



**GIS SPATIAL DATA, TABULAR DATA, AND METADATA
ASSOCIATED WITH REPORT 375, OLMSTED COUNTY, MINNESOTA
AGGREGATE RESOURCE EVALUATION
MAY 2010**

**Project of the Minnesota Department of Natural Resources (MN DNR),
Division of Lands and Minerals, Mineral Potential Evaluation Section,
Aggregate Resource Mapping Program**

Website: http://www.dnr.state.mn.us/lands_minerals/aggregate_maps/index.html

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The spatial and tabular digital data being released for MN DNR Report 375 have been packaged into two types of common GIS spatial data file formats from ESRI (Environmental Systems Research Institute); ESRI **Shapefile** and ESRI **File Geodatabase** (for more information see [aboutgisdata.pdf](#) provided in this release). If your ESRI GIS software package is either ArcView 3.x, ArcGIS Desktop 8x, or ArcGIS 9.0/9.1/9.2 the shapefile format should be used. If you are using ArcGIS 9.3, or any later version of ArcGIS post this data release, you can use the File Geodatabase provided. Associated **metadata** has been provided as **pdf files** and as **xml files** for the shapefiles and feature classes. Note the xml files are best viewed in ArcCatalog (ArcGIS Desktop) by clicking on the metadata tab. For better metadata viewing it is recommended to use the ‘mgmg’ stylesheet developed by LMIC (Land Management Information Center). To download the mgmg stylesheet for ArcGIS 9 visit: <http://www.lmic.state.mn.us/chouse/arccatalog.html>

This document’s goal is to list in detail the digital data released and its folder directory structure locations for both the shapefiles and file geodatabase.

Contents of the Data Folder

Title Folders:

‘olmsdata\resource\shapefiles’

‘olmsdata\resource\file_geodatabase’

(The file geodatabase is only viewable in ArcGIS 9.3 and any future versions of ArcGIS Desktop)

SHAPEFILES FOLDERS - ‘olmsdata\resource\shapefiles’

Digital data folders are organized by the government agency that developed or is most associated with the released datasets. Details of each folder can be found on the subsequent pages.

Minnesota Department of Natural
Resources
\mn_dnr
\mn_dnr\spatial
\mn_dnr\tabular
\mn_dnr\metadata

Minnesota Geological Survey
\mgs
\mgs\spatial
\mgs\tabular
\mgs\metadata

Minnesota Department of
Transportation
\mn_dot
\mn_dot\spatial
\mn_dot\tabular
\mn_dot\metadata

FILE GEODATABASE FOLDER - 'olmsdata\resource\file_geodatabase'

(Only viewable in ArcGIS 9.3 and any future versions of ArcGIS Desktop)

File Geodatabase

Name: *olmsted_aggregate_data.gdb*

Feature Datasets

Feature datasets are organized by the government agency that developed it, or is most associated with the released datasets. In each feature dataset (exp. mn_dnr, mgs) are one or more feature classes. Details of each feature dataset's feature classes are identical to the folder subdirectories for the shapefiles seen above. Therefore that information can also be found on the subsequent pages.

\mn_dnr

\mgs

\mn_dot

File Geodatabase Tabular Related Data

Unlike the shapefiles folder, the related tables in the file geodatabase are attached to the file geodatabase rather than being placed within the government agency folder that they are related to. Below is a list of the three related tables and their government agency. For details see the following subsequent pages following the shapfiles folder directory structure in this document.

\olmscwistrat0607 (mgs)

\olmsdotqual (mn_dot & mn_dnr)

\olmssieve (mn_dnr)

File Geodatabase Metadata

Metadata for the file geodatabase are embedded into the geodatabase as xml files and cannot be viewed in windows explorer. However, the xml files can be viewed using ArcCatalog (ArcGIS 9.3 only if using file geodatabase) under the Metadata tab.

