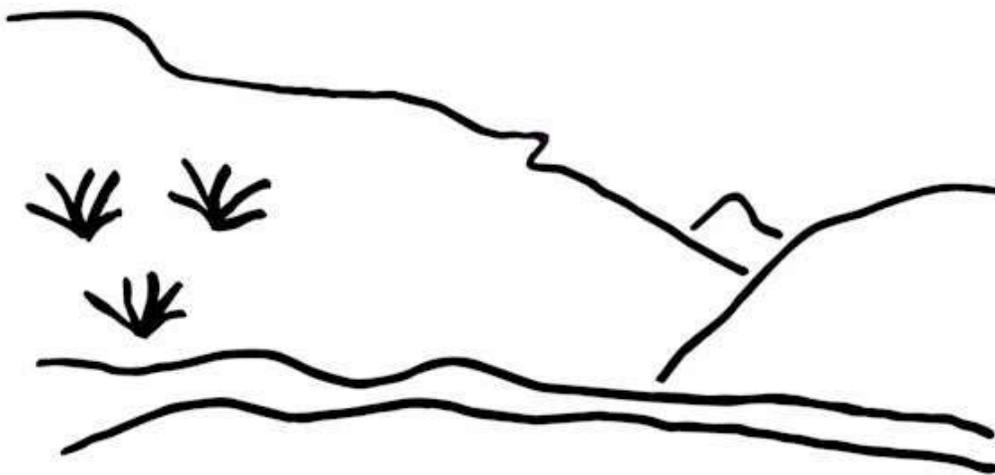


Electronic File Information



Utah Oil Gas and Mining

ELECTRONIC PERMITTING AND DATABASE DESIGN

UTAH DIVISION OF OIL, GAS AND MINING

INTRODUCTION

The Division of Oil, Gas and Mining is in the process of developing a database for electronic permitting.

Primary functions of this database are:

- To index and locate electronic documents stored on our network that were scanned from existing files or created digitally. This electronic filing system will make documents easily available to Division staff, operators, other agencies, and the general public. The filing system will be used for mine permit related information, oil and gas wells, projects, board files and any other files that are currently maintained by the Division in the Public Information Center (PIC).
- To track permitting information and maintain a chronology of permit-related activities including permits, bonds, acreages, mine and permit status, inspections and compliance information.
- To assign and schedule tasks related to permits or projects and to allocate resources (people) to those tasks. Such tasks include new permit reviews, revisions, amendments, reports, bonding and any other project or activity that the Division wishes to allocate staff to.
- To maintain a relational database of people and companies that associates them to each other, permits, projects and other activities. These data will be used as contact information (names, addresses, phone numbers) for the creation of notification, mailing lists, inspection reports, fees and other Division related work.
- To serve as an intermediate application to link information from other database applications like the Oil and Gas Databases and to serve information associated with Geographic Information System (GIS) applications which will enable the Division to publish maps, reports and current and accurate information on the Division Web site.
- To provide a core to the development of on-line permit applications and other related Division activities over the Internet.

This document is currently a preliminary draft in the development of an electronic permitting database system. Much of the information and design of data tables found in this document may change significantly as this project develops. Please use this information as such.

DESIGNATION OF PERMIT NUMBERS AND PROJECT NUMBERS

Currently, each Program has devised and developed their own methods for numbering permits and projects. These numbering systems must be revised to create a unique numbering system for database applications. Most Division numbering systems use the standard county numbering system in

conjunction with a mine, site, well or project number within that county. These numbering systems differ in identifying the type of permit or project and the status of that operation.

To develop a unique numbering system, the types of permits and projects for each program need to be defined and understood. This will enable us to normalize the information found within the database and to order that data in a way that is effective and accurate. The following describes the permits and projects that are currently accomplished by the Division of Oil, Gas and Mining:

MINING SECTION

The mining section for the Division of Oil, Gas and Mining consists of three programs: the Coal Regulatory Program (COAL); the Abandoned Mine Reclamation Program (AMR); and, the Minerals Regulatory Program (MINERALS).

Coal Regulatory Program

The Coal Regulatory Program issues permits for two categories of coal mining activities, exploration permits and mining permits. These two permit categories are further subdivided into the type of permit issued, based on regulatory criteria. As provided under R645-100-400, the R645 Rules apply to all coal exploration and coal mining and reclamation operations, except as provided for in those regulations.

