

Database of the oil and gas wells of Idaho: Metadata

*The Idaho Geological Survey does not guarantee
Oil and Gas data to be free of errors nor assume
liability for interpretations made from these data,
or decisions based thereon.*

Digital Database 3
May 2023

Idaho Geological Survey
Morrill Hall, Third Floor
University of Idaho
Moscow, Idaho 83844-3014

Overview

This document was created for the re-release of the *Database of oil and gas wells of Idaho 1903-2022* in the Idaho Geological Survey's Digital Database series as DD-3 for version 1.2023. The relational database provides a way to connect the various documents of each oil and gas well to its location and other spatial attributes.

The IGS maintains files on over 200 oil and gas wells in the state. These files include the drilling service reports, geophysical logs, geologic logs, and lease maps provided by companies to the Oil and Gas Commission (OGCC) from 1903-2022. Some files contain drilling service reports, geophysical logs, geologic logs, lease maps, and a few LAS files, a format preferred by industry. These data are disseminated through the IGS Oil and Gas database publication and derivative Oil & Gas web app. Conversion of log data to LAS is an ongoing data preservation project.

DD-3 had not been updated since 2014. Previously, only historic, inactive wells were accounted for by the IGS. Beginning in 2009, historical well logs and reports were transferred to IGS from the Idaho Department of Lands. DD-3 was first released in 2011. New oil and gas exploration began in 2007 and over 40 wells have been permitted since then. The database records are current up to February of 2022.

Well locations were thoroughly reviewed and improved using permit maps and remote sensing. A number of corrections to coordinates were made. IGS provides well locations in NAD27 because it was the datum used for most of the historic wells recorded on paper maps. Coordinates in WGS84 are provided so wells can be readily projected into Web Mercator.

Authors for the current version (1.2023)

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James R. Cash
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Dennis M. Feeney

Metadata

The Oil and Gas dataset is provided free of charge and without restriction to lawful use. Without express consent from the IGS, this document and other metadata should accompany any part of this dataset being distributed. Any alteration of these data must be openly and expressively disclosed to avoid misrepresentation of data sources. If the data is altered then shared, the recipient needs to be aware of any changes not reviewed and approved by IGS as an addendum to the metadata.

Included with this dataset (DD-3OilAndGas2023.zip):

1. Microsoft Access (2002-2003) .mdb
2. A data dictionary explaining the main table of the Access database
3. Well point geodatabase feature class in ArcMap 10.8.1 .mxd
4. Well point geodatabase feature class in ArcGis Pro 3.1.1 .aprx
5. A point shapefile of well locations made from the feature class
6. A point .kmz layer of well locations made from the feature class

This document was last updated 20230531.

