U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

Digital mining claim density map for Federal lands in Utah: 1996

by

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Open-File Report 99-407

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INTRODUCTION

This report describes a digital map generated by the U.S. Geological Survey (USGS) to provide digital spatial mining claim density information for federal lands in Utah as of March 1997. Mining claim data is earth science information deemed to be relevant to the assessment of historic, current, and future ecological, economic, and social systems. There is no paper map included in this Open-File report.

In accordance with the Federal Land Policy and Management Act of 1976 (FLPMA), all unpatented mining claims, mill, and tunnel sites must be recorded at the appropriate BLM State office. BLM maintains a cumulative computer listing of mining claims in the MCRS database with locations given by meridian, township, range, and section. A mining claim is considered closed when the claim is relinquished or a formal BLM decision declaring the mining claim null and void has been issued and the appeal period has expired. All other mining claims filed with BLM are considered to be open and actively held. The digital map (figure 1.) with the mining claim density database available in this report are suitable for geographic information system (GIS)-based regional assessments at a scale of 1:100,000 or smaller.

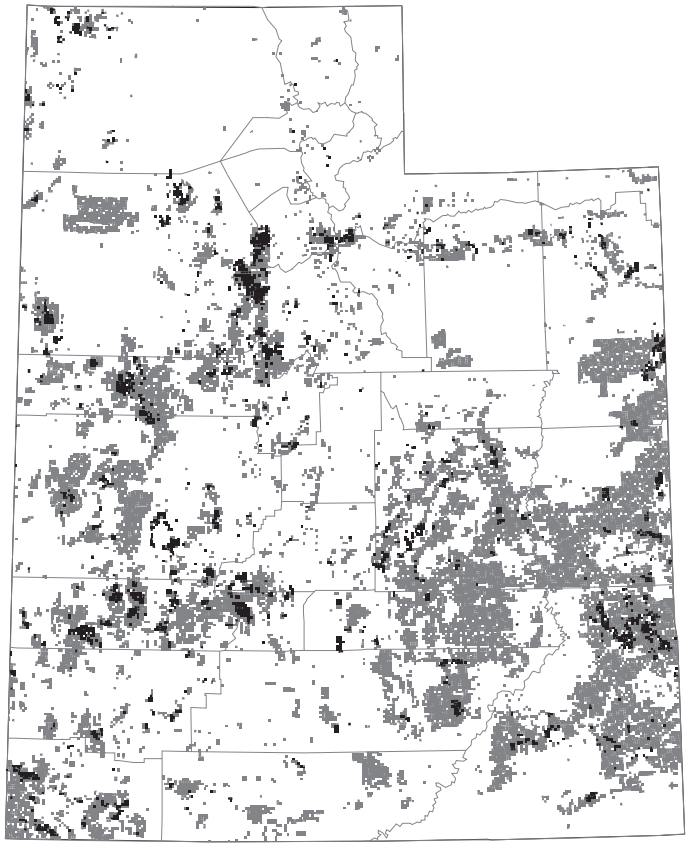

Figure 1. --- Open (black) and closed (gray) status of mining claims in Utah for 1996.

DATA SOURCES, PROCESSING, AND ACCURACY

Data Sources

The mining claim density database of federal lands in Utah is one of 13 statewide databases published in the U.S. Geological Survey Open-File Report 99-325. The database contains information identifying 1) the meridian, township, range, and section (MTRS) designation, a unique record identifier, 2) the number and type of claims (lode, placer, mill site, tunnel site) within each section, and 3) the status of the claims (open is held by a claimant, closed is no longer held). The original mine claim data used to create the databases in OF99-325 were acquired from the BLM in March 1997. An official quarterly release of the MCRS mine claim data for Utah is available by specific request from the:

United States Department of the Interior
Bureau of Land Management
Mining Claim Recordation System Coordinator
NI-112, Denver Federal Center
P.O. Box 25047
Denver, CO 80225-0047

The statewide Public Land Survey (PLS) digital map of Utah, ut_clms.e00, was used to create the digital mining claim density map. The digital map was in Arc/Info export format and was acquired as legacy data from the U.S. Bureau of Mines (USBM) which was closed by Congress in February 1996. No metadata information was available with this digital file. The PLS is assumed to be from 1:100,000 scale sources.

Processing

The digital file, ut_clms.e00, was imported using Arc/Info, version 7.1.1 (Environmental Systems Research Institute, Inc., Redlands, California), a commercially available GIS software, as an Arc/Info coverage into a workspace on a Sun Ultra 1 with Solaris 2.5.1 operating software. Each section of the new digital PLS contained a unique identifier corresponding in form to the MTRS in the mining claim density database. This digital map had been used for an older mining claim density database created by the USBM. The older data, which was directly attached to the coverage, was removed and the current database from OF99-325 was linked, using a relate file, with the digital PLS of Utah. The linking process connected the data in the database to their corresponding sections in the digital map. The result was a digital mining claim density map (figure 1.) with the attributes of the current database. A subset of the digital map, that part containing mine claim density data, was created and named ut_clms2. This step was necessary because the PLS acquired from the USBM is not public domain data. However, subsets of the PLS, such as the one in this report, can be released provided that the PLS of the state cannot be recreated from the subset. The relate file was renamed ut_clms2.rel and the database of Utah from OF99-325 was renamed ut_clms2.clms. The renaming allows the database and the relate file to be included in the single export file, ut_clms2.e00, created when packaging the digital map for others.

