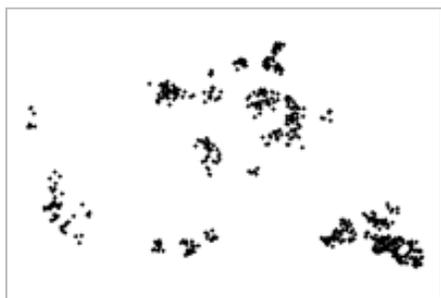


## Water Wells and Developed Springs within Four Miles of Abandoned Uranium Mines on the Navajo Nation



**Data format:** Shapefile

**File or table name:** NN\_Wells\_4mi

**Coordinate system:** Geographic

**Theme keywords:** Well, Water Wells, Spring, Developed Springs

**Abstract:** Point shapefile for water wells and springs on the Navajo Nation. This dataset is based upon the Navajo Department of Water Resources database of wells. It includes water, artesian, observation and mineral wells, natural and developed springs, other, and unknown water sources. Wells and springs within four miles of abandoned uranium mines (AUMs) have had their positions and selected attributes reviewed and updated where applicable. Wells and developed springs within 4 miles of AUMs have been added from other sources. This wells and springs shapefile is a compilation primarily of the Navajo Nation Department of Water Resources well database (NDWR; Skey=S12160204), and secondarily the following well and spring data sources: US Geological Survey (USGS) Geographic Names Information System (GNIS; S06300501), USGS National Hydrography Dataset (NHD; S06290501), New Mexico Office of the State Engineer (NMOSE; S06300502), USGS Nation Water Information System (NWIS) Ground-water Site Inventory (GWSI; S06300503), Utah Division of Water Rights (UDWR; S06300504), and the MWH's Northeast Church Rock Mine Closeout Plan (MWH; S07120505). All wells and developed springs were inspected for positional accuracy in comparison to all other well and spring datasets, and especially in comparison to well and spring positions mapped on USGS 1:24,000 scale digital topographic maps (Digital Raster Graphics - DRGs) and photointerpreted on USGS Digital Orthophoto Quarter Quads (DOQQs; 1-meter resolution). This dataset was updated from data provided by NDWR (S08060701), ADWR (S08060702), UDWR (S08060703), and NMOSE (S08060704) in April 2007.

### FGDC and ESRI Metadata:

- [Identification Information](#)
- [Data Quality Information](#)
- [Spatial Data Organization Information](#)
- [Spatial Reference Information](#)
- [Entity and Attribute Information](#)
- [Distribution Information](#)
- [Metadata Reference Information](#)
- [Binary Enclosures](#)

Metadata elements shown with blue text are defined in the Federal Geographic Data Committee's (FGDC) [Content Standard for Digital Geospatial Metadata \(CSDGM\)](#). Elements shown with green text are defined in the [ESRI Profile of the CSDGM](#). Elements shown with a green asterisk (\*) will be automatically updated by ArcCatalog. ArcCatalog adds hints indicating which FGDC elements are mandatory; these are shown with gray text.

### Identification Information:

**Citation:**

**Citation information:**

**Originators:** TerraSpectra Geomatics

**Title:**

Water Wells and Developed Springs within Four Miles of Abandoned Uranium Mines on the Navajo Nation

\***File or table name:** NN\_Wells\_4mi

**Publication date:** August 2007

\***Geospatial data presentation form:** vector digital data

**Publication information:**

**Publication place:** San Francisco, CA

**Publisher:** U. S. Environmental Protection Agency, Region 9, Superfund Program

**Online linkage:** [\\Terra\\_dc\Navajo\NAUM\\_NN\\_Summary\DB\Water\NN\\_Wells.shp](\\Terra_dc\Navajo\NAUM_NN_Summary\DB\Water\NN_Wells.shp)

