage ☐ City 3. NAME ☑ OWNER	13KUNSWIC		OUTOV / A ON
2. LOCATION NE SW 8	Township Range	Mike	JUR ENT		CHECK (V) ON
OR - Grid or Street No. Street Name	000 1000	ADDRESS	JUK JEMB		
•		R+ 4	•		
AND - If available subdivision name, lot &	block No.	POST OFFICE			
. ,		Eau Closs			
			Drain Storm E ted To: Storm E Other Sewer C.I.		Storm Bldg.Se
answer in appropriate	C.I. Other C.I.	Other C.I. Sewer	Other Sewer C.I.	Other	سسب الم
Street Sewer Other Sewers Foundation Di	rain Connected to: Sewage S	ump Clearwater Septic		orption Unit	
San. Storm C.I. Other Sewer	Sewage C.I. C	other Sump Tank	Tank Seepage Pit	1	
Clearwater Dr.	Clearwater Sump	- 4/	Seepage Bed Seepage Tre	nch	
Waste	Subsurface Pumproom	Barn Animal Animal Silo Gutter Barn Yard Wit	Glass Lined Sild Storage W/G	Earthen Sila Storage Tren	ge ich Or
Pit Well — Pump	Nonconforming Existing	Pen	Facility Pit	Pit	
Tank	Subsurface Waste Pond or L	and Other (Give Description	202		
Manure Liquid Manure Storage (Subsurface Waste Pond or L Gasoline or Disposal Unit Dil Tank (Specify Type)	Land Other (Give Description	. ,		
					
5, Well is intended to supply water for:	1 1 2/ .	9. FORMATIONS			1
Mol	oile Home	Kind		From (ft.)	To (ft.)
6: DRILLHOLE	n i cou l m. cou	1 7 0			
Dia. (in.) From (it.) To (ft.) Dia. (in.)	From (ft.) To (ft.)	10pson	<u> </u>	Surface	
Surface 7/		Sand	•	1	1.3
Surrate //	•		^		~~
		Sand agra	vel		ي _
7. CASING, LINER, CURBING AND SCREEN Material, Weight, Specification	•			١٠	0
Dia. (in.). & Method of Assembly I	From (ft.) To (ft.)	Sand		<u> </u>	8
5 5000 000	Surface 68	Sand on	0	8	7/
Sully 12 real states	3 unace	Sana Tyra	mer.		
15#perft -258 wa	ll	<u> </u>		- 1/10	· · · · · · · · · · · · · · · · · · ·
ASTM 7-12-953		152 7	1	i Han	
C + 1 + 1 1 1		5/1 5	4 X2		
. Sundomo Melax box		10 minus on province	At dimin right		
4x3' Johnson Screen	68 71	10. TYPE OF DRILLING I		1.	. •
8. GROUT OR OTHER SEALING MATERIAL		E Cable Tool	Rotary-hammer W/drilling mud & air	☐ Jett	ing with
	rom (ft.) To (ft.)	Rotary-air w/drilling mud	Rotary-hammer		.Air
		Rotary-w/drilling			Water
none	Surface	i mud	Reverse Rotary		
		Well construction completed	on 8-6		19.80
11. MISCELLANEOUS DATA	<u></u>	i, on communication compacted	V4	bove	•
	at _/O GPM	Well is terminated		elow final gra	ade
Depth from surface to normal water level	53 Ft.	Well disinfected upon comple	tion 🔀 Y	es 🔲 No	
Depth of water level		***	100	es 🗆 No	
		Well sealed watertight upon or	ompletion X Y	es No	C:
	laire	laboratory			19_ <u>80</u>
Your opinion concerning other pollution hazards, i finishing the well, amount of cement used in grout	information concerning difficing, blasting, etc., should be g	ulties encountered, and data r riven on reverse side:	elating to nearby wells	, screens, seals, n	netitod of
· Signature () 0 PAD 1	· ·	Complete Mail Address			

) TOP

WELL CONSTRUCTION REPORT

	The same state of the same sta
Well Construction Report For	State of Wisconsin Department of Natural Resources
WISCONSIN UNIQUE WELL NUMBER	Private Water Supply — WS/2
Property Owner (Telephone Num	Box 7921
Property Owner HARRIS ERINDE (77.1) Mailing Address	Box 7921 NOV 7 1988 Madison, WI 58707
	1. Location (Please type or print using a black pen.)
	ate
The company of the control of the co	Who is said to the control of the co
	Grid or Street Address or Road Name and Number (if available)
Conney Well Coation Well Coation Date	WM DDD CO
Well Constructor (Business Name).	Subdivision Name Lot # Block #
Well Committee of the C	Sim name at 10 a and
Address	parcel of section. Gov't Lot # or Sw 4 of SE 4 of
TENER Sondot Ra	Section S T Z6 N; R /O D E W
、 Ale Taranta City A Taranta Taranta Taranta Taranta State A and Zip Code 社 原	3. Well Type 🔀 New
East Clarre DOV SYZ3	Reconstruction/Rehabilitation
	of well constructed in 19
	Reason for new, reconstructed, replaced, or rehabilitated
	well?
4. Well serves # of homes and/or nursery Stockligh Capacity	well Exes No waterias nursery stock
(ex: barn, restaurant, church, school, industry, etc.) High Capacity	Property? Yes No Drilled Driven Point Jetted Other
5. Well Located on Highest Point of Property, Consistent with the General	
Well Located in Floodplain? Yes No 9. Downs	pout/Yard Hydrant 17: Wastewater Sump
Distance In Feet From Well To Nearest: 10. Privy	18. Paved Animal Barn Pen
1. Landfill11. Founds	ation Drain to Clearwater 19. Animal Yard or Shelter
2. Building Overhang 12. Founds	ation Drain to Sewer 20, Silo — Type
3. Septic or Holding Tank 13. Buildin	g Drain 21. Barn Gutter
	Iron or Plastic □ Other 22. Manure Pipe □ Gravity □ Pressure
	g Sewer 🗆 Gravity 🗆 Pressure 🔻 🗅 Cast Iron or Plastic 🗅 Other
	Iron or Plastic Other 23. Other Manure Storage
7. Buried Petroleum Tank 15. Collecto	
8. Shoreline/Swimming Pool 16. Clearwa	ter Sump
6. Drillhole Dimensions Method of constructing upper enlarged drillhole. (If applicable $ u$ more than one.)	9. Geology From To
	Type, Caving/Noncaving, Color, Hardness, Etc. (ft.) (ft.)
Dia. (in.) (ft.) (ft.)	
Dia. (in.) (ft.) (ft.) 1. Rotary — Mud Circulation 2. Rotary — Air	Type, Caving/Noncaving, Color, Hardness, Etc. (ft.) (ft.)
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Dia. (in.) (ft.) (ft.) (ft.) 1. Rotary — Mud Circulation 2. Rotary — Air 3. Rotary — Foam 4. Reverse Rotary 5. Cable-tool Bit in, dia.	I Topsoil surface / 3 Sand agrave 13
	Topsoil surface
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Dia. (in.) (ff.) (ff.) 1. Rotary — Mud Circulation 2. Rotary — Air 3. Rotary — Foam 4. Reverse Rotary 5. Cable-tool Bit	Sand Varace Sand Varace 3 3 3 3 3 3 3 3 3
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Make additional comments on reverse side about geology, etc.

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WELL CO	NSTRUCTÓ	iDic pro∪b.	r	DEP A PT	st MENT O	ATE OF W			OPM	ENT		•	70 Wel
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OTHER PO	LLUTION SO	URCES (Give	description	such as dum	p, quarry, dra	inage Well, s	tream, p	ond, lake, e	ic.)			•	
6. Well is	s intended	to supply	water for	· · · · · · · · · · · · · · · · · · ·									······
			· .	Hon	1ė								
7. DRILLH Dia. (in.)	OLE From (ft.)	to (ff.)	Dia. (in.)	From (ft.)	To (ft.)	10. FOF		NS Kind		•	Fro	m (ft.)	To (ft.)
	Surface		Dia: (III.)	170117 (11.7)	10 (11)	Con	l-fi			· · · · · · · · · · · · · · · · · · ·		rface	65
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4	12	104			1.	sand	i0cos	arse w	u th e	gravel		65	104
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					<u> </u>	Well co	nstructi	on compl	eted o	n Aug.			156
Yield test:	SIOBNALL		Hrs, a	1 18	GPM	Well is	termina	atéd	13	Inches	□ belo		nal grade
Depth from	n surface to	normal w	ater level	69	ft.	Well dis	infecte	d upon o	omplet	ion .		Yes	□ No
Dëpih to w	vater levěl v	when pump	ing .	68-6	· -fi.	Well sea	led w	atertight	upon c	ompletion	2	X Yes	□ No
Water sam	ple sent té	Wis. (itate	. (Madisor	ı)	•	laboi	ratory	on: Aug	g. 1		188
Your opini wells, scre sufface pur	ens, seals,	ing other i	pollution l	s, method	l of finish	ing the w	g diffi ell, an	culties er nount of	counte cement	red, and used in	data rel groufing	ating y, blas	to nearby
SIGNATURE	• 		<u>-</u>		<u> </u>	COMPLET	e mail	ADDRESS	•				
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WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH See Instructions on Reverse Side

1. County Eau Claire,	(Town Brunswick Brunswick
2 10 20 1	Check one and give Bame
2. Location N.W. 2 of N.W. 2 Sec. 8.	T. 26N. R. 10W. or Section, Town and Range numbers partnership or firm
Name of inglyidual	partnership or firm
3. Owner M or Agent George Sprague. A Mail Address R. 5 Eau Claire. Wish Complete add	ress required
hon well to nearest: Building . 5.1 ft; sewerne	mest; draimone ft; septic tanknone ft;
belance well to nearest: Building partit, sewer he he lead to be and the lead of the lead	1 of the second
6. Well is intended to supply water for:Geolir	and the water cattle and in which
The DRILLHOLE: have a long trailed in the second	
Dia (in.) From (ft.) To (ft.) Dia (in.) From (ft.) To (ft.)	Kind you have a constitution (1975)
born (in error to bur) is rainer ober the	Said astronoid has tenne to be a mark
NEW 1881 of ADMINIT OF MICH. MINE.	Hard ben the state of 17 to 121
8. CASING AND LINER PIPE OR CURBING:	Sand (fine) 21 274
Dia (in.). No Kind . Tigo . (iv.) From (itt) U. To (ft.)	Sand & coarse gravel 27
4" Steel (New) and to 32"	hand pump installed and scaled t
the state of the second	well carried with a distantiant
2003年 1000年 100	Paris Plang a Well As "both some
9. GROUT:	clean gravel and no screen ne
Bellesting the state of the sta	de l'antique augusta l'apprend l'an pour l'apprend
The state of the s	Construction of the well was completed on:
TARGETT A ATTROCTE TO A TTA	06t919~5L
	The well is terminated 1201 inches
Yield test?	A above, KNAW [] the permanent ground surface.
Depth from surface to water-level: 23 1 ft.	Was the well disinfected upon completion?
The state of the s	Was the well disinfected upon completion?
Water sample was sent to the state laboratory at	Was the well sealed watertight upon completion?
_Medison on Oct. 15 19.51	Was the wen stated a state of the state of t
THU.	Time Live Bur Livious and Calgoria.
An in Dank Watt Bailling Co.	R. 1 Eau Glaire, Wis.
Signature Registered Well Driller. Registered Well Driller. Please do not write	Complete Mail Address
20503	10 ml 10 ml 10 ml 10 ml
Rec'd 0CT 1 6 1951	m m ++ s
Ans'd	as 24 hrs.
Interpretation	48 nrs. + + + + + + + + + + + + + + + + + + +
	Confirm
The same of the sa	3. Coll
2800	Examiner

State of Wisconsin
Department of Natural Resources
Private Water Supply
Box 7921
Madison, Wisconsin 53707

NOTE:

WELL CONSTRUCTOR'S REPORT Form 3300-15 Rev. 2-79

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Alatterationally 11 and the second			TAN T PLANT
1. COUNTY	CHECK (V) ONE:	lage City Rame	MAN S ISO
14 Section or GoV't. Lot	Section Township Range		AT TIME OF DRILLING CHECK (4) ONE
2. LOCATION NW/NW	8 26N 10W	John Jeins	
OR - Grid or Street No. Street or Road	Name Q5	ADDRESS	- CATALOG - CATA
AND — If available subdivision name, lot &	block No.	POST OFFICE	ZIP CODE
		Eau Claud L	Storm Blug, Drain Storm Bldg, Sewer
4. Distance in recent was	tary Bidg, Drain Sanitary	Bldg. Sewer Floor Drain Connected To: Other C.I. Sewer Other Sewer	
answer in appropriate	•	- Loteling C	ewage Absorption Unit Manure Hopper or
Sauce Sauce	Sewage C.I. Of	her Sump Tank Tank Se	pepage Pit & Retention of Phuematic Tank
San. Storm C.I. Other Sewer Clearwater Dr.	Clearwater Sump	, <u>S</u>	epage Bed epage Trefich
Privy Pet Pit: Nonconforming Existing	Subsurface Pumproom Nonconforming Existing	Barn Animal Animal Silo Glass L utter Barn Yard With Pit Storag Facilit	Lined Sill Earthen Silagen Earthen Storage Trench Mamure Basin Or Pit
Pit Well Pump	Noncomorning Existing	Pen , Facilit	
Tank Temporary Manure Watertight Liquid Manure	Subsurface Waste Pond e Gasoline or Disposal Un	or Land Manure Storage Basin	Other (Describe)
Stack or Platform Manure Tank or Pressur Plpe	e Gasoline or Disposal Un Oli Tank (Specify T	(pe) Concrete Floor and	
5. Well is intended to supply water for:		Partial Concrete Walls 9. FORMATIONS	
THE	underld	Kind	From (ft.) To (ft.)
6. DRILLHOLE Dia (in.) From (ft.) To (ft.) Dia (in.)	From (ft.) To (ft.)	Sand worasel	Surface 47
Dia. (in.) From (ft.) To (ft.) Dia. (in.)	TOME (ALL)	Joseph John John John John John John John Joh	
Surface 4			
7. CASING, LINER, CURBING AND SCREEN Material, Weight, Specification	, v	٠.	
Dia. (in.) Mfg. & Method of Assembly	Tom (i.i.)	163	
6 Techurstel	Surface 43	12 17	7
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434 U.O.P. Johnson &	TAIWLESS		
STOR WELL SCREE	1 43 47		
w/4x6 Fig. K PKR-	JUL BACK	10. TYPE OF DRILLING MACHINE	v-hammer i 🤏 .
P. 48 . 1 111/11 1	vil back)	Cable Tool w/dri	lling Jetting with
8. GROUT OR OTHER SEALING MATERIAL Kind	From (ft.) To (ft.)	Rotary-air Rotar W/drlilling mud & air	y-hammer Air Water
	Surface	Botary-w/drillings	se Rotary (Value
	Suriace		2112- 74
		Well construction completed on	above 19
11. MISCELLANEOUS DATA Vield Test:	s, at GPM	Well is terminated inche	rinal grade
Depth from surface to normal water level	19 Ft	Well disinfected upon sompletion	Yes No
Denth of water level		į.	□ Fes □ No
when pumping Ft. S	tabilized No.	Well sealed watertight upon completion	F 0 74
Water sample sent to	lave # 8	laboratory on	rearby wells, screens, seals, method of
Your opinion concerning other pollution hazards finishing the well, amount of cement used in ground	, information concerning diffi ting, blasting, etc., should be	given on reverse side.	Well Dilling Core
Signature ()	A AL)	Business Name and Complete Malling A	Ossan Drive 1 + 030
THE MAN ON THE	LAT Y	E CL.	LA MILL EATON 15 / 12

State of Wisconsin Department of Natural Resources Private Water Supply Box 7921 Madison, Wisconsin 53707

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Dan #146

Signature

NOTE:

WELL CONSTRUCTOR'S REPORT Form 3300-15 Rev. 2-79

White Copy — Division's Copy Green Copy — Driller's Copy Yellow Copy — Owner's Copy

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2. 100	CATION	1	ection or G	oy't. Lot			hip Range	3.	NAME Man	12 6V	VIVER [□AGENT	AT TIME	OF	RILLING	CHECI	((1) ON
OR			treet No.	Street or	Road Name	2-			ADDRESS	S.	Sto	Anna la	Rice	<u>,</u>		rt.	B
AN:	D – If	availab	le subdivis	ion name, 1	ot & block	No.			POSTS OF	FICE	la	A.	-	5	ZIP CODI	The same and	
			47	711	Sanitary B	Ida Drain	Sanitary	/ Blde	Sewer		Floor	Drain ted To:	Storm	Bldg.	Drain	Storm	Bldg. Sev
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1	,Pit	Pump									<u> </u>				· · ·		
Tempo	rary Man		Vatertight I Manure Tan	iquid Ma	anure Sul	surface V	Vaste Pond Disposal Un	or La			torage E Floor C		Other	(Descr	ibe)		Į,
Stack o	r Platfor	TN E	Manure Tan Basin	Pi		Tank	(Specify T	ype)	Cot	ncrete l	Floor C Floor a ncrete	n#			•	·	
5. Well	is inténè	led to	supply wate	er for:	rriga	Par King		9.	FORMAT					Fr	om (ft.)		o (ft.)
	LLHOL		·		. /			سيم ا		· A	· ·)
Dia. (i	n.) From	m (ft.)	To (ft.)	Dia. (in.)	From (ft.) To	<u> </u>	1	DIL.	o City		<i>j</i> .	<i>.</i>	Su	rface	10	
10) _. Su	rface	38	6	38		53_	16	MANO		are	a re	(RY	-	2_	- 2	2
			<u></u>				<u> </u>	1	and	10	A.C.	avell	, (20	13	Z _[
7. CAS	ING, LI	NER, C erial, W g. & M	URBING # eight, spec thod of A	ND SCRE	EN From (ft.) Ta	o (ft.)	ļ		(
In	10		201	715001	Surfac	ير ا	'	-			•					<u> </u>	· [
<u> </u>	10	07	Dr.	11/1					12	0		n			12/	den	ŧ
·	100	7/	TE	M.CH.U	7		*.		ار.	37		5.3		10	400	1:	
8	All	ar II.	<u>el A</u>	all s	ecris	121	/	F	795			4.	11 2	1	<u> </u>		<u>k</u>
•	8	pac	bu!	5 Xb	5		3	10	TYPE OF	7 DRŤ	LING	MACHINE	USED		· · · ·	<u> </u>	`
								1.00				ı Rotai	ry-hamme illing & air	r	10.	etting w	th
GRC	OUT OR		R SEALING	3 MATERL	AL From (f	t.)	(fg)	,		e Tool ry-air illing n		[rv -homm e	i i"		i Alr	
n Din	ادر الملكة	An 1	A.I		Surface	}			•	ıry-w/d	-	l	rse Rotáry	/		Wa	ter
المحال المستدان	1		1		<u> </u>		,	Well	construct	ion cor	npleted	1 on	4.		11	192	860
11. 1	MISCEL	LANI	OUS DA	TA ø)		Ø.A					11	inche		above belov	final	grade	
. ,	Yield Tes	it:		<u> </u>	Hrs. at -		GPM_		is termina								
				nal water le	vel	13	Ft.	Well	disinfected	l upon	comple	etion	الميكا	es Yes	L No	, <u>.</u>	[
]	Depth of when p			∑ Ft.	Stabilize	d Yes	s 🗆 No	Well s	sealed wat	ertight	upon c	completion		Yes	□ No		<u></u>
Ÿ	Water sar	nple ser	nt to			·					borator			-27		19_	<u> </u>
				llution haz	erds, inform grouting, bl	ation conce asting, etc.,	rning diffic should be	ulties given	èncounte on reverse	red, an side.	d data.	relating to	nearby w	ells, sci	eens, seal	s, metno	

Business Name and Contact Billing Wells Willing Co. 4625 Olsen Drive

OCT 2 1973

WELL CONSTRUCTOR'S REPORT FORM 3300-15

2803 COLIFORM TEST RESULT

NOTE
WHITE.COPY - DIVISION'S COPY

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES 2
Box 450
Madison, Wisconsin 53701

						COPY - DRILL V COPY - OWN			JII, WISCOIISIN 657	
1. COUNTY					CHECK ONE		r i -1	NAME	***************************************	····································
	Eau Cla					Village	City	Eau Cl	aire	·
2. LOCATI				ownship 26 N	Range 10 W	1	at time of s Carot			
	or street no.	· · · · · · · · · · · · · · · · · · ·	treet name	497		ADDRES		11010		
	······································		•	استرا		R.%		<u> </u>	<u> </u>	
AND -If av	ailable subdivi	ision name, lò	ot & block no) , '	•	POST OF	FICE laire,	WI 54701		
4. Distance	e in feet from	m well to ne	arest:	BUILDING	BANITARY SEWI	ER FLOOR DRA	IN FC	UNDATION DRAIN		ATER DRAIN
•.	ord answer in		1		C. I. TILE	C. I. TIL	E SEWER CC	DNNECTEDINDEPEN	DENT C. I.	TILE
				SEEPAGE P	TT ABSORPTION	ON FIELD BA	IRN SILO	ABANDONED WE	LL SINK HOLE	
C. I.	THE		.	•		· [
	·	65		75.			<u> </u>			
OTHER POL	LUTION SOU	URCES (Give	description s	such as dump	, quarry, drainag	e well, stream, p	ond; lake, etc	.) [']	•	• •
5; Well is in	itended to s	upply water			·			· · · · · · · · · · · · · · · · · · ·		 ;
			hc	me		10 50514	,	•		The state of the s
6, DRILLI Dia. (in.)	From (ft.)	To (ft.)	Dia, (in.)	From (ft.	.) .To (ft.)	9. FORMA	ATTOMS Kind		Froga (ft.)	To (ft,)
							Kilic	<u> </u>	- Carrier	1.0 (11.7)
8	Surface	40.	4 :	. 40	90 .	Sand	& Clay		Surface	40
•						Band			46	90
7. CASING	, LINER, CO	JRBING, A	ND SCREE	Ņ.		DOLLIO.		- Address	40	90
Dia. (in.)	"к	ind and Weig	ht .	From (ft.) To (ft.)	ļ				
4	New bl	lack		Surface	86			. And the second		·
47.	21011	-	*	1	1			11		
	Steel	pipe T	& C ·	<u> </u>		1.5	· 60	7 10	1	·.
	thread	l coupl	e art		• .	De	10 /			•
			•			, de		13		
	per ft	10.8	<u>9 </u>	<u> </u>	·		1 4	<u>· </u>		
	4 ft.	soreen		∤ • ; ,						
8. GROUT				Ļ ·	',	1 : A		IG MACHINE USE)	•
· · · · · · · · · · · · · · · · · · ·	, King	<u>d</u>	<u> </u>	From (ft.)	To (ft.)	Cable 76	ól (Direct Rotary	Revers	e Rotary
A 6	lav	·	•	Surface	40	Rotaly w/d/illing	air	Rotary - hamn	.	
• .	V					<u> </u>			<u> </u>	Water
11. MISCEL	LANÉOUS	DATA .		<u>l </u>		Well constru	iction compl	eted on Aug 25	≱ À above	19 73
Yield test:	24	DAIA .	Hrs. at	10	GPIVI	Well is termi	nated . 13	3 Inches	below f	inal grade
Depth from	surface to no	ormal water	level.	60	f.	Well disinfec	ted upon co	mpletion	X Yes	□ Nò
Depth to wat	ter level whe	n pumping		62	f	Well sealed v	vatertight up	on completion	□X Yes	. □ No
Nåter sample	sent to	Madis	on				labo	oratory on: Aug	29	19.73
our opinion ype of casing e given on re	j joints, metl	other pollur hod of finisl	tion hazards hing the we	s, informati II, amount	on concerning of cement used	difficulties en in grouting, b	countered, a plasting, sub-	and data relating to surface pumprooms	nearby wells, scr , access pits, etc.	eens, seals, ., should
MATURE		roga	hm_	,	II P	COMPLETE M	AIL ADDRES	9 11 1		