SUB-DIRECTORY FOLDER DETAILS

MN DNR, Division of Lands and Minerals, Aggregate Resource Mapping Program's GIS Spatial and Tabular Data Developed for this Study

{data\resource\shapefiles\mn_dnr}

{data\resource\file_geodatabase\olmsted_aggregate_data.gdb\mn_dnr}

MN DNR GIS Spatial Data

Shapefiles {olmsdata\resource\shapefiles\mn_dnr\spatial}

File Geodatabase Feature Classes {olmsdata\resource\file_geodatabase\olmsted_aggregate_data.gdb\mn_dnr}

olmssgp: Polygon Features, Sand and Gravel Potential in Olmsted County. This dataset consists of information about the geology, geological characteristics, and sand and gravel potential of 115 map units. Six fields relate to the surficial geology of the map unit, including a unique map unit id, sediment, landform, surficial geology description, and dominant lithology. Five fields relate to sand and gravel characteristics, including probability, quality, texture, overburden thickness, deposit size, and sand and gravel thickness. These characteristics were used to calculate the aggregate potential of the map unit for sand and gravel.

olmscsp: Polygon Features, Crushed Stone Potential in Olmsted County. This dataset consists of information about the geology, geological characteristics, and aggregate potential of crushed stone potential units. Three attribute fields relate to the crushed stone characteristics, including overburden thickness, quality, and bedrock geological unit. These characteristics were used to calculate the aggregate potential of the map unit for crushed stone.

olmsbg: Polygon Features, Bedrock Geology Mapping Units in Olmsted County. This dataset consists of bedrock geology mapping units and contacts for Olmsted County, Minnesota. The 1:100,000-scale bedrock map was constructed, in part, to provide the foundation for the crushed stone potential map of Olmsted County. The bedrock information that serves as the basis for the crushed stone potential is based in part on data from the Minnesota Geological Survey, including the state map series, S-20: Geologic map of Minnesota, bedrock geology, (1:1,000,000, Morey and Meints, 2000), the county atlas series, C-3: Geologic Atlas of Olmsted County, Minnesota, (1:100,000, N.H. Balaban, ed., 1988), report of investigation number 36, RI-36: Paleozoic Lithostratigraphic Nomenclature for Minnesota, (Mossler, 1987), report of investigation number 65, RI-65: Paleozoic Lithostratigraphic Nomenclature for Minnesota, (Mossler, 2008), and a digital bedrock geologic map for Olmsted County as part of open file report OF07-07: Bedrock geology, topography and karst feature inventory of Steele, Dodge, Olmsted and Winona counties, (Tipping and others, 2004). Additionally, the County Well Index (CWI) from the Minnesota Department of Health, <http://mdh-agua.health.state.mn.us/cwi/cwiViewer.htm>, as well

as subsurface geologic interpretations of private and municipal well logs by Khalid Mubarak while working as a contract employee for the Olmsted County Environmental Resource Services Department.

olmsbgn: Polyline Features, Bedrock Geology Contacts and Inferred Contacts in Olmsted County. This spatial dataset consists of bedrock geology contacts and inferred contacts for Olmsted County, Minnesota done between the years 2007-2009. This dataset displays the boundaries between adjacent bedrock units seen at the surface (contacts) and those obscured by thick overburden (inferred contacts).

This polyline spatial dataset is associated with the polygon shapefile of bedrock geology mapping units for Olmsted County (olmsbg.shp). For more detailed information on both of these datasets see the metadata for olmsbg.shp titled, olmsbg.pdf

olmsfobs*: Point Features, Aggregate Field Observations in Olmsted County. This dataset includes information gathered in the field. Fieldwork was completed in the spring and fall of 2003-2004. It includes 1695 field observation sites within Olmsted County, MN. Observations include, but are not limited to: aggregate pits (gravel pits, crushed stone quarries, sand pits), industrial sand quarries, and borrow pits; test holes; exposures of surficial geologic sediment, glacial stratigraphy, and bedrock formations in road cuts or along stream banks; excavations for basements, judicial ditches, construction projects, and trenches (cable, pipe, tiling). This spatial dataset contains a field description of each site, the dominant type of material encountered, the source of information, geologic unit thickness, and geologic overburden thickness. A selected number of observation's geologic sediment were sampled and analyzed with a sieve. A table was created based on the sieve analysis that can be joined to this dataset's unique observation id (see associated datasets)