**Description:**

**Abstract:**

Point shapefile for water wells and springs on the Navajo Nation. This dataset is based upon the Navajo Department of Water Resources database of wells. It includes water, artesian, observation and mineral wells, natural and developed springs, other, and unknown water sources. Wells and springs within four miles of abandoned uranium mines (AUMs) have had their positions and selected attributes reviewed and updated where applicable. Wells and developed springs within 4 miles of AUMs have been added from other sources. This wells and springs shapefile is a compilation primarily of the Navajo Nation Department of Water Resources well database (NDWR; Skey=S12160204), and secondarily the following well and spring data sources: US Geological Survey (USGS) Geographic Names Information System (GNIS; S06300501), USGS National Hydrography Dataset (NHD; S06290501), New Mexico Office of the State Engineer (NMOSE; S06300502), USGS Nation Water Information System (NWIS) Ground-water Site Inventory (GWSI; S06300503), Utah Division of Water Rights (UDWR; S06300504), and the MWH's Northeast Church Rock Mine Closeout Plan (MWH; S07120505). All wells and developed springs were inspected for positional accuracy in comparison to all other well and spring datasets, and especially in comparison to well and spring positions mapped on USGS 1:24,000 scale digital topographic maps (Digital Raster Graphics - DRGs) and photointerpreted on USGS Digital Orthophoto Quarter Quads (DOQQs; 1-meter resolution). This dataset was updated from data provided by NDWR (S08060701), ADWR (S08060702), UDWR (S08060703), and NMOSE (S08060704) in April 2007.

**Purpose:**

This dataset was developed to support the U.S. Environmental Protection Agency (USEPA) in its undertaking of an extensive scientific study to determine if abandoned uranium mines (AUM) and related mine features pose a significant risk to human health and the environment, and to identify areas requiring action to reduce risk for the Navajo Nation.

\***Language of dataset:** en

**Time period of content:**

**Time period information:**

**Single date/time:**

**Calendar date:** July 2007

**Currentness reference:**

publication date

**Status:**

**Progress:** Complete

**Maintenance and update frequency:** None planned

**Spatial domain:**

**Bounding coordinates:**

- \***West bounding coordinate:** -111.658783
- \***East bounding coordinate:** -107.774709
- \***North bounding coordinate:** 37.453998
- \***South bounding coordinate:** 35.259767

**Local bounding coordinates:**

- \***Left bounding coordinate:** -111.658783
- \***Right bounding coordinate:** -107.774709
- \***Top bounding coordinate:** 37.453998
- \***Bottom bounding coordinate:** 35.259767

**Keywords:**

**Theme:**

**Theme keywords:** Well, Water Wells, Spring, Developed Springs

**Theme keyword thesaurus:** None

**Place:**

**Place keywords:** Navajo Nation, Arizona, New Mexico, Utah, United States

**Place keyword thesaurus:** None

**Access constraints:** None

**Use constraints:**

These wells and developed springs are those compiled from multiple sources that are within four miles of the known Surface and Underground Abandoned Uranium Mines that are on or within one mile of the Navajo Nation. NDWR wells were moved to more accurate locations but not deleted with the exception of oil wells. Other data sources supported moving the NDWR wells and were used to add new wells. Abandoned, active, or suspended status of these wells has not been verified. This dataset covers the six Abandoned Uranium (AUM) Region of the Navajo Nation.

Use of this data generally requires computer workstations with ESRI's Arc/Info (8.x or above), ArcGIS (8.x or above), or ArcView (3.x), or some other GIS or CAD software that is capable of reading or converting this dataset. The data are provided "as-is," without warranty of any kind, either express or implied. These data have been compiled as part of a desktop project to collect existing spatial data to support the study of Navajo abandoned uranium mines. No field verifications were undertaken as part of this desktop study.

**Point of contact:**

**Contact information:**

**Contact organization primary:**

**Contact organization:** U. S. Environmental Protection Agency, Region 9, Superfund Program

**Contact address:**

**Address type:** mailing and physical address

**Address:**

75 Hawthorne St (SFD 8-2)

**City:** San Francisco

**State or province:** CA

**Postal code:** 94105

**Country:** USA

**Contact voice telephone:** 415-972-3167

**Security information:**

**Security classification system:** None

\***Native dataset format:** Shapefile

\***Native data set environment:**

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.1.0.780

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## Data Quality Information:

### Attribute accuracy:

#### Attribute accuracy report:

Attribute accuracy was verified by visual inspection against original source materials.