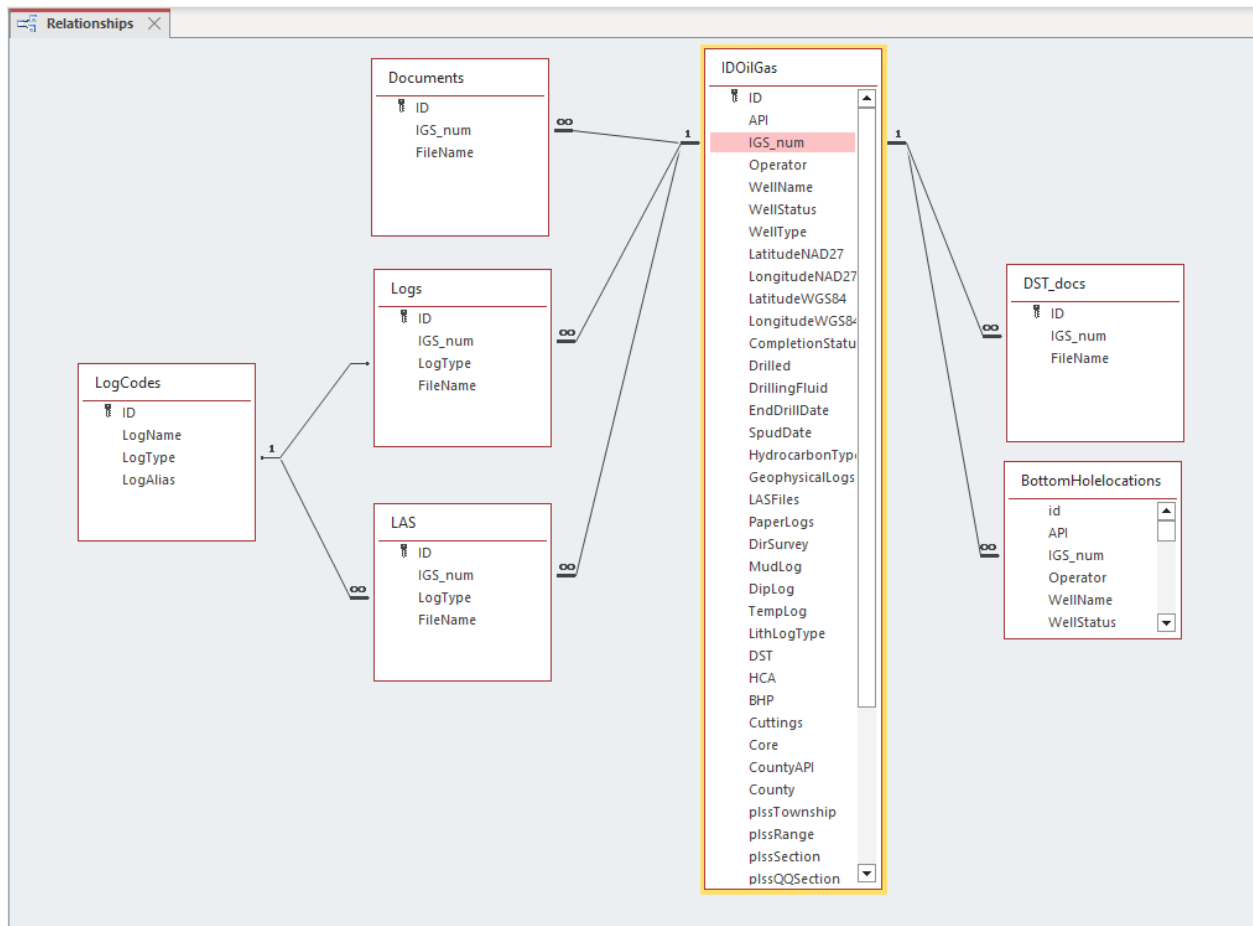
Hardware and Software

All work was done on PC-platform computers with a Windows 10 Professional (Build 19045) SP1 64-bit Operating System. For data transformation, data entry, and documentation Windows Office Suites 2010, 2013, and Office 365 were used interchangeably. For GIS-derived attributes and products, ArcGIS 10.8.1 and ArcGIS Pro 3.1.1 were employed. Google Earth Pro was used as needed for location verification via remote-sensing and to assist with defining cross-referenced locations for some documents. Earth Point's web app was used to assist locating and verifying properties with public land survey system (PLSS)-derived locations. Scripts developed in Python, SQL, Visual Basic, and Windows Command Prompt were used for some data verification and database maintenance tasks.

Decoding API numbers: 00-000-00000-00

This number originated from the American Petroleum Institute and is used nationwide to identify individual oil and gas wells. United States Well Number (USWN) is The first two numbers represent the state, which is 11 for Idaho. The next three numbers correspond to counties within states. Note that only odd numbers are used. The next sequence of 5 numbers is a serial number which is assigned to wells in the order they are permitted. In Idaho, historic wells are of the form 09000, while modern wells are 20000. This convention varies by state and by agency so there are exceptions to these, but each well has a unique and consistent identification number. The final two-number segment represents sideline—wells drilled at different angles from a common well head. Because this is not common, most wells end in -00, meaning there is only one permitted well.

