

**DESCRIPTION OF DIGITAL FILES FOR GEOLOGIC MAP OF THE OLALLA
7.5' QUADRANGLE, KING, KITSAP, AND PIERCE COUNTIES,
WASHINGTON,
U.S. GEOLOGICAL SURVEY SCIENTIFIC INVESTIGATIONS MAP 2902**

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INTRODUCTION

This readme document serves to introduce and describe the digital files that are included in this publication. They are available for downloading at <http://pubs.usgs.gov> and include both Geographic Information System (GIS) software files (both raster and vector data) that are viewable with an Environmental Systems Research Institute (ESRI) compatible commercial GIS (or with ESRI's ArcReader utility; a free map viewer with no editing capabilities) as well as Portable Document Format (PDF) files that are viewable with a reader or web browser plug-in available for free on the internet. Two download packages are available (see the section entitled "Scientific Investigations Map 2902 Digital Contents" below for details) depending on the resources available to the user. For those interested only in a paper plot of the Scientific Investigations Map, please see the section entitled "Obtaining Paper Plots" below.

This digital map publication, generated from new mapping by the authors, shows the general distribution of surficial deposits in the Olalla 7.5' quadrangle. It presents current knowledge of the geologic structure and stratigraphy of the area covered. The database identifies map units that are classified by general age and lithology following the stratigraphic nomenclature used by the U.S. Geological Survey. The scale of the source map limits the spatial resolution (scale) of the database to 1:24,000 or smaller. The content and character of the digital publication, as well as methods of obtaining the digital files, are described below.

SCIENTIFIC INVESTIGATIONS MAP 2902 DIGITAL CONTENTS

The digital data for this Scientific Investigations Map consists of:

- 1) A **Geodatabase** package that contains geologic vector and table data stored as data objects within an ESRI ArcGIS 9.0 personal geodatabase, raster data stored as ESRI format DRG-TIFF, an ESRI map document for use with ArcGIS 9.0 which allows full control of editing and rendering of the data sources, an ESRI published map document for use with ArcReader which allows viewing and querying of the source data along with metadata, and an ArcGIS style for symbolizing the map.
- 2) A **Shapefile** package that contains shapefiles exported from the personal geodatabase, and the same ESRI DRG-TIFF as in the Geodatabase package along with supporting files. This package does not contain annotation layers included in the Geodatabase package due to software limitations.

3) An **html** file with metadata for the entire database.

4) **PDF** files of the map sheet.

Each package has been compressed into a single file (.zip extension) using WinZip, a freely downloadable compression software utility (download from <http://www.winzip.com>). Each compressed file will uncompress into a folder containing the associated files.

If you:

- Have access to ArcGIS 9.0, download the Geodatabase package and open the map document (.mxd extension) from ArcGIS (version 9.0).
- Have access to ArcView 3.x, ArcGIS 8.3, or a GIS that can read shapefiles, download the Shapefile package.
- Do not have access to a GIS but wish to view and query the data, download the Geodatabase package and open the published map document (.pmf extension) from ArcReader (free download from <http://www.esri.com>).
- Do not have access to a GIS and only wish to print the map sheet or parts of it, download the PDF package and open them from Adobe Reader 5.0 or later (free download from <http://www.adobe.com>). Note that the map sheet is approximately 36 x 36 inches and will require a large-format plotter.
- Only wish to have a paper copy of the Scientific Investigations Map, see the section entitled "Obtaining Paper Plots" below.

1) **GEODATABASE PACKAGE:**

(SIM2902_DB.ZIP, 9.93 MB compressed, 80.7 MB uncompressed)

Geodatabase data objects

Description

Olalla.mdb An ESRI personal geodatabase with simple feature classes:

Feature Classes

OlallaTopology Topology that includes OlallaGeologyPoly and OlallaContacts

OlallaContacts A line feature class representing the contacts and faults of the geology