Coal Exploration Permits

The R645 Rules require the Division to issue permits for exploration based on certain criteria, or, to determine that the exploration activity is exempt from the Coal Regulatory Program requirements. Those categories that are considered exempt are:

- The extraction of coal by a landowner for his or her own noncommercial use from land owned or leased by him or her. Noncommercial use does not include the extraction of coal by one unit of an integrated company or other business or nonprofit entity which uses the coal in its own manufacturing or power plants.
- The extraction of 250 tons of coal or less by a person conducting coal mining and reclamation operations. A person who intends to remove more than 250 tons is not exempted.
- The extraction of coal as an incidental part of federal, state or local government-financed highway or other construction in accordance with R645-102.
- The extraction of coal incidental to the extraction of other minerals where coal does not exceed 16-2/3 percent of the mineral tonnage removed for commercial use or sale in accordance with R645-106.
- Coal exploration on lands subject to the requirements of 43 CFR Parts 3480-3487. (Coal under the jurisdiction of BLM.)

If a coal exploration permit is required by the Division, the permits fall into two categories:

- **Minor Coal Exploration.** Coal exploration during which 250 tons or less of coal will be removed will require Division review of a Notice of Intention to Conduct Minor Coal Exploration under the requirements of R645-201- 200. Exploration during which 250 tons or less of coal will be removed on lands designated as unsuitable for surface coal mining operations under R645-103 will be subject to the requirements of R645-201-300.
- **Major Coal Exploration.** Coal exploration during which more than 250 tons of coal will be removed or which takes place on lands which are designated as unsuitable for surface coal mining operations under R645-103 will require Division approval and issuance of a Major Coal Exploration Permit under the requirements of R645-201-300.

Coal Mining Permits

Coal mining permits are exempt only by the same criteria as identified previously for coal exploration permits. Currently, the Division issues only one type of coal mining permit but prior to implementation of the Permanent Program Rules for coal, permits were issued under the MC Rules (Interim Program Rules). These permits differ in design and performance standards established by those rules and identified separately to note those differences. Accordingly the two types of coal mining permits are:

- **Interim Program Coal Mining Permits** are those permits issued after August 3, 1977 and all mining activities ceased before January 21, 1981.
- **Permanent Program Coal Mining Permits** are those permits issued after January 21, 1981 or for earlier operations that continued mining activities after January 21, 1981.

Exemptions

Regulatory Determination of Exemption. The Division may, on its own initiative, and will, within a reasonable time of a request from any person who intends to conduct coal mining and reclamation operations, make a written determination whether the operation is exempt under R645-100-400.

Permits are not issued by the Division for operations that are exempt. Applications for such activities do require review and findings the Division and need to be identified and numbered in a manner that will track and document that process.

MINERALS REGULATORY PROGRAM

The Minerals Regulatory program currently issues two categories of permits. Mining Permits and Exploration Permits. In addition to permits, annual fees are also required for these permits. These fees are based on the size of the operation.

Minerals Exploration Permits

The Division following submittal of a Notice of Intent to Conduct Exploration Operations by the applicant issues exploration permits. Exploration operations which are less than 5 acres do not require Division review and approval prior to conducting exploration activities, but do need to be filed with the Division 30 days prior to commencement. Exploration activities larger than 5 acres require Division approval and submittal of a reclamation bond before conducting exploration.

Minerals Mining Permits

Minerals mining permits are issued based on the size of the "Mining Operations." Listed below are definitions applicable to mining permits issued by the Minerals Regulatory Program:

"Exempt Mining Operations" means those mining operations which were previously exempt from the Act because less than 500 tons of material was mined in a period of twelve consecutive months or less than two acres of land was excavated or used as a disposal site in a period of twelve consecutive months. These exemptions were eliminated by statutory amendments in 1986 and are no longer available.

"Large Mining Operations" means mining operations which have a disturbed area of more than five surface acres at any time.

"Small Mining Operations" means mining operations which have a disturbed area of five or less surface acres at any time.

ABANDONED MINE RECLAMATION PROGRAM

The Abandoned Mine Reclamation Program does not issue permits. Their program makes an inventory of abandoned mine sites throughout the state. Based on an assessment of these sites and their proximity, they will be grouped into reclamation projects. Reclamation projects are numbered by county and project number (starting at 9001). Sites were numbered in a similar manner (starting at 0001), but more recently, sites are being numbered by a cadastral system 4S,3E,21,001 (Township, Range, Section, and Feature Number).

