

# **Reviewing Data for Online Delivery**

## **Geoscience Information Resources**

### **CONTRIBUTIONS TO THE NATIONAL GEOTHERMAL DATA SYSTEM**

**Notes from webinar held May 17th, 2011**

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The Reviewing Data for Online Delivery webinar covers topics on data delivery problems, the use of the templates and specifics about their worksheets, a brief review of the Identifiers and URI's as well as review on the metadata for the datasets. There is also an overview of the geochemistry template currently in testing, as well as a look at the new face of the State Geothermal Data website and its features.

## **TABLE OF CONTENTS**

<b>The Templates .....</b>	<b>3</b>
➤ <b>Borehole Temperature Observation Template .....</b>	<b>3</b>
➤ <b>Well Header Data Template.....</b>	<b>3</b>
➤ <b>Well Log Information Template.....</b>	<b>3</b>
<b>Using the Templates.....</b>	<b>3</b>
<b>About.....</b>	<b>4</b>
<b>Notes .....</b>	<b>5</b>
<b>Resource Provider Information.....</b>	<b>6</b>
<b>Data Mapping View .....</b>	<b>6</b>
<b>Data Valid Terms .....</b>	<b>7</b>
<b>Well Log Information, Header, and Borehole Observation Sections.....</b>	<b>Error! Bookmark not defined.</b>
<b>Observation Data .....</b>	<b>7</b>
<b>Identifiers.....</b>	<b>8</b>
<b>USGIN Dereferencing.....</b>	<b>9</b>
<b>Geochemistry Data.....</b>	<b>10</b>
<b>Review Notes Worksheet .....</b>	<b>12</b>
<b>Basic properties reported for all analyses worksheet .....</b>	<b>12</b>
<b>Analyte Dictionary Worksheet .....</b>	<b>13</b>
<b>State Geothermal Data Website.....</b>	<b>14</b>
<b>Content Model Templates .....</b>	<b>15</b>
<b>The State Geothermal Data Repository and Uploading Data.....</b>	<b>15</b>
<b>User Names and Logging in to the State Geothermal Data Site .....</b>	<b>17</b>
<b>Other Features on the State Geothermal Data Web Site .....</b>	<b>18</b>

## **The Templates**

In the Geothermal Oil, Gas and Exploratory Well Templates on the State Geothermal Data Site, ([http://www.stategeothermaldata.org/data\\_delivery/content\\_models/oil\\_gas\\_exp](http://www.stategeothermaldata.org/data_delivery/content_models/oil_gas_exp)) you will find the three templates that are discussed in this document.

### **➤ Borehole Temperature Observation Template**

The Borehole Temperature Observation Template is for collecting temperature measurement information and well borehole information. This content model has some flexibility and allows for multiple borehole measurements depending on the depth where the temperature is being recorded. There should be one row of well information for each temperature observation; these data records maybe implemented as a temperature observation service.

### **➤ Well Header Data Template**

The Well Header Template will have one record per well and allow for multiple well borings. Each data record represents the well location as a feature and includes association from each well to its related logs and other data.

### **➤ Well Log Information Template**

The Well Log Template was designed as a data compilation spreadsheet. The template has all the information to build a metadata record for a well log or a temperature observation. The Well Log Template will also greatly resemble the Well Header Template, with additional features.

While the templates should be consistent and relatively similar, as far as the general information they contain, each template serves its own purpose. The templates function differently from one another; one may be used for the compilation of data while the other is used for the actual data delivery in the services.


## **Using the Templates**

You can find additional information on the Catalog services for permit files and logs, along with information on Feature services (ArcMap) and on the data/well log/observation fields in the template worksheets by viewing the Borehole Data Webinar posted at [http://repository.usgin.org/uri\\_gin/usgin/dlio/182](http://repository.usgin.org/uri_gin/usgin/dlio/182).

When using the templates, it's best to be familiar with the various worksheets with each having a labeled tab at the bottom of the excel spreadsheet. The worksheets will differ from template to template. Some labels include; **About, Notes, Resource Provider Information, Data Mapping View, Data Valid Terms, All Log Types and a Data /Well Log Information section.** After technical review, a worksheet with **AZGS Comments** is added.