### Logical consistency report:

No tests for logical consistency was performed for this point data.

### Completeness report:

These wells and developed springs are those compiled from multiple sources that are within four miles of the known Surface and Underground Abandoned Uranium Mines that are on or within one mile of the Navajo Nation. NDWR wells were moved to more accurate locations but not deleted with the exception of oil wells. Other data sources supported moving the NDWR wells and were used to add new wells. Abandoned, active, or suspended status of these wells has not been verified. This dataset covers the six Abandoned Uranium (AUM) Region of the Navajo Nation.

### Positional accuracy:

#### Horizontal positional accuracy:

##### Horizontal positional accuracy report:

These wells and developed springs are located at least by the center of a section of a township, resulting in a potential error of one half mile. However, all wells and springs were inspected for positional accuracy in comparison to other datasets, and especially in comparison to well and spring positions mapped on USGS (1:24,000 scale) DRGs and photointerpreted on USGS DOQQs (1-meter resolution).

### Lineage:

#### Process step:

##### Process description:

The Navajo Department of Water Resources well database (NDWR; Skey=S12160204) was clipped to the aggregated 4 mile buffer (Buffer\_Aggr\_4mi.shp) developed around Abandoned Uranium Mines (AUMs) to create this wells.shp dataset. "wells.shp" was then used as the base wells and developed springs dataset.

The NDWR attributes were maintained, and augmented. The following attributes were added: TYPE (feature type), TYPE\_SRC (source of feature type other than NDWR, where possible), USE (use or purpose of well/developed spring), USE\_SRC (Source of Use information), WELLID (well identifier), WELLID\_SRC (source of well identifier), CORROB\_SRC (source of well/developed spring that corroborates the presence of an NDWR well/developed spring), MOVE\_SRC (source of well/developed spring that justifies the repositioning of an NDWR well/developed spring), and ADD\_SRC (source of well/developed spring added to this wells/developed springs shapefile).

Well and spring datasets from the following sources were acquired from the US Geological Survey (USGS) Geographic Names Information System (GNIS;

S06300501), USGS National Hydrography Dataset (NHD; S06290501), New Mexico Office of the State Engineer (NMOSE; S06300502), USGS Nation Water Information System (NWIS) Ground-water Site Inventory (GWSI; S06300503), and the MWH's NORTHEAST CHURCH ROCK MINE CLOSEOUT PLAN (MWH; S07120505). They were each clipped to the aggregated 4 mile buffer (Buffer\_Aggr\_4mi.shp).

For each NDWR well, wells and springs within about 0.5 miles from other sources were inspected to correlate by Well ID and/or Well Name. Where any given source could be used to corroborate the existence of the NDWR well, this source was then identified in the CORROB\_SRC field. Each NDWR well was also compared to well and spring positions mapped on USGS 1:24,000 scale digital topographic maps (Digital Raster Graphics - DRGs) and photointerpreted on USGS Digital Orthophoto Quarter Quads (DOQQs; 1-meter resolution). All sources were inspected to determine whether an NDWR well should be moved to a more accurate position. The most important source for final positioning were 1-meter resolution USGS DOQQs, whereon, a windmill, pump house, or pump structure typically could be photointerpreted. NDWR wells that were moved are signified by the presence of one or more sources identified in the MOVE\_SRC field. The first identified is the most important source used to move a well, followed by any succeeding identified sources.

In some cases new wells were added that are not present in the NDWR wells base data. The field ADD\_SRC will show one or more identified sources used to justify adding the well or developed spring to this dataset. The most important source was the ability to photointerpret an NDWR unmapped well on a DOQQ. In a few cases wells were added even when not spotted on a DOQQ. This was based on multiple sources agreeing that a new well exists at a single particular position. Alternatively, a source may identify a new well that has been added to the source's database in the recent past (especially 2005). For added wells and developed springs, attributes were populated from source attributes.

For all wells and developed springs, the new TYPE field was populated with a simplified set of feature types, most of which are Well, Developed Spring, or Oil Well. TYPE was populated from a Non-NDWR source, where possible, to add another layer of corroboration. This source was then identified in TYPE\_SRC.