Table Relationships



Data Dictionary for the database main table, IDOilGas

Order	Field Name	Data Type	Field Length	Description
1	ID	AutoNumber	4	Unique numeric ID
2	API	Short Text	255	The American Petroleum Institute number is a unique number used nationally to track and identify every permitted oil and gas well. First two digits are state, next 3 digits are county, last five digits are permit serial number.
3	IGS_num	Short Text	255	Idaho Geological Survey well identification number. IGS number has the following format (xxxx-xx): First four digits are the year in which the well was permitted, last two digits correspond to the order in which the permits were issued.
4	Operator	Short Text	255	Company listed on the well permit.
5	WellName	Short Text	255	Name of well listed on permit.
6	WellStatus	Short Text	255	Oil and Gas producing well, Shut-in, Abandoned (plugged status unknown), Plugged and Abandoned, currently used as an artesian well, currently used as a geothermal well.
7	WellType	Short Text	255	Oil and Gas well, Geothermal well, Water Well, Stratigraphic test well.
8	LatitudeNAD27	Number	8	Latitude of well location based on NAD27 datum.
9	LongitudeNAD27	Number	8	Longitude of well location based on NAD27 datum.
10	LatitudeWGS84	Number	8	Latitude of well location based on WGS84 datum.
11	LongitudeWGS84	Number	8	Longitude of well location based on WGS84 datum.
12	CompletionStatus	Short Text	255	Y = subsurface zone completed, N = well not completed or status unknown.
13	Drilled	Short Text	255	Y= well was drilled, N = well was permitted but not drilled.
14	DrillingFluid	Short Text	255	O indicates an oil based drilling fluid used, W indicates a water based drilling fluid was used, U indicates drilling fluid type is unknown.
15	EndDrillDate	Short Text	255	Date in which the drilling of the well was completed.
16	SpudDate	Short Text	255	Estimated date well was spudded.
17	HydrocarbonType	Short Text	255	Oil show reported, Gas show reported, Cuttings Fluorescence reported, No show reported.
18	GeophysicalLogs	Short Text	255	Y geophysical wireline logs for the well exist. N indicates the existence of logs are not known.
19	LASFiles	Short Text	255	Y indicates digital LAS Files of logs are available from the IGS website, N means LAS files are not available from the IGS website, C indicates public distribution of LAS files are restricted for a year after the well has been drilled.
20	PaperLogs	Short Text	255	Y indicates copies of the wireline logs are available from the IGS website.
21	DirSurvey	Short Text	255	Y indicates Directional Survey is available from the IGS website.
22	MudLog	Short Text	255	Y indicates Mud Log is available from the IGS website.
23	DipLog	Short Text	255	Y indicates Dip Log is available from the IGS website, N indicates Dip does not exists or copy is not available from IGS.
24	TempLog	Short Text	255	Y indicates a Temperature Log available from IGS website.
25	LithLogType	Short Text	255	Indicates the types of Lithologic Logs available from the IGS website.
26	DST	Short Text	255	Y indicates a Drill Stem Report (DST) available from IGS website.
27	HCA	Short Text	255	Y indicates a Hydrocarbon Analysis (HCA) is available from the IGS website.
28	BHP	Short Text	255	Y indicates a Bottom Hole Pressure (BHP) Log is available from the IGS website.
29	Cuttings	Short Text	255	Agency where cuttings reside. N indicates unknown existence of any cuttings.
30	Core	Short Text	255	Indicates drill cores were taken, how many, and at what intervals. Core logs are available from the IGS website.
31	CountyAPI	Long	4	County code portion of the API number.
32	CountyAPI	Short Text	255	County name.
33	plssTownship	Short Text	255	PLSS Township code.
34	plssRange	Short Text	255	PLSS Range code.
35	plssSection	Long	4	PLSS Section Number.
36	plssQQSection	Short Text	255	PLSS (quarter) quarter section code. For example, NW SE would be read as: the northwest quarter of the southeast quarter of the section.
37	FNL	Number	8	Distance north of section boundary to well location in feet according to permit.
38	FEL	Number	8	Distance east of section boundary to well location in feet according to permit.
39	FSL	Number	8	Distance south of section boundary to well location in feet according to permit.
40	FWL	Number	8	Distance west of section boundary to well location in feet according to permit.
41	GroundElevation	Number	8	Ground elevation above sea level in feet.
42	KellyBushing	Number	8	Kelly bushing elevation above sea level in feet.
43	TotalDepth	Number	8	Measured depth of well below ground elevation.
44	FieldName	Number	255	Name of oil/gas field name as designated by the Idaho Department of Lands. Wildcat refers to wells drilled outside of a known oil/gas field.
45	IBMG_num	Short Text	255	Retired identification code used by Idaho Bureau of Mines and Geology (now Idaho Geological Survey).