PERMIT / PROJECT IDENTIFICATION NUMBER (PID)

The Permit / Project Identification Number (**PID**) will be used as the unique identification number to define any particular permit or project within the Mining Section. The PID consists of three elements: category, county number, and permit/project number.

Categories used in the Mining Section for PID numbers are as follows:

Category	Description
A	AMR PROJECT
C	COAL PERMIT
E	MINERALS EXPLORATION
M	MINERALS PERMIT
X	COAL EXPLORATION

County numbers used in the Mining Section for PID numbers are as follows:

County	County Name
001	BEAVER
003	BOX ELDER
005	CACHE
007	CARBON
009	DAGGETT
011	DAVIS
013	DUCHESNE
015	EMERY
017	GARFIELD
019	GRAND
021	IRON
023	JUAB
025	KANE
027	MILLARD
029	MORGAN
031	PIUTE
033	RICH
035	SALT LAKE
037	SAN JUAN
039	SANPETE
041	SEVIER
043	SUMMIT
045	TOOELE

County	County Name
047	UINTAH
049	UTAH
051	WASATCH
053	WASHINGTON
055	WAYNE
057	WEBER
999	OTHER

The Permit / Project Numbers are a series of four-digit numbers that are unique to a particular Category and County. Here are some examples of unique PID numbers:

C0070001 – Coal Permit, Carbon County, Permit Number 0001 (White Oak Mine). Previous numbering schemes for this permit would include ACT/007/001, C007001, C/007/001, INA/007/001, and PRO/007/001, etc.

M0070002 – Minerals Permit, Carbon County, Permit Number 0002 (Sunnyside Tar Sands). Previous numbering schemes for this permit would include, M070002, S070002, M/007/0002, S/07/0002, LMO/07/0002, SMO/07/0002, etc.

E0150025 – Minerals Exploration Permit, Emery County, Permit Number 0025 (San Rafael Swell Area). Previous numbering schemes for this permit would include, EXP/15/0025, E150025, E15025, E/15/0025, etc.

A0079001- AMR Project, Carbon County, Project Number 9001 (Kennilworth Project). Previous numbering schemes for this project would include, AMR/007/901, 07/901, 901-Kennilworth, etc.

X0070040 – Coal Exploration Permit, Carbon County, Permit Number 0040 (Beaver Brook). Previous numbering schemes for this permit would include, E007040, EXP/007/040, CEP/007/040, etc.

While the PID number sets up a unique number for a particular project or permit category, it does not differentiate between different permit types that occur in each category nor does it identify the status of the permit operations. As can be seen above, earlier numbering schemes tried to incorporate this information into the permit number, causing confusion in identifying and filing information for a particular permit as the status or type of permit changed. Because the type of permit or the status of the operation can and do change over the course of time, this information has been organized into separate fields within the database tables and is explained further in the Database Table Definitions and Design Standards.

OIL AND GAS SECTION

The Utah Oil and Gas Section (OILGAS), primarily uses the API well numbering system for their permit process. Other numbering schemes have been developed for permits related to Gas Plants and UIC Permits. These numbering schemes have been developed and are already a part of the Oil and Gas Production and Reporting database and the RBDMS database applications. Refer to other sources of information for a description of these data.

API NUMBERING SYSTEM

The American Petroleum Institute (API) Subcommittee on Well Data Retrieval Systems was formed in 1962 to develop a standard method for nationwide well identification for use in computerized well data systems. They created the API well number, a unique, permanent, numeric identifier assigned for identification of a well (i.e. hole in the ground), which is drilled for the purpose of finding or producing oil and/or gas or providing related services.

The Oil and Gas Program uses the API numbering scheme:

API-43-007-30319-00-00

43 State Code (UTAH)

007 County Code (Carbon)

30319 Unique Well Identifier

00 Directional Sidetrack Code

00 Event Sequence Code

In many cases, Utah database applications key to the API number as, "4300730319" where the API letter designation, the Directional Sidetrack Code and the Event Sequence Code have been dropped from the key field value.

State Code:

The first two digits of the API number represent the *surface location* of the state the well is located in. The bottom hole location of a well may be in a contiguous state such as Colorado, Wyoming, Idaho, Nevada, or Arizona, but the API number is based on the surface location. Please refer to a State Code List for a complete listing of state and pseudo-state codes.