Please do not write in space below | GAS - 24 HRS. | GAS - 48 HRS. |

CONFIRMED

REMARKS

	State of Wisconsin
Well Construction Report For	Department of Natural Resources Private Water Supply — WS/2 Box 7821 Private Water Supply — WS/2
WISCONSIN UNIQUE WELL NUMBER IN 8	Private Water Supply — WS/2 Box 7921
Property Owner. Deloris Ropp 1 Telephone Number 4528	Box 7921 Madison, WI 58707 CFP
Mailing Address	
W6600 CTH 85	1. Location (Please type or print using a black pen.)
State Zip Code	City Uillage Fire # (if available)
EAN CLAIRSE WI 5470	Or Of Diu Au Clean Grid or Street Address or Road Name and Number (if available)
County of Well	The substitute of the substitu
County of Well County Well Location Location Permit No. W. 7107 Well Completion Date 07/ 4/ 5	Subdivision Name Lot # Block #
Well Constructor (Business Name) Registration # 2, Mark well loc	Data Vision
in correct 40-	
Address parcel of sect	Section 9; T 26 N; R 10 E W
9625 Okson Dr.	3. Well Type 4 New
City State Zip Code	Replacement Reconstruction
EAU CANZE WI 14701 W	
	of unique well # constructed in 19
S	Reason for new, replaced or reconstructed well?
	Red Wall
4. Well serves # of homes and/or Sprinkling High Capacity Well? Yes	DENO.
(ex: barn, restaurant, church, school, industry, etc.) High Capacity Property?. Yes	Drilled Driven Point Jetted Other
5 Wall Ligarted on Highest Point of Property, Consistent with the General Layout and	d Surroundings? Yes 🗆 No If no, explain on back side.
Well Located in Floodplain? Tyes NiNo 9. Downspout/1 ard myd	ITANO TILLED
Distance In Feet From Well To Nearest:	18% Paved Animal Barn Pen
1. Landfill 1. Foundation Drain to (
200 2. Building Overhang12. Foundation Drain to S	Sewer
3./Septic or Holding Tank	
Sewage Absorption Unit	
5. Nonconforming Pit 4. Building Sewer 🗆 Grav	/
6. Buried Home Heating Oil Tank	
7. Buried Petroleum Tank 15. Collector or Street Set	
6, Drillhole Dimensions Method of constructing upper enlarged 9, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20	Geology From To
From To drillhole only.	e, Caving/Noncaving, Color, Hardness, Etc. (ft.)
From To drillhole only. Dia: (in.) (ft.) (ft.) 1. Rotary — Mud Circulation	e, Caving/Noncaving, Color, Hardness, Etc. (ft.) (ft.)
From To drillhole only. Dia: (in.) (ft.) (ft.) 1. Rotary — Mud Circulation 1. Rotary — Air	e, Caving/Noncaving, Color, Hardness, Etc. (ft.) Town Land surface 33
Typ Dia; (in.) (ft.) (ft.) Surface 3. Rotary — Mud Circulation Rotary — Air S. Rotary — Foam	e, Caving/Noncaving, Color, Hardness, Etc. (ft.) Town Land surface 33
From To drillhole only. Dia: (in.) (ft.) (ft.) 1. Rotary — Mud Circulation 2. Rotary — Air 3. Rotary — Foam 4. Reverse Rotary	e, Caving/Noncaving, Color, Hardness, Etc. (ft.) (ft.)
Typ Dia; (in.) (ft.) surface 1. Rotary — Mud Circulation D. Rotary — Air 3. Rotary — Foam 4. Reverse Rotary 5. Cable-tool Bit india.	e, Caving/Noncaving, Color, Hardness, Etc. (ft.) Town Land surface 33
From To drillhole only	e, Caving/Noncaving, Color, Hardness, Etc. (ft.) Town Land surface 33
Typ Dia; (in.) (ft.) (ft.) Surface	e, Caving/Noncaving, Color, Hardness, Etc. (ft.) Town Land surface 33
Typ Dia; (in.) (ft.) (ft.) Surface 1. Rotary - Mud Circulation	re, Caving/Noncaving, Color, Hardness, Etc. (ft.) rywn And surface 33 nd a gravel 33 2
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Typ Dia; (in.) (ft.) (ft.) Burface 1. Rotary - Mud Circulation	e, Caving/Noncaving, Color, Hardness, Etc. (ft.) TYWN AND Surface 33 Nd - Gravel 33 42
From To drillhole only. Dia; (in.) (ft.) surface 1. Rotary - Mud Circulation	re, Caving/Noncaving, Color, Hardness, Etc. (ft.) rywn And surface 33 nd a gravel 33 2
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Typ Dia; (in.) (ft.) (ft.) 1. Rotary — Mud Circulation	e, Caving/Noncaving, Color, Hardness, Etc. (ft.) TYWN AND Surface 33 Nd - Gravel 33 42
Typ Dia; (in.) (ft.) (ft.) Bia; (in.) (ft.) (ft.) Dia; (in.) (ft.) (ft.) (ft.) (ft.)	e, Caving/Noncaving, Color, Hardness, Etc. (ft.) rywn And surface 33 nd gravel 33 42
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Dia; (in.) (ft.) (ft.) (ft.) 1. Rotary — Mud Circulation 3. Rotary — Foam 4. Reverse Rotary 5. Cable-tool Bit in., dia. 6. Temp. Outer Casing in. dia. Removed? Yes No if no, explain 7. Other 7. Casing, Liner, Screen Material, Weight, Specification From To in., (ft.) Surface Mayurul May	ter Level love ground level low ground surface 12. Well Is: 2
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Dia; (in.) (ft.) (ft.) drillhole only.	ter Level ove ground level olow ground surface if the below sur

		onstruction UNIQUE				GG 650	JAN 2 5	Departmen	te of Wiscon it of Natural Vater Supply	Resources	24
1 *****	erty Owner Don Jac ng Address	uish		rel (7	ephone Nu 15) · 83	mber 4-5461	2 5	1991 Ma	Box 7921 dison, WI 53	707	
Main	-	Box 85					1. Location			t using a black Fire # (if ays	
City	•			. St	ate WI	Zip Code	of Eau	Claire		1; 97	Grand
	Eau Cla	County Well L	ocation		Well C	547,01 ompletion	Grid or Street	t Address or	Road Name ar	d Number (if e	vallable)
Locat	^{tion} Eau Cla	Permit No. 7	V	· · ·	Date	MM. D.D. YY	Subdivision	ı Name	L	ot# Blo	ck#" .
(18)	Well Construc	ctor (Business N ng ineer ing	lame) r Ind.	Registr	ation#	2. Mark well location in correct 40-acre	1		<u> </u>		in viik Garagiya
1,00	Address		· · · · · · · ·		` 	parcel of section. N	Gov't Lot	or I : T 26	W _ ¼ of l _ N: R _ 10	W 1∕2 of EX	J'w
		t Main Str		- CZ1	p Code	- x	3. Well Ty		X New		1300
	City Young Ar	merica	Stat MN		397	w E	1	٠.	☐ Reconst		
1	· , '		γ · · · · · · · · · · · · · · · · · · ·	•						onstructed in	.19
XR					i	. S.	Reason for r	iew, replace rrigatio	or reconstr	ucted well?	
		nomes and/or			High Capaci	· ·		~ .			<u> </u>
		urch, school, in		CG . I.		ty Property? Xi Yes 🗅 No				ed . Other	
5. Well Loca	ted on Highest ted in Floodple	t Point of Properties	erty, Cons		9. Down	neral Layout and Sur aspout/Yard Hydrant		17; VV	istewater Su	mp .	HCK BIUB.
Distance 1	In Feet From	Well To Neares	ti, "ar t		10: Privy				ved Animal l imal Yard öi		. ;
,	Landfill Building Over	·hano				dation Drain to Clear dation Drain to Sewer				ement St	ave_
	Septic or Hold				18. Build	ing Drain	·	21. Ba	rn Gutter		,
	Sewage Absor		•			t Iron of Plastic Oth			· -	Gravity. 🗆 Pr lastic 🔟 Oth	
	Nonconformin	g Pit Heating Oil Ta	rilė			ng Sewer □ Gravity □ st Iron or Plastic □ Ot			er Manure S		ex ,
	Buried Petrole		· ·		l5. Collec	ctor or Street Sewer				Vaste Source	, ,
·	Shoreline/Swir			<u> </u>		water Sump	,, , <u>,</u>	24			
Drillhole D Fi Diá, (in.) (i	rom To ft.) (ft.)	Method of co	, ,	•			Geo ving/Noncavin		rdness, Étc.	From (ft.)	T
12 sur	face 61	i. Rotary		arculatio	n ·	T- Töp Söi		· . · · · ·	· · · · · · · · · · · · · · · · · · ·	surface	4
···			- Foam			Sand, C	oarse, Br	own, Só		4	35
		4. Revers		. in.	dia.		<u> </u>				
***		☐ 6. Temp.	Outer Cas	ing	in. dia.		ledium, Br		ft	35	61
·· · · · · · · · · · · · · · · · · · ·	'	J-	ed?			33333333333	17#:00508 8-1-0028	3	note		
· , .]		If no, e	xplain		<u> </u>	0000000	0-7-0000		1,,		1
<u> </u>	Casing.	Liner, Screen	<u> </u>		· · · · · · · · · · · · · · · · · · ·	- OWNEC W	vell .# 4.				1
Dia, (in.)	Material, W Mfg. & Me	eight, Specifica thod of Assemi	tion Ny	From (ft.)	To - (ft.)	Eau Cla	ice County	Tariga	han well	# 28	
	375 Wall.	Blk. Stee	i" -	surface	51	weater	approval	<u> </u>	-1990) 1
in it	Casing w	/Shoe ::	achi,	4.	\	14 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1			
	• • •				}	10. Static Water Le	evel,		2. Well Is:	F27	: ,
					 	24 ft. above a	conny sintace		18	Below	Grade
	• ,		,			11. Punip Test		_	eveloped?	X Yes [□ No ·
	en type and n		40-01	From	(61)	Pumping Level		urface D	isinfected?	Yes [] No
12 (10)		SS. Screen or Other Sealing			11.01	Pumping at			apped?	X Yes	No No
Method		<u></u>	From	To	Sacks	13. Did you perman	iently seal all	mused, non	complying, o	unsafe wells N/A	3?
Kind	of Sealing Ma	terial	(ft.)	(ft.)	Cement	14. Signature of Po	int Driver or R		riller	Date Signed	· · ·
 		<u>.</u>	surface				• •		かけ	', -	
		. :	•			Signature of Drill R	ig Operator	DA	JH:	Date Signed 1-21-91	
ala addition	al acomments o	n roverce side s	hout geole	ore etc		1 John	~ / /	WELL CO		ON REPO	RT.

1978 WELL CONSTRUCTOR'S REPORT Form 3300-15 APR 0 4 1979

State of Wisconsin Department of Natural Resources Box 7921

NOTE:

White Copy Green Copy Division's CopyDriller's Copy

	Madisor	n, Wisco	onsin 537	707				Yello	ow Copy	r -	Owner's	Сору								
1. CO	UNTY	E D	1 (7/50	E		CK (V)	ONE						Name	,	æ 1. 1	201			
			\ <u>\</u>		· ()	Towns		Ran		Village		Cit					F DRILL	ING C	HECK	(J ONE
2. LO	CATION		Section v W/N/				i N	1 .	Ju)			\mathcal{D}	lon.		aule					(1)
OR			street No.	Street Na	_	1)					ADDRES	S	7		٠٠					
		· arrailal	la mihdir	ision name,	5	blook N	<u> </u>				POST OF	FICE	<u> </u>							
ANI) II	avanat	ote subaiv	ision name, i	w a	DIOCK I	νο.						eval		547	AV.				
4. Dist	ance in	feet fro	m well	Building	Sanl	Itary Blo	dg. Dra	In .	Sanita	ry Bld	g. Sewer		Floor' Connec				dg, Drain			Bldg, Sew
to no	earest: /er in ap	(Red	cord ·	80	C	.l.	Oth	er	c.I.		Other	C.I.	Sewer	Other S	ewer !	C.I.	Other	· °	2.1.	Other
.bloc			er Sewers	,	n Dr	ain Con	nected	to: S	ewage S		Clearw	ater	Septic	Holding			rption Ur	n1t		
San.	Storm	C.I.	Other	Sewer		Sewag Sump			3.1.	Other	Sum	P	Tank 135	Tank	Seepag			(570		 -
				Clearwate Dr.	نہاـ	Cleary Sump				 				lov	Seepag	e Tren	ch			
Privy.	Pet Waste	Pit: N	lonconfo	rming Existin		Subsurfa Noncon				Barn Gutte		A nim Yaro	nai Silo Wit	h Pit Sto	ass Linec orage cility	Silo W/o Pit	Earthe Storage Pit	e Trend	ch Or	
.	Pit	Pump								80				1	10					•
. Tempor	rary	Tank Watert	ight Manure	Solld Manur Storage	e S	ubsurfa iasoline il Tank	ce Wa	aste P	ond or	Land	Other (G	lve De	escription	on)			<u></u> ,			
Manure Stack	.]	Tank	Manujie	Structure	ŏ	II Tank	(S	pecif	у Туре)	١. ٠							·			
. 5 Well	ic inten	led to	supply wa	ter for:						19.	FORMAT	IONS		;				<u></u>		 .
. J. WOIL	, HI 10210			isehold	~ £	Dair	iv fo	<u>ar</u>	m				Kind				From (f	t.) -	, To	(ft.)
6. DRI									(0)	1 6	Blac	٠ حا	():	_4		.	Charles and of		16	
Dia. (ir	i.) Fro	m (ft.)	To (ft.) Dia. (in.). F	rom (ft	.)	Ťо	(It.)	-	DIAC	<u> </u>	U)	LT.			Surface			· ·
te	Su	rface	60							ી	3lact	(<u>Cla</u>	γ		THE PERSON NAMED IN	15			7
		7,			Ţ.					0	- 01	Ann.	J (2	i Snekk	. Aleger	.	17	.	35	3
7 .040	INIC T D	NIED C	TIP BING	AND SCRE	EN.					40	of S CA	uy_	4-C	71.677			R 4		<u> </u>	<u> </u>
Dia. (in	Mat	erial, W & Meti	eight, Sp	AND SCRE ecification sembly).F	rom (ft	.)	· To ((ft.)	L	ana	\mathcal{L}	<u>òra</u> i	ne/			35		<u>50</u>)
					153	38		Æ	1		1				. 1	l	50		· (o	'
<u> </u>	15	El	Jew	71767	-	Surface		<u>ري</u>	6	1	<u>-0 0.r</u>	<u> </u>		LUVE	<u> </u>		<u> </u>		<u>u</u>	<u> </u>
	اے	in u	nll.	18.97 4	BIE					1	٠.	A STATE OF THE PARTY OF THE PAR	·~				·		نىپ.	den
		<u> </u>	~			· .					· AND STATE	L	7 [60			2.1	, P	1
	<u> </u>	<u>15.</u>	Pipe	 	<u>, , , , , , , , , , , , , , , , , , , </u>				0 1			-7	726	<u> </u>	-		100	1 5 4	<u>. </u>	· · · · · · · · · · · · · · · · · · ·
53/1	'10a	ومعمل		Sumon.	Xt	and	200		loox			. ,	10	•	130					
· <u> </u>	10	, ywu	<u>νι . </u>	0,0	7.0	~~ /			<u>~</u>	# 0.	TYPE OF	DRII	LING	MACHIN	Œ USEC)		,		. • '
well		eem	<u>((),</u>	stor		56	?	6	0	4				I Ro	tarv han drilling id & air	mer	1 -	lätt	ing wit	h ች
8: GRO	UT OR			ig materi	AL +	rom (ft.		To (c. A	1	٤ ١	e Tooi rv-air						انا ،	Air	
	:	Kir	ıa		- r :	rom (11.	' -	10 (7	1 .		ry-air Illing r			tary-han	 			Wate	r
		-			5	Surface				<u> </u>	☐ Rota	ry-w/c	irilling	Ç Re	verse Ro	tary _. .	<u> </u>		e . _{. e}	The said of the
			,	•		•			,	Well	constructi	on co	mpleted	on <u>U</u>	<u>٥٧. 3</u>	3			_ 19	2 8)
11. M	IISCEL	LANI	OUS D	ATĄ			7	5 6 6	•			,	سالحد العراج				óve fi	nal gra	ide	ا به و در مجمع استساسته در در در مجمع استساسته
Y	ield Tes	d:			Hrs.	<u>at</u>		20	- GPM	Well	is terminat	ted -		ine	hes	!. be	low			-, ,*,
D	epth fro	m surf	ace to no	mal water le	vel		ଷ୍ଟ		Ft	Well	lisinfected	upon	comple	tion		⊠ Ye	s 🗆 Ņ	Q		A ST
	epth of when p) Ft.	Sta	abilized	X	Yes	□ No	Well s	ealed water	ertight	upon	ompletic)n	X) Ye	s 🗆 N	o		
w	ater san	nnle set	it to Eas	u Clain	e.	Cty	Cti4	\overline{a}	xpt.	# 6	1859		borator		16-	1	177	<u></u>	19	18
Your op	inion co	ncernir Il, amou	ng other p	ollution haz rent used in	ards, i grout	informa ing, blas	tion co	ncern tc., sh	ing diff ould be	iculties given	encounter on reverse	red, an side.	nd data	relating	o nearby	wells,	screens,	seals, n 1 Eo s	nethod	515/
Signature			1	MA			11	f:r			lete Mail		SS		4605	Olse	a Drive	•		- ***
	toin	nes	M	KILL	M		14	46) de	'		•			gų Cla	ire, W	is. 5476	M		

/ 4 (o Registered Well Driller

2805

State of Wisconsin

NOTE:

WELL CONSTRUCTOR'S REPORT Form 3300-15 Rev. 12-76

Department of Natural Resources Box 7921 Madison, Wisconsin 53707

White Copy Green Copy Yellow Copy Division's CopyDriller's CopyOwner's Copy

1. COUNTY	P	17.6	7 ⁽ , c	Ç.	IECK (V) ONE			· r	¬		Name	R						,
	Coers	<u> </u>	ne	, <u> </u> <u> </u>	Town	- In-		/illage	JAME J	City	VNER	746	ENT	AT TH	VE OF	DRILL	INIC C	HECK	(V) ONE
0 TOCATIO	- I	ection	Section	~ 1'm	nship		ge OW	3. 1	MAIME A	ろし		ن برند	P	70	1 D	والمالية	.1140 0	ILOK	(V) OIVE
2. LOCATIO	Grid or S	treet No.	Street Nar	ne			0 00		DDRES	ZLAZZ S		7		×		<u></u>			
			1 d		Ž							<i>-</i>	4						
AND -	If availab	le subdivis	ion name, l	ot & block	c No:			I	OST OF	FICE	A			Ea	u l	Office	ne	W	Leso.
4. Distance in	n feet from	n well	Building	Sanitary	Bldg. Dı	rain	Sanita	y Bidg	. Sewer		Floor Con nec					ig, Drair			Idg, Sew
to nearest: answer in			6	C.I.	01	ther	C.I.		Other	C.I.	Sewer	Other	r Sewei	C.	.1.	Other			Other
block) Street Sewe		er Sewers	Foundatio	n Drain C	onnecte	d to:	 Sewage S	iúmp	Clearw	ater	Septic	Holo	ing S	ewage	Absor	ption U	nit	<u></u>	
San. Storr		Other .	Sewer Clearwate	Sev Sui r Cle	vage np arwater			other	Sum	1	Tánk Ióna	Tan	56	epage epage		h de	Lon.	€	
Privy Pet	Pit: N	onconforr	Dr _i . ning Existir	Sur g Subst	irface Pi	umpro	om	Barn	Animal	Anim	al Sile	D DIT	Glass L	ined	Siro	Farthe	n Silag	e h Or	L
Wast	Well			None	onformi	ng Exi	isting	Gutter	Barn Pen	Yait	' '	.,	Facilit	الآ	w/o Pit	Pit	e Trend		
,	Pump															ļ			
Temporary Manure Stačk	Waterti Liquid Tank	ght S Manure S S	olid Manur torage tructure	e Subsu Gasoli Oil Ta	rface V ne or I nk	Vaste i Dispos (Speci	Pond or I al Unit fy Type)	_and	Other (G	aive De	escripti	on)							٠.
",	1.7.4	1	for					To	FORMAT	TIONS		///			·····				
5: Well is inte	ended to s	ирріу жав	er tor:	Ha	ing man			13.	, ordina.		Kińd	l .	•		1	From (f	t.)	To	o (ft.)
6. DRILLHO Dia. (in.) Fi		lTo (ft.)	Dia. (in.)	,		,	(ft.)		· D	Vi	!! !! ~	,	,	, ,		Surface		.35	,
· 10	Surface	39	12						1	0	1	F	7	B.		ی		7	02
6	72	ナカラ						1	1							٠			
7. CASING,	INER, Claterial, W	URBING A eight, Spe od of Asso	AND SCRE	EN From		То	(ft.) //			ajo	37								
Dia. (in.)	& Meu	J. J.	EAA-	1. 1	(11.)	7.	1/		1/2	U, O	14			•					
6 7	leut	fleel	ALRAN	Surfa	ice .	3	//	 	7/10	1	3					, 1	. *	•	
12	upple	el 20 l	Nigorff	 	·	#		-			J D	······································					.		
	stm-	4-5	3	<u> </u>		<i>/</i> ·	<u> </u>	-		/									·
· 05	ist	eel	Tyso	<u> </u>				10	TYPĖ O	e pen	LLING	MAC	HINE	USED		···········			
124.3	· ·	•				·]	١.,			ـــا	Rotar w/drii mud 8	y-ham ling	mer	-	-		
8. GROUT O	R OTHER	SEALÍN	G MATERI	AL/				1	A Cab			اسا	•			-	Jett 	ing Wit Air	in
	Kin	đ	·	From	(ft.)	, To	(ft.)	-{	☐ W/di	ary-air rilling (mud		Rotar & air	y-main	mer		님	Wat	er '
Pl	pay	Com	enf	Surfa	.ce	_3	12		□ Rota	ary-w/d	drilling		Rever	se Rot	ary				· ·
v. A.	hela	to		ļ	٠.			Well	construct	tion co	mplete	no be		3-	2	7		ير19_	78
11. MISCI	,	OUS DA	TA			0	ZGPM.	Wat	is termina	hot	10	9	inche			ove low	final gr	ade	
Yield T	est:	<i>b</i>		Hrs. at			Grm	Well	19 pertiture	iwa -			210-10-		L.		•		•
			nal water le	vel	Z9		_ Ft.	Well	lisinfecte	d upor	comp	letion			(1) Y	es L	No		· ;
	of water le pumping		70 Ft.	Stabiliz	ea th	Yes	□ No	Well	sealed war	tertigh	t upon	comp	letion		* Y	es 🗆	No .		
894 Water s	ample sen	t to	71	del	su.	71		2 1.4	An 62		borato			nearhy	wells	screens	, seals.	19 <u>*</u>	i of
Your opinion finishing the w	concernin vell, amou	g other po nt of ceme	diution haz ent used in	erds, inforgrouting,	mation blasting,	concer , etc., s	ming diff should be	BITTOIL	011 101010	- DAW	,	a iviat	ang w	- Latery	11 VILO		, , , , , , , ,		
Signature ^		. 1	. 1		,			Com	plete Mai				~ ^	١.		n N			
AD.I.) ./	11	_/_/_/					A	7	K	2	. /	D []	, t	0	111	ب سدمد د		•

OCT 2 9 1973

WELL CONSTRUCTOR'S REPORT FORM 3300-15

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
Box 450

REMARKS

9004

Kenneth B. OlsonRegistered Well Dri	iller.	3 <i>909</i> in space	Bas A	<u> </u>	Lve-	Ga	w C		1701
IGNATURE		COMPLET	TE MAIL AI	DDRES!	S	•	•		
Your opinion concerning other pollution hazards, information c ype of casing joints, method of finishing the well, amount of ce be given on reverse side.	ment usea	in groutii	ig, Diasting	g, sub-s	urrace p	umprooi	ms, acc	ess pits, et	c., should
Water sample sent to Eau Claire		4:EE: 4!	a anatime		atory or		o nearl	23	19 7 5
Depth to water level when pumping 106	ft.	Well seal	ed watertig	ght upo	on comp	letion		∑ Ye	
Depth from surface to normal water level 97	ft.	Well disi	nfected up	on con	npletion			₩ Ye	,
Yield test: 4 Hrs. at 9	GPM	•	erminated		<u> </u>	nches		below	final grade
Meat Cernent #	30		struction o	complé		Oc		2.2 above	19 73
Clay slussy Surface.	4	Rota w/dr	ry – air illing mud	.		tary — har rilling muc			ng with ir Water
Kind From (ft.)	o (ft.)	Cable			·	ect Rotary	. 1		rse Rotary
8. GROUT OR OTHER SEALING MATERIAL		10. TYF	E OF DR	FLLING	G MACH	IINE US	ED	•	
	-/-	;	, ,	74		+	.		Ã
		<u>* </u>	<u>'' . </u>	92,	· · · · · ·	, 21.	6 6	·	<u> </u>
· Musicare in serving		, -	JD		<u>,</u> L	,1	. 17	land	6
21. 11. 1 15 # 1. 101				,				١.	
	3/ /		· · · · · · · · · · · · · · · · · · ·					` '/	
7. CASING, LINER, CONDING, AND SCREEN	To (ft.)	Lis	mi) L	Dan	d. /2	ock	6	6	16/
		S	lale	,	. '				6
10 Surface 30 5 30	161	J.	pesa	l.				Surface	
6. DRILLHOLE Dia. (in.) From (ft.) To (ft.) Dia. (in.) From (ft.)	To (ft.)	J. 1 J.	/	Ķind				From (ft.)	To (ft.)
Mabile Tome		· ġ. FOF	MATION:	<u></u>					· · · · · · · · · · · · · · · · · · ·
5. Well is intended to supply water for:	,	<u> </u>	- APP	·			······································		
OTHER POLLUTION SOURCES (Give description such as dump, quar	ry, drainage	well, stream	/ 65 5 m, pond, lak	Z	1	<u>52</u>			
CLEAR WATER DRAIN SEPTIC TANK PRIVY SEEPAGE PIT A	ABSORPTION	A ETETD	BARN	SILO	ABANU		,	Comments	. 0
(Record enswer in appropriate block)	2.			ATT-C		ONED W		2,2 NK HOLE	
4. Distance in feet from well to nearest: BUILDING SANIT.			DRAIN SEW		NDATION INECTED		NDENT	WASTE W	ATER DRAIF
AND -If available subdivision name, lot & block no.		12	OFFICE	2 , 5	* ,	- ً. ا م)_	547	2/
OR - Grid or street no. Street name		ADD	RESS	·		ar artist to see			
2. LOCATION - 1/4 Section Section Township Re	ange	3. OWN	ER AT TIM	IE OF D	RILLING	(Jak)			
1. COUNTY CHECK	CK ONE	Village	c	ity	DALL.	E NALL	ر مرمضد	b)	
	GREEN CO YELLOW (OPY DR	ILLER'S CO	JP Y		Madi	son, Wis	consin 537	·UT
WELL CONSTRUCTOR'S REPORT FORM 3300-15	WHITE CO	NOT1	ision's co	ÒΡΥ	DEP		Box	450 '	ESOURCES

GAS - 48 HRS.