Figure 1 displays the sections of the PLS containing claims and their status for this digital map. The map can be queried regarding its other attributes and can be used in investigating relationships with other digital data.

Accuracy

Several factors can affect the accuracy of the mining claim density database and digital map. The original data from BLM may contain errors. Two possible sources of error in the database are 1) incorrect position of the mining claim submitted by the claimant, and 2) input errors from the data entry papers to the computer database.

The digital map of the PLS of Utah may contain errors. Possible errors include 1) misidentified sections, 2) sections with no identifying information, and 3) sections missing from the PLS digital map. These errors would result in incorrect locations of the mining claim density data or failure of the data to be connected with the digital map.

Tables 1 and 2, summarize the number of mining claims by type and status for the digital map and the database. The total number of claims in the digital map (table 1) do not agree with the total number of claims in the mining claim density database from OF99-325 (table 2). Some contributing factors may be 1) failure of the data to find a section to combine with in the digital map, or 2) sections occurring as multiple parts due to irregular state boundaries, shorelines, or to non-PLS land surveys. The first type of error results in a decrease in the expected number of claims in the digital map. The second results in an increase. Both sources of error may be present. A ratio of the grand totals of all claims of Table 1 to Table 2 should show the degree of fit of the digital map totals to the original database totals. A value equal to 1 indicates a 100% fit. A value less than 1 indicates data was lost. A value greater than 1 indicates multi-part sections may be in the digital PLS map. The table shows that the digital map contains 361,202 mining claims but the database contains 360,628 mining claims. A ratio of the two numbers, 1.0016, indicates a very good fit.

Table 1. Mining claim totals by type and status in Utah (digital map linked to database)

	DIGITAL MAP DATABASE CLAIM TOTALS				
Type of Claim	LODE	PLACER	MILL	TUNNEL	ALL CLAIMS
Number of Open Mining Claims	11,900	2,617	976	7	15,500
Number of Closed Mining Claims	309,290	32,539	3,751	122	345,702
Grand Totals	321,190	35,156	4,727	129	361,202

Table 2. Mining claim totals by type and status in Utah (ut_clms2.clms database)

	DENSITY DATABASE CLAIM TOTALS				
Type of Claim	LODE	PLACER	MILL	TUNNEL	ALL CLAIMS
Number of Open Mining Claims	11,865	2,613	976	7	15,461
Number of Closed Mining Claims	308,670	32,624	3,751	122	345,167
Grand Totals	320,535	35,237	4,727	129	360,628

Another concern regarding accuracy involves the visual representation of the data to a viewer. The digital map does not accurately represent the aerial extent of the lands covered by a mining claim because the presence of one mining claim, about 20 acres for a lode claim, will 'color in' the entire section (640 acres) it occurs in. A section is typically 1 square mile. The visual representation of one claim is magnified by a factor of 32 times its actual size. The best digital map resolution available at this time is to the section. Any area calculations done with the digital map for mining claims will likely be unreliable. Specific information about a particular area should be acquired from the BLM State office.

Additionally, the positional accuracy of a mining claim is generalized to one section in the PLS even if it crosses into another section. Mining claims generally follow geologic features and usually do not conform to the PLS lines. The procedure used by Campbell (1996) chooses the first section listed for a mining claim in the MCRS as the section of position. This method insures that each claim is counted only once. The digital PLS map may have been derived from 1:100,000 source maps. It is considered accurate enough for geographic representations for the purposes of regional assessments at a scale of 1:100,000 or smaller.

MINING CLAIM DENSITY MAP CONTENTS

Table 3 contains the structure and descriptions of specific fields within the digital map, ut_clms2, linked with the mining claim density database, ut_clms2.clms. The fields in normal type are from the digital PLS of Utah. The italicized field in bold type, ***mtrs***, is common to both the PLS and the database. The fields in bold type are from the mining claim density database.

Table 3. Structural relationship of the digital map to the mining claim density database

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	DEC	DESCRIPTION
1	area	4	12	Floating	3	Internal Arc/Info polygon area
5	perimeter	4	12	Floating	3	Internal Arc/Info polygon perimeter
9	ut_clms2#	4	5	Binary	-	Internal Arc/info polygon number
13	ut_clms2-id	4	5	Binary	-	User-defined polygon number
17	***mtrs***[1]	18	18	Character	-	**M**eridian+**T**ownship+**R**ange+**S**ection
35	nolc[2]	4	4	Integer	-	**N**umber of **O**pen **L**ode **C**laims[2]
39	nopc	4	4	Integer	-	**N**umber of **O**pen **P**lacer **C**laims
43	nomc	4	4	Integer	-	**N**umber of **O**pen **M**ill site **C**laims
47	notc	4	4	Integer	-	**N**umber of **O**pen **T**unnel **C**laims
51	toc	4	4	Integer	-	**T**otal number of **O**pen **C**laims
55	nclc	4	4	Integer	-	**N**umber of **C**losed **L**ode **C**laims
59	ncpc	4	4	Integer	-	**N**umber of **C**losed **P**lacer **C**laims
63	ncmc	4	4	Integer	-	**N**umber of **C**losed **M**ill site **C**laims
67	nctc	4	4	Integer	-	**N**umber of **C**losed **T**unnel **C**laims
71	tcc	4	4	Integer	-	**T**otal number of **C**losed **C**laims
75	tc	4	4	Integer	-	**T**otal number of **C**laims of all kinds