## About

In the **About** section you will find a **title**, **version**, **description**, **editors**, **template revision history** and **data revision history** sections.



# AASG GEOTHERMAL DATA

Title	AASG Geothermal Data: Borehole temperature observation feature		
Version	1.2		
Description	This spreadsheet indicates the content requested for temperature measurement data obtained from boreholes for the AASG geothermal data project. Typically bottomhole temperatures are recorded from log headers, and this information will be provided through a borehole temperature observation service. The HeaderURI for a particular borehole (well for simple wells) is the cross-referencing link (foreign key) used to associate the		
Editors	Stephen Richard, Celia Coleman, Esty Pape		

### Template revision history

Revision	Comment	Person	Date
0.1	Initial draft started by copying well log template and deleting unrelated fields	Stephen Richard	10/22/2010
1.0	additional notes, investigate drilling fluid property reporting units and procedures. Synchronize data fields with well header and well log template file.	Stephen Richard	10/23/2010
1.1	add CirculationDuration property, update notes on temperature units (strong recommendation to use Centigrade) and time since circulation. Remove KB and DF elevations, all depths should be referenced to ground level for temperature observations.	Stephen Richard	3/28/2011
1.11	Added "Information Source" to the BoreholeObservation Template.	Celia Coleman	4/19/2011
1.12	Added "Coalbed Methane" to Commodity of Interest in the Data Valid Terms.	Celia Coleman	4/22/2011
1.13	Added "CommodityOfInterest", "Function" and "Production" to the BoreholeObservation Template.	Celia Coleman	4/22/2011
1.14	Updated template with minor changes, cleanup of column comments: complete DataMappingView entries. Move InformationSource to end of property list.	Esty Pape, Stephen Richard	5/4/2011
1.2	Change version to 1.2 because added new fields; this should have happened at 1.11. Add serviceName and featureName to about header. These are the names that should be used for deployed services.	Stephen Richard	5/5/2011

### Data Revision History

Date	Comment	Person

**Title:** Name of the template. When naming your template, insert your state name. i.e. 'Arizona Borehole Observation Feature'

**Version:** The version number for the template has to do with the fields present in the actual data table, think of it as a version for the data schema, not the version for the data in the table. Do not change this field.

**Description:** Describes the features and data in the worksheet and why it was developed. You can add additional text to make this description relevant to your state data set.

**Editors:** Editors of the template not the data. Do not change this field.

**Template revision History:** Evolution of the template, tabs, worksheets, version etc. (not the actual data). Do not change this field.

**Data Revision History:** Revision for the actual data in the table. Whenever a change is made to the data set, a record should be entered to record who, where, when, and what modification has occurred.

## Notes

The Notes provide comments on the various worksheets in your template and provide an explanation for each worksheet and how it is to be used.

2	<p>This template defines the content model for a service that delivers borehole temperature observations. Many of these will be standard 'bottom hole temperatures' (BHT) from Oil and Gas Well logs, but numerous other measurements may be delivered. Much of the variation will concern procedures used to extrapolate a true bottom-hole temperature from the maximum recorded temperatures that are recorded on wireline log headers.</p> <p>The WellLog Information template should be used when compiling BHT data from log headers while cataloging the well logs. The content model presented here is intended to present key information necessary to query a temperature observation service and to evaluate the reported temperatures.</p>	
3		
4		
5	required field	
6		
7	<b>sheets in this workbook:</b>	
8	<b>ResourceProviderInformation:</b> contains information for name of agency and contacts for agency providing the information in this spreadsheet workbook.	
9	<b>BoreholeObservation</b> contains fields for information used to discover temperature measurements meeting various criteria, and to evaluate the reported results.	
10	<b>DataMappingView:</b> Table has one row for each header data element. Use to correlate the interchange format elements with content in existing databases at data providing agency.	
	<b>Data Valid Terms:</b> collection of example controlled vocabulary lists; as the project progresses these should converge on vocabularies that can be used by all parties to achieve semantic interoperability.	