County Code:

The third through fifth digits of the API number represent the surface location of the county where the well is located. In this example the well is located in county code 007 or Carbon County. Again, keep in mind that the bottom hole location may be in a contiguous county, but the API number is based on the surface location.

Please note that all county codes are odd numbers except for certain counties in Arizona and New Mexico and Kern County, California. This was designed for expansion. Kern County's well population has exceeded 99,999 so County Code 029 is used for the first 99,999 wells, and 030 for the wells drilled after that.

County codes are also used to designate offshore areas for both state and federal waters. Please refer to a County Code Listing for a complete listing of county and pseudo-county codes.

Unique Well Identifier:

In most states, the sixth through tenth digit of the API number is assigned as a unique number within the county the well is drilled. In a few states, the unique well identifier is based on the permit number and may only be unique within the state. In most cases the series 00000 has been used for historical wells (i.e. wells drilled prior to the issuance of API numbers). The series 10000-50000 are used by most states for current numbers.

Directional Sidetrack Codes:

The sidetrack code is the eleventh and twelfth digits of the API number. It is used to identify each sidetrack uniquely for the well. The rule of thumb is to increment the sidetrack code for each unique bottom hole location of the well.

Event Sequence Code:

The thirteenth and fourteenth digits of the API number indicate how many operations there have been on a single borehole. It is incremented only when part of the borehole identified in the 11th and 12th positions is deepened, recompleted, or worked over. It is important to note that this code can vary between data vendors based on their database recompletion criteria.

DATABASE TABLE DEFINITIONS AND DESIGN STANDARDS

Developing definitions and standards in database design is critical to understanding and identifying the information contained in that database. Primarily, a database is a set of tables that are used to store information. Each table collects a set of related information and describes that information using by grouping similar data into fields (columns) that contain text, numbers, dates or other types of information. A unique field or combinations of fields is used to identify records (rows) in the table. Tables are indexed using this uniqueness to quickly identify and locate records in the table. These indexes are also used to relate the information from one table to another table. These relationships are defined by the names used for the indexes within each table and are often referred to as primary keys or foreign keys.

Relationships are one of the fundamental differences between databases and data stored in spreadsheets or other single-table (flat-file) applications. The two most often used relationships in databases are; one-to-one relationships where the primary key of one table exactly matches only one record in the foreign key of another table, and, one-to-many relationships where the primary key in one table can point to many records in another table.

Database tables will be named using 'tbl' as a prefix to the name like, tblCounty or tblCategory. This helps identify whether the information is coming from a table or a view in the database. Views will have 'vw' added as a prefix to their names for the same reason.

Tables and Column Descriptions

Lookup Tables

Lookup tables are tables that are used in the database to look up or populate column information in other tables. For examples, the tblCounty table is used as a lookup table to place the county number in the field of another table. Using lookup tables helps to normalize the information entered into the database and helps eliminate data entry errors. They also expedite data entry by automatically completing the information in a particular field with the next most likely value in the lookup table. The following are examples of lookup tables used in the database:

Lookup Table Name – tblCounty

The tblCounty table contains two columns, County and CountyName. County is the standardized county number or county code used for all counties in Utah. The CountyName is full name for the county in CAPITOL letters. An additional CountyName has been added to the list, '999 – OTHER' , to designate a value where the information required may not be specific to a particular county. Values in tblCounty are as follows:

County	CountyName
001	BEAVER
003	BOX ELDER
005	CACHE
007	CARBON
009	DAGGETT
011	DAVIS
013	DUCHESNE
015	EMERY
017	GARFIELD
019	GRAND
021	IRON
023	JUAB
025	KANE
027	MILLARD
029	MORGAN
031	PIUTE
033	RICH
035	SALT LAKE
037	SAN JUAN
039	SANPETE
041	SEVIER
043	SUMMIT
045	TOOELE
047	UINTAH

County	CountyName
049	UTAH
051	WASATCH
053	WASHINGTON
055	WAYNE
057	WEBER
999	OTHER

Lookup Table Name - tblCategory

The tblCategory table is used to lookup values for fields in several tables. The table has two columns, Category and Description. This table is used to categorize filing systems and permit types used by the division. Current values for tblCategory are as follows:

Category	Description
A	AMR PROJECT
B	BOARD
C	COAL PERMIT
D	DIVISION
E	MINERALS EXPLORATION
G	GAS PLANT
M	MINERALS PERMIT
P	PUBLIC
U	UIC PERMIT
W	API WELL
X	COAL EXPLORATION