FGDC metadata for IDOilGasWells feature class

Oil and gas wells of Idaho: 1903-2022, Idaho Geological Survey Digital Database 3, Version 1.2023



Tags oil, gas, petroleum, petrogeology, economic geology, well, exploration, permit, log, LAS, drill, history, abandoned, analysis, chemistry, chemical, education, public data, web map service

Summary

This feature class provides the locations and attributes for 214 oil and gas wells in Idaho.

Description

This is a component of the Idaho Geological Survey publication, Digital Database 3: Database of oil and gas data of Idaho. This dataset represents information on current and historical oil and gas exploration wells in Idaho provided by companies to the Oil and Gas Commission from 1903-2022. This data was transferred to the Idaho Geological Survey in 2009 from the Idaho Department of Lands, who regulates and maintains data for recent/current oil and gas exploration in Idaho. These data were derived mostly from historical well paper logs and reports. This database also includes newly drilled and producing wells. Information for active wells is from journal articles, well permits from Idaho Department of Lands, and electric logs.

Credits

New well data came from Idaho Department of Lands, electric logs, Rigzone.com, Oil and Gas Journal. Historic well data came from the Idaho Geological Survey publication DD-3 (2013), Historical Oil and Gas data for Idaho: 1903-1988. Data source for this 2023 release is Idaho Department of Lands and brings data current to 2022.

Use limitations

Provided as-is for research purposes. Locations and attributes of wells are compiled from the assortment of source documents available at the time of publication. Revisions of this database will be issued as new information is added. Wells that were drilled from 2007 to present day have had their locations verified using the best available imagery. If a well was permitted but not drilled, the coordinates from the permit are provided.

Extent

West -117.023782 East -111.070051
North 47.813927 South 42.005267

Scale Range

Maximum (zoomed in) 1:5,000
Minimum (zoomed out) 1:150,000,000

Topics and Keywords ►

Themes or categories of the resource Economy

Content type Downloadable Data

Export to FGDC CSDGM XML format as Resource Description No

Citation ►

Title Oil and gas wells of Idaho: 1903-2022, Idaho Geological Survey Digital Database 3, Version 1.2023

Publication date 2023-05-25 00:00:00

Presentation formats digital map

Citation Contacts ►

Responsible party - originator

Individual's name Mark Barton

Responsible party - originator

Individual's name Reed Lewis

Responsible party - originator

Individual's name Christopher Tate

Responsible party - originator

Individual's name Jacob Eldredge

Responsible party - publisher

Organization's name Idaho Geological Survey

Contact information ►

Phone

Voice 208-885-7991

Address

Type physical

Delivery point 875 Perimeter Dr.

City Moscow

Administrative area ID

Postal code 83844-3014

Country US

Delivery point Morrill Hall, 3rd Floor

Resource Details ►

Dataset character set utf8 - 8 bit UCS Transfer Format

Status on-going

Credits

New well data came from Idaho Department of Lands, electric logs, Rigzone.com, Oil and Gas Journal. Historic well data came from the Idaho Geological Survey publication DD-3 (2013), Historical Oil and Gas data for Idaho: 1903-1988. Data source for this 2023 release is Idaho Department of Lands and brings data current to 2022.

ArcGIS item properties

Extents ►

Extent

Description

Intermittent permitting and drilling of oil and gas wells.