*Shapefile has related database table titled 'olmsieve' found in the 'MN DNR GIS Tabular Data'

olmspits^: Point Features, Mining Pits in Olmsted County. This dataset consists of location information, source information, and geological characteristics for 270 mining locations (91 Gravel Pits, 91 Quarries, 12 Gravel Pits Above Quarries, 19 Industrial Sand Quarries, 44 Mn/DOT ASIS Prospects, 8 Borrow Pits, and 5 Sand Pits) within Olmsted County that are currently being mined, were mined, or were prospected (prospect) by Mn/DOT and have not been mined at the time of this project. Several sources of information identify pit locations: topographic maps, aerial photographs, soil surveys, Mn/DOT (Aggregate Source Information System) ASIS files, fieldwork, gravel operators, and other miscellaneous sources. Pits range in size from less than 1 acre to greater than 50 acres and may be active, inactive, or reclaimed. The aggregate quality of the pit varies.

^ Shapefile has related database table titled 'olmsdotquality' found in both the 'MN/DOT GIS Tabular Data' and 'MN DNR GIS Tabular Data'

olmsdep: Polygon Features, Depleted Mining Lands in Olmsted County. Dataset includes polygon information gathered from aerial photographs and verbal communication on areas showing indication(s) that sand and gravel resources are significantly depleted. For Olmsted County delineated areas are 20 acres or larger. Indicators include reclamation of mine lands, secondary use of mine lands, and/or reclaimed extent of mine lands bounded by other land uses. Additional resources may exist at depth. Areas labeled as depleted are limited to mine lands where aggregate resources have been partially or entirely extracted and do not include development (i.e. residential or commercial) over resources that have not been mined.

Information gathering was completed in the spring of 2008 through the spring of 2009. It includes 5 polygons within Olmsted County.

MN DNR GIS Tabular Data

DBFs {olmsdata\resource\shapefiles\mn_dnr\tabular}

File Geodatabase Tables {olmsdata\resource\file_geodatabase\olmsted_aggregate_data.gdb}

Olmsieve.dbf: Database, Olmsted County Sieve Analysis Table, 2009. This tabular dataset consists of sieve analysis data on six test hole samples taken in the Spring of 2004 by MN DNR staff. This tabular data can be spatially related to 'olmsfobs' (Field Observations) using the field titled 'FIELD_ID'.

Olmsdotqual.dbf: Database, MN/DOT ASIS Quality Table Created by MN DNR, 2008, Olmsted County. This tabular dataset consists of information about the quality of Minnesota Department of Transportation's evaluated gravel pits and other aggregate sources. Quality information includes soundness, durability, and mineral content. This table contains the averages and ranges of values for the different quality tests and was summarized by the MN DNR from the MN/DOT pit sheets.

MN DNR GIS Associated Metadata Including Field and Attribute Tables

PDF {olmsdata\resource\shapefiles\mn_dnr\metadata}

XML {olmsdata\resource\shapefiles\mn_dnr\spatial}

XML {olmsdata\resource\file_geodatabase\olmsted_aggregate_data.gdb\mn_dnr}

The associated metadata in pdf and xml format. Important note, the field and attribute tables are only viewable in the .pdf document, not in the .xml document.

PDF {olmsdata\resource\mn_dnr\metadata}

Field and attribute tables found at the bottom of each document.

olmsgp.pdf

olmscsp.pdf

olmsfobs.pdf

olmspits.pdf

olmsdep.pdf

olmsdotqual.pdf

XML {olmsdata\resource\shapefiles\mn_dnr\spatial}

Viewable in ArcGIS 9x within ArcCatalog using the 'Metadata' tab.

olmssgp.shp.xml (For attribute table see olmssgp.pdf)
olmscsp.shp.xml (For attribute table see olmscsp.pdf)
olmsfobs.shp.xml (For attribute table see olmsfobs.pdf)
olmspits.shp.xml (For attribute table see olmspits.pdf)
olmsdep.shp.xml (For attribute table see olmsdep.pdf)

XML {olmsata\resource\shapefiles\mn_dnr\tabular}

olmsdotqual.dbf.xml (For attribute table see olmsdotqual.pdf)

XML {olmsdata\resource\mn_dnr\file_geodatabase\olmsted_aggregate_data.gdb\mn_dnr}

Metadata for the file geodatabase mn_dnr feature classes are embedded into the data and cannot be viewed in windows explorer. The xml file can only be viewed using ArcCatalog (ArcGIS 9.3 only if using file geodatabase) under the 'Metadata' tab.