**Process software and version:** ESRI ArcGIS 8.3

**Process date:** June 2005

**Source produced citation abbreviation:**

wells.shp

**Process contact:**

**Contact information:**

**Contact organization primary:**

**Contact organization:** TerraSpectra Geomatics

**Contact address:**

**Address type:** mailing and physical address

**Address:**

2700 E Sunset Rd, Ste A-10

**City:** Las Vegas

**State or province:** NV

**Postal code:** 89120

**Country:** USA

**Process step:**

**Process description:**

The initial wells.shp shapefile developed in June 2005 was updated from four sources:

ADWR - Arizona Div. of Water Resources (S08060702)

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A newer instance of the ADWR well database, adwrwell.shp (based upon their Wells 55 Registry) dated 10/16/06 was obtained. Their database is purchased from their website at <http://www.azwater.gov>, and is updated based upon periodic reissues of their Wells 55 Data DVD-ROM.

The shapefile was queried for wateruses (WATERUSE1, WATERUSE2, WATERUSE3) that included: COMMERCIAL, DOMESTIC, IRRIGATION, MUNICIPAL, STOCK. These were selected for those that intersected a four mile buffer around Surface & Underground AUMs. The ADWR REGISTRYID was used as the WELLID. Transferred ADWR WATERUSE 1, 2, and 3 to USE. Manually deleted wells redundant with existing wells in wells.shp, based upon position and well ID. All remaining ADWR wells were added to wells.shp to create the output shapefile, NN\_Wells\_4mi.shp.

NMOSE - New Mexico Office of the State Engineer (S08060704)

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A newer instance of the NMOSE iWATERS database is updated daily and is available via their website [http://www.ose.state.nm.us/waters\\_db\\_index.html](http://www.ose.state.nm.us/waters_db_index.html). San Juan, McKinley, and Cibola counties were downloaded from the iWATERS database on 2/19/07. These iWATERS DB counties were selected for wells post 12/26/02. The shapefile ose\_wells\_jan03.shp was downloaded (it's latest entry was 2/26/02). Selected from ose\_wells\_jan03.shp the three counties of San Juan, McKinley, and Cibola. Both datasets were selected for water use equal to AGR, COM, DAI, DOM, FGP, FPO, IRR, MDW, MIL, MOB, MPP, MUL, MUN, NON, POU, SAN, SCH, STK, STO, SUB, UTL. Both datasets were selected for wells within 4 miles of Surface & Underground AUMs. Transferred NMOSE attributes POD Number/WELL NUMBE to WELLID and USE to USE. Manually deleted wells redundant with existing wells in wells.shp, based upon position and well ID. All remaining NMOSE wells were added to NN\_Wells\_4mi.shp.

UDWR - Utah Div. of Water Rights (S08060703)

-----  
The UDWR water rights points of diversion (POD) shapefile, wrpod.shp, is updated daily and is available via their website at <http://waterrights.utah.gov/gisinfo/wrcover.asp>. A new version was acquired dated 2/22/07. POD was selected for Underground (wells). Underground PODs with a STATUS of WD, REJ, UNAP, and TEMPEXP were eliminated. Uses with a O (Other) were eliminated because virtually all had an owner name recognizable oil company. The one POD where the Use was not given and the owner was an oil company was eliminated. Transferred attributes from UT WRPOD: WRNUM to WELLID & USES to USE. Manually deleted wells redundant with existing wells in wells.shp, based upon position and well ID. All remaining UDWR PODs were added to NN\_Wells\_4mi.shp.

NDWR - Navajo Div. of Water Resources (S08060701)

-----  
The NDWR provided a new instance of their well database shapefile, wells\_within\_navajonation.shp, via email dated 3/26/07. This shapefile was compared to the new NN\_Wells\_4mi.shp to determine if any new wells needed to be added. New additions from the updated NDWR wells database were for areas with new or enlarged Surface & Underground AUMs were added to NN\_Wells\_4mi.shp.