Geographic extent

Bounding rectangle

Extent type

Extent used for searching
West longitude -117.023782
East longitude -111.070051
North latitude 47.813927
South latitude 42.005267

Temporal extent

Beginning date 1903-01-01 00:00:00
Ending date 2022-02-28 00:00:00

Resource Points of Contact ►

Point of contact - publisher

Organization's name Idaho Geological Survey

Contact information ►

Phone

Voice 208-885-7991

Address

Type physical

Delivery point 875 Perimeter Dr.

City Moscow

Administrative area ID

Postal code 83844-3014

Country US

Delivery point Morrill Hall, 3rd Floor

Resource Maintenance ►

Resource maintenance

Update frequency as needed

Resource Constraints ►

Constraints

Limitations of use

Provided as-is for research purposes. Locations and attributes of wells are compiled from the assortment of source documents available at the time of publication. Revisions of this database will be issued as new information is added. Wells that were drilled from 2007 to present day have had their locations verified using the best available imagery. If a well was permitted but not drilled, the coordinates from the permit are provided.

Legal constraints

Limitations of use

The Idaho Geological Survey does not assume liability; no warranty expressed or implied is made by the Agency regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty.

Data Quality ►

Scope of quality information ►

Resource level dataset

Data quality report - Conceptual consistency ►

Data quality measure reference

Measure description

Wells and their attributes are assigned by IGS Staff. Data presented here represent the best known information for these wells.

Data quality report - Completeness omission ►

Data quality measure reference

Measure description

All well locations were visually checked against original maps, imagery, and other location data for completeness.

Data quality report - Quantitative attribute accuracy ►

Data quality measure reference

Measure description

Attributes in this dataset were derived by IGS staff from files acquired from the Idaho Department of Lands in 2009. Additional data was added from IGS files associated with oil and gas.

Quality evaluation procedure

Evaluation type direct internal

Evaluation method

Document review.

Data quality report - Absolute external positional accuracy ►

dimension horizontal

Data quality measure reference

Measure description

Wells were plotted on a 1:24,000 base using measurements provided in sundry reports and applications.

Locations are approximate if permitted but not drilled.

Lineage ►

Process step ►

When the process occurred 2009-08-01 00:00:00

Description

Acquired paper files from Idaho Department of Lands.

Process step ►

When the process occurred 2010-08-01 00:00:00

Description

Scanned letter sized documentation.

Process step ►

When the process occurred 2010-09-01 00:00:00

Description

Added attributes for wells from scanned data.

Process step ►

When the process occurred 2010-10-01 00:00:00

Description

Created Lat/Lon locations in decimal degrees from plotting locations or measured from topo map.

Process step ►

When the process occurred 2010-11-01 00:00:00

Description

Scanned geophysical logs (scanned at LogDigi).

Process step ►

When the process occurred 2011-03-01 00:00:00

Description

Added attributes for log information from scanned data.

Process step ►

When the process occurred 2011-04-01 00:00:00

Description

Created point shapefile from Lat/Lon locations in decimal degrees from table (excel file).

Process step ►

When the process occurred 2013-04-23 00:00:00

Description

Published DD-3

Process step ►

When the process occurred 2020-11-09 00:00:00

Description

Update DD-3 records and fields. Add recent oil and gas wells.

Process step ►

When the process occurred 2023-02-22 00:00:00

Description

Update DD-3 records and fields. Add recent oil and gas wells. Add new log type, logs, documents, and LAS files for recently permitted wells.

Process step ►

When the process occurred 2023-05-15 00:00:00

Description

Update DD-3 records and field names. Remove redundant fields. Add recent oil and gas wells. Verify and correct accuracy of well coordinates in WGS84 and NAD27.

Process step ►

When the process occurred 2023-05-25 00:00:00

Description

Publish new DD-3.

Source data ►

Description

These records include information on past oil and gas exploration wells in Idaho from 1903 to 1988 provided by companies to the Oil and Gas Conservation Commission. These data were derived mostly from historical well paper logs and reports. This data was transferred to the Idaho Geological Survey in 2009 from the Idaho Department of Lands. Data from wells that were permitted from 2007 to the present comes from Idaho Department of Lands and the Oil and Gas Conservation Commission.