Lookup Table Name - tblSection

Section	Description
ACCT	Accounting
BOARD	Board of Oil, Gas and Mining
GENERAL	General Public
OGM	Division of Oil, Gas and Mining
OILGAS	Oil and Gas
ADMIN	Administration
AG	Attorney General's Office
MINING	Mining

Table Name – tblFolders

The Folders Table is the principal location of information to locate and identify electronic documents stored in the Master Files Directory. The Master Files Directory closely resembles the folders and the files currently stored in the Public Information Center (PIC Room). Each document is uniquely identified and given an identification number and key information regarding that document is entered into the Folders Table to locate and identify that particular document. Documents scanned from paper will be stored in the Master Files Directory as Adobe Acrobat PDF files. Documents that are available digitally and in their original format will be printed electronically using the Adobe Acrobat Distiller and saved as PDF files, and, will also be stored in their native form. The following is a description of the column names used in tblFolders:

1. **FileID** – Unique integer to identify each record.
2. **Section** - Identifies the section or program that owns the document. (MINING, OILGAS, ADMIN, etc.) This is a lookup value from tblSection.
3. **Category** - Identified a particular category of files within a given section. (A – AMR, C-COAL, M-MINERALS, W-WELLS, etc.) This is a lookup value from tblCategory.
4. **FilePath** – The full path name for the document.
5. **FileName** – The full file name for the document.
6. **DocType** – The general type of document. (LETTER, MEMO, FORM, etc.) This is a lookup value from tblDocType.
7. **DocGroup**
8. **DocCode** – The DocCode field is used to identify documents for which and API or PID number does not apply but the document is still tied to a specific group or actions. An Example of this would be a Board File folder.
9. **API** – The API field ties the document to a specific well number. This is a lookup value from vwAPI that derives the well numbers and names directly from the Oil and Gas Database.
10. **PID** – The PID field ties the document to a specific permit or project number. This is a lookup value from tblPID (or from a view which uses tblPID as part of its source information).
11. **DocStamped** – Date the Division stamped the Document as Received.
12. **DocDate** – Date as indicated within the document.
13. **DocTo** – The complete name as written on the document as to whom it was written to – use all CAPITOL LETTERS.
14. **DocFrom** – The complete name as written on the document from which it was written – use all CAPITOL LETTERS.
15. **DocRegarding** – The complete line of information on the RE: line of a letter or memo to file.
16. **DocRemarks** – Provides an area for comments, key word, etc. which would aid in identifying or locating the document. This field is searchable.

17. **DocLink** – This is the hyperlink to the actual document. The DocLink is generated when the document record is created.
18. **DocPassword** – Any specific password that the document has been assigned in order to open, view or edit the document.
19. **DateAdded** – The date the information in this record was added to the database.
20. **AddedBy** – The userid of the person who entered the information for this record into the database.
21. **Archived** - This is a logical flag to indicate whether the document has been archived. The default value for this field is False.
22. **DateArchived** – The date the document was archived.
23. **ArchivedBy** – The userid of the person who archived the document.
24. **DeletedFlag** – This is a logical flag to mark the record for deletion. Marking this flag does not automatically delete the record from the database, but does make the record invisible to most users. Records marked for deletion will be periodically reviewed and eventually, permanently deleted from the database. The default value for this field is False.
25. **DateDeleted** - The date the record was marked for deletion.
26. **ArchiveBoxNumber** – The number used of the Archive Box for which the original paper document was placed for archiving.
27. **ArchiveBoxDate** – The date used on the Archive Box.
28. **RevisedFlag** – This is a logical flag used to mark whether or not the information in this record has been updated since originally entered.
29. **ConfidentialFlag** – This logical flag marks the document as confidential, making it invisible to the public and most general users. The default value for this field is False.
30. **MakePublicFlag** – This is a logical flag used to make the record available for public viewing. The default value for this field is False.
31. **Sub01 thru Sub10** – Sub01 thru Sub10 are subdirectories under the parent tree “M:\Files\” these fields are used to filter and select records by these subdirectories for reports, forms, queries, and views. These subdirectories are to be parsed from the FilePath when the record is created.
32. **Remarks** – The remarks field is a memo field for adding comments or other information about the record that may be useful. The Remarks field is NOT searchable or indexed.