The water uses were standardized in the NN\_Wells\_4mi.shp shapefile because the various state organizations identify water use using different categories, names, and/or abbreviations. USE was standardized on the NDWR usage, as follows:

#### NDWR

----

Agriculture (AGR)  
 Domestic (DOM)  
 Industrial (IND)  
 Livestock (LIV)  
 Municipal (MUN)  
 Other (OTH)  
 Recreational (?) (REC)  
 Unknown (UNK)

#### ADWR to NDWR

-----

DOM to DOM  
 Commercial/COM to IND  
 Stock/STK to LIV  
 Municipal/MUN to Mun

#### UDWR to NDWR

-----

I to AGR  
 D to DOM  
 S to IND  
 M to NUM  
 O to OTH

UDWR identifies up to five uses but typically one. The multiple uses were maintained where:

D = Domestic  
 I = Irrigation  
 M = Municipal  
 O = Other  
 P = Power  
 S = Stockwatering  
 X = Mining

#### NMOSE to NDWR

-----

IRR to AGR  
 DOM/MUL to DOM  
 COM/SAN to IND  
 STK to LIV  
 MUN/SCH/MDW/SUB to MUN

From the attributes in wells.shp the following attributes are maintained in this NN\_Wells\_4mi.shp:

- Well\_ID - Well Identifier
- WellID\_Src - Source of Well Identifier
- Alias - Alternate well designations
- Type - Well type
- Type\_Src - Well type source
- Use - Primary water use

- Use\_Src - Water use source
- Corrob\_Src - source of well/developed spring that corroborates the presence of an NDWR well/developed spring
- Move\_Src - source of well/developed spring that justifies the repositioning of an NDWR well/developed spring
- Add\_Src - source of well/developed spring added to this wells/developed springs shapefile
- Comment - attribute for other pertinent information about the well or developed spring.
- WellStatus - Well status
- Operator - Well operator
- Well\_Depth - Total well depth in feet
- Aquifer - aquifer used for water source
- SWL - Static water level in feet
- PWSID - Public Water System ID
- USGS\_ID - USGS Station Number
- DataSource - Source of well information

Two new attributes were added:

- 4Mi\_Buffer - Yes, if within 4 miles of a surface or underground AUM and No if greater than 4 miles (all are Yes in this dataset)
- UID - arbitrary unique ID

**Process software and version:** ESRI ArcMap 9.1

**Process date:** July 2007

**Source used citation abbreviation:**

wells.shp

**Process contact:**

**Contact information:**

**Contact organization primary:**

**Contact organization:** TerraSpectra Geomatics

**Contact address:**

**Address type:** mailing and physical address

**Address:**

2700 E Sunset Rd, Ste A-10

**City:** Las Vegas

**State or province:** NV

**Postal code:** 89120

**Country:** USA

**Contact voice telephone:** 702-795-8254

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## Spatial Data Organization Information:

\***Direct spatial reference method:** Vector

**Point and vector object information:**

**SDTS terms description:**

\***Name:** NN\_Wells\_4mi

\***SDTS point and vector object type:** Entity point

\***Point and vector object count:** 1153

**ESRI terms description:**

- \***Name:** NN\_Wells\_4mi
- \***ESRI feature type:** Simple
- \***ESRI feature geometry:** Point
- \***ESRI topology:** FALSE
- \***ESRI feature count:** 1153
- \***Spatial index:** TRUE
- \***Linear referencing:** FALSE

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**Spatial Reference Information:****Horizontal coordinate system definition:****Coordinate system name:**

- \***Geographic coordinate system name:** GCS\_North\_American\_1983

**Geographic:**

- \***Latitude resolution:** 0.000000
- \***Longitude resolution:** 0.000000
- \***Geographic coordinate units:** Decimal degrees

**Geodetic model:**

- \***Horizontal datum name:** North American Datum of 1983
- \***Ellipsoid name:** Geodetic Reference System 80
- \***Semi-major axis:** 6378137.000000
- \***Denominator of flattening ratio:** 298.257222

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**Entity and Attribute Information:****Detailed description:**