[1] For example, '26 30.0N 29.2E05' is Meridian 26 (Salt Lake), Township 30 North, Range 29 ½ East, Section 5 Another meridian is the Uintah Meridian (30).

[2] in a section of the PLS

REFERENCES

Campbell, Harry W., 1996, Procedure from making a mining claim density map from BLM claim recordation digital data: U.S. Geological Survey Open-File Report 96-736, 13 p.

Hyndman, Paul C. and Harry W. Campbell, 1999, Digital databases containing mining claim density information for Arizona, California, Colorado, Idaho, Montana, Nebraska, New Mexico, Nevada, Oregon, South Dakota, Utah, Washington, and Wyoming created from the BLM Mining Claim Recordation System: 1996: U.S. Geological Survey Open-File Report 99-325, 21 p.

OBTAINING DIGITAL DATA

The digital mining claim density map of Utah, ut_clms2, is provided with this report in Arc/Info EXPORT format as ut_clms2.e00. The mining claim density database, ut_clms.clms, and the relate file, ut_clms2.rel, are contained in the export file. A metadata file, ut_clms2.met, occurs separately. These files and this report are available from the USGS public access FTP site and the World Wide Web site on the Internet. Table 4 lists the files and their sizes.

Table 4. Files available with this Open-File Report

FILE NAME	FILE TYPE	SIZE IN KILOBYTES
of99-407.pdf	PDF file	454
ut_clms2.e00	Arc/Info export	17,266
ut_clms2.met	Metadata	30

By Anonymous FTP

Do the following steps to obtain the files for OF99-407by anonymous ftp. Windows users may need to start FTP in the MSDOS window.

STEP (type the words between the quotes)	REASON
cd to your_local_directory	Go to a directory to receive the WinZip file – you may need to make a directory first
'ftp wrgis.wr.usgs.gov'	Make ftp connection with the USGS computer, WRGIS
Name: 'anonymous'	Use 'anonymous' as your user name
Password: *your email address*	Use your email address as a password (you@email_address)
'cd pub/open-file'	Go down to the pub/open-file directory
'cd of99-407'	Go down to the specific open file directory
'binary'	Type the word 'binary' to change the transfer type to binary mode
'get of99-407.exe'	Copy the self-extracting file across the Internet to the receiving directory on your computer
'bye'	Close the ftp connection

Extracting the files from the of99-407.exe self-extracting file is accomplished by typing the name of the file, 'of99-407', and pressing the 'Enter' key. The files will unload automatically.

By the World Wide Web

The files for this report can be obtained over the Internet at URL http://wrgis.wr.usgs.gov/open-file/. Do the following steps to obtain the files for OF99-407 by the World Wide Web:

STEP	REASON
Attach to the internet with your web browser	This connects you to the internet.
Type 'http://wrgis.wr.usgs.gov/open-file/'	Make sure the internet address looks like this to connect with the USGS computer, WRGIS
Find the report in the listing and click on of99-407	This opens a page with instructions and information for downloading the report
Follow the instructions for downloading the data and this report	You should receive the report to your computer

METADATA

Following are 1) an Arc/Info description of the digital map, ut_clms2, 2) a description of the relate file, and 3) the formal metadata for the digital map and associated files.

Description of SINGLE precision coverage ut_clms2

FEATURE CLASSES

Feature Class	Subclass	Number of Features	Attribute data (bytes)	Spatial Index?	Topology?
ARCS		50811			
POLYGONS		19364	34		Yes
NODES		32382			

SECONDARY FEATURES

Tics	4
Arc Segments	51724
Polygon Labels	18591

TOLERANCES

Fuzzy = 55.938 V Dangle = 0.000 N

COVERAGE BOUNDARY

Xmin = -270089.500 Xmax = 172232.672
Ymin = -4403224.000 Ymax = 4957459.000

STATUS

The coverage has not been Edited since the last BUILD or CLEAN

COORDINATE SYSTEM DESCRIPTION

Projection	LAMBERT
Datum	NAD27
Units	METERS
Spheroid	CLARKE1866
Parameters:	
1ST Standard Parallel	33 0 0.00
2nd Standard Parallel	45 0 0.00
Longitude of central meridian	-111 0 0.00
Latitude of projection's origin	0 0 0.00
False easting (meters)	0.00000
False northing (meters)	0.00000

Description of Arc/Info ut_clms2.rel relate structure

Relation	= UT_CLMS2
Table-Id	= ut_clms2.clms
Database	= info
Item	= MTRS
Column	= mtrs
Type	= ORDERED
Access	= RO