## Resource Provider Information

The Resource Provider Information worksheet contains the contact information for the agency providing the data. Once the information is populated, it will be used to provide contact information when establishing a data service for online delivery. The contact information is important to relate the provider of the metadata record (dataset) and documents service access and constraints, who provided the data, and contact information to obtain additional information.

Resource Provider information	
1	Under the assumption that temperature observation reported in this sheet will be in the possession of the agency preparing the spreadsheet, information to inform users on how to access the logs will be shared by all records in the table. The following information will be used to populate resource contact fields in metadata records for the logs listed in the Well log metadata spreadsheet.
2	
3	
4	Contact Person Name
5	Contact person role
6	Organization Name
7	E-mail address
8	Telephone number
9	Postal Address: Name
10	Street address
11	City, ST Zip
12	Access Instructions
13	Use Constraints
14	

## Data Mapping View

This worksheet is designed to assist mapping an existing dataset/record into the interchangeable data fields in the spreadsheet. Elements (a.k.a. fields, attributes) in the interchange format are listed down the left side. The Table and Field columns can be used to identify your existing table and the field in that table that contains content to map into the interchange element. The notes column can be used to indicate if any calculation or filtering is necessary on the existing field to transform to the interchange format.

	Interchange content element	Notes on element (same information as pop-up comment).	Source table	Source field	Notes on mapping
5	MudResistivity	This is value typically reported on log. Units assumed to be ohm.m, with temperature report as n.nnn tt; logs us '@' to separate measured resistance and temperature, but this character may cause problems in data interchange.			
67					
68	Density	Density of mud from log; units assumed to be pounds per gallon.			
69	FluidLevel	Distance from surface along the well bore that the formation fluid in the well will reach under static conditions.			
70	pH	Hydrogen ion potential of fluid in the well.			
	Viscosity	The resistance to flow due to the internal friction caused by molecular cohesion of the fluid; the ratio of shear stress to shear rate in the fluid. Viscosity is reported on logs in seconds, base on standard funnel test; units will be assumed to be seconds.			
71					
	FluidLoss	Fluid loss in cubic cm (cc) or ml, as measured by standard mud logging fluid loss procedure. Report value and units as 'nn.nn uu' where uu is cc or ml.			
72					
73	InformationSource	source of information on well engineering, completion, etc.			

## Well Log Information, Header, and Borehole Observation Sections

You can find more information on the fields in the actual data/well log/observation section in the templates at [http://repository.usgin.org/uri\\_gin/usgin/dlio/182](http://repository.usgin.org/uri_gin/usgin/dlio/182). This sheet will contain the data, which will need to meet various criteria to be published.

	A	B	C	D	E	F	G	H	I	J	K
1	Observation URI	WellName	APINo	HeaderURI	OtherID	OtherName	BoreholeName	Operator	LeaseOwner	LeaseNo	SpudDate
2		Bozo 1 OilCompany. This row contains example data for reference only.	42-501-20130-03-00	http://resources.usgin.org/uri_gin/azgs/well/42-501-20130-03-00							1980-01-01T00:00

## Data Valid Terms

The Data Valid Terms is a collection of controlled vocabulary lists. As the project progresses these should converge on vocabularies that can be used by all parties to achieve semantic interoperability. When you hover your mouse over the feature header cell, a comment may appear if that particular field has a vocabulary. If you're using new terms, it is important to list them in this section and give definitions for them.