- \***Name:** NN\_Wells\_4mi

**Entity type:**

- \***Entity type label:** NN\_Wells\_4mi
- \***Entity type type:** Feature Class
- \***Entity type count:** 1153

**Entity type definition:**

Wells and Developed Springs

**Attribute:**

- \***Attribute label:** FID
- \***Attribute alias:** FID
- \***Attribute definition:**  
Internal feature number.
- \***Attribute definition source:**  
ESRI

- \***Attribute type:** OID
- \***Attribute width:** 4
- \***Attribute precision:** 0
- \***Attribute scale:** 0

**Attribute domain values:****\*Unrepresentable domain:**

Sequential unique whole numbers that are automatically generated.

**Attribute:**

\***Attribute label:** Shape

\***Attribute alias:** Shape

\***Attribute definition:**

Feature geometry.

\***Attribute definition source:**

ESRI

\***Attribute type:** Geometry

\***Attribute width:** 0

\***Attribute precision:** 0

\***Attribute scale:** 0

**Attribute domain values:****\*Unrepresentable domain:**

Coordinates defining the features.

**Attribute:**

\***Attribute label:** TYPE

\***Attribute alias:** TYPE

\***Attribute type:** String

\***Attribute width:** 35

**Attribute:**

\***Attribute label:** TYPE\_SRC

\***Attribute alias:** TYPE\_SRC

\***Attribute type:** String

\***Attribute width:** 10

**Attribute:**

\***Attribute label:** USE

\***Attribute alias:** USE

\***Attribute type:** String

\***Attribute width:** 26

**Attribute:**

\***Attribute label:** USE\_SRC

\***Attribute alias:** USE\_SRC

\***Attribute type:** String

\***Attribute width:** 25

**Attribute:**

\***Attribute label:** WELLID\_SRC

\***Attribute alias:** WELLID\_SRC

\***Attribute type:** String

\***Attribute width:** 10

**Attribute:**

\***Attribute label:** CORROB\_SRC

\***Attribute alias:** CORROB\_SRC

\*Attribute type: String

\*Attribute width: 25

**Attribute:**

\*Attribute label: MOVE\_SRC

\*Attribute alias: MOVE\_SRC

\*Attribute type: String

\*Attribute width: 10

**Attribute:**

\*Attribute label: ADD\_SRC

\*Attribute alias: ADD\_SRC

\*Attribute type: String

\*Attribute width: 3

**Attribute:**

\*Attribute label: OPERATOR

\*Attribute alias: OPERATOR

\*Attribute type: String

\*Attribute width: 10

**Attribute:**

\*Attribute label: AQUIFER

\*Attribute alias: AQUIFER

\*Attribute type: Number

\*Attribute width: 12

\*Attribute number of decimals: 1

**Attribute:**

\*Attribute label: SWL

\*Attribute alias: SWL

\*Attribute type: String

\*Attribute width: 8

**Attribute:**

\*Attribute label: PWSID

\*Attribute alias: PWSID

\*Attribute type: Number

\*Attribute width: 12

\*Attribute number of decimals: 1

**Attribute:**

\*Attribute label: USGS\_ID

\*Attribute alias: USGS\_ID

\*Attribute type: String

\*Attribute width: 9

**Attribute:**

\*Attribute label: WELLSTATUS

\*Attribute alias: WELLSTATUS

\***Attribute type:** String  
\***Attribute width:** 15

**Attribute:**

\***Attribute label:** COMMENT  
\***Attribute alias:** COMMENT

\***Attribute type:** String  
\***Attribute width:** 24

**Attribute:**

\***Attribute label:** Well\_ID  
\***Attribute alias:** Well\_ID

\***Attribute type:** String  
\***Attribute width:** 40

**Attribute:**

\***Attribute label:** WellID\_Src  
\***Attribute alias:** WellID\_Src

\***Attribute type:** String  
\***Attribute width:** 40

**Attribute:**

\***Attribute label:** Alias  
\***Attribute alias:** Alias

\***Attribute type:** String  
\***Attribute width:** 40

**Attribute:**

\***Attribute label:** Type  
\***Attribute alias:** Type

\***Attribute type:** String  
\***Attribute width:** 150

**Attribute:**

\***Attribute label:** Type\_Src  
\***Attribute alias:** Type\_Src

\***Attribute type:** String  
\***Attribute width:** 3

**Attribute:**

\***Attribute label:** Use  
\***Attribute alias:** Use

\***Attribute type:** Number  
\***Attribute width:** 4

**Attribute:**

\***Attribute label:** Use\_Src  
\***Attribute alias:** Use\_Src

\***Attribute type:** String  
\***Attribute width:** 10  
\***Attribute precision:** 0