Formal metadata for the mine claim density map and associated files

The following metadata describes the mining claim density map:

```
Identification_Information:
  Citation:
    Citation_Information:
      Originator: Paul C. Hyndman
      Originator: Harry W. Campbell
      Publication_Date: 1999
      Title:
        Digital mining claim density map for Federal lands in Utah: 1996
      Edition: Version 1.0
      Geospatial_Data_Presentation_Form: map and database
  Description:
    Abstract:
      The mining claim density data of federal lands in Utah are combined with
      the digital Utah Public Land Survey (PLS) to create a digital map of the
      density of mine claims in Open-File Report 99-407.

      The mining claim density data of federal lands in Utah was one of
      13 western states released in Open-File Report 99-325.  The database for
      Utah was converted to an Arc/Info file and connected with the PLS by an
      Arc/Info relate.

      As stated in OF 99-325, "The database was created from data obtained in
      March, 1997, from the Mining Claim Recordation System of the Bureau of
      Land Management.  The data was analyzed, manipulated, and summarized into
      a database providing mining claim density information.  The database
      quantifies the status of mining claim activity for federal land in the
      State of Utah for 1996 and includes information on past mining claim
      activity on federal land since 1976. It contains information identifying
      1) the general location of mining claims within the Public Land Survey
      (PLS) system, 2) the number and type of claims (lode, placer, mill site,
      tunnel site) and 3) the status of the claims in 1976 (open is held,
      closed is no longer held by a claimant).  Other terms used by BLM for
      closed claims are "Abandoned and Void" and "Void by Operation of the
      Law".  According to BLM, new terminology for "Open" will be "Recorded"
      and for "Closed" will be "Terminated and Closed".

      Combining the database with a digital PLS coverage of Utah enables a user
      to spatially display the mine claim data as a digital map and compare it
      with other spatial themes.
    Purpose:
      The digital map was developed to document mining claim activity
      on federal lands in Utah and to investigate interrelationships of mining
      claim activity with physical and social science concerns.

      This digital map is not to be considered as a legal representation of
      survey lines and corners or of mining claim boundaries.
    Supplemental_Information: This data is in Arc/Info 7.1 format
    Data_Set_Part:
      Part_Type: Arc/Info export file
      Part_Name: ut_clms2.e00
      Part_Description: This Arc/Info export file contains the coverage
        ut_clms2, the database ut_clms2.clms, and the relate ut_clms2.rel.
```

This digital map contains only those parts of the Utah PLS which contain mine claim density data. The original PLS of Utah was acquired from the U.S. Bureau of Mines when it was closed by Congress in 1996. The Bureau of Mines purchased the PLS of Utah from a private company. The data is proprietary and cannot be released in its complete form.

Data_Set_Part:
Part_Type: Arc/Info database
Part_Name: ut_clms2.clms
Part_Description: This database contains mine claim density information for federal lands in the state, from 1976 through 1996. It is one of several state databases from OF 99-325.

Data_Set_Part:
Part_Type: Arc/Info relate
Part_Name: ut_clms2.rel
Part_Description: This file contains the parameters needed to relate the database, ut_clms2.clms to the digital map database, ut_clms2.pat. The structure of the relate is:

```
RELATION                    = UT_CLMS2
TABLE-ID                    = ut_clms2.clms
DATABASE                    = info
ITEM                        = MTRS
COLUMN                      = mtrs
TYPE                        = ORDERED
ACCESS                      = RO
```

Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 1976
Ending_Date: 1997
Currentness_Reference: Release date of data by the Bureau of Land Management in March, 1997

Status:
Progress: Complete
Maintenance_and_Update_Frequency: None planned

Spatial_Domain:
Bounding_Coordinates:
West_Bounding_Coordinate: -114 00 00
East_Bounding_Coordinate: -109 00 00
North_Bounding_Coordinate: 42 00 00
South_Bounding_Coordinate: 37 00 00

Keywords:
Theme:
Theme_Keyword_Thesaurus: None
Theme_Keyword: mining claim density
Theme_Keyword: lode
Theme_Keyword: placer
Theme_Keyword: mill site
Theme_Keyword: tunnel site
Theme_Keyword: mine claim
Place:
Place_Keyword_Thesaurus: None
Place_Keyword: Utah

Access_Constraints: None

Use_Constraints:
Users should contact the BLM for current data. The U.S. Geological Survey makes no warranties related to the accuracy of the data and users are required to determine suitability of use for any particular purpose. This digital map is not meant to be construed as a legal representation of mining claim boundaries. The PLS data is assumed to be from 1:100,000 scale base maps. The map should not be used at scales larger than 1:100,000.

The user must obtain current information on mining claims from the Utah State Office of the Bureau of Land Management for the area of interest since the mining claim density data is not current. The information in the database does not provide the legal location or status of individual mining claims.

Any hardcopies utilizing this data set shall clearly indicate their source. If the user has modified the data in any way they are

obligated to describe the types of modifications they have performed on the hardcopy map. User specifically agrees not to misrepresent this data set, nor to imply that changes they made were approved by the U.S. Geological Survey.

