# U.S. Natural Gas Underground Storage

## Summary

This data was created for the purpose of identifying and providing detailed information on underground natural gas storage in the United States.

## Description

U.S. underground natural gas storage fields as of December 2018. Includes both active and inactive fields. Sources: EIA-191, Monthly Underground Gas Storage Reportto improve accuracy of locations other sources were used including Homeland Infrastructure Foundation-Level Data (HIFLD), EPA Facility Registry Service (FRS), National Pipeline Mapping System Public Viewer, company websites and satellite imagery.

## Credits

U.S. Energy Information Administration, Homeland Infrastructure Foundation-Level Data (HIFLD), EPA Facility Registry Service (FRS), and PHMSA - National Pipeline Mapping System Public Viewer.

## Use limitations

None (public use). Users are advised to thoroughly review the metadata to understand the appropriate use and limitations of the data. These data and related graphics, if available, are not legal documents and are not intended to be used as such.The information contained in these data is dynamic and may change over time. The U.S. Energy Information Administration gives no warranty, expressed or implied, as to the accuracy, reliability, or completeness of these data.

## Extent
**West** -151.273674 **East** -76.253513
**North** 61.263013 **South** 28.992567

## Scale Range
**Maximum (zoomed in)** 1:5,000
**Minimum (zoomed out)** 1:150,000,000

# ArcGIS Metadata

## Topics and Keywords

**\* CONTENT TYPE** Downloadable Data
EXPORT TO FGDC CSDGM XML FORMAT AS RESOURCE DESCRIPTION No

PLACE KEYWORDS USA

THEME KEYWORDS energy, storage, natural gas, EIA, geospatial

## Citation

TITLE U.S. Natural Gas Underground Storage
PUBLICATION DATE 2019-10-08 00:00:00

PRESENTATION FORMATS \* digital map

## Resource Details

DATASET LANGUAGES \* English (UNITED STATES)
DATASET CHARACTER SET utf8 - 8 bit UCS Transfer Format

SPATIAL REPRESENTATION TYPE \* vector

\* PROCESSING ENVIRONMENT Version 6.2 (Build 9200) ; Esri ArcGIS 10.6.1.9270

CREDITS
U.S. Energy Information Administration, Homeland Infrastructure Foundation-Level Data (HIFLD), EPA Facility Registry Service (FRS), and PHMSA - National Pipeline Mapping System Public Viewer.

ARCGIS ITEM PROPERTIES
\* NAME
\* SIZE 0.011
\* LOCATION
\* ACCESS PROTOCOL Local Area Network

## Extents

EXTENT
GEOGRAPHIC EXTENT
BOUNDING RECTANGLE
EXTENT TYPE Extent used for searching
\* WEST LONGITUDE -151.273674
\* EAST LONGITUDE -76.253513
\* NORTH LATITUDE 61.263013
\* SOUTH LATITUDE 28.992567
\* EXTENT CONTAINS THE RESOURCE Yes

EXTENT IN THE ITEM'S COORDINATE SYSTEM

- **West longitude**  -16839708.360108
- **East longitude**  -8488502.215204
- **South latitude**  3374700.014585
- **North latitude**  8686466.558878
- **Extent contains the resource**  Yes

## Resource Constraints

Constraints
Limitations of use
None (public use). Users are advised to thoroughly review the metadata to understand the appropriate use and limitations of the data. These data and related graphics, if available, are not legal documents and are not intended to be used as such.The information contained in these data is dynamic and may change over time. The U.S. Energy Information Administration gives no warranty, expressed or implied, as to the accuracy, reliability, or completeness of these data.

## Spatial Reference

ArcGIS coordinate system
- **Type**  Projected
- **Geographic coordinate reference**  GCS_WGS_1984
- **Projection**  WGS_1984_Web_Mercator_Auxiliary_Sphere
- **Coordinate reference details**
   Projected coordinate system
   Well-known identifier  102100
   X origin  -21940362.558068998
   Y origin  -30241100
   XY scale  144381166.92742443
   Z origin  -100000
   Z scale  10000
   M origin  -100000
   M scale  10000
   XY tolerance  0.001
   Z tolerance  0.001
   M tolerance  0.001
   High precision  true
   Latest well-known identifier  3857
   Well-known text  PROJCS["WGS_1984_Web_Mercator_Auxiliary_Sphere",GEOGCS["GCS_WGS_1984",DATUM["D_WGS_1984",SPHEROID ["WGS_1984",6378137.0,298.257223563]],PRIMEM["Greenwich",0.0],UNIT["Degree",0.0174532925199433]],PROJECTION ["Mercator_Auxiliary_Sphere"],PARAMETER["False_Easting",0.0],PARAMETER["False_Northing",0.0],PARAMETER["Central_Meridian",0.0],PARAMETER ["Standard_Parallel_1",0.0],PARAMETER["Auxiliary_Sphere_Type",0.0],UNIT["Meter",1.0],AUTHORITY["EPSG",3857]]

Reference system identifier
- **Value**  3857
- **Codespace**  EPSG
- **Version**  8.8(9.3.1.2)