\*Attribute scale: 0

**Attribute:**

\*Attribute label: WellStatus

\*Attribute alias: WellStatus

\*Attribute type: String

\*Attribute width: 3

\*Attribute precision: 0

\*Attribute scale: 0

**Attribute:**

\*Attribute label: Operator

\*Attribute alias: Operator

\*Attribute type: String

\*Attribute width: 10

\*Attribute precision: 0

\*Attribute scale: 0

**Attribute:**

\*Attribute label: Well\_Depth

\*Attribute alias: Well\_Depth

\*Attribute type: Double

\*Attribute width: 11

\*Attribute precision: 10

\*Attribute scale: 1

**Attribute:**

\*Attribute label: Aquifer

\*Attribute alias: Aquifer

\*Attribute type: String

\*Attribute width: 8

\*Attribute precision: 0

\*Attribute scale: 0

**Attribute:**

\*Attribute label: DataSource

\*Attribute alias: DataSource

\*Attribute type: String

\*Attribute width: 24

\*Attribute precision: 0

\*Attribute scale: 0

**Attribute:**

\*Attribute label: Corrob\_Src

\*Attribute alias: Corrob\_Src

\*Attribute type: String

\*Attribute width: 40

\*Attribute precision: 0

\*Attribute scale: 0

**Attribute:**

\*Attribute label: Move\_Src

\*Attribute alias: Move\_Src

\***Attribute type:** String  
 \***Attribute width:** 40  
 \***Attribute precision:** 0  
 \***Attribute scale:** 0

**Attribute:**

\***Attribute label:** Add\_Src  
 \***Attribute alias:** Add\_Src

\***Attribute type:** String  
 \***Attribute width:** 40  
 \***Attribute precision:** 0  
 \***Attribute scale:** 0

**Attribute:**

\***Attribute label:** Comment  
 \***Attribute alias:** Comment

\***Attribute type:** String  
 \***Attribute width:** 150  
 \***Attribute precision:** 0  
 \***Attribute scale:** 0

**Attribute:**

\***Attribute label:** 4Mi\_Buffer  
 \***Attribute alias:** 4Mi\_Buffer

\***Attribute type:** String  
 \***Attribute width:** 3  
 \***Attribute precision:** 0  
 \***Attribute scale:** 0

**Attribute:**

\***Attribute label:** UID  
 \***Attribute alias:** UID

\***Attribute type:** SmallInteger  
 \***Attribute width:** 4  
 \***Attribute precision:** 4  
 \***Attribute scale:** 0

**Overview description:**

**Dataset overview:**

1153 points representing water wells and developed springs are present.

**Entity and attribute overview:**

There are 21 thematic attributes:

- Well\_ID - Well Identifier
- WellID\_Src - Source of Well Identifier
- Alias - Alternate well designations
- Type - Well type
  - Observation Well
  - Unknown
  - Water Well
  - Developed Spring
  - Well
  - Artesian Well

- Natural Spring
- Mineral Well
- Type\_Src - Well type source
- Use - Primary water use
- Use\_Src - Water use source
- Corrob\_Src - source of well/developed spring that corroborates the presence of an NDWR well/developed spring
- Move\_Src - source of well/developed spring that justifies the repositioning of an NDWR well/developed spring
- Add\_Src - source of well/developed spring added to this wells/developed springs shapefile
- Comment - attribute for other pertinent information about the well or developed spring.
- 4Mi\_Buffer - Yes, if within 4 miles of a surface or underground AUM and No if greater than 4 miles (all are Yes in this dataset)
- UID - arbitrary unique ID