Minnesota Geological Survey (MGS) Data Used in this Study

{olmsdata\resource\shapefiles\mgs}

{olmsdata\resource\file_geodatabase\olmsted_aggregate_data.gdb\mgs}

MGS GIS Spatial Data

Shapefile {olmsdata\resource\shapefiles\mgs\spatial}

File Geodatabase Feature Class {olmsdata\resource\file_geodatabase\olmsted_aggregate_data.gdb\mgs}

olmscwiwells0607:** Point Features, CWI Well Locations, 2007, in Olmsted County. This dataset consists of the locations of wells drilled within Olmsted County. The County Well Index (CWI) is a database that contains geologic information about wells drilled throughout Minnesota. Locations were used to look at the geological descriptions of these wells. This CWI dataset was downloaded from the Minnesota Geological Survey (MGS) in June of 2007 and contained 4063 wells within the project's spatial extent. 37 of these wells were given new values for 'DEPTH2BDRK' (Depth to Bedrock) by project Geologist Steve Kostka. These records are indicated with a 'Yes' attribute in the attribute field 'D2BDRKDNR'. This dataset contains a field (doh_path) that is used to hyperlink to the Minnesota Department of Health's County Well Index Online webpage. This web page provides detailed information (i.e., Drillers Description, Stratigraphy, etc.) regarding the associated well, via its 'relateid' or unique id. The shapefile can be hyperlinked utilizing ESRI software like ArcView 3.3 and ArcGIS 9.

An additional table, seen below, olmscwistrat0607.dbf, is a subset of the STRAT (Well Stratigraphy) table of the CWI database. The olmscwiwells0607 shapefile relates to the olmscwistrat0607.dbf table as a one-to-many relate on the 'relateid' field. The additional table contains only those fields that were considered directly applicable to developing aggregate resource mapping units for this project. Descriptions can vary from well to well, due to different individuals completing the well logging. As an example of the detail found in these descriptions: detailed descriptions often cover 5 to 10 feet of thickness per glacial material type or bedrock type. Less detailed descriptions may say 0-240 feet glacial drift and 240-360 feet sandstone.

The definition of the fields found in olmscwistrat0607.dbf are included in the olmscwiwells0607.pdf document.

** Shapefile has related database table 'olmscwistrat0607' found in 'MGS GIS Tabular Data'

MGS GIS Tabular Data

DBF {olmsdata\resource\shapfiles\mgs\tabular}

File Geodatabase Table {olmsdata\resource\file_geodatabase\olmsted_aggregate_data.gdb}

Olmwistrat0607: Database, CWI Well Stratigraphy Table, June 2007, Olmsted County. olmscwistrat0607.dbf, is a subset of the STRAT table of the CWI database. The olmscwiwells0607 shapefile relates to the olmscwistrat0607.dbf table as a one-to-many relate on the relateid field. The additional table contains only those fields that were considered directly applicable to developing aggregate resource mapping units for this project. Descriptions can vary from well to well, due to different individuals completing the well logging. As an example of the detail found in these descriptions: detailed descriptions often cover 5 to 10 feet of thickness per glacial material type or bedrock type. Less detailed descriptions may say 0-240 feet glacial drift and 240-360 feet sandstone. This dataset consists of the locations of wells drilled within Olmsted County. The County Well Index (CWI) is a database that contains geologic information about wells drilled throughout Minnesota. locations were used to look at the geological descriptions of these wells. This CWI dataset was downloaded from the Minnesota Geological Survey (MGS) in June of 2007 and contained 4063 wells within the project's spatial extent.

MGS GIS Associated Metadata

PDF {olmsdata\resource\shapefiles\mgs\metadata}

XML {olmsdata\resource\shapefiles\mgs\spatial}

XML {olmsdata\resource\file_geodatabase\olmsted_aggregate_data.gdb\mgs}

The associated metadata in pdf and xml format. Important note, the field and attribute tables are only viewable in the .pdf document, not in the .xml document.

PDF {olmsdata\resource\shapefiles\mgs\metadata}

Field and attribute tables found at the bottom of each document.