## Spatial Data Properties

Vector
- **Level of topology for this dataset**  geometry only

Geometric objects
   Feature class name  storage_ng_underground_eia_v3
- **Object type**  point
- **Object count**  410

ArcGIS Feature Class Properties
   Feature class name  storage_ng_underground_eia_v3
- **Feature type**  Simple
- **Geometry type**  Point
- **Has topology**  FALSE
- **Feature count**  410
- **Spatial index**  TRUE
- **Linear referencing**  FALSE

## Lineage

Lineage statement
EIA-191, Monthly Underground Gas Storage Report; to improve accuracy of locations other sources were used including Homeland Infrastructure Foundation-Level Data (HIFLD), EPA Facility Registry Service (FRS), National Pipeline Mapping System Public Viewer, company websites and satellite imagery.

## Distribution

Distribution format
- **Name**  File Geodatabase Feature Class

Transfer options
- **Transfer size**  0.011

## Fields

Details for object storage_ng_underground_eia_v3
- **Type**  Feature Class
- **Row count**  410

Field OBJECTID
- **Alias**  OBJECTID
- **Data type**  OID
- **Width**  4
- **Precision**  0
- **Scale**  0
- **Field description**
   Internal feature number.

- **Description source**
   Esri

* DESCRIPTION OF VALUES
  Sequential unique whole numbers that are automatically generated.

FIELD state
  * ALIAS   State Abbreviation
  * DATA TYPE   String
  * WIDTH   254
  * PRECISION   0
  * SCALE   0
  FIELD DESCRIPTION
    State location of natural gas storage facility.

  DESCRIPTION SOURCE
    EIA

FIELD fld_code
  * ALIAS   Field Code
  * DATA TYPE   String
  * WIDTH   254
  * PRECISION   0
  * SCALE   0

FIELD ID
  * ALIAS   ID
  * DATA TYPE   String
  * WIDTH   254
  * PRECISION   0
  * SCALE   0
  FIELD DESCRIPTION
    Unique identifier

  DESCRIPTION SOURCE
    EIA

FIELD res_code
  * ALIAS   Reservoir Code
  * DATA TYPE   String
  * WIDTH   254
  * PRECISION   0
  * SCALE   0
  FIELD DESCRIPTION
    Reservoir code.

  DESCRIPTION SOURCE
    EIA

FIELD field
  * ALIAS   Storage Field Name
  * DATA TYPE   String
  * WIDTH   254
  * PRECISION   0
  * SCALE   0
  FIELD DESCRIPTION
    Name of storage field.

  DESCRIPTION SOURCE
    EIA

FIELD reservoir
  * ALIAS   Reservoir Name
  * DATA TYPE   String
  * WIDTH   254
  * PRECISION   0
  * SCALE   0
  FIELD DESCRIPTION
    Name of underground natural gas storage reservoir.

  DESCRIPTION SOURCE
    EIA

FIELD company
  * ALIAS   Company Name
  * DATA TYPE   String
  * WIDTH   254

  * PRECISION   0
  * SCALE   0
  FIELD DESCRIPTION
    Name of company operating the underground natural gas sotrage field.

  DESCRIPTION SOURCE
    EIA

FIELD Field_Type
  * ALIAS   Type of Facility
  * DATA TYPE   String
  * WIDTH   254
  * PRECISION   0
  * SCALE   0
  FIELD DESCRIPTION
    Type of storage facility.

  LIST OF VALUES
    VALUE   Aquifer

DESCRIPTION  Water-bearing sands topped by an impermable cap rock.
ENUMERATED DOMAIN VALUE DEFINITION SOURCE   EIA

VALUE  Depleted field
DESCRIPTION  A depleted oil or gas field.
ENUMERATED DOMAIN VALUE DEFINITION SOURCE   EIA

VALUE  Salt facility
DESCRIPTION  A hollowed-out salt dome.
ENUMERATED DOMAIN VALUE DEFINITION SOURCE   EIA

## FIELD county

* ALIAS  County Name
* DATA TYPE  String
* WIDTH  254
* PRECISION  0
* SCALE  0

FIELD DESCRIPTION

County location of natural gas storage facility. Note: county names are as reported by EIA-191 survey respondents and may be different from the final determined locations.

DESCRIPTION SOURCE

EIA

## FIELD region

* ALIAS  Region
* DATA TYPE  String
* WIDTH  254
* PRECISION  0
* SCALE  0

FIELD DESCRIPTION

Natural gas storage regions: East, South Central, Midwest, Mountain, and Pacific regions.