GAS - 24 HRS.

COLIFORM TEST RESULT.

CONFIRMED

Sec. 11

Sample Nos. All Retained

1815 University Avenue, Madison, Wisconsin 53706

Well name Huntsinger Farms, Inc. (Irr. #1)

Town of Brunswick

Owner.... Huntsinger Farms, Inc. Address.. Route #5

Eau Claire, Wisconsin

Driller.. Olson Bros., Well Drilling

Engineer.

	,	
· C	County: Eau Claire	R.10W
Completed Field check.	July 9, 1968 T.	+-
Altitude	W 820' ETM 26	
Use	Irrigation N	1 1
Static w.l	59' 420	+
Spec. cap	18.	iii

	******	Dril	l Hole			Quad. Elk Mound 15' Casing & Liner Pipe or Curbing									
Dia.	from	to	Dia.	from	to	Dia.	Y	from		Dia.		from	to		
12"	0	143'				271	Steel P&C 451bs. of Johnson Steel Slt #	tainle							
Grou	t: Kir Nor			· · · · · · · · · · · · · · · · · · ·		·		1	<u> </u>			from	to		

Samples from 0

to 155'

Rec'd: 3/4/69

Studied by: M. Roshardt

Issued: Aug. 19

Sa	mples fro		o 122,				idled by: M. Roshardt Issued: Aug. 19
Fo	rmations:	Drift			٠,		G7 gt/sec
Re	marks:	Well teste Driller re	ed for 4 leports we	hours at 11 depth	215 of 1	gpm with 43 feet.	12 feet of drawdown. K= 00067 gt) sec
L		•					
IC	G OF WELI			,		•	
	I .	Graphic	Rock		Gra	in Size	
ľ	Depths	Section	Туре	Color		Range	Miscellaneous Characteristics
	0-5	8.0	Sand	Mixed	C .	M/VC	Quartz & rounded rook frags. Fow granules & small peobles.
J	5-10		11	ft	12	11	Seme,
	10-15		11	18	11	11	Quartz & rock fragments. Many granules to large pebbles.
	15-20].Vo::::::::::::::::::::::::::::::::::::	n,	13	(i	Iţ	Same
	20-25		11	11	11	11	Same plus trace silt.
	25-30	7:00000	n .	11	11	tt	Same
D	30~35	WO::: \$18:	11	16	C	fn/VC	Rounded quartz & rock frags. Few grans to medium pebbles.
i	35-40		11	11	11	M/VC	Samo
R	40-45	0.00	11	11	.11	11	Same plus trace large peobles:
~``	45-50	0.00	**	1t	. M.	11	Same
1 -	50-55	. O	11	11.	11	In/VC	
I	55-60	O	11	11	11	11	11
1	60-65 65-70	V	- 11 - :	''	'''	110	Rounded quartz & rock fragments. Trace granules.
F	70-75			 		11	Subrounded quartz & rock framients. Trace large publics.
•	75-80			111	C .	11	Subrounded quartz & rock fragments.
	80-85	0.3.8	111	 ;;	M	12	Same plus few granules to medium pebbles.
T	85-90			111	11	18	Subrounded quartz & rock fragments. Tr grans to medium pat
	90-95		- 11	 ;; 		11	Same plus trace large pebbles.
ŀ	95-100		- 11	111	C	1:	Same but no large pebbles.
ł	100~105		16	 	L	10	Subrounded quartz & rock fragments.
-{		 	11		M		Same plus trace silt.
-	105-115		/11	11	М	£n/C	Rounded quantz & few rook fragments.
1	115-120 120-122	Y	/11	11	11	13	Same plus trace large pebbles.
1	122-125		"	111		fn/VC	Same but no peobles trace silt.
1	125-130	0 30 30 30	11	111	C	11	Rounded quartz & few rock frags. Tr granules to M pabbles.
1 .	130-135	~ · · · · · · · · · · · · · · · · · · ·	11	11	<u>M</u>	l	Subrounded quartz & rock fragments, Many grans to M pobs.
1	135-140	60	11	111	0	W/V0	Same
1	140-144	00	-11 ;	l	·	11	
	144-145			Yl or .	<u>M.</u>		Subrounded to angular quartz, trans rook fragments.
1	143-154		Cravel	11	S peb	Gran/M.peb	Ouantz, granito, sandsfond, chert. Srnd. Ltl. snd. Tr siltigi. Much silt. Trace sand. granules. Non-calcardous.
155		pini Dialinia	Clay	Gry or		Silt/Clay	
100	154-155	1	Sand	Yl gray	fn/C	vrn/vc	Trace rock fragments.

First Water Quality Test For	State of Wisconsin Department of Natural Resources
MEGONEGO ATOTAT TIATIOTIE WELL NIIMBEK MAS I LE	- BOL VALID . DUA I VAL
Property Owner KALL RICKMAN Telephone Number Mailting Address	
Box 84 Route 4 State Zip Code	1. Location (Flease type or print using a black pen.) Town City Village Fire # (if available)
Olty Equa Clavia Wi 5470/	of HAD BRUNSWICK Grid or Street Address or Road Name and Number (if available)
County E.C. County Well Location Well Completion Z 28 Permit No. W	Maple Rd
Posistration # 2. Mark Well locatile	on Subdivision Name
OLSON BROS 1460 in correct 40-acr parcel of section	Gov't Lot # or SW 4 of JW 4 of Section # ; T 2.6 N; R 10 D E X W
Address 4625 OLSON DRIVE	3. Well Type New
State Zip Code	Replacement Reconstruction/Rehabilitation
	of well constructed in 19 Reason for new, reconstructed, replaced, or rehabilitated
S	well?
4. Well serves # of homes and/or High Capacity Well? □ Yes 🖽	- race was
(ex: barn, restaurant, enurch, school, mounty, cost,	urroundings? Z-Yes : No
Well Located in Floodplain? Yes Lo-No 10. Privy	18. Paved Animal Barn Pen
11. Foundation Drain to Cle	arwater 19. Animal Yard or Shelter ver 20. Silo — Type
1. Danding 2. Building Overhang 12. Foundation Drain to Set 3. Screet or Holding Tank 13. Building Drain	21. Barn Gutter
3. Septic of Floring Plants	
5. Nonconforming Pit 14. Building Sewer 🗆 Gravity	
6. Diffed frome freating on rame	Other NR 112 Waste Source
7. Buried Petroleum Tank 15. Collector Sewer 8. Shoreline/Swimming Pool 16. Clearwater Sump	24
6. Drillhole Dimensions Method of constructing upper enlarged 9.	Geology From To Caving/Noncaving, Color, Hardness, Etc. (ft.)
Prom To drillhole. (If applicable more than one.) Dia. (in.) (ft.) (ft.) 1. Rotary — Mud Circulation	surface 3
surface / 2. Rotary - Air	sona
3, Rotary – Foam 4 Reverse Rotary	y gravel + sand 3 42
(2) 10 140 Z 5. Cable tool Bit _ (2) in. dia.	
6. Temp. Outer Casingin. dia. Removed? Yes No	171.01
If no, explain	116 0016
7 Casing, Liner, Screen	K= :001601
Material, Weight, Specification From To (ft.) Mig. & Method of Assembly (ft.)	1380/
6 1897 PF Atul 280 44 surface 36 757	
/ 10. Static Wate	r Level ve ground level 12. Well Is: Above
79 ft. bel	ow ground surface Above Grade
(5.75) 11. Pump Test	Developed? Yes No
Dia. (ip.) screen type and material From To Pumping Level	ft, below surface Disinfected? Yes No Capped? Yes No
rumping ave	CAN TOL troms
Method Missis Clamp From To Sacks 13. Were all un	ised, noncomplying, or unsafe wells properly filled with scalant?
Rand of Sealing Material	Well Constructor Date Signed
1/ 1 24004	con Cloon
Signature of pr	ill Rip Operator PO Date Signed
Make additional comments on reverse side about geology, etc.	

WELL CONSTRUCTOR'S REPORT FORM 3300-15

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
Box 450
Madison, Wisconsin 53701

FORM 3300—15		GREEN C	NOTE OPY - DIVISION'S COPY OPY - DRILLER'S COPY COPY - OWNER'S COPY		IATURAL RES x 450 isconsin 53701	
1. COUNTY	CHI Town	ECK ONE	Village City /	D NAME	wo f	<u> </u>
2. LOCATION - ¼ Section Section		Range	3. OWNER AT TIME OF	DRILLING	<u> </u>	
Mich Sard 4	John /	Dw.	Robert	Kilhem	ase	20
OR - Grid of street no. Street na	ume MM MM	i el	ADDRESS	46		
AND -If available subdivision name, lot & blo	ock no.		POST OFFICE	pl ·		4
4. Distance in feet from well to nearest:	BUILDING SANI	TARY SEWE	RIFLOOR DRAIN FO	UNDATION DRAIN		TER DRAIN
•	th C.	I. TILE	C. I. TILE SEWER CO	DNNECTED INDEPENDENT	C. I.	TILE
(Record answer in appropriate block) CLEAR WATER DRAIN SEPTIC TANK PR	IVV GEEPAGE PET I	ABSORPTIC	ON FIELD BARN SILO	 ABANDONED WELL S	INK HOE	Sept.
C. I. THE 500	550					s e
OTHER POLLUTION SOURCES (Give descrip	otion sucleas dump, qu	arry, drainage	e well, stream, pond, lake, etc	5)		
5. Well is intended to supply water for:	andrination de la contraction /del>		Plant	inas!		
6. DRILLHOLE		+	9. FORMATIONS	<i></i>		
Dia. (in.) From (ft.) To (ft.) Dia	. (in.), From (ft.)	To (ft.)	, Kin	d (, , , , , , , , , , , , , , , , , ,	From (ft.)	To (ft.)
Surface 44 24	j. '		That	all	Surface	2
	·	•	In allo	Property of	9	90
7. CASING, LINER, CURBING, AND SO	CREEN	-	- Janes		0 x	000
Dia. (in.) Kind and Weight	From (ft.)	To (ft.)	Gand		200	34
5" men stee	Surface	24.4	Grane		39	44
15-70 7/ 00/						" Jr
- Intagge	· · · · · · · · · · · · · · · · · · ·	·		2 /1/sac		
T cupled			772 K	,002 fr/sec		
		•	119	173 AT/d		
		·	17.	1,00		
8. GROUT OR OTHER SEALING MATE	ERIAL		10. TYPE OF DRILLI	NG MACHINE USED	<u></u>	
Kind	. From (ft.)	To (ft.)	Cable Tool	Direct Rotary	Reverse	e Rotary
none	Surface	•	Rotary — air w/drilling mud	Rotary — hammer with drilling mud & air	☐ Jetting ☐ Air	with Water
			Well construction comp	oleted on July	9 1	1977
11. MISCELLANEOUS DATA Yield test: Hrs	s. at	gPM	Well is terminated	A inches	řábove below f	inal grade
Depth from surface to normal water level	23	ft.	Well disinfected upon c	ompletion	Yes	☐ No
Depth to water level when pumping	5	ft:	Well sealed watertight u	pon completion	Yes	☐ No
Water sample sent to	on.		lak	poratory on July	9	19/7
Your opinion concerning other pollution has been casing joints, method of finishing to given on reverse side.	nazards, information the well, amount of	concerning cement use	difficulties encountered, d in grouting, blasting, sul	and data relating to near b-surface pumprooms, ac	rby wells, scre cess pits, etc.	ens, seals, , should
SIGNATURE	0.1	10 9 5	COMPLETE MAIL ADDRI	ESS:	<u></u>	

Please do not write in spage below HRS. GAS – 48 HRS.

IGAS - 24 HRS.

CONFIRMED

REMARKS

State of Wisconsin Department of Natural Resources Private Water Supply Box 7921 Madison, Wisconsin 53707

NOTE:

WELL CONSTRUCTOR'S REPORT Form 3300-15 Rev. 2-79

	Private E	of Natura e Water S Box 7921	upply				Gre	ite Copy en Copy	, <u> </u>	Division's Driller's (Copy	;	F	orm 330	0-15	K Ė	į.	Rev. 2	2-79
		Wisconsi	n 5370′	7 • • • • • • • • • • • • • • • • • • •				llow Cor	ру —	Owner's	Сору	·			A	-	198		7
1. CO	UNTY	Co	» W	Ulan	AP	CHECK Town			Village		□ ci		Vame		n /	own o	1 BN		UICK
2 10	C A TYON	100	tion or	Gov't. Lot	, 5	Section LL	Towns	hip Rang	ge 3.	name ,	Pop	WNER [AGEN	TATTI	IME O	FDRILL	ING C	HÉCK	์ (√) Oทเ
2, 410 OR	CATION - G	rid or Str	egt No.	Street or	Road 1	ame	(Y) 1 [13/		ADDRES	S	7		12		97-0	-na	41	F
AN	ID – If	available	subdivi	sion name,	101 & b	n ()	ri	PER DA		POST OF	FICE	- 4	0	a	7	ZIP &	ODE		
		4,42,45	,			[?]				C	LEN CEN	H	deste	- JU.	17				
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ans blo	wer in ap	propriate		7				<u> </u>		Clarke	untax I	'Cantle	·Holding	leawage.	· Moso	entlon III	1+ Ma	nure	lopper or
Stree San.	Storm	 	Sewers Other	Foundati		n Connec Sewage Sump	ted to:	C.I.	Other	. Cleary Sum		Tank	Tank	Seepag	Pit	ption of	~~~ Re	tentior	or c Tank
,				Člearwai Dr.	er	Clearwate Sump			-	<u> </u>	7	10	150	Seepag Seepag	e Tren	ch 😿 📝			Ab on
Privy	Pet Waste Pit	Well	nconfor	ming Exist		ubsurface onconforr			Barn Guttei		Yar	nal Silo d Wit	Gla h Pit Sto	sscined Påge ility	Silo W/o Pit	Storag Or Pit	e Tren	ch Mar	then Ture Basir
		Pump Tank								<u> </u>						<u> </u>			
Stack of	orary Mar or Platfor	nure Wa m Ma Bas	tertight nure Ta sin	nk or IP	Nanure ressure Pipe	Subsurf Gasoline Oil Tani	ace V or E	Vaste Po Disposal (Specify	nd or La Unit ' Type)	Co	ncrete	floor C Floor C Floor a	рфy	Oth	ier (De	scribe)			
A COWA	il is inton	iled to su	nelst verd	tor for:		\perp	_		19		tial Co	oncrete							
S.V. WEI	u is niton	ied to suj	ppty wa	· ·		Hi	MI	272				Kind		7-		From (f	t.)	T	o (ft.)
	in.) Fro		To (ft.)	Dia, (in	i i Br	om (ft.)	1 T	o (ft.)		,	Å	לאם הוה בחל	10	00.20	ا نر	Surface			· [
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10	Su	rface	<u> </u>	<u> </u>				*			14	ed (400	K.		_0		10	2
6		12	103	<u>, </u>	<u> </u>		<u> </u>		_	/_						·			
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	\mathcal{L}_{l}	MACA	als ci	20 May	Mr.		<u> </u>		1								· ·		·
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4) 		alle	41	wall	gre	. 1				☐ Cab			Rot W/C	täry-ham trilling d:& air	mer	1	Jett	ting wi	th
8. GR	OUT OR	OTHER Kind	SEALIN	G MATER	AL Fre	om (ft.)	To	(ft)		Rot W/d			i	tary-ham			. 🗆	Air	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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	M	re	ليبيا	ens	St	ırface	12	<u>d</u> :	1:	·		•	i Ker	76136 170	cu, y			. بر ب	
\	<u>-Wa</u>	10	ATIC D					 .	Well	construc	tion co	mpleted	on	=:	V at	ove	F	19,	12
	MISCEI Yield Tei	LANEC	JUS DA	ATA	Hrs. :	at	6_	GPM	[Well	is termina	ated -	16	<u>inc</u>	hes [low f	inal gr	ade	· · ·
	•				•	1	7,0	Ft.	Wall	disinfecte	d unoi	n comple	: etion		1 2 Y	es 🗀 1	Nó		
		om surrac water lev		mal water			<u> </u>					•			·	<u> </u>			
,		umping _		Ft	Stal	oilized	Yes	s 🗆 N	lo Well	sealed wa	ter tigh	t upon o	completio	n J	Ki Ye	S L I	No.	<u> </u>	
	Water sar	nple sent	to	<i>[7)</i>	tool	AUT	<u></u>		ecia vitia	on count		aborator	-	ก กคละโาง	r wells	soreens	r /	192	I of
Your o	pinion cong the we	ncerning II, amoun	other p t of cen	ollution ha nent used in	zards, ir ı grouti:	irormation ng, blastin	g, etc.,	should l	e given	on reverse	e side.	uce data	· ·	- Italie	********	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Signatu	rò /	, A	1	<u> </u>					Busin	ess Name	and C	omplete	Mailing	Address		1			
	عدانه	لأ برد	1/5/2			Registered	Well D) Priller	1	1-1	d	n / 1	Pla	ENG	2	Jed.	3	41	13

· NOTE:

WELL CONSTRUCTOR'S REPORT Form 3300-15 Rev. 2-79

White Copy - Division's Copy Green Copy - Driller's Copy Yellow Copy - Owner's Copy

Box 7921 Madison, Wisconsin 53707	Gre	en Copy Low Copy	- Division's C - Driller's C - Owner's C	onv			APR	131	
1. COUNTY Eau Glaire	CHECK (/) ON	E:	llage [☐ City	Name Bru	nswic	MAR	JUL	1.4 191
1/4 Section or Gov't. Lot	1 1 .	nip Range		X OWNER	AGENT A	TIME	名数 だいにてい	VOSEH)	ECK (V) ON
2. LOCATION SETSW OR - Grid or Street No. Street or Roa	9 26N d Name	1.0W	ADDRESS	U . 1	Mm. Speh	та	- W	(CV)	
					te#4				
AND — If available subdivision name, lot &	block No.		POST OF		Claire.	Wisc.	ZIP CO 5470		
, , , , , , , , , , , , , , , , , , , ,	iltary Bldg. Drain		Bldg. Sewer	Floor Connec			Bldg, Drain		rm Bldg, Se
to nearest: (Record answer in appropriate block)	Other	C.I.	Other	C.I. Sewer	Other Sewer	C.I.	Other	C.I.	Other
Street Sewer Other Sewers Foundation D	rain Connected to		mp Clearw her Sum			vage Abs	orption Uni	Manu Reten	l re Hopper o tion or natic Tank
San. Storm C.I. Other Sewer Clearwater Dr.	Sump Clearwater			40	See	page Bed		Pnuer	natic Tank
Privy Pet Pit: Nonconforming Existing	Sump Subsurface Pumpro		Barn Animal utter Barn	Animal Silc Yard Wit	Glass-Li	page Tre		Silage	Earthen Manure Bas
Pump .	Nonconforming Ex	disting	Pen	1 1 1 1 1 1 1 1 1	Facility	W/c Pit	Or Pit	, inches	Wallale Bas
Temporary Manure Watertight Liquid Manur Stack or Platform Manure Tank or Pressu	re Subsurface W re Gasoline or D	aste Pond		nure.Storage E		Other (C	Describe)	<u></u> l	
Basin Pipe	Oil Tank	isposal Uni (Specify Ty	(pe) Con	icrete Floor C icrete Floor a	nd .				
5. Well is intended to supply water for:	<u> </u>	· • · · · · · · · · · · · · · · · · ·	9. FORMAT	ial Concrete IONS	Walls				
6. DRILLHOLE	ne .			· Kind		1	From (ft.	<u> </u>	To (ft.)
	From (ft.) To	(ft.)	Top Soi	1.			Surface		2
70 Surface 4 6	1 0	14	Sand			١ ,	2		84 .
10 Surface 4 6	4 8	· /	Dettar.			 .	~		<u>өд</u> .
T. CACING I INED CURRING AND SCREEN			· · · · · · · · · · · · · · · · · · ·						
7. CASING, LINER, CURBING AND SCREEN Material, Weight, Specification Dia. (in.) Mfg. & Method of Assembly	From (ft.) . To	(ft.)	· STANFART	A Committee of the Comm		٠.	٠.		
ASTM A 53 19.451bs.		ين	A STATE OF THE PARTY OF THE PAR		,	اب.	200		
6 New Blk. St. T&C	Surface	<u>*************************************</u>	100 mg 1 mg 1 mg 1 mg 1 mg 1 mg 1 mg 1 m		018	17/0			
	· · ·			K= 1	001-	DT	day		
Seidemann-Sumitoms Me	tal Indi				156		•		
	A STATE OF THE STA								
			10. TYPE OF	DRILLING	MACHINE U	SED	·		
3 14-slot S/S Screen	81 8	4.	•		Rotary- w/drillin mud:&	nammer	• 1 –	1 - 441	
8. GROUT OR OTHER SEALING MATERIAL.	crom (ft.) To	(ft.)	Cable	ry-air illing mud	Rotary-			Jetting	Air ·
			- Rota	illing, mud ry-w/drilling	l	• •			Water
Drill Sluriy	Surface	4 .	mud لــا		Reverse	Rotary			
<u> </u>			Well constructi	on completed	l on		ch 19 '		19_81_
11. MISCELLANEOUS DATA Vield Test: 3 Hrs	. at12	GPM	Well is termina	ted18	inches	<u>Z</u> Z¥ ,	above fir	al grade	· ·
Depth from surface to normal water level	55	Ft. V	Vell disinfected	upon comple	etion ·	EXX Y	Yes 🗀 No)	
Depth of water level when pumping 57 Pt. St	abilized 🛎 Yes	□ No V	Vell sealed water	ertight upon c	ompletion	ZZ. y	Yes 🗆 No		
Will follow a Water sample sent to	fter install	lation Pel		y laborator	v on				19
Your opinion concerning other pollution hazards, finishing the well, amount of cement used in groun	information concer ling, blasting, etc., s	ning diffici	iltles encounte	red, and data		arby well	ls, screens, s	als, me	
Signature / / / /			usiness Name a		Mailing Add: & Heat 1	ess Tr	nc.		