Source attributes used above:

- NDWR - Navajo Dept. of Water Resources
- ADWR - Arizona Dept. of Water Resources
- CRUMP - Church Rock Uranium Monitoring Project, Church Rock Uranium Monitoring Project (CRUMP) results, 2003-2004, Report to the Navajo Nation Council Resources Committee, Church Rock Chapter House (S06160501, see CRUMP\_Samples.shp)
  - DOQQ - USGS 1990's Black and White Digital Orthophoto Quarter Quadrangles
  - DRG - USGS Digital Raster Graphic (USGS 7.5 minute topographic map)
  - GWSI - USGS Ground-water Site Inventory
  - GNIS - Geographic Names Information System
  - NHD - USGS National Hydrography Dataset (see NN\_Points\_NHDH.shp)
  - NMOSE - New Mexico Office of the State Engineer
  - S01140501 - Church Rock Uranium Monitoring Project, Water Sources in Church Rock Area: General Chemistry, Heavy Metals and Aesthetic Parameters, and Selected Radionuclide Samples
    - S07120505 - State of NM Northeast Church Rock Mine Closeout Plan
    - UDWR - Utah Div. of Water Rights
    - USACE - US Army Corps of Engineers (see NN\_USACE\_Samples.shp)

NDWR Attributes

- 
- WellStatus - Well status
  - Operator - Well operator
  - Well\_Depth - Total well depth in feet
  - Aquifer - aquifer used for water source
  - SWL - Static water level in feet
  - PWSID - Public Water System ID
  - USGS\_ID - USGS Station Number
  - DataSource - Source of well information

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## Distribution Information:

### Distributor:

#### Contact information:

#### Contact organization primary:

**Contact organization:** U. S. Environmental Protection Agency, Region 9,  
Superfund Records Center

**Contact address:****Address type:** mailing address**Address:**

95 Hawthorne St (SFD-7C)

**City:** San Francisco**State or province:** CA**Postal code:** 94105**Country:** USA**Contact voice telephone:** 415-536-2033**Resource description:** NN\_Wells\_4mi**Distribution liability:**

Although these data have been processed successfully on a computer system for the USEPA, no warranty expressed or implied is made by the USEPA or its contractors regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. No responsibility is assumed by USEPA or its contractors in the use of these data.

**Standard order process:****Digital form:****Digital transfer information:**\***Transfer size:** 0.031\***Dataset size:** 0.031**Fees:** None**Custom order process:**

Contact the USEPA for a custom order.

**Technical prerequisites:**

Use of this data generally requires computer workstations with ESRI's Arc/Info (8.x or above), ArcGIS (8.x or above), or ArcView (3.x), or some other GIS or CAD software that is capable of reading or converting this dataset.

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**Metadata Reference Information:**\***Metadata date:** 20070811\***Language of metadata:** en**Metadata contact:****Contact information:****Contact person primary:****Contact person:** Andrew Bain**Contact organization:** U. S. Environmental Protection Agency, Region 9,  
Superfund Program**Contact position:** Project Manager**Contact address:****Address type:** mailing and physical address**Address:**

75 Hawthorne St (SFD 8-2)

**City:** San Francisco**State or province:** CA

**Postal code:** 94105  
**Country:** USA

**Contact voice telephone:** 415-972-3167

- \***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.

**Metadata security information:**

**Metadata security classification system:** None

**Metadata extensions:**

- \***Online linkage:** <http://www.esri.com/metadata/esriprof80.html>
- \***Profile name:** ESRI Metadata Profile

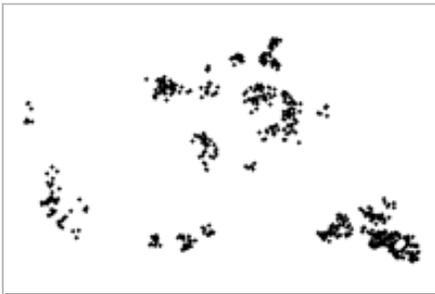
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## Binary Enclosures:

**Thumbnail:**

**Enclosure type:** Picture



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