OlallaGeologyPoly A polygon feature class representing geologic units

<i>OlallaGeologyPolyAnno</i>	An annotation feature class representing feature-linked annotation (labels) for geologic unit polygons (OlallaGeologyPoly).
<i>OlallaGeologyBedTraces</i>	A line feature class representing bedding traces of geologic units
<i>OlallaSamples</i>	A point feature class representing locations of geologic samples
<i>OlallaSamplesAnno</i>	An annotation feature class representing feature-linked annotation (labels) for sample locations (OlallaSamples)
<i>OlallaStructurePoints</i>	A point feature class representing geologic structure point features (bedding attitude)
<i>OlallaStructurePointsAnno</i>	An annotation feature class representing feature-linked annotation (labels) for sample locations (OlallaStructurePoints)
<i>Anno_2_61</i>	The feature-linked annotation file linking OlallaGeologyPolyAnno to OlallaGeologyPoly
<i>Anno_3_32</i>	The feature-linked annotation file linking OlallaStructurePointsAnno to OlallaStructurePoints
<i>Anno_7_33</i>	The feature-linked annotation file linking OlallaSamplesAnno to OlallaSamples

Map documents and data:

<i>Olalla.mxd</i>	ArcMap document created in ArcGIS 9.0 containing the data rendering and symbolization information that was used in the production of the Scientific Investigations Map sheet.
<i>Olalla.pmf</i>	Published map document created from Olalla.mxd for use with ArcReader. It contains all of the same rendering and symbolization information that is in the original .mxd. Features may be queried with the identify tool in the same way they could in the .mxd, but there are no editing capabilities with this utility.
<i>SGMP.style</i>	Custom style file used to symbolize lines, polygons, and points. For ArcGIS 9.0 put this into “\Program Files\ArcGIS\Bin\Styles”; for ArcGIS 8.3 put this into “\ArcGIS\Bin\Styles”
<i>olalla.tif</i>	DRG base of USGS topographic map.
<i>olalla.tfw</i>	World file containing projection information for Olalla.tif

olallahshade A hillshade created from the Olalla 10m Digital Elevation Model (DEM) with a sun azimuth of 45 degrees, a sun height angle of 50 degrees, and vertical exaggeration of 2

2) SHAPEFILE PACKAGE

(SIM2902_SHP.ZIP, 4.36 MB compressed, 11.4 MB uncompressed)

<u>Shapefiles</u>	<u>Description</u>
<i>OlallaContacts.shp</i>	A line shapefile representing the contacts and faults of the geology
<i>OlallaGeologyPoly.shp</i>	A polygon shapefile representing geologic units
<i>OlallaGeologyBed Traces.shp</i>	A line shapefile representing bedding traces of geologic units
<i>OlallaSamples.shp</i>	A point shapefile representing locations of geologic samples
<i>OlallaStructurePoints.shp</i>	A point feature class representing geologic structure point features (bedding attitude)

Map document files

<i>SGMP.style</i>	Custom style file used to symbolize lines, polygons, and points. For ArcGIS 9.0 put this into “\Program Files\ArcGIS\Bin\Styles”; for ArcGIS 8.3 put this into “\ArcGIS\Bin\Styles”
<i>olalla.tif</i>	DRG base of USGS topographic map.
<i>olalla.tfw</i>	World file containing projection information for Olalla.tif
<i>olallahshade</i>	A hillshade created from the Olalla 10m Digital Elevation Model (DEM) with a sun azimuth of 45 degrees, a sun height angle of 50 degrees, and vertical exaggeration of 2
<i>Olalla.pmf</i>	Published map document created from Olalla.mxd for use with ArcReader. It contains all of the same rendering and symbolization information that is in the original .mxd. Features may be queried with the identify tool in the same way they could in the .mxd, but there are no editing capabilities with this utility

3) METADATA (.html) (59 KB)

<u>Files</u>	<u>Description</u>
<i>metadata.html</i>	Metadata created in ArcCatalog for this map

4) PORTABLE DOCUMENT FORMAT
(ADOBE ACROBAT 5.0, FILES 22.6 MB)

Files

Description

Olalla_map.pdf

A PDF file containing an image of the entire map sheet,
exported from Adobe Illustrator

OBTAINING THE DIGITAL DATA

The digital data for this map can be obtained in two ways:

- 1) Download from the U.S. Geological Survey Web Site
- 2) Request a compact disc (CD) of the files.

1) TO OBTAIN THE FILES FROM THE U.S. GEOLOGICAL SURVEY WEB PAGES:

The U.S. Geological Survey supports a set of graphical pages on the World Wide Web. Digital publications (including this one) can be accessed via these pages. The location of the main Web page for the entire U.S. Geological Survey is <http://www.usgs.gov>. The Web server for digital publications is <http://pubs.usgs.gov>. To access files for this Scientific Investigations Map report, go to <http://pubs.usgs.gov/sim/2005/2902/>.