Registered Well Driller

Route # 3, Box 35A Durand, Wisc.

/	1, County	Com C	laire		(Town day Clays	· •
SE, N	2. Location	Town of	Brunsw	ich s	City The Check one and	sive mame
	3, Owner 🖪		×	يانها الأسارا	e or Section, Town and Range numbers	
, .	4. Mail Ado	iress Cau	Clavil	Wi	Po	4
		$v = v \cdot v \cdot v \cdot v$	The state of the s		lress requiredft; septic ta	nk ft;
	dry well	or filter bed.	00 ft; abando	ned well_	ft.	Coupe of College of a what is the College of College how or college of
	6. Well is in 7. DRILLH	itended to sur	pply water for:	Jam	10. FORMATIONS:	AN THE REPORT OF
		165 To (165)	Dia. (in.) From (ft.)	To (ft.)	ikind	From To (ft.)
	The land			·	and serious serios	0 63
			PIPE OR CU	RBING:	2 3 4 5 5 7 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	74.38
	4 8	Tel	0	65	1 =0, 1 day	GE VED
	de sensite visco de	en anglia sila Tuga iyo wata s	19 W 1997 2	10 10 10 10 10 10 10 10 10 10 10 10 10 1	O TO THE REAL PROPERTY OF THE PARTY OF THE P	OCT 2 1961
,		Kind	From (ft.)	To (ft.)	E N G	NITARY
	100 Y	Carlo Are and	Sec. 18 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Construction of the well was co	
	11. MISCE	LLANEOUS 1	DATA:		Supl	1944
	Yield test:			GPM.	The well is terminated	
,	Water-level w	All the second of the second	r-level: _幺幼二 :女之	ft.	Was the well disinfected upon o	
·', '	a did a de la company		he state laborat	ory at:	Yes_£ Was the well sealed watertight	unon completion?
•	City.	on _		19	Yes_	No
	Signature	Zavred Registered Wel	O Lweek	, ,	erry Sh. Cau Ua in space below Complete Mail Add	isl ess
	Rec'd	the first after the size and any and the first terr terr terr terr terr			10 ml 10 ml 10 m	l 10 ml 10 ml
, ,	Ans'd				as—24 hrs.	
: :	Interpretation	iller have stoke this stiffs tall follow have shan pair start days after talls to be T	- '		48 hrs.	Particular designation of the state of the s
	فيست عديد المستوانية المستوانية المستوانية المستوانية المستوانية المستوانية المستوانية المستوانية المستوانية ا		a da ser terreta les ser da que ser parte a caracter ser ser ser se	I	, Coli	n

Examiner.

State of Wisconsin Department of Natural Resources Box 450 Macrison, Wisconsin 53701

NOTE:

White Copy	 Division's Copy
Green Copy	 Driller's Copy
Yellow Copy	 Owner's Copy

WELL CONSTRUCTOR'S REPORT
Form 3300-15
Rev. 10-75 AUG 21 1978

1. COUNTY CHECK CHECK		illage	Name City	anis w	ink	
	Range			NT AT TIME OF		HECK (A ONE
2. LOCATION WELSW 10 20 A		R_{c}	thert	HeIN		TIEOR (T) OILE
OR - Grid or Street No. Street Name	,	ADDRESS	0, .			
		POGE 0137	WE 4			<u>.</u>
AND — If available subdivision name, lot & block No.	•	POST OFF	ICE CILO	1.000	1.11 6	7/506
4. Distance in feet from well Building Sanitary Bidg. I	Orain Sanitar	y Bldg, Sewer	Floor Drain Connected To:	Storm Bld	g. Drain	Storm Bldg, Sev
to nearest: (Record C.I.	Other C.I.		C.I. Sewer Other S			C.I. Other
answer in appropriate 5	<u></u>					
Street Sewer Other Sewers Foundation Drain Connect		ump Clearwat ther Sump	er Septic Holding Tank Tank	Sewage Absorp	tion Unit	
San. Storm C.I. Other Sewer Sump	er		60	Seepage Bed	105	
Privy Pet Pit: Nonconforming Existing Subsurface	Pumproom	Barn Animal A		Seepage Trenct ass Lined Silo		
Waste Pit Well Nonconfort	ning Existing	Gutter Barn Pen	Yard With Pit St	orage w/o cility Pit	Eärthen Silag Storäge Tren Pit	ch Or
Pump Tank	·				Sales Sales Sales Sales Sales Sales Sales Sales Sales Sales Sales Sales Sales Sales Sales Sales Sales Sales S	
Temporary Manure Subsurface Gasoline or Stack Tank Structure Oil Tank	Waste Pond or L Disposal Unit	and Other (GIV	e Description)		STATE OF THE PARTY	
Stack Tank Structure Oll Tank	(Specify Type)	ļ		A STATE OF THE STA		
5. Well is intended to supply water for:	4 .	9. FORMATI	ONS			
nouseho) (d		Kind]	From (ft.)	To (ft.)
6. DRILLHOLE	1	0	11 1	0 1		1.10
Dia. (in.) From (ft.) To (ft.) Dia. (in.) From (ft.)	To (ft.)) - Of	ind Al	s بانه	urface	143
6 Surface 143		1				
	•			(·	•
				Moc		·
7. CASING, LINER; CURBING AND SCREEN Material, Weight, Specification Dia. (in.) & Method of Assembly From (ft.)	1		,	, MI		
	To (ft.)		Kr. 601		•	
La TECNEW Steel A5313	(13 <i>9</i>)		Kai	11/0	,	
LBI			. 4	0-1		
280 WALL 14.45 TET		<u> </u>	10"			
1155 000			•			
USS Pipe		<u> </u>	<u></u>			
43/4 Johnson Established	Wull		,			
Apr 1 20 11 1 100 100	11/5	10. TYPE OF	DRILLING MACHI	NE USED		
200 Jan W 4 x 6 Keller 1391	145		RC W	otary-hammer /drilling udf& air		ting with
8. GROUT OR OTHER SEALING MATERIAL	1 00- 664	Cable Botan	1 -		J.Jet	Air
Kind From (it.)	To (ft.)			otary-hammer air.		Water
Surface	·	Rotary mud	/-w/drilling Re	everse Rotary	, -	,
		Well constructio	n completed on	19 Oa	4	19 7/4
11. MISCELLANEOUS DATA	<u>.l</u>	110000000000000000000000000000000000000	10	abo	ve .	
Yield Test: Hrs. at	GPM_	Well is terminate	ed 152in	ches 🗀 bel	ow final gr	ade
//	,	ver est at 20.00 - 1 - 4.		Jim? Va	No	
Depth from surface to normal water level	Ft.	Well disinfected:	rbou combienou	5- 10	2 110	* .
Depth of water level 104 Ft. Stabilized	Yes 🗆 No	Well sealed water	tight upon completi	on Yes	No No	
Water sample sent to Lau Clau Cit	Cty Du		laboratory on	10-21		_19 <u>76</u>
Your opinion concerning other pollution hazards, information finishing the well, amount of cement used in grouting, blasting	d concerning diffi g, etc., should be	culties encountere given on teverse s	100.			memod or
Signature	111	Complete Mail A	ddress Olson L	Bros. Yveir 625 Olson Dri	ve	
TOWNER MUDDIN	140		Hau.	Claire. Wis. 5	4701	•

State of Wisconsin Department of Natural Resources Private Water Supply Box 7921 Madison, Wisconsin 53707

Signature

NOTE:

White Copy Division's Copy Green Copy Driller's Copy Yellow Copy Owner's Copy

WELL CONSTRUCTOR'S REPORT Form 3300-15

Name BRUDS 1. COUNTY CHECK (/) ONE: Eau Claire **⊠** Town ☐ City └ Village Section Township Range 1/4 Section or Gov't. Lot **◯** OWNER □ □AGENTAT TIME OF DRILLING CHECK (4) ONE Ornwise ? NAME WOOK 10 Street or Road Name ADDRESS - Grid or Street No. Rt4 - If available subdivision name, lot & block No. POST OFFICE ZIP CODE Ear Building Sanitary Bidg, Drain Sanitary Bldg. Sewer Storm Bldg, Drain Storm Bldg. Sev 4. Distance in feet from well Other to nearest: · Other Sewe C.I. Other answer in appropriate <u>62</u> Holding Sewage Absorption Unit Manure Hopper or Retention or Phuematic Tank Street Sewer Other Sewers Foundation Drain Connected to Sewage Sump Clearwater Sump Sewage Sump Clearwater Other C.I. Other Sewer San. Storm Seepage Bed Clearwater Dr. O Seepage Trench Sump Glass Lined Storage Facility Silo W/O Pit Earthen Silage Storage Trench Or Pit Animal Barn Pen Earthen Manure Basin Privy Pit: Nonconforming Existing Subsurface Pumproom Barn Gutter nimal Yard Silo With Pit Nonconforming Existing Well Pump Tank Watertight Liquid Manure Tank or Basin Manure Pressure Pipe Subsurface Gasoline or Oil Tank Waste Pond or Land Disposal Unit (Specify Type) Mänure Storage Basin Concrete Floor Only Other (Describe) Temporary Manure Stack or Platform Concrete Floor and artial Concrete Walls 9. FORMATIONS 5. Well is intended to supply water for: Home Kind From (ft.) To (ft.) DRILLHOLE From (ft.) Dia. (in.) From (tt.) To (ft.) Dia. (in.) To (ft.) 100501 Surface 70 Surface Sand agrave 7. CASING, LINER, CURBING AND SCREEN Material, Weight, Specification ano From (ft.) To (ft.) Dia. (in.) Steel PEnewblac Surface TYPE OF DRILLING MACHINE USED "X3 Johnson 67 70 Rotary-hammer W/drilling mud:& air ☐ Jetting with Cable Tool GROUT OR OTHER SEALING MATERIAL Rotary-air w/drilling mud Rotary-hammer Air To (ft.) Kind From (ft.) Water Rotary-w/drilling mud 🔲 Reverse Rotary Surface none 1986 Well construction completed on M MISCELLANEOUS DATA above final grade inches below Well is terminated Yield Test: X Yes No Wellidisinfected upon completion Ft. Depth from surface to normal water level Depth of water level Yes 🖂 No <u>60</u> ft Stabilized ⊠ Yes □ No ealed watertight upon completion when pumping Plaire Eau laboratory on Water sample sent to. Your opinion concerning other pollution hazards, information concerning difficulties encountered, and data relating to nearby wells, screens, seals, method of finishing the well, amount of cement used in grouting, blasting, etc., should be given on reverse side. Business Name and Complete Mailing Address

| Olson Well DRILL 1896-

Registered Well Driller

P#	8	3
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JAN 2 1 1971

well.	CONSTRU	ו פינים חיים	DE DOD#		VIIII	STATE O DEPARTMENT OF	F WISCONSIN	SUIDCE:
Wel-6	COMBINO	CIONS	WET OWT	WHIT GRE	TE COPY - F	DRILLER'S COPY Madison, W	x 450 /isconsin 5370	
1. COUNT				CHEC	LOW COPY -	NAME		
	caw (laire	ار	Town	· 🗀 Villa	ge City Brunswick		
for SE	10N - Rumber 1	and Street or	% section, sec	211 1/11	and range.	Also give subdivision name, lot and block numbers when	available.)	
8. OWNER	AT TIME OF	DRILLING	7/1	W.114	<u> </u>	10 T. 26.N. R. 10/W:		
7	, (a. a at bat san		2)	r. B	<u>, J., L</u>	Tibble \		
4. OWNER	S'S COMPLET	E MAIL ADI	DRESS	145	6-	Alaria (III)		
5. Distan	ce in feet fr	om well to	nearest:	BUILDING S	ANITARY SE			TER DRAI
(Record	answer in app	ropriate block)	6	23	LE C. I. TILE SEWER CONNECTED INDEPENDE	O. I.	TILE
CLEAR WA	TER DRAIN	SEPTIC TAI	NK PRIVY	SEEPAGE PI		TION FIELD BARN SILO ABANDONED WELK	SINK HOUR	<u> </u>
C. 1.	TILE	19"		89'			Sink Holls	•
Omno po	I I I I I I I I I I I I I I I I I I I	(g / (mona /d)	<u>, , , </u>		<u>· </u>			
OTHER PO	THUTTON SO	URCES (GIVE	description (anch as dump	, quarry, dra	inage well, stream, pond, lake, etc.)		
6. Well i	s intended	to supply	water for			1 4 0		
<u> </u>				0	House	hold use		·-··
7. DRILLH Dla. (in.)	OLE From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)	10. FORMATIONS Kind	ا دورون	
511	Surface		Dia. (III.)	170111 (11.)	10 (11.)	Ninu .	From (ft.)	To (ft.)
<u>. 5"</u>		78'	ļ	·		Sand & gravel	Surface	78
	1				1			
8. CASING	G, LINER, C	URBING, A	ND SCREE	N				· · ·
Dia. (in.)	к	ind and Weigl	ht	From (ft.)	To (ft.)			
511	It.o.	THO	15 lles	Surface	75			
· · ·			1 0 3000		1	1 Touc	1	•
·	-m	205						. ,
					<u>.</u>	. 2-010021 ptd		•
0' 1	0.1			07	4 /		-	
34	Johns	m 5,5	. ROTEL	v #18x	plat	1-1-1-1-1-1-1		·
9. GROUT	OR OTHER		MATERIAL			,		
	Kin	d		From (ft.)	To (ft.)		<u> </u>	
			* • •	Surface			.	
,						M. II	12. 1	170
11. MISCE	LLANEOUS	DATA				Well construction completed on	10-6-	19/0
Yield, testi			4 Hrs. a	t , 2	O GPM	Well is terminated & inches	above fina below fina	al grade
Depth from	surface to	normal w	ater level	5	íg ft.	Well disinfected upon completion	Yes	□ No
epth to w	ater level v	vhen pump	oing	:6	ft:	Well sealed watertight upon completion	(¥ Yes	□ No
Vater sam	ple sent to	Enul	Clair	ر (ا) . د ا	(D) .	laboratory on:	10-6-	19 70
vells, scre	on concerni ens, seals, nprooms, a	type of c	asing joint	hazards, in s, method	formation of finishi	concerning difficulties encountered, and da ng the well, amount of cement used in gr se side.	ta relating to outing, blasti	nearby
IGNATURE				·/·		COMPLETE MAIL ADDRESS Of Son Bios. Well-Dri	Hing Co:	
ク	~ 1 /	130	, .	•		4625 Olson Dr	ive	
Z In	ind a	lloor	Reg	istered We	eli Driller	Eau Claire, Wis. 5	4701	

COLIFORM TEST RESULT

Please do not write in space below
GAS - 24 HRS. GAS - 46 HRS. CONFIRMED

	State of Wisconsin
Well Construction Report For	Department of Natural Resources
WISCONSIN UNIOUE WELL NUMBER	Private Water Supply — WS/2
Property Owner Jon Jaguest Telephone Man	FEB Box 7921 1902 Madison, WI 58707
Mailing Address	***************************************
S. 5550 Cenetary Ld.	1. Location (Please type or print using a black pen.)
Olty	Zip Code Zip Code City Uillage Fire # (if available)
County of Well County Well Location Well Co	54701 Grid, or Street Address or Road Name and Number-(if available)
County of Well County Well Location Well Co	impletion 15191 Size Autress of road rathe and range of a variable
Location Chara Permit No. W 5812 Date	M.M. D.D. YV. Subdivision Name Lot # Block #
7 7 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2. Mark well location (VW) WE WW)
10 146	parcel of section. Gov't Lot, of 4 of 4 of
Address Olson Bros. Well Drilling Co., Inc.	N Section / T N; R D E W
4040 UISON DITUE	3. Well Type
Fall Claire M/ E470a	W Replacement Reconstruction
	of unique well #constructed in 19
	Reason for new, replaced or reconstructed well?
	DOI'N WATER
4. Well serves # of homes and/or High Capacity	*
(ex: barn, restaurant, church, school, industry, etc.) High Capacity	Property? Yes No. Drilled Driven Point D Jetted Other
5. Well Located on Highest Point of Property, Consistent with the Gen	neral Layout and Surroundings? 💢 Yes 🔲 No If no, explain on back side.
	spout/Yard Hydrant 34 17. Wastewater Sump 18. Paved Animal Barn Pen
	lätion Drain to Clearwater 19. Animal Yard or Shelter
	lation Drain to Sewer 29 Silo — Type
3. Septic or Holding Tank 13. Building	
14. 1 61 PMA	Iron or Plastic 🗆 Other 22. Manure Pipe 🗆 Gravity 🗆 Pressure
5. Nonconforming Pit (14, Buildin	ig Sewer ⊟Gravity □ Pressure / \□ Cast Iron or Plastic □ Other
717	iron or Plastic Other
7	or or Street Sewer Other NR 112 Waste Source
	ater Sump 24.
6. Drillhole Dimensions Method of constructing upper enlarged	Divis 9. Geology From To
F. Dia. (in.) (ft.) (ft.)	Type, Caving/Noncaving, Color, Hardness, Etc. (ft.) (ft.)
1. Rotary — Mud Circulation	Brown sand surface 4/
surface D	Court away
3. Reverse Rotary	
6 6 5 Cable-tool Bit in. dia.	
6. Temp. Outer Casing in. dia.	
Removed? Yes No	
If no, explain	
7. Other	725 1260.0024
7. Casing, Liner, Screen	
Material, Weight, Specification From To Dia. (in.) Mfg. & Method of Assembly (ft.) (ft.)	757 907 (10
1 1 2 1 201 DI Tsurface	
Justice ABB 0.80PG surface	
1897 Law 8:00 36	
18.91 Sawkill 36	
	10. Static Water Level 12. Well Is: ft, above ground level
	Grade
6.56	11. Pump Test Developed? Tes No
Dia fint screen type and material From To	
5 Hd Stainless stul 36 40	Fumping Level 1t. below surface Connects
8. Grout or Other Sealing Material	rumping at 2 1 2 Gr W for / nours
22022	13. Did you permanently seal all unused, noncomplying, or unsafe wells?
Kind of Scaling Material (ft.) (ft.) Cement	Yes No. If no, explain
Bound surface (1) 2	14. Signature of Point Officer or Registered Driller Date Signed
mana gione 10 0	Signighture of Drill Rig Operator To Date Signed
舞りなな リー・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・	Mary Chan PO Dan 1091
Make additional comments on reverse side about geology, etc.	WELL CONSTRUCTION REPORT 204
MARIE AND AND AND AND AND AND AND AND AND AND	DNR Form 3300-77A Rev. 9-88
	Wenns Original
MM 56 90 50 50 50 Z No. 20 W 1990 2 5 5 5 7 5 5	nin meden gen Raben finte be bei general bei ber bei ber bei bei bei bei bei bei bei bei bei bei

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State of Wisconsin
Department of Natural Resources
Private Water Supply
Box 7921
Madison, Wisconsin 53707

B1

NOTE:

White Copy — Division's Copy Green Copy — Driller's Copy Yellow Copy — Owner's Copy WELL CONSTRUCTOR'S REPORT Form 3300-15 Rev. 2-79

.JAN 1 0 1989

1. COUNTY	CHECK (V) ONE:	,	Thomas .	/ Management	
Can Claim		Village □ City →	Name .	BRUNS	1111111
1/4 Section or Gov't, Lot	Section Township Range		A OFFIT AT THE	DICUIVS	DUTCE
2. LOCATION ATT	10 2611111	Along The A.	AGENT AT TIME	JF DRILLING C	HECK (√) OV
OR - Grid or Street No. Street or Ros	nd Name	ADDRESS	un, an.	1 2	
NE, NW Sec10/ X/4	MI Sam	1 22 M	· · · · · · · · · · · · ·	<i>l_</i>	
AND - if available subdivision name, lot &	bytock No.	POST OFFICE	meta s	7 TH CODE	
•	,	Jan Ola	- -	ZIP CODE	7
4. Distance in feet from well Building Sai	nitary Bidg. Drain Sanitar	ry Bldg, Sewer Floor	Drain Sted To: Storm B	0/10/	
to nearest: (Record	C.I. Other C.I.		Other Sewer C.I.	(ADM 1)	torm Bldg. Se
answer in appropriate 30			0	A COLINER	Other
Street Sewer Other Sewers Foundation D	rain Connected to: Sewage S	ump Clearwater Septic	Holding Sewage Abso	orption Unit Mai	nure Hopper
San. Storm C.I. Other Sewer	Sewage C.I. C	other Sump Tank	Tank Seepage Pit	Ret	ention or lematic Tank
Clearwater Dr.	Clearwater Sump	75	Seepage Bed	1071	·
Privy Pet Pit: Nonconforming Existing Waste	Subsurface Pumproom	Barn Animal Animal Sile	Seepage Tree		e Earthen
Pit Well	Nonconforming Existing	Gutter Barn Yard Will Pen	o Glass Lined Silo th Pit Storage W/o Facility Pit	Storage Trend	Manure Bas
Pump Tank				101111	
Temporary Manure Watertight Liquid Manur		or Land Manure Storage	Basin Other (D	Occurry 1	
Stack or Platform Manure Tank or Pressul Basin Pipe	re Gasoline or Disposal Ur Oil Tank (Specify T	Concrete Floor	Only	escribe)	
		Concrete Floor a			
5. Well is intended to supply water for:		9. FORMATIONS	, , , , , , , , , , , , , , , , , , ,	· · · · · · · · · · · · · · · · · · ·	
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		1			
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		10. TYPE OF DRILLING	MACHINE USED	······································	
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		Well construction completed	on . 10 .	[<i>[</i> 4	1987
11. MISCELLANEOUS DATA			i II_ai	IOVA	
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Depth from surface to normal water level	/5 Pt.	Well disinfected upon comple	tion	es 🗀 No	
Depth of water level					
• , ,	ibilized Fyes No	Well sealed watertight upon c	ompletion Z-Ye	s 🗆 No	
· P A	4				
Water sample sent to	air # 36	230 laboratory	7 on	115	19.87
Your opinion concerning other pollution hazards, i	nformation concerning diffic	ulties encountered, and data	relating to nearby walls	screens sools -	
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Signature 1	1 1 A A 1 1	Business Name and Colsoir	Prot. Wall Driffina	CON	
~ W/ You	- # 146	Business Name and Complete	Walte Naghesarive		
Georgeann M. also	Registered Well Driller	. Eoc	Claire, Wis. 54701	:	
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APPENDIX B

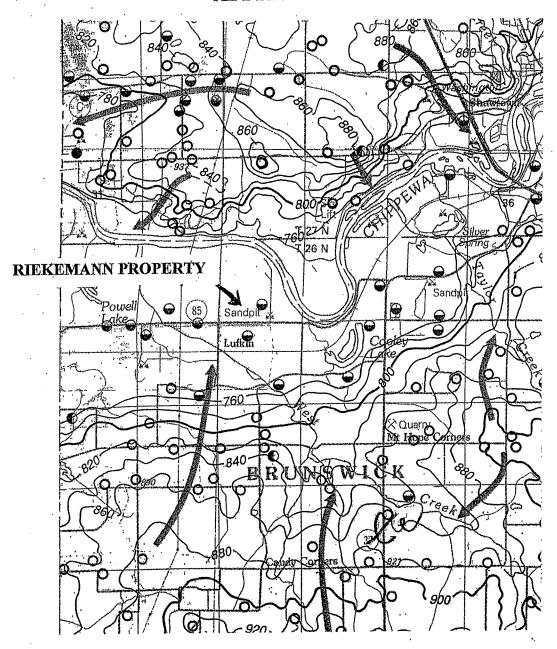


Figure 5. Water-table map by Muldoon (1992) for the Riekemann Property. The 760-foot contour line does not cross West Creek in the W ½, Section 8, T26N, R10W as shown on the topographic map (Figure 2)

APPENDIX B

Wisconsin DOT Conceptual Permit

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Wisconsin Department of Transportation

TRANSPORTATION DISTRICT 6

718 West Clairemont Avenue Eau Claire, WI 54701-5108

Telephone Toll Free

· (715) 836-2891 (800) 991-5285

FAX TDD (715) 836-2807 (715) 836-6578

E-Mail

eauclaire.dtd@dot.state.wi.us

GAIL D. JENSEN MATHY CONSTRUCTION CO. PO BOX 189 ONALASKA WI 54650-0189

September 17, 2002

Subject:

Special Exception to Trans 233 Requirements

Town of Brunswick

STH 85, Eau Claire County

Dear Ms. Jensen:

The Conceptual Trans 233 Land Division Review Request was transmitted to the Wisconsin Department of Transportation by your office on September 6, 2002.