Borehole Type		Function		example well type terms	
commodity of interest		Production Terms		code	Type definition
Coalbed Methane		production	production of a fluid--oil, natural gas, other gas, water, brine, sulfur...	TA	Temporarily Abandoned
Oil		exploration	for acquisition of information specific to discovery or evaluation of economic accumulation of some material related to production. Water into a geothermal system, fluids for secondary recovery for monitoring some subsurface properties, e.g. water level, pressure, temperature, fluid composition, etc.	AB	Plugged and Abandoned
OilAndGas	Mixtures of oil and combustible natural gas.	injection	production of water soluble mineral by circulating water or other fluid to dissolve and remove material; also when such dissolution is for the purpose of creating a cavern for storage.	PR	Producing
Gas	Combustible natural gas	monitoring	injection of material into a subsurface cavern or reservoir with intention of withdrawing for use at a later time	BM	Brine Mining
GeothermalEnergy	fluid extracted from subsurface as medium for transporting heat from subsurface heat reservoir for use by people.	scientific	injection of material with intention of removing it permanently from the surface environment	SH	Shut-In
Helium		solutionMining		SD	Sealed
CarbonDioxide		storage		PF	PF Well
OtherGas	Not sure if there are any other gases produced from subsurface...	disposal		IN	Injection
Sulfur				GJ	Gas Storage Injection
Water				GW	Gas Storage Withdrawal
Brine				GL	Gas Storage in a Salt Formation
MetallicMinerals	base and precious metals			WS	Water Supply
Salt	sodium chloride			GT	Geothermal Well
OtherEvaporite	borates, other salts.			OB	Observation Well
OtherSolidMineral	Barite, anhydrite, zeolites, clay minerals, apatite, etc.			LU	Lease use Well
Information	well was drilled for monitoring, making measurements, acquiring stratigraphic information, etc. Not specific to any particular commodity exploration or development.			DW	Domestic Well
Uranium	Uranium or thorium minerals			PP	Partial Plug
well Status		Borehole shape		TR	Training Well
		terms to characterize general geometry of borehole		SM	Shut-In Multiple Completion
		vertical default		ZZ	Well Not Eligible for Allowable
		inclined down		SS	Shut-in with G-1 pending pipeline connection
		curved			
		horizontal			

## Observation Data

**Measurement source:** The ‘measurement source’ of an observation provides a way for each record to report specific metadata about a particular measurement. In many cases the ‘measurement source’ will be the same for every record in the template (one report or original dataset). When compiling data that is coming from many publications, there are different ‘measurement source’ citations associated with individual records within the table. The ‘measurement source’ field should provide some guidance as to where the record/data came from.

**Information Source:** Information source is for information on the person or database compiling the data. It should list the contact information, when they compiled the data and what procedures were used, etc.

**Measurement procedure:** The measurement procedure should tell what procedure was originally used to gather the data in the table. For example “bottom hole temperature from Schlumberger Electric Log EL-235 dated 11/13/1978.”

## **Identifiers**

When dealing with a data system, the link between various data items is important.

Linkage is important because there may be several datasets associated with a single well bore such as cuttings, temperature measurements, fluid samples, logs, geochemistry from the fluid samples, and more. The idea is that there will be many relationships between different data items, and interoperability allows for linking those items together in the data system.

The way to bind all this data in the information system is to have reliable uniform identifiers and a consistent way of using them. The **Identifier** is a string that is unique to your resource (well).

**API** – Most gas, oil, and geothermal wells (depending on the state) have API numbers. An API number is a "unique, permanent, numeric identifier" assigned to each well drilled for oil, gas, and geothermal wells in the United States. The API number is one of many industry standards established by the American Petroleum Institute. The state issues API numbers based on the regulations in that state. API's are more commonly used and understood when referring to mineral resource wells.

**URI** – (Uniform Resource Identifier) is a string of letters and numbers that identifies a resource. In these terms ‘resource’ being something we are interested in and want to identify and link with other information. This information may be an individual well log, an individual well, an individual wellbore, hot spring, a single fluid chemistry data, an earthquake hypocenter, or a particular sample, etc.

**HTTP URI's** – Hypertext Transfer Protocol (http) is a common scheme used on the web to identify web pages. This identifier might identify anything in the world, a person, a well, a rock, that you can't send over a wire. The URI will be a representation for the item that the identifier identifies.



## Minting URI's

A URI is a Uniform Resource Identifier; the URI describes the mechanism used to access the resource, the computer that the resource is housed in, and the name of the resource on the computer. In many cases, they will have to be made up (hopefully of some reasonable chain of text and number or http address that your shed some light on the data item) unless there is some visible identifier scheme already in place.

One of the conventions being promoted in the information system for URI's is adding prefixes. Prefixes are used to identify the authority.

**Prefixes** -will help identify what kind of identifier it is and who assigned it. They are also both globally unique and unique to the organization. This helps in organizing URI's.