Point_of_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Paul Hyndman
Contact_Organization: U.S. Geological Survey
Contact_Position: Geologist
Contact_Address:
Address_Type: mailing and physical address
Address: 904 W. Riverside Ave., Rm. 202
City: Spokane
State_or_Province: Washington
Postal_Code: 99201
Country: U.S.A.
Contact_Voice_Telephone: 509-368-3100 or 509-368-3118
Contact_Facsimile_Telephone: 509-368-3199
Contact_Electronic_Mail_Address: phyndman@usgs.gov
Contact_Instructions: General office phone is 509-368-3100

Data_Set_Credit:
Cheryl Laudenbach, Denver Service Center, BLM, provided the original mining claim data from the Mining Claim Recordation Database. The data was used to create the mining claim density databases in OF 99-325.

Native_Data_Set_Environment: Solaris 2.5.1, Sun Ultra 1, Arc/Info 7.1.2

Data_Quality_Information:
Attribute_Accuracy:
Attribute_Accuracy_Report:
OF 99-325 reports that the attributes of the mining claim data from BLM data, claims per section, do not represent the exact number of claims in each section. Some claims overlap into adjoining sections and/or townships. In order to count each claim only once, it was necessary to choose one section for each claim to be identified with. Therefore, the first section listed in the BLM database for a particular claim was chosen as the section the claim was counted in.

The accuracy was tested by summing each category of claim in the mining claim database and comparing the sum to those from the original BLM database. The sums for each category matched.

No attempt was made to determine the accuracy of BLM’s database.

Completeness_Report:
None of the data from BLM was omitted. The data is considered complete for the purpose of determining mining claim density in this State.

Logical_Consistency_Report:
The data set is a derived subset of the original BLM data. No modifications to the BLM data were made.

Positional_Accuracy:
Horizontal_Positional_Accuracy:
Horizontal_Positional_Accuracy_Report:
A claim may be within a section or it may straddle two, three, or four sections. In order to count each claim only once, it was necessary to choose one section for each claim to be identified with. Therefore, the first section listed in the BLM database for a particular claim was chosen as the section the claim was counted in.