The Wisconsin Department of Transportation has considered this conceptual proposal in the light of the Rules and Regulations Governing Division of Land Abutting a State Trunk Highway or Connecting Highway, Chapter Trans 233, Wisconsin Administrative Code, promulgated under authority of Section 236.13(1)(e) and 86.07(2), Wisconsin Statutes.

As a conceptual proposal, the Department of Transportation does not object to granting two (2) Special Exceptions to the requirements of Trans 233 for accesses to STH 85, with the following conditions: The existing residential drive serving the farm operation will be restricted to its existing use only. Any further land division, changes in land use, or highway improvement projects may require the removal of one of these two driveways and access to all these lands will be via a single access.

This decision is based on the preliminary information you have provided. For final approval and certification, you must submit all the required information for a formal Trans 233 Land Division Review, including a certified survey map (CSM) or deed, and a check for the land division review fee (\$110). If the final proposal is found to agree substantially with the preliminary proposal already submitted, the Special Exception will be approved. Full compliance with the requirements as set forth in Trans 233 will be required before we can certify the final CSM.

Sincerely,

Diane Schermann

District Access Management Coordinator

DS:ss

cc: Robert Riekman, property owner

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APPENDIX C

Chapter 3, Wisconsin Construction Site Best Management Practice Handbook

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CHAPTER 3: BEST MANAGEMENT PRACTICES

CHAPTER 3 BEST MANAGEMENT PRACTICES

The purposes of this chapter are to:

describe best management practices to control pollutants on construction sites;

identify where the best management practices apply; and

provide minimum standards and criteria for designing and using the best management practices.

This chapter includes both temporary and permanent best management practices. Temporary best management practices are defined as best management practices designed to provide control of pollutants for days, weeks or months and generally are removed from the site when no longer needed. Generally they do not require engineering analysis or design. Permanent best management practices are defined as best management practices designed to remain in-place for years after the construction or land disturbance has ended. Permanent best management practices generally require engineering analysis or design.

The word "shall" means a required provision. "May" means an optional provision. "May not" means a prohibition.

This chapter includes descriptions and discussions of individual best management practices by the following categories:

- A. Diverting flow;
- B. Managing overland flow;
- C. Trapping sediment in channelized flow;
- D. Establishing permanent drainageways;
- E. Protecting inlet;
- F. Trapping sediment during site dewatering;
- G. Preventing tracking; and
- H. Others.

Chapter 3

April 1989

A. Best Management Practices for Diverting Flow

Concentrated or sheet runoff flow to a disturbed area greatly increases the amount of erosion of the disturbed area and the sediment carried in runoff from the disturbed area. Diverting the runoff around the disturbed area is generally an effective best management practice when the disturbed area cannot be stabilized immediately. Diverting runoff from the disturbed area also increases the practicability of controlling the pollutants from the disturbed area.

The Model Ordinance requires:

- * channelized runoff from adjacent areas passing through the site shall be diverted around disturbed areas.
- * sheetflow runoff from adjacent areas greater than 10,000 square feet in area shall also be diverted around disturbed areas, unless shown to have resultant runoff velocities of less than 0.5 ft./sec. across the disturbed area for the set of one-year design storms.
- * diverted runoff shall be conveyed in a manner that will not erode the conveyance and receiving channels.

Diversions may be temporary or permanent best management practices.

A. 1. Permanent Diversion 1

Definition

A channel with a supporting ridge on the downslope side constructed across the slope.

Purpose

To divert runoff around disturbed areas to a location where the water can be discharged without adversely impacting the receiving area or channel.

Conditions Where Practice Applies

- 1. Upslope of disturbed areas where erosion is likely to occur.
- Upslope of soil piles.
- 3. To direct runoff from an area to a detention basin.
- 4. Around buildings or areas subject to damage from runoff.

Planning Considerations

Permanent diversions should be planned as part of the initial site development. Design of a permanent diversion requires assessment of potential hazards in the event of failure. The design should be prepared by a registered professional engineer.

Design Criteria and Requirements

[Wisconsin Field Office Technical Guides (SCS) Standard 362 may be used for design.]

1. <u>Timing</u> - Diversions and outlets shall be constructed and stabilized prior to disturbing downslope areas or using the detention basin.

L. Derived from Wisconsin Field Office Technical Guides (SCS) standard 362, Diversion.

"b" IS ASSUMED AS 3' (0.91 m) TO DETERMINE MEASURING POINT FOR "V" BOTTOM CHANNELS.

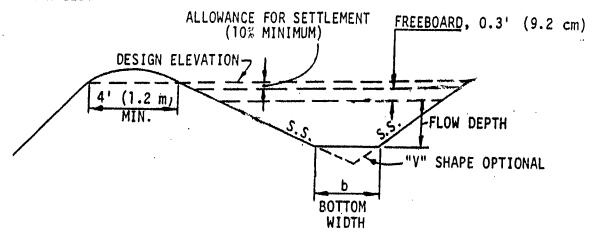


FIGURE 1

- 4. Grade and Velocity The channel grades may be uniform or variable. Channel velocity shall be non-erosive and may not exceed permissible velocities shown in Table 1.
- 5. Outlets Each diversion shall have an adequate outlet capable of conveying runoff to a location where the discharge will not cause adverse impacts. The design elevation of the water surface in the diversion may not be lower than the design elevation of the water surface in the outlet at their junction when both are operating at design flow.
- 6. <u>Vegetative Stabilization</u> The diversion side slopes, ridge and the downslope side of the berm shall be stabilized by either sodding or seeding and mulching within 7 days of final grading. The diversion channel shall be stabilized as specified in the subchapter on Best Management Practices for Concentrated Flow.

Maintenance

Diversions shall be inspected within 24 hours after each rainfall or daily during periods of prolonged rainfall until the vegetative cover is stabilized. Repairs shall be made immediately.

A. 2. Temporary Diversion¹

Definition

A temporary channel with a supporting ridge on the downslope side constructed across the slope that is used for less than 12 months..

<u>Purpose</u>

To divert runoff around disturbed areas to a location where the water can be discharged without adversely impacting the receiving area or channel.

Conditions Where Practice Applies

- 1. Where drainage areas do not exceed 3 acres.
- 2. Upslope of disturbed areas where erosion is likely to occur.
- 3. At discharge points from downspouts.
- 4. Upslope of soil piles.
- 5. To direct runoff from an area to a detention basin.

Planning Considerations

Design of a temporary diversion requires assessment of potential hazards in the event of failure. The design should be prepared by a registered professional engineer.

Design Criteria and Requirements

1. <u>Timing</u> - Diversions and outlets shall be constructed and stabilized prior to disturbing downslope areas or using the detention basin.

Derived from Illinois Procedures and Standards for Urban Soil Erosion and Sedimentation Control.

Chapter 3

April 1988

- Outlets Each diversion shall have an adequate outlet capable of conveying runoff to a location where the discharge will not cause adverse impacts. The design elevation of the water surface in the diversion may not be lower than the design elevation of the water surface in the outlet at their junction when both are operating at design flow.
- 6. <u>Vegetative Stabilization</u> The diversion side slopes, ridge, downslope side of the berm and channel shall be stabilized within 7 days of final grading by:
 - a. sodding;
 - b. seeding and mulching in combination with filter fabric barriers or straw bale barriers;
 - c. covering with suitable filter fabric; or
 - d. covering with 6 mil polyethylene sheeting.

<u>Maintenance</u>

Diversions shall be inspected within 24 hours after each rainfall or daily during periods of prolonged rainfall throughout its period or use. Repairs shall be made immediately.

B. Best Management Practices for Managing Overland Flow

Overland flow refers to runoff flowing as a "sheet" over the land and is not concentrated in runoff channels. Generally, areas with overland flow are small in size. Best management practices are usually placed on sideslope and downslope locations.

Temporary best management practices include:

Filter fabric fences.

Straw bale fences.

Mulching.

Permanent best management practices include:

Seeding with mulching.

Sodding (see areas of concentrated flow for description).

These best management practices are applicable to both areas less than and greater than 10 acres where overland flow occurs and to containing pollutants from soil storage piles. The Model Ordinance requires for disturbed sites left inactive for 7 days or more:

- * filter fences, straw bales or equivalent best management practices to be places along all sideslope and downslope sides of sites where less than 10 acres are disturbed at one time.
- * at sites with less than 10 acres disturbed at one time, if a channel or area of concentrated runoff passes through the site, filter fences shall be placed along the channel edges to reduce sediment amounts reaching the channel.

The Model Ordinance also requires:

* filter fences or straw bales to be placed around soil piles with more than 10 cubic yards of material if the soil pile will exist for less than 7 days.

Filter fences or straw bales are also best management practices that can be used temporarily while vegetative cover is being established on soil piles of more than 10 cubic yards that will be in existance for more than 7 days.

B. 1. Filter Fabric Fences 1

Definition

A temporary sediment barrier consisting of a geotextile filter fabric stretched across and attached to supporting posts and entrenched.

<u>Purposes</u>

- 1. To intercept and detain small amounts of sediment from disturbed areas during construction operations to prevent sediment from leaving the site.
- To decrease the velocity of sheet flows.

Conditions Where Practice Applies

- Downslope of disturbed areas where erosion is likely to occur in the form of sheet or rill erosion.
- 2. Around or downslope of soil piles.
- 3. Where the size of the drainage area is no more than 0.25 acres per 100 feet of fence length. The maximum slope length for given slopes is as follows:

Slope	Slope Length	
< 2%	100 feet	
2 to 5%	75	
5 to 10%	50	
10 to 20%	25	
> 20%	15	

- 4. Where the maximum gradient behind the fence is 50% (2:1).
- 5. Under no circumstances may filter fabric fences be used in streams, swales, ditches or below ordinary high water marks along streams. See filter fabric barriers for conditions with concentrated flow.

Derived from Virginia Erosion and Sediment Control Handbook; North Carolina Erosion and Sediment Control Planning and Design Manual; Wisconsin Department of Transportation specifications for filter fabrics; and DNR field observations.

Factory pre-assembled with support netting: The full height of the filter fabric fence shall be supported by "2 x 2" kiln dried hardwood posts or equivalent. The posts shall be driven at least 8 inches into the ground. The maximum spacing of the posts shall be 8 feet.

- 6. Anchoring The filter fabric shall be anchored by spreading at least 8 inches of the fabric in a 4" x 4" trench or a 4" deep V-trench on the upslope side of the fence as shown in Figures 1 and 2. The trench shall be backfilled and compacted.
- 7. <u>Fabric specifications</u> The filter fabric shall meet the following specifications:
 - a. Grab strength: 100 lb. minimum in any principal direction (ASTM D-1682)
 - b. Mullen Burst: Minimum 200 psi (ASTM D-3786)
 - c. Equivalent opening size:

between 50 and 140 for soils with more than 15 percent by weight passing a No. 200 sieve

between 20 and 50 for soils with less than 15 percent by weight passing a No. 200 sieve

- d. Water Flow Rate of 10 gal/min/ft² at 50MM constant head as determined by multiplying permittivity in sec as determined by ASTM D-4491 by a conversion factor of 74:
- e. Ultra violet radiation stability of 90%.
- f. Fabric with support netting shall be reinforced with an industrial polypropylene netting with a 3/4 inch spacing or equivalent. A heavy duty nylon top support cord or equivalent is required.

Maintenance

- Fabric filter fences shall be inspected within 24 hours after each rainfall or daily during periods of prolonged rainfall. Repair or replacement shall be made immediately.
- 2. Sediment deposits should be removed after each storm event. Sediment deposits shall be removed when deposits reach 0.5 the height of the fence.

B. 2. Straw Bale Fences 1

Definition

A temporary sediment barrier consisting of a row of entrenched and anchored bales.

Purposes

- 1. To intercept and detain small amounts of sediment from disturbed areas during construction operations to prevent sediment from leaving the site.
- 2. To decrease the velocity of sheet flows.

Conditions Where Practice Applies

- 1. Downslope of disturbed areas where erosion is likely to occur in the form of sheet or rill erosion.
- Around or downslope of soil piles.
- Where the maximum size of the drainage area is 0.25 acres per 100 feet of fence length; the maximum length of slope behind the fence is 100 feet; and the maximum gradient behind the fence is 50% (2:1). The maximum slope length for given slopes is as follows:

Slope	Slope Length
< 2%	100 feet
2 to 5%	75
5 to 10%	50
10 to 20%	25
> 20%	15

- 4. Where pollutant control is needed for less than 3 months.
- 5. Under no circumstances may straw bale fences be used in streams, swales, ditches or below ordinary high water marks along streams. See straw bale barriers for conditions with concentrated flow.

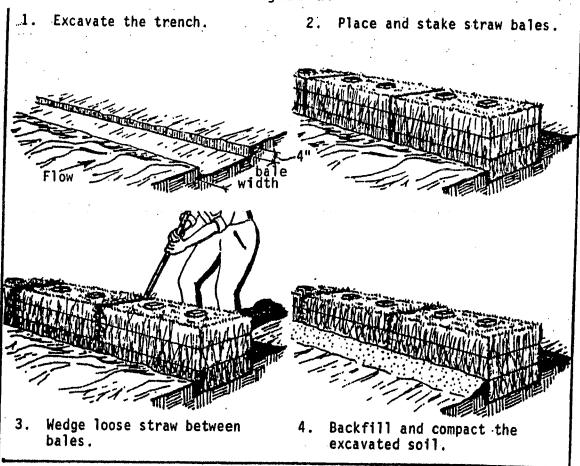
Derived from Virginia Erosion and Sediment Control Handbook, North Carolina Erosion and Sediment Control Planning and Design Handbook; and DNR field observations.

7. Anchoring - Each straw bale shall be securely anchored by at least two stakes or re-bars driven through the bale and at least 8 inches into the ground. The first stake shall be driven towards the previously anchored bale to help create a tight fit.

Maintenance

- 1. Straw bale fences shall be inspected within 24 hours after each rainfall or daily during periods of prolonged rainfall. Repair or replacement shall be made immediately.
- 2. Sediment deposits should be removed after each storm event. Sediment deposits shall be removed when deposits reach 0.5 the height of the fence.

Figure 1.



Source: Adapted from <u>Installation of Straw and Fabric Filter Barriers for Sediment Control</u>,
Sherwood and Wyant

B. 3. Mulching 1 2

Definition

A soil surface application of plant residues or other suitable materials.

<u>Purposes</u>

- 1. To reduce erosion by dissipating raindrop impact energy and reducing overland flow and concentrated flow velocities.
- 2. To foster establishment of temporary vegetative cover.
- 3. To foster establishment of permanent vegetative cover.

Conditions Where Practice Applies

- 1. On exposed soils where additional grading or landscaping will take place.
- 2. On exposed soils in conjunction with temporary or permanent seeding.

Planning Considerations

- 1. The effectiveness of mulching is increased if drainage from upslope areas is diverted around the exposed areas.
- 2. Mulching should be used in conjunction with other best management practices such as filter fabric fences or straw bale fences.
- 3. A variety of mulch nets and mats are commercially available.

Portions derived from Wisconsin Field Office Technical Guide (SCS) Standard 484, Mulching and Virginia Sediment and Erosion Control Handbook.

Brand names are mentioned for illustration purposes only. Use of a trade name does not imply endorsement of the product.

Emulsified asphalt may not be used when air temperatures are below 32° F. Manufacturer's recommendations for mixing and temperature control shall be followed. The materials shall be blown from a machine designed for the application and uniformly deposited over the area in one operation. The machine used shall be capable of blowing or ejecting a constant amount of straw and allow introduction of the asphalt emulsion.

- (3) Applying synthethic binders, such as Terratack, Petroset and Aerospray, in accordance with the manufacturer's recommendations.
- 5. Nets and Mats Erosion nets and mats including excelsior retention blankets, jute matting and polypropylene netting, shall be installed according to the manufacturer's recommendations.
 - a. Fertilizer, seed or sod shall be applied before installing the nets or mats.
 - b. Installation shall start at the bottom of the channel or bottom of the slope. Overlap nets or mats at least 4 inches. Nets or mats shall be placed on all portions of the channel covered by water when 1 foot of water is flowing in the channel.
 - c. The nets or mats shall be secured by placing 6 inch or longer, no. 8 gauge or heavier wire staples. Staples shall be placed every 3 feet along the edge and where the nets or mats overlap.

<u>Maintenance</u>

All mulches, mats and nets shall be inspected within 24 hours after each rainfall or daily during periods of prolonged rainfall. Additional mulch, netting or matting shall be applied immediately when necessary to maintain suitable coverage. Inspections shall be made until vegetative cover is established.

B. 4. Seeding¹

Definition

A temporary or permanent planting of grasses or legumes.

<u>Purposes</u>

To stabilize disturbed areas to minimize erosion and to reduce overland flow velocities.

Conditions Where Practice Applies

On exposed soils.

Planning Considerations

- 1. The effectiveness of seeding in controlling erosion is increased if drainage from upslope areas is diverted around the exposed areas.
- 2. Seeding should be used in conjunction with other best management practices such as filter fabric fences or straw bale fences.
- 3. Seeding may not be considered as acceptable vegetative cover until the grasses are established.

Design Criteria and Requirements

- 1. Model Ordinance requirements The Model Ordinance requires that seeding (sodding, mulching or other equivalent best management practice) shall be applied within 7 days of the end of active disturbance of the soil surface.
- 2. <u>Seedbed preparation</u> A proper seedbed shall be prepared before seeding.
- 3. <u>Mulching</u> Seeding on all slopes shall be done in conjunction with mulching.

Portions derived from Wisconsin Field Office Technical Guide (SCS) Standard 342, Critical Area Planting, and the Virginia Erosion and Sediment Control Handbook.

C. Best Management Practices for Trapping Sediment in Channelized Flow

Channelized flow refers to runoff flowing through depressions, swales or channels. This section contains best management practices to control or trap sediment carried in channelized flow.

The Model Ordinance requires:

* at sites with more than 10 acres disturbed at one time, or at which a channel originates in the disturbed area, one or more wet detention basins be constructed to receive all runoff leaving the site.

The practices vary by drainage area as follows:

for drainage areas less than 2 acres -

Filter fabric barriers (C. 1.)

Straw bale barriers (C. 2.)

Temporary diversions (A. 2.)

for drainage areas less than 5 acres -

Sediment traps (C. 3.)

for drainage areas less than 150 acres -

Sediment basins (C. 4)

C. 1. Filter Fabric Barrier 1

Definition

A temporary sediment barrier used in areas of concentrated flow consisting of a filter fabric stretched across and attached to supporting posts and a wire fence and entrenched.

<u>Purpose</u>

1. To cause sediment carried in channelized or concentrated runoff to settle by reducing the velocity of the flow.

Conditions Where Practice Applies

- 1. In unstabilized minor swales, ditches or diversions where the maximum contributing area is no greater than 2 acres.
- Filter fabric barriers may not be used in intermittent and perennial stream channels.

Planning Considerations

1. A filter fabric barrier does not require an engineering analysis.

- 2. Under normal conditions, filter fabric barriers require removal of trapped sediment. If maintenance is difficult due to location or presence of wet soils that prohibit prompt cleaning after runoff events, additional parallel barriers should be constructed.
- 3. Filter fabrics degrade due to ultraviolet light. Consult the manufacturer's specifications for useful lifetime.
- 4. Woven and non-woven filter fabrics are available. Strength, permeability and suitability for various soil textures vary with the type of fabric.

Derived from Virginia Erosion and Sediment Control Handbook; Wisconsin Department of Transportation specifications for filter fabrics; and DNR field observations.

- b. Mullen Burst: Minimum 200 psi (ASTM D-3786)
- c. Equivalent opening size:

between 50 and 140 for soils with more than 15 percent by weight passing a No. 200 sieve

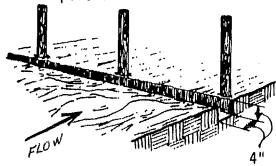
between 20 and 50 for soils with less than 15 percent by weight passing a No. 200 sieve

- d. Water Flow Rate of 10 gal/min/ft² at 50MM constant head as determined by multiplying permittivity in sec as determined by ASTM D-4491 by a conversion factor of 74:
- e. Ultra violet radiation stability of 90%.
- f. Fabric with support netting shall be reinforced with an industrial polypropylene netting with a 3/4 inch spacing or equivalent. A heavy duty nylon top support cord or equivalent is required.
- 9. Spacing The spacing between fences shall be determined based on the drainage area and the difference in elevation. For unpaved contributing areas, the contributing drainage area to each filter fabric barrier may not exceed 2 acres. For paved contributing areas, the contributing drainage area to each filter fabric barrier may not exceed 1 acre. The difference in elevation between barriers may not exceed 2/3rds the height of the filter fabric. [For example, a 3 foot barrier used on a 2% grade with an unpaved contributing area allows the barriers to be placed 100 feet apart provided the contributing area between the barriers does not exceed 2 acres.]

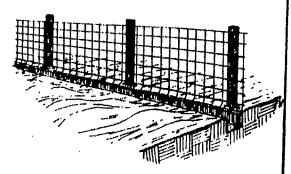
<u>Maintenance</u>

- 1. Fabric filter barriers shall be inspected within 24 hours after each rainfall or daily during periods of prolonged rainfall. Repair or replacement shall be made immediately.
- 2. Sediment deposits should be removed after each storm event. Sediment deposits shall be removed when deposits reach 0.5 the height of the barrier.

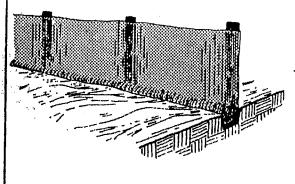
 Set posts and excavate a 4"x4" trench upslope along the line of posts.

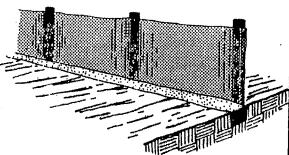


2. Staple wire fencing to the posts.



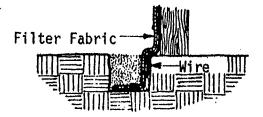
- 3. Attach the filter fabric to the wire fence and extend it into the trench.
- 4. Backfill and compact the excavated soil.





Extension of fabric and wire into the trench.





CONSTRUCTION OF A SILT FENCE

Source: Adapted from <u>Installation of Straw and Fabric</u> <u>Filter Barriers for Sediment Control</u>, Sherwood

and Wyant

C. 2. Straw Bale Barrier 1

Definition

A temporary sediment barrier used in areas of concentrated flow consisting of a row of entrenched and anchored straw bales.

<u>Purpose</u>

1. To prevent channels from eroding by decreasing the velocity of low-to-moderate velocity and volume channel flows.

Conditions Where Practice Applies

- 1. In unstabilized minor swales, ditches or diversions where the maximum contributing area is no greater than 2 acres.
- 2. Straw bale barriers may not be used in intermittent and perennial stream channels.

Planning Considerations

- 1. A straw bale barrier does not require an engineering analysis or design.
- 2. Under normal conditions, straw bale barriers require removal of trapped sediment. If maintenance is difficult due to location or presence of wet soils that prohibit prompt cleaning after runoff events, additional parallel barriers should be constructed.
- 3. Straw bale barriers are generally less effective than filter fabric barriers. However, they may be the most practical best management practice in situations where removal of a filter fabric barrier is not possible or not practicable.

 $^{^{}f 1}$ Derived from Virginia Sediment and Erosion Control Handbook.

Chapter 3

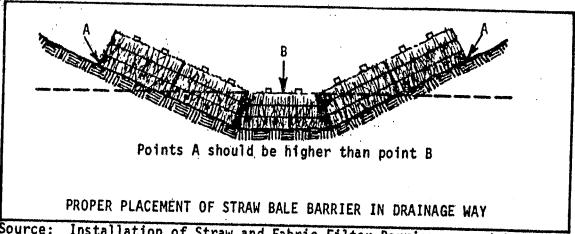
April 1989

7. Spacing - The spacing between fences shall be determined based on the drainage area and the difference in elevation. For unpaved contributing areas, the contributing drainage area to each straw bale barrier may not exceed 2 acres. For paved contributing areas, the contributing drainage area to each straw bale barrier may not exceed 1 acre. The difference in elevation between barriers may not exceed 2/3rds the height of the straw bale. [For example, a 3 foot barrier used on a 2% grade with an unpaved contributing area allows the barriers to be placed 100 feet apart provided the contributing area between the barriers does not exceed 2 acres.]