Distribution ►

Distributor ►

Contact information - publisher

Organization's name Idaho Geological Survey

Contact information ►

Phone

Voice 208-885-7991

Address

Type physical

Delivery point 875 Perimeter Dr.

City Moscow

Administrative area ID

Postal code 83844-3014

Country US

Delivery point Morrill Hall, 3rd Floor

Fields ►

Details for object Details for OilGasWells ►

Type Feature Class

Definition

Oil and gas well point data

Definition source

Idaho Geological Survey

Field ID ►

Data type OID

Width 4

Field description

Internal feature number.

Description source

ESRI

Field API ►

Data type Text

Width 255

Field description

The American Petroleum Institute number is a unique number used nationally to track and identify every permitted oil and gas well. First two digits are state, next 3 digits are county, last five digits are permit serial number.

Description source

IGS

Field IGS_num ►

Data type Text
Width 255

Field description

Idaho Geological Survey well identification number. IGS number has the following format (xxxx-xx): First four digits are the year in which the well was permitted, last two digits correspond to the order in which the permits were issued.

Description source

IGS

Field Operator ►

Data type Text
Width 255

Field description

Company listed on the well permit.

Description source

IGS

Field WellName ►

Data type Text
Width 255

Field description

Name of well listed on permit.

Description source

IGS

Field WellStatus ►

Data type Text
Width 255

Field description

Oil and Gas producing well, Shut-in, Abandoned (plugged status unknown), Plugged and Abandoned, currently used as an artesian well, currently used as a geothermal well.

Description source

IGS

Field WellType ►

Data type Text
Width 255

Field description

Oil and Gas well, Geothermal well, Water Well, Stratigraphic test well.

Description source
IGS

Field LatitudeNAD27 ►

Data type Double
Width 8

Field description
Latitude of well location based on NAD27 datum.

Description source
IGS

Field LongitudeNAD27 ►

Data type Double
Width 8

Field description
Longitude of well location based on NAD27 datum.

Description source
IGS

Field LatitudeWGS84 ►

Data type Double
Width 8

Field description
Latitude of well location based on WGS84 datum.

Description source
IGS

Field LongitudeWGS84 ►

Data type Double
Width 8

Field description
Longitude of well location based on WGS84 datum.

Description source
IGS

Field CompletionStatus ►

Data type Text
Width 255

Field description
Y = subsurface zone completed, N = well not completed or status unknown.

Description source

IGS

Field Drilled ►

Data type Text
Width 255

Field description

Y= well was drilled, N = well was permitted but not drilled.

Description source

IGS

Field DrillingFluid ►

Data type Text
Width 255

Field description

O indicates an oil based drilling fluid used, W indicates a water based drilling fluid was used, U indicates drilling fluid type is unknown.

Description source

IGS

Field EndDrillDate ►

Data type Text
Width 255

Field description

Date in which the drilling of the well was completed.

Description source

IGS

Field SpudDate ►

Data type Text
Width 255

Field description

Estimated date well was spudded.

Description source

IGS

Field HydrocarbonType ►

Data type Text
Width 255

Field description

Oil show reported, Gas show reported, Cuttings Fluorescence reported, No show reported.

Description source

IGS

Field GeophysicalLogs ►

Data type Text
Width 255

Field description

Y geophysical wireline logs for the well exist. N indicates the existence of logs are not known.

Description source

IGS

Field LASFiles ►

Data type Text
Width 255

Field description

Y indicates digital LAS Files of logs are available from the IGS website, N means LAS files are not available from the IGS website, C indicates public distribution of LAS files are restricted for a year after the well has been drilled.

Description source

IGS

Field PaperLogs ►

Data type Text
Width 255

Field description

Y indicates copies of the wireline logs are available from the IGS website.

Description source

IGS

Field DirSurvey ►

Data type Text
Width 255

Field description

Y indicates Directional Survey is available from the IGS website.

Description source

IGS

Field MudLog ►

Data type Text
Width 255

Field description

Y indicates Mud Log is available from the IGS website.

Description source

IGS

Field DiplLog ►

Data type Text
Width 255

Field description

Y indicates Dip Log is available from the IGS website, N indicates Dip does not exists or copy is not available from IGS.