Lineage:
Source_Information:
Source_Citation:
Citation_Information:
Originator:
U.S. Geological Survey
Publication_Date: 1999
Title: Digital databases containing mining claim density information for Arizona, California, Colorado, Idaho, Montana, Nebraska, New Mexico, Nevada, Oregon, South Dakota, Utah, Washington, and Wyoming created from the BLM Mining Claim Recordation System: 1996
Edition: 1
Geospatial_Data_Presentation_Form: tabular database
Series_Information:

```
            Series_Name: Open-File Report
            Issue_Identification: OF 99-325
          Publication_Information:
            Publication_Place: Denver, Colorado
            Publisher: U.S. Geological Survey
          Other_Citation_Details:
            Original data from the Bureau of Land Management Mine Claim
            Recordation Database (MCRD)
          Online_Linkage: URL = http://wrgis.wr.usgs.gov/open-file/of99-325
      Type_of_Source_Media: digital file
      Source_Time_Period_of_Content:
        Time_Period_Information:
          Range_of_Dates/Times:
            Beginning_Date: 1976
            Ending_Date: 199703
        Source_Currentness_Reference:
          The data were copied from BLM's MCRD database on March, 1997.
          The data are cumulative from 1976, when the database was created.
      Source_Citation_Abbreviation: USGS OF99-325
      Source_Contribution:
        This database contributed the mine claim density information
        needed to create a spatial mine claim density map.
    Process_Step:
      Process_Description:
        The mine claim density database of Utah was released as part of the
        U.S. Geological Open-File Report, OF 99-325.  It was imported as an
        Arc/Info table, ut_clms2.clms, using the command, dbaseinfo.  A relate,
        ut_clms2.rel, was made to connect the database to the PLS of Utah.
        This report can be found at URL = http://wrgis.wr.usgs.gov/open-file/
      Process_Date: 1997-1998
Data_Quality_Information:
  Completeness_Report:
    The digital PLS of Utah is assumed to be complete.
  Logical_Consistency_Report:
    The PLS in this report is a derived subset of the original PLS.  Only those
    sections containing mine claim density data are included in this report.
  Positional_Accuracy:
    Horizontal_Positional_Accuracy:
      Horizontal_Positional_Accuracy_Report:
        No attempt wa made to check the positional accuracy of the digital PLS.
        The PLS is assumed to have come from 1:100,000 scale sources.
  Lineage:
    Source_Information:
      Source_Citation:
        Citation_Information:
          Originator:
            Uncertain.  Digital PLS of Utah obtained from the U.S. Bureau
            of Mines at its closure in 1996.  The data may have been
            purchased from Petroleum Information, Inc. in 1988.  The digital
            PLS is considered copyrighted and cannot be released in a form that
            would enable someone to reconstruct the PLS.  Portions can be
            released in paper or digital form.
          Publication_Date:
          Title: none
          Geospatial_Data_Presentation_Form: map
      Type_of_Source_Media: digital file
      Source_Time_Period_of_Content:
        Time_Period_Information:
          Single_Date/Time:
            Calendar_Date: 1988
        Source_Currentness_Reference:
          The PLS may not be current with regard to section lines and corners.
      Source_Citation_Abbreviation: none
      Source_Contribution:
        The U.S. Bureau of Mines contributed the digital PLS of Utah.  It did
        not include metadata or other documentation.
    Process_Step:
      Process_Description:
        The Utah PLS contained a field, mtrs, to which the mine claim density
        database could be attached.  The data was attached through the use of
        a relate, ut_clms2.rel.
```

```
      Process_Date: 1997
Spatial_Data_Organization_Information:
  Indirect_Spatial_Reference:
  Direct_Spatial_Reference_Method:
  Point_and_Vector_Object_Information:
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_object_Type: Point
      Point_and_Vector_Object_Count: 32382
      SDTS_Point_and_Vector_object_Type: String
      Point_and_Vector_Object_Count: 50811
      SDTS_Point_and_Vector_object_Type: GT-polygon composed of chains
      Point_and_Vector_Object_Count: 19364
Spatial_Reference_Information:
  Horizontal_Coordinate_System_Definition:
    Geodetic_Model:
      Horizontal_Datum_Name: North American Datum of 1927
      Ellipsoid_Name: Clarke 1866
    Planar:
      Map_Projection:
        Lambert_Conformal_Conic:
          Standard_Parallel: 33 0 0
          Standard_Parallel: 45 0 0
          Longitude_of_Central_Meridian: -111 0 0
          Latitude_of_Projection_Origin: 0 0 0
          False_Easting: 0.0
          False_Northing: 0.0
Entity_and_Attribute_Information:
  Detailed_Description:
    Entity_Type:
      Entity_Type_Label: ut_clms.clms
      Entity_Type_Definition:
        Summary of values for number and type of mining claims in each section
        from OF99-325.  The data is tied to an MTRS code which represents the
        Meridian + Township + Range + Section.  This code provides a unique
        identifier for each Section of the PLS.
      Entity_Type_Definition_Source:
        The Bureau of Land Management is the official
        source for PLS designations and surveys and for
        the mining claim data.
    Attribute:
      Attribute_Label: MTRS
      Attribute_Definition:
        A concatenation of Meridian, Township, Range, and
        Section of the PLS
      Attribute_Definition_Source: Bureau of Land Management
      Attribute_Domain_Values:
        Enumerated_Domain:
          Enumerated_Domain_Value: MMTTT.TDRRR.RESS__
          Enumerated_Domain_Value_Definition:
            MTRS is an 18-character field which is a concatenation
            of meridian (M), Township (T), township direction (D),
            range (R), range direction (E), and section (S).  The form
            of the field is MMTTT.TDRRR.RESS__.  The last two spaces
            were included in the beginning of the study but were not utilized.

            MM = the FIPS code for meridian.  FIPS stands for the Federal
            Information Processing Standard.  The codes for the meridians are:

            26 - Salt Lake
            30 - Uintah

            TTT.T = BLM Township designation as 'TTT.T' may include a fraction