Maintenance

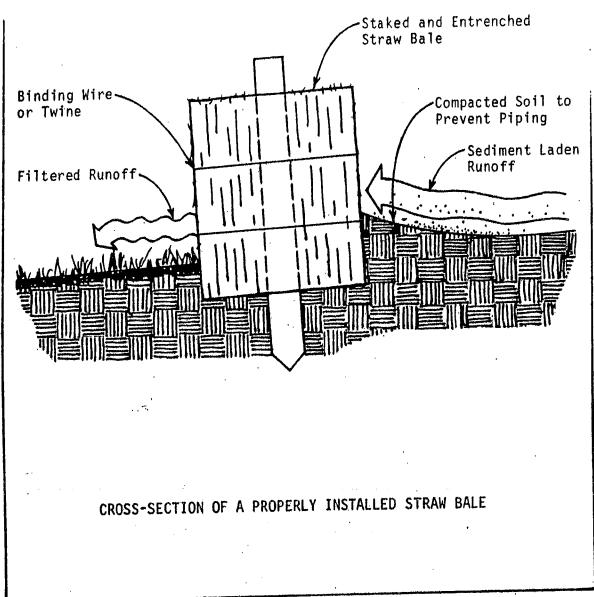
- 1. Straw bale barriers shall be inspected within 24 hours after each rainfall or daily during periods of prolonged rainfall. Repair or replacement shall be made immediately.
- 2. Sediment deposits should be removed after each storm event. Sediment deposits shall be removed when deposits reach 0.5 the height of the barrier.

Figure 1.



rce: Installation of Straw and Fabric Filter Barriers for Sediment Control, Sherwood and Wyant

Figure 3.



Michigan Soil Erosion and Sedimentation Control Guidebook, 1975 Source:

C. 3. Sediment Trap1

Definition

A small temporary basin designed and constructed to control sediment.

<u>Purpose</u>

To detain sediment-laden runoff from disturbed areas for sufficient time to allow the majority of the sediment to settle out.

Conditions Where Practice Applies

For drainage areas less than 5 acres. The useful life of the basin is 18 months or less. Permanent basins require additional features.

Planning Considerations

- 1. Sediment traps may come under the definition of dams and be subject to the provisions of Ch. NR 333, Wisconsin Administrative Code, Dam Design and Construction Standards. As of August 1988, Chapter NR 333 did not apply to dams having a structural height of 6 feet or less, or a storage capacity of 15 acre-feet or less. Also, Chapter NR 333 did not apply to dams having a structural height of more than 6 feet but less than 25 feet and and a maximum storage capacity of less than 50 acre-feet of water. Basins may not be located where failure will result in loss of life.
- 2. Sediment traps meeting these design requirements are at best only 70 to 80% effective in trapping sediment. Smaller sediment particles such as clay-sized particles will not be effectively controlled. Other best management practices such as vegetative cover installed in the drainage area are generally a more effective means of controlling the smaller particle sizes than enlarging the sediment basin's area by a factor of 3 to 5.

Derived from Erosion & Sediment Control Handbook by Goldman, Jackson and Bursztynsky, Virginia Sediment and Erosion Control Handbook and North Carolina Erosion and Sediment Control Planning and Design Manual.

- 6. <u>Fabric Specifications</u> The filter fabric shall meet the following specifications:
 - a. Grab strength: 100 lb. minimum in any principal direction (ASTM D1682)
 - b. Mullen Burst: Minimum 200 psi (ASTM D-3786)
 - c. Equivalent opening size:

between 50 and 140 for soils with more than 15 percent by weight passing a No. 200 sieve

between 20 and 50 for soils with less than 15 percent by weight passing a No. 200 sieve

- d. Water Flow Rate of 10 gal/min/ft² at 50MM constant head as determined by multiplying permittivity in sec as determined by ASTM D-4491 by a conversion factor of 74:
- e. Ultra violet radiation stability of 90%.
- 7. Embankment Cross Section The maximum height of the sediment trap embankment shall be 5 feet. The minimum top widths and outlet heights for various embankment heights are:

Height of Embankment	Height of Outlet	Top Width of Embankment	
2.0 ft.	1.0 ft.	4.0 ft.	
2.5	1.5	4.0	
4.5	3.5	4.0	
5.0	4.0	4.5	

The original ground under the embankment shall be scarified to a depth of 6 inches or more prior to placement of the fill material. Fill material shall not be placed over frozen ground.

Maintenance

Sediment shall be removed when it reaches half of the outlet height of the trap.

The sediment trap shall be inspected after each runoff event. Repairs shall be made promptly.

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C. 4. Sediment Basin¹

Definition

A temporary basin designed and constructed to control sediment.

<u>Purpose</u>

To detain sediment-laden runoff from disturbed areas for sufficient time to allow the majority of the sediment to settle out.

Conditions Where Practice Applies

Where other best management practices are not adequate to prevent off-site sedimentation. For drainage areas less than 150 acres. The useful life of the basin is 18 months or less. Permanent basins require additional features.

Planning Considerations

- 1. Sediment basins may come under the definition of dams and be subject to the provisions of Ch. NR 333, Wisconsin Administrative Code, Dam Design and Construction Standards. As of April 1989, Chapter NR 333 did not apply to dams having a structural height of 6 feet or less, or a storage capacity of 15 acre-feet or less. Also, Chapter NR 333 did not apply to dams having a structural height of more than 6 feet but less than 25 feet and and a maximum storage capacity of less than 50 acre-feet of water. Basins may not be located where failure will result in loss of life.
- 2. Sediment basins meeting these design requirements are at best only 70 to 80% effective in trapping sediment. Smaller sediment particles such as clay-sized particles will not be effectively controlled. Other best management

Portions derived from Erosion & Sediment Control Handbook by Goldman, Jackson and Bursztynsky, Virginia Sediment and Erosion Control Handbook, North Carolina Erosion and Sediment Control Planning and Design Manual and Wisconsin Field Office Technical Guide (SCS) standards 350 and 378.

The surface area may be adjusted for different conditions in the drainage area. For example, using the Rational Method, the minimum surface area is:

$$A_s$$
 (ft²) = 1.2/ v_s x C x i avg x A dr (acres)

where A = surface area of runoff storage volume

v = settling velocity for a 0.015 mm. particle [0.0005 ft/sec]

C = runoff coefficient

i = average rainfall intensity for a 10-year, 6-hour design storm [0.5 in/hr for a 3 inch design storm]

A_{dr} = drainage area to the basin in acres

for conditions where the runoff coefficient is 0.5:

$$A_s$$
 (ft²) = 625 x A_{dr} (acres)

- b. <u>Depth</u> The depth of the runoff storage volume from the top of the sediment storage and permanent pool volume to the crest of the principle spillway shall be at least 2 feet to prevent resuspension of sediments.
- Runoff Storage Volume Shape The length to average width ratio of the basin shall be at least 2:1 with a ratio of 5:1 preferred. Baffles shall be used to prevent short-circuiting in basins with length to average width ratios of less than 5:1. The average width shall be calculated by dividing the surface area by the shortest flow path in the basin.
- 4. Sediment Storage and Permanent Pool Volume The sediment storage and permanent pond volume shall be sufficiently large to contain the estimated annual sediment volume from the drainage area. The minimum depth shall be 2 feet or the estimated depth of the sediment plus 6 inches, whichever is greater. A method for estimating annual sediment volume is as follows:

Average Slope of <u>Disturbed Area</u>	Volume of Sediment per <u>Acre of Disturbed Area</u>		
<6%	20 cubic yards		
10%	45		
14	75		
18	120		
22	160		
26	210		

9. <u>Dewatering Outlet</u> - The principal spillway shall include one or more outlets for dewatering the runoff storage volume. The size of the outlet(s) shall be calculated to dewater the basin in no less than 3 days. The following equation may be used:

$$A_{o} = A_{s}(2h)^{1/2}$$

$$\frac{20,428 \times T \times C_{d}}{}$$

where A_0 = surface area of the outlet (ft²)

 $A_s = surface area of basin (ft²)$

h = head of water above outlet

T = dewatering time (hr)

C_d = coefficient of contraction for the outlet, about 0.6 for sharp edged orifices

The bottom hole or slot shall be at the elevation of the sediment storage and permanent pool. No hole shall be greater than 4 inches in diameter.

10. <u>Embankment</u> - Embankments shall have a minimum top width of 4 feet and side slopes of 2:1 or flatter.

Height of Embankment	Top Width of <u>Embankment</u>
<10 ft.	6 ft.
10.1 to 15	8
15.1 to 20	10
20.1 or greater	see SCS standard 378

The original ground under the embankment shall be stripped and scarified to a depth of 6 inches or more prior to placement of the fill material. Fill material shall not be placed over frozen ground.

Method B

- 1. <u>Use Field Office Technical Guide standards 350 and 378 with the additional design criteria that follow.</u>
- 2. <u>Basin Components</u> As shown in Figure 1, the basin shall include the following elements:
 - a runoff storage volume;
 - b. a sediment storage and permanent pool volume;
 - c. a principal spillway;
 - d. a dewatering outlet for the runoff water storage volume; and
 - e. an emergency spillway.
- Runoff Storage Volume Capacity The runoff storage volume is the volume between the crest of the principal spillway and the bottom of the lowest dewatering hole. The basin shall be designed to fill to the top of the riser or other primary spillway during the design storm and then discharge at the rate of inflow to the basin.
 - surface area The minimum surface area of the runoff storage volume shall be 1.2 times the area necessary to settle a 0.015 mm. particle based on the average runoff from a design storm intensity of 0.5 inches per hour (equal to either the volume of a 10-year, 6 hour storm divided by 6 hours or 0.75 times the volume of a 10-year, 24-hour storm divided by 6 hours). For entirely disturbed drainage areas, the surface area of the runoff storage volume (in square feet) equals

625 x A_{dr} (drainage area in acres)

6. <u>Dewatering Outlet</u> - The principal spillway shall include one or more outlets for dewatering the runoff storage volume. The size of the outlet(s) shall be calculated to dewater the basin in no less than 3 days. The following equation may be used:

$$A_0 = A_s(2h)^{1/2}$$

$$\frac{20,428 \times T \times C_d}{20}$$

where $A_0 = \text{surface area of the outlet (ft}^2$)

 $A_s = surface area of basin (ft²)$

h = head of water above outlet

T = dewatering time (hr)

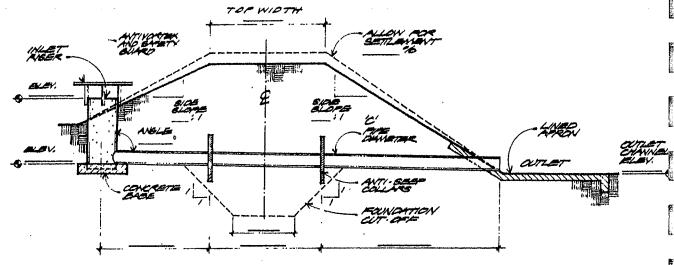
C_d = coefficient of contraction for the outlet, about 0.6 for sharp edged orifices

The bottom hole or slot shall be at the elevation of the sediment storage and permanent pool. No hole shall be greater than 4 inches in diameter.

7. Safety - Sediment basins should be surrounded by fences.

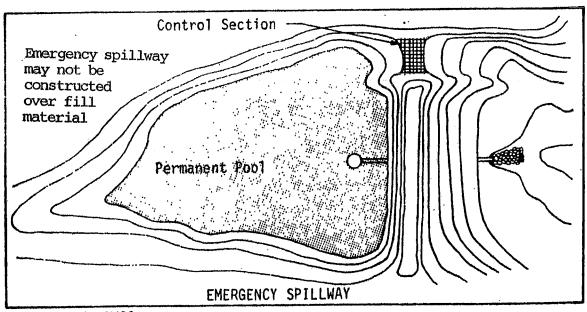
Maintenance

- 1. The embankment and emergency spillway shall be inspected regularly to insure that it is structurely sound and has not been damaged by erosion or construction equipment. Repairs shall be made promptly.
- 2. The sediment basin shall be checked after each runoff event. When the sediment reaches the elevation of the sediment storage and permanent pool elevation, the basin shall be cleaned out.



Source: Illinois Procedures and Standards for Urban Soil Erosion and Sedimentation Control

10 feet minimum 20 feet minimum if drainage area is greater than 20 acres



Source: Va SWCC

Chapter 3

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D. Best Management Practices for Establishing Permanent Drainageways

Concentrated runoff has a great potential to erode sediment and transport pollutants to recieving waters. Permanent best management practices to stabilize areas of concentrated flow are:

Seeding with mulching (B. 3 and 4)

Sodding (D. 2)

Grassed Waterway (D. 3)

Geotextile Reinforced Grassed Waterway (D. 4)

Rock and Concrete Lined Waterway (D. 5)

D. 1. Permanent Channel Stabilization 1

Definition

Permanent stabilization of areas of concentrated flow.

Purpose

To prevent channels from eroding by establishing vegetation or placing rip-rap in the channel.

Conditions Where Practice Applies

In unstabilized swales, ditches or diversions.

Planning Considerations

The stabilization of a channel requires analysis of velocity for expected storms.

Design Criteria and Requirements

- 1. <u>Channel Lining</u> The lining of the channel shall meet the following requirements:
 - a. channels may be vegetated if the velocity for a 10-year, 24-hour storm does not exceed the following:

for sand, silt, sandy loam and silty loam soils

3.0 ft./sec.

for silty clay loam and sandy loam soils

4.0 ft./sec.

clay

5.0 ft./sec.

b. channels shall be lined with rock rip-rap or other non-erosive material if the velocity exceed those identified in a. above or the channel must carry water continuously. (See D. 5 Rock and Concrete Lined Waterways and D. 4 Geotextile Reinforced Grassed

Derived from Wisconsin Field Office Technical Guide (SCS) standards and Wisconsin Department of Transportation guidance.

for clay soils

velocity (ft/sec)

slope %	_2	_3_	4	5
<3	seed & mulch	seed & erosion mat	seed, erosion mat & sod checks	sod
3-5	seed & erosion mat	seed, erosion mat & sod checks	sod	sod
5-7	seed, erosion mat & sod checks	sod	sod	sod & erosion mat
>7	sod	sod	sod & erosion mat	sod & erosion mat

3. The best management practices identified in 1. and 2. above shall meet the following requirements:

seeding and mulching

erosion mat

sod checks	D. 2	Sodding
sod	D. 2	Sodding
grassed waterways	D. 3	Grassed Waterway
rip-rap	D. 5	Rock and Concrete Lined Waterway
geotextile reinforced grassed waterway	D. 4	Geotextile Reinforced Grassed Waterway

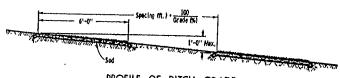
B. 4

B. 3

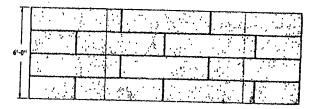
Seeding

Mulching

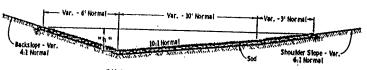
Figure 1.



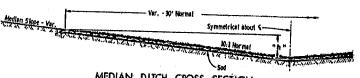
PROFILE OF DITCH GRADE



PLAN VIEW SHOWING SOD



SIDE DITCH CROSS SECTION



MEDIAN DITCH CROSS SECTION

The minimum height of sitch to be sodded shall be equal to the maximum depth of flow plus 6". The normal " h " will be 1"-6".

SOD DITCH CHECKS

State of Wisconsin Department of Teansportation Division of Highways

D. 3. Grassed Waterway¹

<u>Definition</u>

A constructed channel shaped or graded to required dimensions and established in suitable vegetation for the stable conveyance of runoff.

<u>Purposes</u>

- 1. To protect the soil surface of channels and ditches from erosive forces of high velocity runoff.
- 2. To slow the velocity of concentrated runoff.

Conditions Where Practice Applies

- 1. In ditches, channels and diversions where vegetative cover will be stable (see D. 1. Permanent Channel Stabilization)
- 2. In ditches, channels and diversions without permanent or frequent low flow or dry weather discharge.
- 3. This best management practice does not apply to perennial streams or other channels requiring Chapter 30 permits.

Planning Considerations

Grassed waterways require engineering analysis and design.

Design Criteria and Requirements

[Wisconsin Field Office Technical Guides (SCS) Standard 412, Grassed Waterway may be used for design.]

1. <u>Timing</u> - The vegetation and any protective materials specified in D. 1. Permanent Channel Stabilization shall be installed within 7 days of final grading.

Derived from Wisconsin Field Office Technical Guide (SCS) Standard 412, Grassed Waterway.

D. 5. Rock and Concrete Lined Waterways 1

Definition

Lining of a channel, diversion or ditch with stone or other permanent material.

Purposes

- 1. To protect the soil surface of channels and ditches from erosive forces of high velocity runoff.
- 2. To slow the velocity of concentrated runoff.

Conditions Where Practice Applies

- 1. In ditches, channels and diversions where vegetative cover will not be stable (see D. 1. Permanent Channel Stabilization)
- 2. In ditches, channels and diversions with permanent or frequent low flow or dry weather discharge.
- 3. This best management practice does not apply to perennial streams or other channels requiring Chapter 30 permits.

Planning Considerations

Lined waterways require engineering analysis and design.

Design Criteria and Requirements

[Wisconsin Field Office Technical Guides (SCS) Standard 468, Lined Waterway or Outlet may be used for design.]

1. <u>Timing</u> - The rock rip-rap or other permanent materials shall be installed within 7 days of final grading.

Derived from Wisconsin Field Office Technical Guide (SCS) Standard 468, Lined Waterway or Outlet.

Table 2. Values of "n" for Various sizes of Riprap

inches	feet	$n = 0.04D^{1/6} **$
2	.17	.030
4	.33	.033
6	.50	.036
8	.67	.037
10	.83	.039
12	1.0	.040

Where 'D' is diameter of rock, the size of which is such that by weight, 50% is larger and 50% is smaller than this diameter. D in feet.

Table 3. Slope Adjustment Factors for Allowable Velocity (all rock sizes and shapes)

Slope: Horizontal to Vertical	ft/ft	Adjustment* <u>Factor</u>
3:1	0.33	0.80
4:1	0.25	0.85
5:1	0.20	0.89
6:1	0.17	0.91
7:1	0.14	0.92
8:1	0.13	0.93
9:1	0.11	0.94
10:1	0.10	1.00
12:1	0.08	1.00
15:1	0.07	1.00

* Factor = $(\cos \theta - \sin \theta)^{1/2}$, where θ = angle of bed slope

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E. Best Management Practices for Protecting Inlets

Because the best management practices to minimize the movement of pollutants from the site can never be 100% effective, there remains a need to prevent pollutants from entering inlets, catch basins, culverts and other conveyance structures to prevent pollutants from reaching lakes, streams and wetlands.

The Model Ordinance requires all storm drain inlets be protected by using straw bales, filter fabric or equivalent barrier.

E. 1. Inlet Protection Barriers 1

Definition

A temporary barrier constructed around a storm drain inlet, catch basin or culvert.

Purpose

To prevent sediment and other pollutants from entering conveyance systems.

Conditions Where Practice Applies

At the location where runoff enters conveyance system structures such as curb inlets, drop inlets and culverts.

Planning Considerations

This best management practice uses many of the design criteria and requirements of C. 1. filter fabric barriers and C. 2. straw bale barriers.

Design Criteria and Requirements

- 1. <u>Model Ordinance requirements</u> All storm drain inlets shall be protected by using a straw bales, filter fabric or equivalent barrier.
- 2. <u>Timing</u> The inlet protection barrier shall be installed before the site is disturbed.
- 3. Removal The inlet protection barrier shall remain in-place and be maintained until the disturbed area is stabilized by permanent best management practices.
- 4. <u>Placement</u> The inlet protection barrier shall surround the inlet except where the elevation of curbs or adjacent ground surfaces are higher than the top of the inlet structure.

Derived from Virginia Erosion and Sediment Control Handbook.

G. 1. Temporary Graveled Access Roads and Parking Areas 1

Definition

A gravel stabilized pad located at points of vehicular access and parking on the construction site.

<u>Purpose</u>

To reduce the amount of sediment transported onto public roads.

Conditions Where Practice Applies

At access points to the construction sites.

Planning Considerations

The amount of sediment being transported from the site can be reduced by using other best management practices such as temporary diversions to convey runoff from downspouts to stabilized channels.

Design Criteria and Requirements

- 1. <u>Timing</u> The graveled access shall be installed as soon as practicable after the start of site disturbance.
- 2. Removal The graveled acces shall remain in-place and be maintained until the disturbed area is stabilized by permanent best management practices.
- 3. Location The graveled access shall be located to provide maximum use by all construction vehicles.

Derived from Virginia Erosion and Sediment Control Handbook.

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Revised: March 1991

H. 1. Downspout Extender

Definition

A temporary tube, trough or pipe to convey water from a building's downspouts to a stable area.

<u>Purposes</u>

To prevent water discharged from a building's downspouts from eroding disturbed areas.

Conditions Where Practice Applies

On downspouts discharging to disturbed areas.

Planning Considerations

1. Conveying water from roofs can greatly decrease the amount of water flowing across disturbed areas.

Design Criteria and Requirements

- 1. <u>Timing</u> The downspout extender shall be installed as soon as downspouts are installed.
- 2. <u>Removal</u> Downspout extenders may be removed only after the disturbed area is stabilized by permanent best management practices.
- 3. <u>Materials</u> Non-slotted drainage tile or equivalent impermeable material shall be used.

Maintenance

1. Downspout extenders shall be inspected within 24 hours after each rainfall or daily during periods of prolonged rainfall. Repair or replacement shall be made immediately.

APPENDIX D

Storm Water Pollution Prevention And Spill Prevention Control And Countermeasure (SPCC)



STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES

GENERAL PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of ch. 283, Wis. Stats., and ch. NR 216, Wis. Adm. Code, any Tier 2 private, local, state or federal facility as defined in ch. NR 216, Wis. Adm. Code, and located in the State of Wisconsin, excluding initial coverage within Indian Country after September 30, 2001, that discharges

STORM WATER ASSOCIATED WITH INDUSTRIAL ACTIVITY

and meeting the applicability criteria in Part II of this permit, is permitted to discharge such storm water to waters of the state (including surface waters, wetlands, groundwater, and municipal and private separate storm sewers) provided that the discharge is in accordance with the conditions set forth in this permit.

This permit is issued by the Department of Natural Resources (Department) and covers storm water discharges as of the date of issuance to the facility. This permit will be transmitted by the Department to the permittee along with an attached cover letter stating that coverage under this general permit is appropriate. This permit will become effective at a facility beginning upon the Start Date specified by the Department in the cover letter.

This permit to discharge storm water shall expire at midnight, March 31, 2006.

State of Wisconsin Department of Natural Resources, For the Secretary

Al Shea

Director, Bureau of Watershed Management

Date of Signature

Tier 2 General Permit for the Discharge of Storm Water Associated with Industrial Activity

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PART I. APPLICATION REQUIREMENTS

Tier 2 industrial facility types listed in s. NR 216.21(2)(b), Wis. Adm. Code, shall apply for a storm water discharge permit in accordance with s. NR 216.26. The Department will evaluate the information submitted in the application to determine whether a facility is covered under a storm water general permit or an individual permit, or whether coverage under a permit would be denied. If coverage under this permit is appropriate, the Department will transmit a copy of this permit to the facility with a cover letter indicating the date upon which the permit becomes effective at the facility.

PART II. STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY ELIGIBLE FOR COVERAGE BY THIS PERMIT.

A. Applicability. This permit is applicable to point sources which discharge storm water associated with industrial activity to the waters of the state, either directly or via a separate storm sewer system, originating from industrial facilities belonging to:

(1) Manufacturing facilities described by the following SIC codes, but only if contaminated storm water results from the operation of these facilities:

SIC	<u>Description</u>
20	Food & Kindred Products
21	Tobacco Products
22	Textile Mill Products
23	Apparel & Other Textile Products
2434	Wood Kitchen Cabinets
25	Furniture & Fixtures
265-	Paperboard Containers & Boxes
267-	Misc. Converted Paper Products
27	Printing, Publishing, & Allied Industries
283-	Drugs
285-	Paints & Allied Products
30	Rubber & Misc. Plastics Products
31	Leather & Leather Products
323-	Products of Purchased Glass
34	Fabricated Metal Products
35	Industrial & Commercial Machinery & Computer Equipment
36	Electronic & Other Electrical Equipment & Components
37	Transportation Equipment
38	Instruments & Related Products
39	Misc. Manufacturing Industries
4221	Farm Product Warehousing & Storage
4222	Refrigerated Warehousing & Storage
4225	General Warehousing & Storage

Note: Facilities in SIC codes 311-, 3441 and 373- are included in s. NR 216.2192)(a)1. as Tier 1 facilities.