Description source

IGS

Field TempLog ►

Data type Text
Width 255

Field description

Y indicates a Temperature Log available from IGS website.

Description source

IGS

Field LithLogType ►

Data type Text
Width 255

Field description

Indicates the types of Lithologic Logs available from the IGS website.

Description source

IGS

Field DST ►

Data type Text
Width 255

Field description

Y indicates a Drill Stem Report (DST) available from IGS website.

Description source

IGS

Field HCA ►

Data type Text
Width 255

Field description

Y indicates a Hydrocarbon Analysis (HCA) is available from the IGS website.

Description source

IGS

Field BHP ►

Data type Text
Width 255

Field description

Y indicates a Bottom Hole Pressure (BHP) Log is available from the IGS website.

Description source

IGS

Field Cuttings ►

Data type Text
Width 255

Field description

Agency where cuttings reside. N indicates unknown existence of any cuttings.

Description source

IGS

Field Core ►

Data type Text
Width 255

Field description

Indicates drill cores were taken, how many, and at what intervals. Core logs are available from the IGS website.

Description source

IGS

Field CountyAPI ►

Data type Long
Width 4

Field description

County code portion of the API number.

Description source

IGS

Field County ►

Data type Text
Width 255

Field description

County name.

Description source

IGS

Field plssTownship ►

Data type Text
Width 255

Field description
PLSS Township code.

Description source
IGS

Field plssRange ►

Data type Text
Width 255

Field description
PLSS Range code.

Description source
IGS

Field plssSection ►

Data type Long
Width 4

Field description
PLSS Section Number.

Description source
IGS

Field plssQQSection ►

Data type Text
Width 255

Field description
PLSS (quarter) quarter section code. For example, NW SE would be read as: the northwest quarter of the southeast quarter of the section.

Description source
IGS

Field FNL ►

Data type Double
Width 8

Field description
Distance north of section boundary to well location in feet according to permit.

Description source
IGS

Field FEL ►

Data type Double

Width 8

Field description

Distance east of section boundary to well location in feet according to permit.

Description source

IGS

Field FSL ►

Data type Double

Width 8

Field description

Distance south of section boundary to well location in feet according to permit.

Description source

IGS

Field FWL ►

Data type Double

Width 8

Field description

Distance west of section boundary to well location in feet according to permit.

Description source

IGS

Field GroundElevation ►

Data type Double

Width 8

Field description

Ground elevation above sea level in feet.

Description source

IGS

Field KellyBushing ►

Data type Double

Width 8

Field description

Kelly bushing elevation above sea level in feet.

Description source

IGS

Field TotalDepth ►

Data type Double
Width 8

Field description

Measured depth of well below ground elevation.

Description source

IGS

Field FieldName ►

Data type Text
Width 255

Field description

Name of oil/gas field name as designated by the Idaho Department of Lands. Wildcat refers to wells drilled outside of a known oil/gas field.

Description source

IGS

Field IBMG_num ►

Data type Text
Width 255

Field description

Retired identification code used by Idaho Bureau of Mines and Geology (now Idaho Geological Survey).

Description source

IGS

Metadata Details ►

Metadata character set utf8 - 8 bit UCS Transfer Format

Scope of the data described by the metadata dataset

Last update ⇄ 2023-05-25

ArcGIS metadata properties

Metadata format ArcGIS 1.0

Standard or profile used to edit metadata FGDC

Created in ArcGIS for the item 2023-05-24 12:14:39

Automatic updates

Have been performed No

Metadata Contacts ►

Metadata contact - publisher

Organization's name Idaho Geological Survey

Contact information ►

Phone

Voice 208-885-7991

Address

Type physical

Delivery point 875 Perimeter Dr.

City Moscow

Administrative area ID

Postal code 83844-3014

Country US

Delivery point Morrill Hall, 3rd Floor

Metadata Maintenance ►

Maintenance

Update frequency as needed

Thumbnail and Enclosures ►

Thumbnail

Thumbnail type

Image file