DESCRIPTION SOURCE

EIA

LIST OF VALUES

VALUE  East Region
DESCRIPTION Connecticut, Delaware, District of Columbia, Florida, Georgia, Massachusetts, Maryland, Maine, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Vermont, Virginia, and West Virginia
ENUMERATED DOMAIN VALUE DEFINITION SOURCE   EIA

VALUE  Midwest Regions
DESCRIPTION  Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, Missouri, Tennessee, and Wisconsin

VALUE  South Central Region
DESCRIPTION  Alabama, Arkansas, Kansas, Louisiana, Mississippi, Oklahoma, and Texas

VALUE  Mountain Region
DESCRIPTION  Arizona, Colorado, Idaho, Montana, Nebraska, New Mexico, Nevada, North Dakota, South Dakota, Utah, and Wyoming

VALUE  Pacific Region
DESCRIPTION  California, Oregon, and Washington

## FIELD status

* ALIAS  Field Status
* DATA TYPE  String
* WIDTH  254
* PRECISION  0
* SCALE  0

FIELD DESCRIPTION

The active/inactive status of a field. A facility is "inactive" if it has not had any injections for at least the twelve months prior to this report month, and does not contain volumes of working gas, or is in the process of abandonment or depletion.

DESCRIPTION SOURCE

EIA

## FIELD base_gas

* ALIAS  Base (Cushion) Gas (Mcf)
* DATA TYPE  Integer
* WIDTH  4
* PRECISION  0
* SCALE  0

FIELD DESCRIPTION

Base (cushion) gas in thousand cubic fieet (Mcf). The volume of gas needed to maintain adequate reservoir pressures and deliverability rates throughout the withdrawal season. Base gas usually is not withdrawn, and remains in the reservoir. All native gas is included in the base gas volume.

DESCRIPTION SOURCE

EIA

## FIELD work_cap

* ALIAS  Working Gas Capacity (Mcf)
* DATA TYPE  Integer
* WIDTH  4
* PRECISION  0
* SCALE  0

FIELD DESCRIPTION

Working (top storage) gas in thousand cubic fieet (Mcf). The volume of natural gas in an underground storage facility available to be withdrawn, not including base gas. Working gas may or may not be completely withdrawn during any particular withdrawal season.

DESCRIPTION SOURCE

EIA

## FIELD fld_cap

* ALIAS  Total Field Capacity (Mcf)
* DATA TYPE  Integer
* WIDTH  4
* PRECISION  0
* SCALE  0

FIELD DESCRIPTION

Total storage field capacity in thousand cubic fieet (Mcf). The maximum volume of natural gas (including base gas and working gas) that you can store in an underground storage facility based on its design specifications, the physical characteristics of the reservoir, installed compression equipment, and operating procedures particular to the site.

DESCRIPTION SOURCE
EIA

FIELD maxdeliv
* ALIAS  Maximum Daily Delivery (mcf/day)
* DATA TYPE  Integer
* WIDTH  4
* PRECISION  0
* SCALE  0
FIELD DESCRIPTION

The maximum rate (Mcf/day) natural gas can be withdrawn (or delivered) from a storage field when filled to maximum capacity.

DESCRIPTION SOURCE
EIA

FIELD source
* ALIAS  Source
* DATA TYPE  String
* WIDTH  254
* PRECISION  0
* SCALE  0

FIELD period
* ALIAS  Reporting Period
* DATA TYPE  Integer
* WIDTH  4
* PRECISION  0
* SCALE  0
FIELD DESCRIPTION

The report period (currency of data),

DESCRIPTION SOURCE
EIA

FIELD latitude
* ALIAS  Latitude
* DATA TYPE  Double
* WIDTH  8
* PRECISION  0
* SCALE  0
FIELD DESCRIPTION

The latitude of the storage facility in decimal degrees.

DESCRIPTION SOURCE
EIA

FIELD longitude
* ALIAS  Longitude
* DATA TYPE  Double
* WIDTH  8
* PRECISION  0
* SCALE  0
FIELD DESCRIPTION

The longitude of the storage facility in decimal degrees.

DESCRIPTION SOURCE
EIA

FIELD Shape
* ALIAS  Shape
* DATA TYPE  Geometry
* WIDTH  0
* PRECISION  0
* SCALE  0
* FIELD DESCRIPTION

Feature geometry.

* DESCRIPTION SOURCE

Esri

* DESCRIPTION OF VALUES

Coordinates defining the features.

## Metadata Details

* METADATA LANGUAGE  English (UNITED STATES)
METADATA CHARACTER SET  utf8 - 8 bit UCS Transfer Format

SCOPE OF THE DATA DESCRIBED BY THE METADATA  * dataset
SCOPE NAME  * dataset

* LAST UPDATE  2021-08-05

ARCGIS METADATA PROPERTIES
METADATA FORMAT  ArcGIS 1.0
METADATA STYLE  FGDC CSDGM Metadata
STANDARD OR PROFILE USED TO EDIT METADATA  FGDC

CREATED IN ARCGIS FOR THE ITEM  2021-07-06  12:16:23
LAST MODIFIED IN ARCGIS FOR THE ITEM  2021-08-05  12:04:04

AUTOMATIC UPDATES
HAVE BEEN PERFORMED  Yes
LAST UPDATE  2021-08-05  12:04:04

## Metadata Contacts

METADATA CONTACT
 INDIVIDUAL'S NAME  EIA mapping feedback: mapping@eia.gov

## Metadata Maintenance

MAINTENANCE
 UPDATE FREQUENCY   annually