(2) Transportation facilities described by the following SIC codes that have vehicle maintenance shops, equipment cleaning operations, or airport de-icing operations. This only applies to those portions of these facilities that are either involved in vehicle maintenance including rehabilitation, mechanical

repairs, painting, fueling, lubrication, and associated parking areas, or involved in cleaning operations, or de-icing operations, or that are listed as a pollution source area under s. NR 216.02(2)(d):

SIC	Description
40	Railroad Transportation
41	Local & Interurban Passenger Transit
42	Trucking & Warehousing
43	U.S. Postal Service
44	Water Transportation
45	Transportation By Air
5171	Petroleum Bulk Stations & Terminals

(3) Facilities described by the following SIC codes, including active and inactive mining operations. This permit only applies where storm water runoff has come into contact with any overburden, raw material, intermediate product, finished product, by-product, or waste material.

SIC	<u>Description</u>
10	Metal Mining
12	Coal Mining
13	Oil & Gas Extraction
14	Non-metallic Minerals, except fuels

Note: An industry-specific permit has been developed that combines process and storm water requirements for 14-- (non-metallic mining) facilities.

This permit does not apply to non-coal mining operations which have been released from applicable state or federal reclamation requirements after December 17, 1990; nor to coal mining operations released from the performance bond issued to the facility by the appropriate Surface Mining Control and Reclamation Act authority under 30 U.S.C. 1201 et seq. and 16 U.S.C. 470 et seq. Production, processing, or treatment operations or transmission facilities associated with oil and gas extraction are included only if there has been a discharge of storm water after November 16, 1987 containing a reportable quantity of a pollutant, or if a storm water discharge contributed to a violation of a water quality standard.

- (4) Facilities subject to storm water effluent limitation guidelines, new or existing source performance standards, or toxic pollutant effluent standards under 33 U.S.C. 1251, 1311, 1314 (b) and (c), 1316 (b) and (c), 1317 (b) and (c), 1326 (c), except for those facilities identified in paragraph A.(1) that do not have contaminated storm water.
- (5) Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of one million gallons per day or more, or required to have an approved pretreatment program. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with section 405 of the Clean Water Act under 33 U.S.C. s. 1345.

- (6) Hazardous waste treatment, storage, and disposal facilities, including those operating under interim status or a permit under Subtitle C of the Resource Conservation and Recovery Act (RCRA) under 42 U.S.C. 6921 et seq.-6934.
- (7) Landfills, land application sites, and open dumps that receive or have received any industrial waste from any of the facilities identified in Part II.A. of this permit, including those subject to regulation under subtitle D of RCRA, under 42 U.S.C. 6901 et seq.
- (8) Steam electric power generating facilities, including coal handling sites but not including offsite transformer or electric substations.
- (9) Facilities described in SIC code 2951 for asphalt paving mixes and block, and facilities described in SIC codes 3271, 3272 and 3273 for cement products.
- (10) Facilities originally covered under a Tier 1 general permit, but subsequently covered under a Tier 2 general permit pursuant to s. NR 216.22, Wis. Adm. Code.
- B. Authorized Discharges. This permit authorizes storm water point source discharges to waters of the State from industrial activities identified in Part II.A. of this permit. This permit also authorizes the discharge of storm water commingled with flows contributed by process and non-process wastewater, provided those flows are regulated by other WPDES permits.
- C. Movement to Tier One Coverage. In accordance with s. NR 216.23.10, Wis. Adm. Code, the Department may revoke coverage under this permit. In this case, the permittee shall reapply for tier one general permit coverage.
 - D. Exclusions. The following are excluded from coverage under this permit:
- (1) This permit shall not be used to provide initial permit coverage to a storm water discharge within Indian Country after September 30, 2001. Contact the DNR Northeast Regional office at (920) 492-5800 or the DNR Central office at (608) 267-7694 for non-Indian discharges within Indian Country to determine if state permit coverage from the Department is required. Storm water discharges within Indian Country from non-tribal lands that have state coverage under this general storm water permit prior to September 30, 2001 may continue to be covered under this state general permit for purposes of state law.
- (2) Storm water discharges that affect wetlands, unless the Department determines that the storm water discharges is in conformance with the wetland water quality standards provisions in ch. NR 103, Wis. Adm. Code.
- (3) Storm water discharges that affect endangered and threatened resources, unless the Department determines that the storm water discharges is in conformance with the endangered and threatened resource protection requirements of s. 29.604, Wis. Stats. and ch. NR 27, Wis. Adm. Code.
- (4) Storm water discharges that affect any historic property that is listed property, or on the inventory or on the list of locally designated historic places under s. 44.45, Wis. Stats., unless the Department determines that the storm water discharges will not have an adverse effect on any historic property pursuant to s. 44.40 (3), Wis. Stats.
- (5) Areas located on plant lands which are segregated from the industrial activities of the plant, such as office buildings and accompanying parking lots, if the drainage from the segregated areas is not mixed with storm water drainage from pollution sources listed in Part III.B.(2)(d) of this document.

- (6) Facilities where the Department makes a determination, pursuant to s. NR 216.25(3), Wis. Adm. Code, that a storm water discharge is more appropriately covered under an individual WPDES permit. The Department may make this determination if one or more of the following conditions are met:
- (a) The storm water discharge is a significant source of pollution and more appropriately regulated by an individual WPDES storm water discharge permit; or
- (b) The facility is not in compliance with the terms and condition of this permit or ch. NR 216, Wis. Adm. Code.; or
- (c) Effluent limitations or standards are promulgated for a storm water discharge covered by this permit.
- (7) Storm water discharges that are regulated by permits containing storm water effluent limitations.

PART III. STORM WATER POLLUTION PREVENTION PLAN.

A. Storm Water Pollution Prevention Plan Required. All permittees covered under this storm water general permit shall prepare and implement a Storm Water Pollution Prevention Plan (SWPPP).

B. Purpose and Content of a Storm Water Pollution Plan.

- (1) <u>Purpose of the Plan</u>. Any SWPPP prepared under this permit shall: 1) identify sources of storm water and non-storm water contamination to the storm water drainage system; 2) identify and prescribe appropriate "source area control" type best management practices designed to prevent storm water contamination from occurring; 3) identify and prescribe "storm water treatment" type best management practices to reduce pollutants in contaminated storm water prior to discharge; 4) prescribe actions needed either to bring non-storm water discharges under WPDES permit or to remove these discharges from the storm drainage system; 5) prescribe an implementation schedule so as to ensure that the storm water management actions prescribed in the <u>Storm Water Pollution Prevention Plan</u> are carried out and evaluated on a regular basis.
- (2) <u>Required Plan Content</u>. The SWPPP shall contain, at a minimum, the following items and provisions:
- (a) <u>Pollution Prevention Individual</u>. The SWPPP shall identify by job title the specific individual responsible for all aspects of SWPPP development and implementation. The individual acting in that job title shall have the responsibility to coordinate the development, evaluation, maintenance, and amendment of the SWPPP. The specific individual shall also coordinate facility compliance with the specific management actions identified in the SWPPP, including maintenance practices, conducting monitoring activities, preparing and submitting reports, and to serve as facility contact for the Department.
- (b) <u>Facility Site Description and Drainage Base Map</u>. The SWPPP shall contain a short description that summarizes the major activities conducted at various locations throughout the facility. The SWPPP shall also contain a facility drainage base map that depicts how storm water drains on, through, and from the facility to either groundwater, surface water, or wetlands. The drainage base map shall show: the facility property boundaries; a depiction of the storm drainage collection and disposal system, including all known surface and subsurface conveyances, with the conveyances named; any

secondary containment structures; the location of all outfalls, including outfalls recognized as permitted outfalls under another WPDES permit, numbered for reference, that discharge channelized flow to surface water, groundwater, or wetlands; the drainage area boundary for each storm water outfall; the surface area in acres draining to each outfall, including the percentage that is impervious such as paved, roofed, or highly compacted soil and the percentage that is pervious such as grassy areas and woods; existing structural storm water controls; and the name and location of receiving waters. The location of activities and materials that have the potential to contaminate storm water shall also be depicted on the drainage base map.

- (c) Summary of Existing Sampling Data or Observations. The SWPPP shall summarize any results of available storm water sampling data or other observations that could be useful in characterizing the quality of storm water discharges or identifying sources of storm water contamination. Available data that characterizes the quality of storm drainage discharges under dry weather flow conditions shall also be included, except when such data has or will be reported to the Department under another WPDES permit.
- (d) Potential Sources of Storm Water Contamination. The SWPPP shall identify all potential source areas of storm water contamination, including but not limited to:

-outdoor manufacturing areas;

- -areas of significant soil erosion;
- -industrial plant yards:
- -immediate access roads and rail lines:
- -material handling sites (storage.
- loading, unloading, transportation, or
- conveyance of any raw material,
- finished product, intermediate
- product, by-product or waste);
- -refuse sites:
- -disposal or application of wastewater;
- -vehicle maintenance and cleaning areas:
- -any other areas capable of contaminating storm water runoff.

- -rooftops contaminated by industrial activity or a pollution control device:
- -storage and maintenance areas for
- material handling equipment: -shipping and receiving areas:
- -manufacturing buildings;
- -residual treatment, storage, and
- disposal sites:
- -storage areas (including tank farms) for raw materials, finished and intermediate products:
- -areas containing residual pollutants from past industrial activity;

The SWPPP shall identify any significant polluting materials or activities associated with the storm water pollution source areas identified in this permit. When possible, specific pollutants likely to be present in storm water as a result of contact with specific materials shall also be listed.

- (e) Status of Non-Storm Water Discharges to the Storm Sewer. The SWPPP shall identify all known contaminated and uncontaminated sources of non-storm water discharges to the storm sewer system and indicate which are covered by WPDES permits. The SWPPP shall contain the results of the non-storm water discharge monitoring required by s. NR 216.28, Wis. Adm. Code. If such monitoring is not feasible due to the lack of suitable access to an appropriate monitoring location, the SWPPP shall include a statement that the monitoring could not be conducted and the reasons why.
- (f) Source Area Control Best Management Practices. The SWPPP shall rely, to the maximum extent practicable, and to the extent it is cost effective, on the use of source area control best management practices designed to prevent storm water from becoming contaminated at the site. Source area control best management practices that are either proposed or in place at the facility shall be indicated on the facility drainage base map described in subsection (b). The SWPPP shall provide for the use of the following applicable source area control best management practices:

- 1. Practices to control significant soil erosion;
- 2. Good house-keeping measures, preventive maintenance measures, visual inspections, spill prevention and response measures, and employee training and awareness;
- 3. Covering or enclosing salt storage piles so that neither precipitation nor storm water runoff can come into contact with the stored salt; or, for permittees that use brine and have salt storage piles on impervious curbed surfaces, a means of diverting contaminated storm water to a brine treatment system for process use; and
- 4. Use of a combination of storm water contact control or containment, drainage controls, or diversions to control SARA Title III Section 313 "Water Priority Chemicals" (42 U.S.C. s. 11023(c)) potentially discharged through the action of storm water runoff, leaching, or wind.
- (g) Residual Pollutants. The SWPPP shall identify pollutants that are likely to contaminate storm water discharges to waters of the state following implementation of source area control best management practices. Past sampling data collected at the facility or at sufficiently similar outfalls at other facilities may be used in making this determination. At a minimum, the following pollutants shall be considered for their potential to contaminate storm water:
- 1. Any pollutant for which an effluent limitation is contained in any discharge permit issued to the permittee, for this facility, by the Department;
- 2. Any pollutant contained in a categorical effluent limitation or pre-treatment standard to which the permittee is subject for this facility;
- 3. Any SARA Title III Section 313 "Water Priority Chemical" (42 U.S.C. s. 11023(c)) for which the permittee, for this facility, has reporting requirements and which has the potential for contaminating storm water,
- 4. Any other toxic or hazardous pollutants from present or past activity at the site that remain in contact with precipitation or storm water and which could be discharged to the waters of the state, and which are not regulated by another environmental program; and
- 5. Any of the following parameters which might be present in significant concentrations: oil and grease, pH, total suspended solids, 5-day biological oxygen demand, and chemical oxygen demand.
- (h) Storm Water Treatment Best Management Practices. When source area controls are not feasible, not cost effective, or when the Department determines source area control best management practices are inadequate to achieve a water quality standard, the SWPPP shall prescribe appropriate storm water treatment practices as needed to reduce the pollutants in contaminated storm water prior to discharge to waters of the state. Proposed or existing storm water treatment practices shall be shown on the facility drainage base map. The SWPPP shall provide for the following types of storm water treatment practices:
- 1. Storm water significantly contaminated with petroleum products shall be treated for oil and grease removal by an adequately sized, designed, and functioning wastewater treatment device. Coverage under a separate individual or general permit is required for discharges of storm water from oil/water treatment devices. Under s. 281.41, Wis. Stats., prior approval of plans for oil and grease removal devices may be required.

- 2. Point source discharges of storm water contaminated by significant amounts of sediment from eroding areas, including bare earth industrial lots and ongoing industrial processes, shall be treated by filtration or sedimentation reduction type practices designed in accordance with good engineering practices and the design criteria, standards and specifications outlined in the <u>Wisconsin Construction Site Best Management Practices Handbook</u> (WDNR Pub. WR-222 November 1993 Revision).
- (i) <u>Facility Monitoring Plan</u>. The SWPPP shall include provisions for complying with the monitoring requirements specified in s. NR 216.28, Wis. Adm. Code, and Part IV of this permit. The SWPPP shall include a checklist of inspections to be made during the annual facility site inspection. The SWPPP shall also identify for each outfall the type of monitoring that will be conducted, such as non-storm discharge monitoring, storm water discharge quality inspections.
- (j) <u>SWPPP Implementation Schedule</u>. The SWPPP shall include an implementation schedule for the requirements of this permit that are consistent with the compliance schedule set forth in Part V. of this permit.
- (k) $\underline{Signature}$. The SWPPP and SWPPP summary shall be signed in accordance with Part VI.M. and contain the following statement:

14.2m.

1.1.

"I certify under penalty of law that this document and attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information contained in the plan. Based on my inquiry of the person, or persons, who manage the system, or those persons directly responsible for gathering the information; the information contained in this document is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for providing false information, including the possibility of fine and imprisonment. In addition, I certify under penalty of law that, based upon inquiry of persons directly under my supervision, to the best of my knowledge and belief, the provisions of this document adhere to the provisions of the storm water permit for the development and implementation of a Storm Water Pollution Prevention Plan and that the plan will be complied with."

- C. Inclusion of Other Plans to SWPPP by Reference. When plans, the permit application, or activities developed and conducted in compliance with this permit or other federal, state, or local regulatory programs meet the requirements of ch. NR 216, Wis. Adm. Code, the plans or activities may be incorporated into the SWPPP by reference to avoid unnecessary duplication of regulatory requirements.
 - D. Amending a SWPPP. A permittee shall amend a SWPPP under the following circumstances:
- (1) When expansion, production increases, process modifications, changes in material handling or storage, or other activities are planned which will result in significant increases in the exposure of pollutants to storm water discharged either to waters of the state or to storm water treatment devices. The amendment shall contain a description of the new activities that contribute to the increased pollutant loading, planned source control activities that will be used to control pollutant loads, an estimate of the new or increased discharge of pollutants following treatment, and when appropriate, a description of the effect of the new or increased discharge on existing storm water treatment facilities.
- (2) The comprehensive annual facility site compliance inspection, quarterly visual inspection of storm water quality, or other means reveals that the provisions of the SWPPP are ineffective in controlling storm water pollutants discharged to waters of the state.

(3) Upon written notice that the Department finds the SWPPP to be ineffective in achieving the conditions of this general permit.

PART IV. MONITORING REQUIREMENTS.

- A. Purpose. Monitoring includes site inspections and non-storm water discharge assessments. The purpose of monitoring is to: a) evaluate storm water outfalls for the presence of non-storm water discharges, and b) evaluate the effectiveness of the permittee's pollution prevention activities in controlling contamination of storm water discharges.
- B. Evaluation of Non-Storm Water Discharges. The permittee shall evaluate all storm water outfalls for non-storm water contributions to the storm drainage system for the duration of this permit. Any monitoring shall be representative of non-storm water discharges from the facility.
- (1) Evaluations shall take place during dry periods, and may include either end of pipe screening or detailed testing of the storm sewer collection system.
 - (2) Either of the following monitoring procedures is acceptable:
- (a) A detailed testing of the storm sewer collection system may be performed. Acceptable testing methods include dye testing, smoke testing, or video camera observation. The Department shall require a re-test after 5 years or a lesser period as deemed necessary by the Department.
- (b) End of pipe screening shall consist of visual observations made at least twice per year at each outfall of the storm sewer collection system. Instances of dry weather flow, stains, sludge, color, odor, or other indications of a non-storm water discharge shall be recorded;
- (3) Results of the non-storm water evaluations shall be included in the SWPPP summary required in Part V.A. and the AFSCI report required in Part V.B.(1). Information reported shall include: date of testing, test method, outfall location, testing results, and potential significant sources of non-storm water discovered through testing. Upon discovering non-storm water flows, which are not covered under another permit, the permittee shall either seek coverage under another permit or eliminate the non-storm water flow.
- (4) Any permittee unable to evaluate outfalls for non-storm water discharges shall sign a statement certifying an inability to comply with this requirement, and include a copy of the statement in the SWPPP. In this case, the SWPPP shall be submitted to the Department.
- C. Evaluation of Storm Water Discharges. The permittee shall evaluate storm water outfalls for storm water contributions to the storm drainage system. Any monitoring shall be representative of storm water discharges from the facility.
- (1) <u>Annual Facility Site Compliance Inspection</u>. Permittees shall perform and document the results of the Annual Facility Site Compliance Inspection (AFSCI). The inspection shall be adequate to verify that the site drainage conditions and potential pollution sources identified in the SWPPP remain accurate, and that the best management practices prescribed in the SWPPP are being implemented, properly operated and adequately maintained. Information reported shall include: the inspection date, inspection personnel, scope of the inspection, major observations, and revisions needed in the SWPPP.

- (2) Quarterly Visual Monitoring. Permittees shall perform and document quarterly visual inspections of storm water discharge quality at each storm water discharge outfall. Inspections shall be conducted within the first 30 minutes of discharge or as soon thereafter as practical, but not exceeding 60 minutes. The inspections shall include any observations of color, odor, turbidity, floating solids, foam, oil sheen, or other obvious indicators of storm water pollution. Information reported shall include the inspection date, inspection personnel, visual quality of the storm water discharge, and probable sources of any observed storm water contamination.
- (3) Monitoring Waivers. The Department may waive specific monitoring requirements for the following reasons:
- (a) The permittee indicates that either an employee could not reasonably be present at the facility at the time of the snowmelt or runoff event, or that attempts to meet the monitoring requirement would endanger employee safety or well being.
- (b) The permittee indicates that there were no snow melt or runoff events large enough to conduct a quarterly visual inspection at an outfall.
- (c) An inactive or remote facility (such as an inactive mining operation) demonstrates that monitoring and inspection activities are impractical or unnecessary. At a minimum, the Department shall establish an alternative requirement that the permittee make site inspections by a qualified individual at least once in every 3-year period.
- (d) The permittee can demonstrate to the Department's satisfaction that the sources of storm water contamination are outside of the permittee's property boundary and are not associated with the permittee's activities. The demonstration shall be presented in the SWPPP and submitted to the Department for evaluation.

PART V. COMPLIANCE AND REPORTING REQUIREMENTS.

A. SWPPP Compliance and Reporting Requirements.

- (1)(a) Existing facilities shall develop a SWPPP and submit a SWPPP summary to the Department prior to initiating applicable activity on site. The Department may specify a start date for existing facilities found operating without a permit that will achieve compliance in the shortest practicable time.
- (b) Newly constructed facilities shall develop a SWPPP and submit a SWPPP summary to the Department prior to initiating construction.
 - (2) The SWPPP shall conform to the requirements specified in s. NR 216.27(3), Wis. Adm. Code.
 - (3) The SWPPP shall be kept at the facility and made available to the Department upon request.
- (4) The SWPPP summary shall be submitted on a standardized Department form, which the Department has provided with this permit.
- (5) If a SWPPP summary is incomplete, the Department shall notify the permittee, and may request a review of the entire SWPPP.

- (6) Unless an alternate implementation schedule is required as part of the SWPPP, the BMP's identified in the SWPPP shall be implemented within 24 months of the effective date of coverage under this permit for existing facilities and within 12 months of the effective date of coverage for facilities constructed after October 31, 1994.
- (7) The permittee shall keep the SWPPP current to correct deficiencies in the original SWPPP. The permittee shall amend the SWPPP and notify the Department in the event of any facility operational changes that could result in additional significant storm water contamination.

B. Monitoring Compliance and Reporting Requirements.

- (1) The first AFSCI shall be conducted within 24 months of the effective date of coverage under this general permit. The report shall be written on forms prepared by and available from the Department, and shall contain information from the AFSCI, the quarterly visual inspection, and the non-storm water evaluation. Copies of all of AFSCI, quarterly visual inspection and non-storm water monitoring reports shall be maintained on site for Department inspection for the life of the permit.
- (2) The first quarterly visual inspection of storm water discharge quality shall be conducted within 24 months of the effective date of coverage under the permit.

PART VI. STANDARD REQUIREMENTS

- A. NR 205, Wis. Adm. Code. The requirements in ss. NR 205.07(1) and (3), Wis. Adm. Code, are included by reference in this permit. The permittee shall comply with all of these referenced requirements, except for s. NR 205.07(1)(n), which does not apply to facilities covered under General Permits. Selected s. NR 205.07 requirements are outlined in the Standard Requirements section of this permit. Requirements not specifically outlined in this Standard Requirements section can be found in s. NR 205.07(1) or (3), Wis. Adm. Code.
- B. Work near Surface Waters and Wetlands. Any work performed in wetland areas or within areas subject to local floodplain and shoreland regulations must conform to all applicable county or local ordinances. All applicable state permits and/or contracts required by chs. 30, 31 and 87, Wis. Stats. (or Wisconsin Administrative Code adopted under these laws), and applicable federal permits must be obtained as necessary.
- C. Duty to Comply. Any act of noncompliance with this permit is a violation of this permit and is grounds for enforcement action or withdrawal of permit coverage under this permit and issuance of an individual permit. If the permittee files a request for an individual WPDES permit or a notification of planned changes or anticipated noncompliance, this action by itself does not relieve the permittee of any permit condition.
- D. Continuation of the Expired General Permit. The Department's goal is to reissue this general permit prior to its expiration date. However, if that does not occur, s. NR 205.08(9), Wis. Adm. Code, specifies that an application for reissuance of the permit will be considered to have been submitted for all of the dischargers in the class or category covered by this general permit. The class application for general permit reissuance allows the conditions and requirements of the expired permit to remain in effect until the permit is reissued or revoked.
- E. Duty to halt or reduce activity. Upon failure or impairment of best management practices identified in the SWPPP, the permittee shall, to the extent deemed necessary by the Department to

maintain compliance with its permit, modify or curtail operations until the best management practices are restored or an alternative method of storm water contamination control is provided.