            of a Township.  For example, Township 1 would be '__1.0'.
            Township 27.5 would be '_27.2'.  The '.2' is a 1/2 township.

            D = BLM Township direction may be North (N) or South (S).

            RRR.R = BLM Range designation as 'RRR.R' which may include a
            fraction of a Range See Township (T) for example.

            E = BLM Range direction may be East (E) or West (W).
```

```
        SS = BLM Section number.  For example, section 1 is '_1' and
        section 35 is '35'.  Generally the highest section number is 36,
        but there are exceptions in several States.
      Enumerated_Domain_Value_Definition_Source: Hyndman and Campbell, 1999
Attribute:
  Attribute_Label: NOLC
  Attribute_Definition:
    Number of Open (or recorded) Lode Claims
    within a section
  Attribute_Definition_Source: Hyndman and Campbell, 1999
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 0
      Range_Domain_Maximum: 84
Attribute:
  Attribute_Label: NOPC
  Attribute_Definition:
    Number of Open (or recorded) Placer Claims
    within a section
  Attribute_Definition_Source: Hyndman and Campbell, 1999
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 0
      Range_Domain_Maximum: 25
Attribute:
  Attribute_Label: NOMC
  Attribute_Definition:
    Number of Open (or recorded) Mill site Claims
    within a section
  Attribute_Definition_Source: Hyndman and Campbell, 1999
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 0
      Range_Domain_Maximum: 121
Attribute:
  Attribute_Label: NOTC
  Attribute_Definition:
    Number of Open (or recorded) Tunnel site Claims
    within a section
  Attribute_Definition_Source: Hyndman and Campbell, 1999
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 0
      Range_Domain_Maximum: 1
Attribute:
  Attribute_Label: TOC
  Attribute_Definition:
    Total number of Open (or recorded) Claims of all types
    within a section
  Attribute_Definition_Source: Hyndman and Campbell, 1999
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 0
      Range_Domain_Maximum: 121
Attribute:
  Attribute_Label: NCLC
  Attribute_Definition:
    Number of Closed (or terminated and closed)
    Lode Claims within a section
  Attribute_Definition_Source: Hyndman and Campbell, 1999
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 0
      Range_Domain_Maximum: 213
Attribute:
  Attribute_Label: NCPC
  Attribute_Definition:
    Number of Closed (or terminated and closed)
    Placer Claims within a section
  Attribute_Definition_Source: Hyndman and Campbell, 1999
```

```
      Attribute_Domain_Values:
        Range_Domain:
          Range_Domain_Minimum: 0
          Range_Domain_Maximum: 68
    Attribute:
      Attribute_Label: NCMC
      Attribute_Definition:
        Number of Closed (or terminated and closed)
        Mill site Claims within a section
      Attribute_Definition_Source: Hyndman and Campbell, 1999
      Attribute_Domain_Values:
        Range_Domain:
          Range_Domain_Minimum: 0
          Range_Domain_Maximum: 227
    Attribute:
      Attribute_Label: NCTC
      Attribute_Definition:
        Number of Closed (or terminated and closed)
        Tunnel site Claims within a section
      Attribute_Definition_Source: Hyndman and Campbell, 1999
      Attribute_Domain_Values:
        Range_Domain:
          Range_Domain_Minimum: 0
          Range_Domain_Maximum: 6
    Attribute:
      Attribute_Label: TCC
      Attribute_Definition:
        Total number of Closed (or terminated and closed)
        Claims of all types within a section
      Attribute_Definition_Source: Hyndman and Campbell, 1999
      Attribute_Domain_Values:
        Range_Domain:
          Range_Domain_Minimum: 0
          Range_Domain_Maximum: 293
    Attribute:
      Attribute_Label: TC
      Attribute_Definition:
        Total number of all Claims of all types
        within a section
      Attribute_Definition_Source: Hyndman and Campbell, 1999
      Attribute_Domain_Values:
        Range_Domain:
          Range_Domain_Minimum: 1
          Range_Domain_Maximum: 293
  Detailed_Description:
    Entity_Type:
      Entity_Type_Label: ut_clms2.pat
      Entity_Type_Definition:
        Summary of values for number and type of mining claims in each section
        from OF99-325.  The data is tied to an MTRS code which represents the
        Meridian + Township + Range + Section.  This code provides a unique
        identifier for each Section of the PLS.
      Entity_Type_Definition_Source:
        The Bureau of Land Management is the official
        source for PLS designations and surveys and for
        the mining claim data.
    Attribute:
      Attribute_Label: area
      Attribute_Definition:
        The area of each polygon in the coverage
      Attribute_Definition_Source: Arc/Info
      Attribute_Domain_Values:
        Range_Domain:
          Range_Domain_Minimum: not determined
          Range_Domain_Maximum: not determined
    Attribute:
      Attribute_Label: perimeter
      Attribute_Definition:
        Length of perimeter of each polygon in the coverage
      Attribute_Definition_Source: Arc/Info
      Attribute_Domain_Values:
```

```
        Range_Domain:
          Range_Domain_Minimum: not determined
          Range_Domain_Maximum: not determined
    Attribute:
      Attribute_Label: ut_clms2#
      Attribute_Definition:
        Internal polygon tracking number
      Attribute_Definition_Source: Arc/Info
      Attribute_Domain_Values:
        Range_Domain:
          Range_Domain_Minimum: not determined
          Range_Domain_Maximum: not determined
    Attribute:
      Attribute_Label: ut_clms2-id
      Attribute_Definition:
        Polygon tracking number which can be modified by user
      Attribute_Definition_Source: Arc/Info
      Attribute_Domain_Values:
        Range_Domain:
          Range_Domain_Minimum: not determined
          Range_Domain_Maximum: not determined
    Attribute:
      Attribute_Label: MTRS
      Attribute_Definition:
        A concatenation of Meridian, Township, Range, and
        Section of the PLS
      Attribute_Definition_Source: Bureau of Land Management
      Attribute_Domain_Values:
        Enumerated_Domain:
          Enumerated_Domain_Value: MMTTT.TDRRR.RESS__
          Enumerated_Domain_Value_Definition:
            MTRS is an 18-character field which is a concatenation
            of meridian (M), Township (T), township direction (D),
            range (R), range direction (E), and section (S).  The form