2) TO OBTAIN A CD OF THE FILES:

A CD of any or all of the digital files described here can be obtained by sending a request and return address to:

Karen Wheeler (or Ray Wells)

U.S. Geological Survey
345 Middlefield Road, M/S 973
Menlo Park, CA 94025

or by email: kwheeler@usgs.gov or r wells@usgs.gov

OBTAINING PAPER PLOTS

TO OBTAIN PLOTS FROM A COMMERCIAL VENDOR:

First obtain the PDF package via a download or by requesting a CD of the PDF package as described above. Take that package to a commercial vendor with a large-format

plotter. Make sure the vendor is capable of reading CDs and PDF files and provide the vendor with a copy of this document.

TO OBTAIN PAPER PLOTS FROM THE U.S. GEOLOGICAL SURVEY:

The U.S. Geological Survey provides a print on demand service for digital maps such as this report. To obtain plots, contact the U.S. Geological Survey:

USGS Information Services
Box 25286
Denver Federal Center
Denver, CO 80225-0046

(303) 202-4200
1-888-ASK-USGS
FAX: (303) 202-USGS
e-mail: infoservices@usgs.gov

Be sure to include with your request the Scientific Investigations Map number 2902.

DIGITAL COMPILATION

The Olalla 7.5' quadrangle geologic map was created in ArcMap 8.3 and upgraded to ArcMap 9.0 prior to publication. The map can be recreated with standard ArcGIS 8.3 or 9.0 tools. The datasets were symbolized by matching them to SGMP.style. The map projection is UTM, NAD27, zone 10, meters, and the scale is 1:24,000. The order of the datasets in the ArcMap table of contents was as follows:

- 1) OlallaTopology
- 2) Annotations:
 - OlallaStructurePointsAnno
 - OlallaSamplesAnno
 - OlallaGeologyPolyAnno
- 3) OlallaStructurePoints
- 4) OlallaSamples
- 5) OlallaContacts
- 6) OlallaGeologyBedTraces
- 7) OlallaGeologyPolys (overprints - matched to style with UNIT_PRNT field)
- 8) olalla.tif (40% transparency; indexed colors 1, 5, 10, 11, and 12 turned null; for 0 set CMYK value as follows: C = 0% M = 0% Y = 0% K = 50%)
- 9) olallahshade (80% transparency)
- 10) OlallaGeologyPoly

The map was exported from the layout view in ArcMap as an Adobe Illustrator file. A digital layout (or map collar) consisting of a description of map units, correlation of map units, a data table, and geologic summary was created in Adobe Illustrator. Differences

between the map as it appears in the Illustrator layout versus in the .mxd or .pmf files represent changes in symbology only and do not reflect any changes in the actual source data.

BASE MAP

The base map for the digital compilation is a Digital Raster Graphic (DRG) of the U.S. Geological Survey, 1:24,000-scale topographic map of the Olalla 7.5' quadrangle (1953, revised 1994), which has a 20-foot contour interval. The image inside the map neatline is georeferenced to the NAD 27 Universal Transverse Mercator projection. The horizontal positional accuracy and datum of the DRG matches the accuracy and datum of the source map. The base map layer is a digital image, but no information other than location is attached to the lines. This base map is provided for reference only.

The hillshade for the digital compilation was created from a U.S. Geological Survey 10-meter Digital Elevation Model (DEM) of the Olalla 7.5' quadrangle (1994). The DEM and resulting hillshade are georeferenced to the NAD 27 Universal Transverse Mercator projection. The vertical accuracy of DEM data depends on the source and resolution of the data samples, and is probably 7 meters, but may be as much as 15 meters. The hillshade was created with a sun azimuth of 45 degrees, a sun height angle of 50 degrees, and vertical exaggeration of 2.

SPATIAL RESOLUTION

Uses of this digital geologic map should not violate the spatial resolution of the data. Although the digital form of the data removes the constraint imposed by the scale of a paper map, the detail and accuracy inherent in map scale are also present in the digital data. The fact that this database was edited at a scale of 1:24,000 means that higher resolution information is not present in the dataset. Plotting at scales larger than 1:24,000 will not yield greater real detail, although it may reveal fine-scale irregularities below the intended resolution of the database. Similarly, where this database is used in combination with other data of higher resolution, the resolution of the combined output will be limited by the lower resolution of these data.

ACKNOWLEDGMENTS

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