- F. Other Information. When the permittee becomes aware that he or she failed to submit any relevant facts or submitted incorrect information in the application or in plans in accordance with the provisions cited in Part III, he or she shall promptly submit such facts or information to Department.
- G. Records Retention. All reports and records pertaining to the permittee's coverage under this general permit shall be retained for 5 years beyond the date of the cover letter notifying a facility of coverage under a storm water permit, and shall be made available to the Department upon request.
- H. Notice of Termination. If a facility no longer claims coverage under this general permit, the permittee shall submit a signed notice of termination to the Department.
- (1) Notice of termination forms may be obtained from the regional offices of the Department or by writing to the Department of Natural Resources, Storm Water Program WT/2, Box 7921, Madison, WI 53707-7921.
- (2) Notice of termination forms shall be filed with the appropriate Department regional office or to the Department of Natural Resources, Storm Water Program WT/2, Box 7921, Madison, WI 53707-7921.
- (3) Termination of coverage shall be effective upon submittal of written confirmation by the Department to the permittee.
- I. Permit actions. As provided in s. 283.53, Wis. Stats., after notice and opportunity for a hearing this permit may be modified or revoked and reissued for cause.
- J. Modifications to Permit Requirements. The Department may, upon request of a permittee and/or upon finding of just cause, grant modifications to the compliance and reporting schedules or any requirements of this permit. If the Department took this step at its discretion, it would change this general permit following required public noticing and the change would apply to all dischargers covered under this permit.
- K. Duty to Minimize. The permittee shall take all reasonable steps to minimize or prevent any adverse impacts on the waters of the state resulting from non-compliance with this permit.
- L. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with this permit and the construction site erosion control and storm water management plan. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with conditions of the permit.
- M. Certification and Signature Requirements. All applications for coverage under this permit, notices of termination, plans and reports or information required by this permit shall be signed by the permittee as follows:
- (1) for a corporation, by a responsible corporate officer including president, secretary, treasurer, vice president, manager, or a duly authorized representative having overall responsibility for the operation covered by this permit;
 - (2) for a unit of government, by a ranking elected official or other duly authorized representative;

- (3) for a limited liability company, by a manager; or
- (4) for a partnership, by a general partner; and for a sole proprietorship, by the proprietor.
- N. Duty to Provide Information. The permittee shall furnish to the Department, within a reasonable time, any information that the Department may request to determine whether cause exists for modifying, revoking, or reissuing the permit or to determine compliance with this permit. The permittee shall also furnish to the Department, upon request, copies of records or reports required to be kept by the permittee.
- O. Liabilities under Other Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under section 311 of the Clean Water Act (33 U.S.C. s. 1321), any applicable State law, or regulation under authority preserved by section 510 of the Clean Water Act (33 U.S.C. s. 1370).
- P. Property Rights. The permit does not convey any property rights of any sort, or any exclusive privilege. The permit does not authorize any injury or damage to private property or any invasion of personal rights, or any infringement of federal, state or local laws or regulations.
- Q. Severability. The provisions of this permit are severable, and if any provisions of this permit or the application of any provision of this permit to any circumstance is held invalid the remainder of this permit shall not be affected thereby.
- R. Transfers. This permit is not transferable to any person except after notice to the Department. In the event of a transfer of control of a permitted facility, the new owner or operator shall file a new storm water discharge application.
- S. Inspection and Entry. Upon the presentation of credentials, the permittee shall allow an authorized representative of the Department to:
- (1) enter upon the permittee's premises where a regulated permittee or activity is located or conducted, or when records are required under the conditions of the permit;
- (2) have access to and copy, at reasonable times, any records that are required under the conditions of the permit:
- (3) inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under the permit:
- (4) to sample or monitor at reasonable times, for the purposes of assuring permit compliance, any substances or parameters in storm water at any location.
- T. Spill Reporting. The permittee shall immediately notify the Department in accordance with ch. NR 706 (formerly NR 158), Wis. Adm. Code, in the event that a spill or accidental release of any material or substance results in the discharge of pollutants to the waters of the state, unless the spill or release of pollutants has been immediately reported to the Department in accordance with s. NR 205.07 (1)(s), Wis. Adm. Code.
- U. Submitting Records. Unless otherwise specified, any reports submitted to the Department of Natural Resources in accordance with this permit shall be submitted to the Department office identified in the attached cover letter.
- V. Notification of Noncompliance. Reports of noncompliance with requirements contained in any compliance schedule of the permit shall be submitted in writing within 14 days of the permittee

becoming aware of the noncompliance. Any report of noncompliance shall include: a description of the noncompliance; its cause; the steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance; and the effect of the noncompliance on the permittees ability to meet remaining schedules.

- W. Enforcement. Any violation of s. 283.33, Wis. Stats., ch. NR 216, Wis. Adm. Code, or this permit is enforceable under s. 283.89, Wis. Stats.
- X. Toxic Pollutants. In accordance with s. NR 102.12 Wis. Adm. Code, this permit requires that new and increased discharges as defined in ch. NR 207, Wis. Adm. Code, of persistent, bioaccumulating toxic substances to the Great Lakes waters or their tributaries, be limited to the maximum extent practicable when such discharges result from the contamination of storm water by contact with raw materials, products, by-products or wastes used or stored by the permittee.

TIER 2 GENERAL PERMIT TO DISCHARGE STORM WATER ASSOCIATED WITH INDUSTRIAL ACTIVITY

Facts Sheet
WPDES Permit No. WI-S067857-2
August 2001

SUMMARY

Facilities engaged in the "industrial" activities listed in s. NR 216.21(2)(b), Wis. Adm. Code, must apply for and obtain a storm water discharge permit. This permit requires permittees to develop and follow a storm water pollution prevention plan. The plan must be prepared in accordance with plan requirements contained in s. NR 216.27, Wis. Adm. Code, including provisions for site mapping, implementation schedules, annual plan assessments, and both non-storm water and storm water discharge monitoring. This briefing memo provides information regarding the Tier 2 general permit for the discharge of storm water associated with industrial activity.

INTRODUCTION

DNR's Authority to Issue Permits

The Federal Water Pollution Control Act of 1972 (Public Law 92-500), also called the Clean Water Act, requires that all point sources discharging pollutants to waters of the state obtain a wastewater discharge permit. These permits specify the conditions under which wastewaters can be discharged so that water quality standards for receiving waters are met. In 1974, the United States Environmental Protection Agency (USEPA) delegated the authority for issuing these permits to the Wisconsin Department of Natural Resources (DNR). The DNR exercises its permitting authority through the Wisconsin Pollutant Discharge Elimination System (WPDES), authorized under ch. 283, Wis. Stats. Wastewater permits issued by the state are also federal permits, and must meet with the approval of the USEPA.

The State of Wisconsin has the authority to issue two types of permits for the discharge of pollutants to waters of the state: 1) individual WPDES permits and 2) general WPDES permits. The DNR issues individual WPDES permits when the interaction between pollutant discharges and water quality is complex. These permits require careful scrutiny and must be tailored to the specific conditions of the discharge site. Currently, the State of Wisconsin has issued about 900 specific WPDES permits for the discharge of industrial wastewater. The DNR issues general WPDES permits to a broad classes of dischargers where environmental protection can be achieved through a set of general provisions that apply to all dischargers in an industrial category. The state currently has about 20 general permits that cover discharges from over 4000 industrial facilities.

DNR's Existing Efforts to Control Industrial Storm Water Discharges

The DNR has been using its regulatory authority in several program areas to control selected discharges of contaminated storm water. For example, the DNR has been requiring some type of storm water controls through its landfill licensing, hazardous waste licensing, and metallic mine licensing activities. The DNR has also had authority through federally promulgated effluent limitations to regulate storm water discharge quality for eight categories of industry in Wisconsin (cement manufacturing, feedlots, petroleum refining, phosphate manufacturing, steam electric, coal mining, ore mining and dressing, and mineral mining and processing). Some of these limitations are imposed through general permits, and

some are imposed through individual WPDES permits. In addition, the DNR has also been regulating the discharge of storm water contaminated with petroleum products through other WPDES permits.

New Storm Water Permit Program for Industries

In 1987, Congress enacted amendments to the Clean Water Act (PL 92-500) authorizing a national program of comprehensive storm water pollution control for industries and municipalities. The class of storm water discharges "associated with industrial activity" was identified as a high priority for permitting. Through a series of rule making authorized by the 1987 amendments (40 C.F.R. Part 122.26), the USEPA has:

- 1. identified in final rules an extensive list of industries requiring a permit to discharge storm water, and set forth permit application requirements for industry (November 16, 1990);
- 2. set forth in final rules the NPDES General Permit for industrial storm water discharges in non-delegated states (September 9, 1992); and
- 3. set forth in final rules notification requirements for industries seeking coverage under general permits, and set forth minimum monitoring and reporting requirements for storm water discharges associated with industrial activity (April 2, 1992).

Although the federal general storm water permit is not directly applicable to Wisconsin, provisions of the permit are being considered as Best Available Technology (BAT) and Best Conventional Technology (BCT) for storm water management. Since the Clean Water Act amendments require that storm water discharges meet BAT/BCT, the federal permit had important implications for states like Wisconsin as they developed their own rules concerning storm water permitting.

Concurrent with the USEPA's actions, the Wisconsin DNR has been conducting storm water program activities associated with this new program. Between April and September 1991, DNR mailed permit applications (WPDES Forms 3400-151 & 3400-152) to approximately 20,000 industrial facilities in the state that could potentially be affected by the new storm water regulations. Individual applicants were given until November 18, 1991 to submit completed applications to the DNR. Alternatively, dischargers could opt to join together with other like industries and submit a "group" application to USEPA in Washington, D.C. Under the group application system, information was to be submitted to USEPA in two parts. Due dates varied under the federal program from October 1, 1992, to May 17, 1993, depending upon industrial type. All storm water dischargers submitting either DNR's application form or that were included, as a member of a group application approved by USEPA will be considered by the DNR for general permit coverage.

In 1993, ch. 147 (now ch. 283), Wis. Stats., was amended to include storm water as a "point source" discharge and to require DNR to promulgate administrative rules for permitting the discharge of storm water. As a result, DNR created ch. NR 216, Wis. Adm. Code, for permitting storm water discharges associated with industrial activity, construction sites 5 acres or larger, and selected municipalities. These rules contain a specific directive for DNR to create a minimum of three tiers of general permits for the discharge of storm water associated with industrial activity. The Tier 1 general permit will cover the industrial activity listed in s. NR 216.21(2)(a), Wis. Adm. Code, including a variety of "heavy" type industries, bulk storage facilities, and facilities engaged in salvage type operations. The Tier 2 general permit will cover the industrial activity listed in s. NR 216.21(2)(b), Wis. Adm. Code, including a variety of "light" industries, certain transportation facilities, mining operations, steam electric generating facilities, cement manufacturers, and asphalt pavers. Under these administrative rules, DNR may allow permittees to change coverage from one tier general permit to another, depending upon conditions present

at the facility that could contaminate storm water. Ultimately, if a permittee can demonstrate that storm water at their facility could not be exposed to any industrial activity listed in s. NR 216.27(3)(i), Wis. Adm. Code, a facility can request coverage under a Tier 3 general permit for storm water discharge.

It is the intention of the DNR to initially allow general permit coverage to all storm water discharges associated with industrial activities listed in s. NR 216.21(2), Wis. Adm. Code, either as a separate permit or as an inclusion in an individual WPDES permit. However, the DNR does not currently have the administrative capability to cover all eligible facilities immediately. Consequently, DNR will issue the permit in phases to selected groups of industries until all eligible facilities have received their permits. This will allow DNR to allocate its scarce resources to the greatest storm water pollution problems.

WISCONSIN'S TIER 2 GENERAL STORM WATER PERMIT

Purpose and Nature of the Tier 2 General Permit

Ch. NR 216, Wis. Adm. Code, defines the conditions under which storm water associated with industrial activity can be discharged so that waters of the state (including surface waters, ground water, and wetlands) will be protected. This storm water permit is intended to meet the permitting requirements for storm water associated with industrial activity as established in ch. NR 216, Wis. Adm. Code, for a Tier 2 general permit.

This permit will be issued by DNR, and subsequently used to cover eligible industries. The permit will become effective at a facility beginning upon the *Start Date* specified by DNR in a cover letter to the facility as required by s. NR 216.26(4), Wis. Adm. Code. In summary, this permit requires regulated industrial facilities to:

- 1. identify and eliminate unpermitted non-storm discharges from storm water outfalls;
- 2. develop a <u>Storm Water Pollution Prevention Plan</u> that emphasizes "source area" controls, which are designed to *prevent* storm water from becoming contaminated;
- 3. implement the <u>Storm Water Pollution Prevention Plan</u> and conduct visual site inspections to assure that the plan is working;
- visually monitor storm water outfalls for the presence of contaminants during rainfall or runoff events;
- 5. keep progress and monitoring results current and available for inspection by DNR.

Several technical support documents are being prepared to assist industries:

- 1. The DNR has developed a document for industries entitled <u>Industrial Storm Water Pollution Prevention Planning</u>, dated September 1994. This document provides industries with guidance in preparing the required pollution prevention plans, and will be made available to industries receiving this permit. This document (Document Sales stock #1723) is available through the Wisconsin Department of Administration, Document Sales, 202 S. Thornton Ave., P.O. Box 7840 Madison, WI 53707-3358. To order by credit card, call 1-800-362-7253.
- 2. The USEPA has developed a document for industries entitled <u>Storm Water Pollution</u>

 <u>Prevention for Industrial Activities (EPA-832-R-92-006)</u>. This document includes guidance on selecting best management practices for controlling storm water pollutants from selected

sites, and supplements other similar documents. It is available for a fee from the National Technical Information Service (703-487-4650) or the U.S. Government Printing Office (202-783-3238).

- 3. The DNR has developed a document for industries entitled Wisconsin's Guidance for Industrial Storm Water Sampling, dated September 1994. This document provides industries with guidance in sample collection, preservation, and other aspects important to preparing for sampling, and will be made available to industries receiving this permit. This document (Document Sales stock #1723) is available through the Wisconsin Department of Administration, Document Sales, 202 S. Thornton Ave., P.O. Box 7840 Madison, WI 53707-3358. To order by credit card, call 1-800-362-7253.
- 4. The DNR has developed a document for general construction entitled <u>Wisconsin Construction Site Best Management Practices Handbook</u> (WDNR Pub. WR-222-92 Nov. 93 edition). This document provides guidance in selecting best management practices for controlling storm water pollution from soil erosion. This document (Document Sales stock #1700) is available through the Wisconsin Department of Administration, Document Sales, 202 S. Thornton Ave., P.O. Box 7840 Madison, WI 53707-3358. To order by credit card, call 1-800-362-7253.
- 5. The University of Wisconsin Extension has published a document for entitled <u>The Wisconsin Stormwater Manual: Part II-Technical Design Guidelines for Stormwater BMPs.</u>
 This document provides guidance on storm water management practices, and includes sections on hydrology; infiltration basins and trenches/ wet detention basins; artificial wetland storm water management systems; filter trips/ and grassed swales. To order a copy of this manual contact the UW-Extension at 608-262-3346 or toll free at 877-947-7827. Use publication number G-3691-P. Cost: \$15.00 plus shipping & handling.

Summary of the Tier 2 General Permit for Industrial Storm Water Discharges

Changes from Previous Reissuance of this Permit

- 1. The applicability of this permit in Part II.D. was changed as follows:
 - After September 30, 2001, this permit may not authorize the initial discharge of storm water within Indian Country.
 - Storm water discharges must be in conformance with wetland water quality standards within ch. NR 103, Wis. Adm. Code.
 - Storm water discharges must be in conformance with the endangered and threatened resource protection requirements of s. 29.604, Wis. Stats. and ch. NR 27, Wis. Adm. Code.
 - Storm water discharges that may affect any historic property will need to comply with the historic property requirements pursuant to s. 44.40 (3), Wis. Stats.
- 2. The Storm Water Pollution Prevention Plan (SWPPP) and SWPPP summary reporting requirement were changed within Part V.A.(1). The Department may specify a Start Date for existing facilities found operating without a permit that will achieve compliance in the shortest practical time. Thus, facilities operating in non-compliance may be given less than 12 months to develop a SWPPP and send a copy of the SWPPP summary to the Department.

Part I. Application Requirements

This part of the permit reiterates the requirements of s. NR 216.26, Wis. Adm. Code. It directs industrial facilities identified in the code to apply for a storm water discharge permit; states that the Department will evaluate the information submitted in the application to determine eligibility for Tier 2 coverage; and, if appropriate, transmit a copy of the Tier 2 permit to the facility with a cover letter, indicating the effective date of coverage.

Part II. Storm Water Discharges Associated with Industrial Activity Eligible for Coverage by This Permit

A. Applicability. Facilities eligible for coverage under this permit include those specified in s. NR 216.21 (2)(b), Wis. Adm. Code. In summary, this includes the following facilities: "light" manufacturing facilities by their SIC code; transportation facilities such as railroads, airports, and local and interurban passenger transit; mining, oil and gas operations; facilities subject to federal storm water effluent limitation guidelines, new or existing source performance standards, or toxic pollutant effluent standards; treatment works for domestic or other types of sewage; landfills; hazardous waste facilities; manufacturers of asphalt paving mixes and block, and cement products; and steam electric generators. In addition, the coverage is provided under this permit for facilities which DNR has determined are more appropriately covered by a Tier 2 general permit in accordance with s. NR 216.23(9), Wis. Adm. Code. Industrial facilities described in section A.(1) are only eligible for coverage under this general permit if they are discharging storm water that has come into contact with material handling equipment or activities, raw materials, intermediate or final products, waste materials, byproducts, or industrial machinery in the source areas listed in Part III.B.(2)(d), excluding access roads and rail lines.

<u>B. Authorized Discharges.</u> Non-storm water discharges to storm sewer systems can result in significant contamination of surface or groundwaters. This general storm water permit only authorizes the discharge of storm water associated with industrial activity. It does not authorize the discharge of other wastewaters, such as cooling water, non-contact cooling water, other process wastewater, domestic sewage, spills, or leaks. Some of these discharges (such as process wastewaters and cooling waters) can

be authorized through another general or individual WPDES permit. These other permits will specify different conditions appropriate for the discharge so that surface and groundwater quality is protected. The Department of Natural Resources, Bureau of Watershed Management, Permits and Pretreatment Section should be contacted if these discharges occur to determine what type of permit coverage is needed. This storm water permit does allow the commingling of non-storm water with storm water in a storm water outfall provided the non-storm water component is regulated under another permit. Under normal circumstances, there are no permits available for some types of non-storm discharges to the storm sewer system, such as the discharge of sanitary sewage (except in combined sewer areas), spills, and leaks. These types of discharges are generally illegal.

<u>C. Movement to Tier 1 Coverage.</u> This section gives the Department the authority to move a facility presently covered under a Tier 2 permit into a Tier 1 permit, in cases where contamination of storm water is a significant problem.

<u>D. Exclusions.</u> Storm water discharges are not eligible for coverage under this permit unless they meet the conditions within this section.

This permit requires storm water discharges to meet the wetland standards of ch. NR 103, Wis. Adm. Code, the endangered and threatened resources protection requirements of s. 29.604, Wis. Stats. and ch. NR 27, Wis. Adm. Code. and that storm water discharges will not adversely effect any historic property pursuant to s. 44.40 (3), Wis. Stats. These conditions were added to the permit based on required state laws that came into effect since the permit was previously issued.

This permit may not be used to provide initial permit coverage to a storm water discharge within Indian Country after September 30, 2001. An individual permit will be required for initial permit coverage after September 30, 2001. Facilities already covered under this permit are allowed to continue with coverage under the reissued permit. This change was made due to an agreement made between the State of Wisconsin with the Oneida Indian Tribe in May 1998.

This section states that areas such as office buildings and associated parking lots are not considered an industrial activity and, hence, are not covered under the storm water general permit <u>provided</u> the storm water discharged from these areas is kept separate from the storm water discharged from industrial activities. It should be pointed out that a facility's non-industrial areas receiving significant atmospheric deposition of contaminants from the facility's operation, <u>will</u> be covered under the storm water permit.

This section also allows the Department to make the determination that a facility is more appropriately regulated by an individual WPDES permit rather than a general storm water permit, and specifies the criteria for making this determination.

Lastly, this section excludes <u>discharges</u> regulated by other permits containing storm water effluent limitations. Some clarification is needed here. There is a difference between a <u>discharge</u> and a <u>facility</u>. It is possible for a facility to be eligible for coverage under a general storm water permit, while at the same time be required to hold an individual WPDES permit having a numerical limitation of a pollutant in a storm water discharge. A case in point is a coal-fired power plant. By Wisconsin and federal law, this facility is required to have an individual WPDES permit; and the runoff from the coal pile is subject to a maximum suspended solids concentration of 50 mg/L. Since the power plant has other "source areas" for contamination of storm water, it may also be covered under a tier 2 general storm water permit <u>exclusive</u> of the coal pile.

DNR may waive specific monitoring requirements for inactive or remote facilities where the typical level of monitoring effort specified by this permit is not warranted or is impractical. However, a facility check must be made at least once in 3 years at such facilities.

Part V. Compliance & Reporting

This permit has a "rolling" compliance schedule for each permittee. The schedule starts when the permittee receives the permit from DNR, referred to as the permit "effective date." Consequently, all permittees have the same number of days in which to complete specified activities regardless of when the permit becomes effective at the facility. The permit differentiates between new and existing facilities only in the timeframe by which they must create their SWPPP. Existing facilities will need to complete a SWPPP and submit a summary of the plan to DNR within 12 months of their permit effective date. Newly constructed facilities must prepare a SWPPP and submit the summary prior to initiating construction.

Part V.A. of the permit specifies that each existing facility has 24 months from the effective date of permit coverage to implement their BMP's, while a facility constructed after October 31, 1994 has 12 months. Under s. NR 216.29(5), Wis. Adm. Code, the permittee is allowed to create an alternative implementation schedule for their plan. However, DNR still maintains the authority to determine whether the alternate timeframe will be acceptable. In addition, DNR may, if warranted, perform reviews of detailed plans and specifications for storm water treatment practices, such as oil/water separators, sedimentation or filtration devices, infiltration devices, or chemical treatment devices. It is hoped that facilities will initially depend upon "source area control" practices that prevent storm water from becoming contaminated in the first place before relying on storm water treatment type mechanisms.

The permit requires the first AFSCI to be conducted within 24 months from the effective date of permit coverage. The permittee is required to create an AFSCI report, which is to be kept on site. Subsequent AFSCI's also require reports, which are to be kept on site.

Part VI. General Permit Conditions

This section includes requirements to comply with this general permit and the applicable State laws and regulations.

- A. NR 205. These are general permit conditions in s. NR 205.07(1), Wis. Adm. Code are required in all WPDES permits.
- <u>B. Work near Surface Waters and Wetlands.</u> Other permits or approvals may be required of the permittee. The permittee is responsible for obtaining the necessary approvals.
- <u>C. Duty to Comply.</u> Any act of noncompliance with this permit is a violation of the permit and is grounds for enforcement action, for permit termination or modification, or denial of coverage under the permit. If the permittee files a request for an individual WPDES permit or a notification of planned changes or anticipated noncompliance, this action by itself does not relieve the permittee of any permit condition.
- <u>D. Continuation of Expired General Permit.</u> This permit condition assures continued coverage for a discharger under a WPDES permit in the event that DNR is late in replacing this permit with a new issue.
- <u>E. Duty to Halt or Reduce Activity.</u> In the event of a management practice failure, this condition requires the permittee to modify or curtail other operations until best management practices are restored or an alternative practice is put in place.

- <u>F. Duty to Provide Information</u>. This condition requires the permittee to promptly notify the DNR when he or she becomes aware of a failure to submit any relevant facts or a submittal of incorrect information.
- <u>G. Records Retention.</u> The permittee shall retain all reports and records for a period of 5 years beyond the effective date of permit coverage.
- H. Notice of Termination. Facilities that cease discharging storm water associated with industrial activity can request that DNR terminate the facility's coverage under the general permit. This procedure applies mainly to facilities that stay in place and continue operations, but no longer discharge storm water contaminated by industrial activity. This could come about, for example, if a facility changes its business to a type that is no longer covered by this permit. In such cases, the permit serves no further purpose and can be terminated.

The DNR will not continue to apply the general permit in the case of facility closure and abandonment, provided that the site is left clean of pollutant residuals that could contaminate storm water.

I-X. Miscellaneous Conditions. These conditions are authorized or required by existing state law.

Any individual wishing further information on this permit should contact the appropriate regional Department office or:

Wisconsin Department of Natural Resources Storm Water Program - WT/2 P.O. Box 7921 Madison, WI 53707-7921 Phone (608) 267-7694

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APPENDIX E

Non-metallic Mining Reclamation Plan Operator and Owner Certifications

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Non-metallic Mining Reclamation Plan Operator and Owner Certification

Owner/Operator Certification

I hereby certify, as a duly authorized representative or agent, that this reclamation plan meets the requirements of ch. NR 135, Wis. Adm. Code and that Mathy Construction will follow this plan as submitted unless a revision is submitted and approved in writing by the regulatory authority.

Signature of Applicant or Duly Authorized Agent

Date Signed

10/9/02

F. ... **医**