            of the field is MMTTT.TDRRR.RESS__.  The last two spaces
            were included in the beginning of the study but were not utilized.

            MM = the FIPS code for meridian.  FIPS stands for the Federal
            Information Processing Standard.  The codes for the meridians are:

            26 - Salt Lake
            30 - Uintah

            TTT.T = BLM Township designation as 'TTT.T' may include a fraction
            of a Township.  For example, Township 1 would be '__1.0'.
            Township 27.5 would be '_27.2'.  The '.2' is a 1/2 township.

            D = BLM Township direction may be North (N) or South (S).

            RRR.R = BLM Range designation as 'RRR.R' which may include a
            fraction of a Range See Township (T) for example.

            E = BLM Range direction may be East (E) or West (W).

            SS = BLM Section number.  For example, section 1 is '_1' and
            section 35 is '35'.  Generally the highest section number is 36,
            but there are exceptions in several States.
          Enumerated_Domain_Value_Definition_Source: Hyndman and Campbell, 1999
Distribution_Information:
  Distributor:
    Contact_Information:
      Contact_Person_Primary:
        Contact_Person: Paul Hyndman
        Contact_Organization: U.S. Geological Survey
      Contact_Position: Geologist
      Contact_Address:
        Address_Type: mailing and physical address
        Address: W. 904 Riverside Avenue, Room 202
        City: Spokane
        State_or_Province: Washington
        Postal_Code: 99201
```

```
      Country: USA
    Contact_Voice_Telephone: 509-368-3118
    Contact_Facsimile_Telephone: 509-368-3199
    Contact_Electronic_Mail_Address: phyndman@usgs.gov
    Contact_Instructions: Main phone number is 509-368-3100
Resource_Description: Open-File Report 99-407
Distribution_Liability:
  The U.S. Geological Survey (USGS) provides this data "as is."
  The USGS makes no guarantee or warranty concerning the accuracy of
  information contained in the geographic data.  The USGS further makes no
  warranties, either expressed or implied as to any other matter whatsoever,
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  nor does the fact of distribution constitute or imply any such warranty.

  In no event shall the USGS have any liability whatsoever for payment
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  of any kind, including, but not limited to, any loss of profits
  arising out of use of or reliance on the geographic data or arising
  out of the delivery, installation, operation, or support by the USGS.
Technical_Prerequisites: The user should have GIS software capable of
  reading Arc/Info files
Distributor:
  Contact_Information:
    Contact_Organization_Primary:
      Contact_Organization: U.S. Geological Survey Information Services
    Contact_Address:
      Address_Type: mailing and physical address
      Address:
        Open-File Reports
        Box 2586
      City: Denver
      State_or_Province: CO
      Postal_Code: 80225
      Country: USA
    Contact_Voice_Telephone: 1-303-202-4200
    Contact_Facsimile_Telephone: 1-303-202-4693
Resource_Description: Open-File Report 99-407
Distribution_Liability:
  The U.S. Geological Survey (USGS) provides this data "as is."
  The USGS makes no guarantee or warranty concerning the accuracy of
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  In no event shall the USGS have any liability whatsoever for payment
  of any consequential, incidental, indirect, special, or tort damages
  of any kind, including, but not limited to, any loss of profits
  arising out of use of or reliance on the geographic data or arising
  out of the delivery, installation, operation, or support by the USGS.
Technical_Prerequisites: The user should have software GIS software capable
  of reading Arc/Info files.
Distributor:
  Contact_Information:
    Contact_Organization_Primary:
      Contact_Organization: U.S.G.S. Earth Science Information Office
    Contact_Address:
      Address_Type: mailing and physical address
      Address: 904 West Riverside Avenue, Rm 135
      City: Spokane
      State_or_Province: WA
      Postal_Code: 99201
      Country: USA
```

```
      Contact_Voice_Telephone: 509-368-3130
      Contact_Facsimile_Telephone: 509-353-2872
      Contact_Electronic_Mail_Address: esnfic@mailmcan1.wr.usgs.gov
      Hours_of_Service: 8:00 a.m. - 4:30 p.m. Pacific time zone
  Resource_Description: Open-File Report 99-407
  Distribution_Liability:
    The U.S. Geological Survey (USGS) provides this data "as is."
    The USGS makes no guarantee or warranty concerning the accuracy of
    information contained in the geographic data.  The USGS further makes no
    warranties, either expressed or implied as to any other matter whatsoever,
    including, without limitation, the condition of the product, or its
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    In no event shall the USGS have any liability whatsoever for payment
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    of any kind, including, but not limited to, any loss of profits
    arising out of use of or reliance on the geographic data or arising
    out of the delivery, installation, operation, or support by the USGS.
  Technical_Prerequisites: The user should have software GIS software capable
    of reading Arc/Info files.
Metadata_Reference_Information:
  Metadata_Date: 19990225
  Metadata_Review_Date: 19990331
  Metadata_Contact:
    Contact_Information:
      Contact_Person_Primary:
        Contact_Person: Paul Hyndman
        Contact_Organization: U.S. Geological Survey
      Contact_Position: Geologist
      Contact_Address:
        Address_Type: mailing and physical address
        Address: W. 904 Riverside Avenue, Room 202
        City: Spokane
        State_or_Province: Washington
        Postal_Code: 99201
        Country: USA
      Contact_Voice_Telephone: 509-368-3118
      Contact_Facsimile_Telephone: 509-368-3199
      Contact_Electronic_Mail_Address: phyndman@usgs.gov
      Hours_of_Service: 8am to 4:30pm
      Contact_Instructions: Main phone is 509-368-3100
  Metadata_Standard_Name: FGDC Content Standards for Digital Geospatial
Metadata
  Metadata_Standard_Version: FGDC-STD-001-1998
  Metadata_Time_Convention: local time
  Metadata_Access_Constraints: none
  Metadata_Use_Constraints: none
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