Olmscwiwells0607.pdf
Olmscwistrat0607.pdf

XML {olmsdata\resource\shapefiles\mgs\spatial}
Viewable in ArcGIS 9x within ArcCatalog using the 'Metadata' tab.

Olmscwiwells0607.shp.xml (For attribute table see olmscwiwells0607.pdf)

XML {olmsdata\resource\shapefiles\mgs\tabular}
Viewable in ArcGIS 9x within ArcCatalog using the 'Metadata' tab.

Olmscwistrat0607.dbf.xml (For attribute table see olmscwistrat0607.pdf)

XML {olmsdata\resource\file_geodatabase\olmsted_aggregate_data.gdb\mgs}

Metadata for the file geodatabase mgs feature class and mgs shapefile are embedded into the data. This information is best viewed using ArcCatalog (ArcGIS 9.3 only if using file geodatabase) under the Metadata tab.

Minnesota Department of Transportation (Mn/DOT) Data Used in this Study

{olmsdata\resource\shapefiles\mn_dot}
{olmsdata\resource\file_geodatabase\olmsted_aggregate_data.gdb\mn_dot}

Mn/DOT GIS Spatial Data

Shapefile {olmsdata\resource\shapefiles\mn_dot\spatial}
File Geodatabase Feature Class {olmsdata\resource\file_geodatabase\olmsted_aggregate_data.gdb\mn_dot}

Olmsasis1208: Point features, Mn/DOT Aggregate Source Information System (ASIS) spatial data downloaded in December of 2008. This is the original shapefile that was reviewed and edited in the field for purpose of completing the Mining Pit inventory for Olmsted County. The updated data based on field work and pit sheet review can be found in the olmspits shapefile under field 'source' attribute 'ASIS'. See olmsdotqual.dbf below for more details.

Mn/DOT GIS Tabular Data

DBF {olmsdata\resource\shapefiles\mn_dot\tabular}
File Geodatabase Table {olmsdata\resource\file_geodatabase\olmsted_aggregate_data.gdb\mn_dot}

olmsdotqual.dbf: Database, MN/DOT ASIS Quality Table Created by MN DNR, 2008, Olmsted County This tabular database consists of information about the quality of Minnesota Department of Transportation's evaluated gravel pits and other aggregate sources. Quality information includes soundness, durability, and mineral content. This table contains the averages and ranges of values for the different quality tests and was summarized by the MN DNR from the MN/DOT pit sheets.

Mn/DOT GIS Associated Metadata

PDF and PDF {olmsdata\resource\shapefiles\mn_dot\metadata}
XML {olmsdata\resource\shapefiles\mn_dot\spatial}
XML {olmsdata\resource\file_geodatabase\olmsted_aggregate_data.gdb\mn_dot}

The associated metadata in pdf, xml, and pdf format. Important note, the field and attribute tables are only viewable in the .pdf document, not in the .xml document for olmsdotqual.dbf. The attribute table for olmsasis1208 can be found in the oasismeta08.pdf.

PDF and PDF {olmsdata\resource\shapefiles\mn_dot\metadata}
Field and attribute tables found at the bottom of each document.

Olmsdotqual.pdf (For attribute table see olmsdotqual.pdf)
Olmsasis1208.pdf
oasismeta08.pdf (Metadata in PDF format for attribute fields in olmsasis1208.shp)

XML {olmsdata\resource\shapefiles\mn_dot\spatial}
Viewable in ArcGIS 9x within ArcCatalog using the 'Metadata' tab.

Olmasis0108.shp.xml (For attribute table see oasismeta08.pdf)

XML {olmsdata\resource\shapefiles\mn_dot\tabular}

Viewable in ArcGIS 9x within ArcCatalog using the 'Metadata' tab.

Olmsdotqual.dbf.xml (For attribute table see olmsdotqual.pdf)

XML {data\resource\file_geodatabase\olmsted_aggregate_data.gdb\mn_dot}

Metadata for the file geodatabase olmsdotqual tabular data and olmsasis1208 are embedded into the file geodatabase. This information is best viewed using ArcCatalog (ArcGIS 9.3 only if using file geodatabase) under the Metadata tab.