**Using Existing Identifier** -API numbers for wells or for individual wellbores are commonly used because the API system is set up to identify down to individual wellbores in a great amount of detail.

**Add Prefix to Identify Authority** - Prefixes may look like some of these examples

azogcc: (Arizona Oil and Gas Commission)      api:    (American Petroleum Industry)

azgs:                    (Arizona Geological Survey)

## USGIN Dereferencing

In order for these identifiers to be useful there has to be some way to dereference them. #

A dereferencing service has been set up through USGIN. This is a rule based redirection to a server. This server allows you to define different types of resources.

Example:



<http://resources.usgin.org/uri-gin/azgs/well/uri-description/>

The base URL is <http://resources.usgin.org/uri-gin/>. The authority is azgs (AZGS) – for this you may add different prefixes or other path segments, for other states that want to use this method.

Using the service redirection regular expressions, we are able to dereference a service and parse other URL's coming in. Using regular expression patterns, we can create rules and redirect the requests to a useful client where you will get information back.

The way to make the http useful is by utilizing the existing, very durable, widely tested and used infrastructure for dereferencing identifiers, known as the web. By having the domain name, the registers and domain name servers all over the world, the URI or http URI that uses a known host will be dereferenced and return with something useful.

After obtaining the URI, using the dereferencing system, place the http URI into the browser and you will receive an XML (Well Header in this instance) metadata record or a redirection to additional information on a particular well. This is almost identical to the data spreadsheet; as you can see the features are the same. This is created by the Web Feature service, an online map containing information on where the log was obtained from.

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
<wfs:FeatureCollection xsi:schemaLocation="http://stategeothermaldata.org/uri-gin/aasg/xmlschema/simplefeatures/ http://services.
/MapServer/WFSServer?request=DescribeFeatureType%26version=1.1.0%26typename=WellHeader http://www.opengis.net/wfs htt
- <gml:boundedBy>
  - <gml:Envelope srsName="urn:ogc:def:crs:EPSG:6.9:4326">
    <gml:lowerCorner>31.37012743400004 -114.8031822019999</gml:lowerCorner>
    <gml:upperCorner>36.997997144000067 -109.0493863559999</gml:upperCorner>
  </gml:Envelope>
</gml:boundedBy>
- <gml:featureMember>
  - <aasg:WellHeader gml:id="F2__850">
    <aasg:ID>850</aasg:ID>
    + <aasg:HeaderURI></aasg:HeaderURI>
    <aasg:WellName>Arkla Exploration 12 New Mexico-Arizona Land</aasg:WellName>
    <aasg:APINo>02-017-00262</aasg:APINo>
    <aasg:OtherID>AZOGCC-09-18</aasg:OtherID>
    <aasg:OtherName>
    <aasg:Operator>Arkla Exploration</aasg:Operator>
    <aasg:MineralOwner>New Mexico-Arizona Land</aasg:MineralOwner>
    <aasg:LeaseName>New Mexico-Arizona Land</aasg:LeaseName>
    <aasg:SpudDate>1965-04-26T00:00:00</aasg:SpudDate>
    <aasg:EndedDrillingDate>1965-05-04T00:00:00</aasg:EndedDrillingDate>
    <aasg:WellType>O&Gexplor</aasg:WellType>
    <aasg:Status>Unknown</aasg:Status>
    <aasg:CommodityOfInterest>Information</aasg:CommodityOfInterest>
    <aasg:StatusDate>2010-11-01T00:00:00</aasg:StatusDate>
    <aasg:Function>stratigraphic test</aasg:Function>
    <aasg:Production>not applicable</aasg:Production>
    <aasg:County>NAVAJO</aasg:County>
    <aasg:State>Arizona</aasg:State>
    <aasg:Field>Wildcat</aasg:Field>
```

Geochemical data for wells and springs are of some use in geothermal investigations. The particular data of interest are called analytes. In the template/content model, there will be a collection of basic properties that are associated with any given chemical analysis. This will explain where the sample came from, what the sample is, who collected the sample, what the analytical procedures was, and the general background information that applies to all the results in the analysis. This may be a geologic unit, aquifer, a thermal spring, a borehole, etc. We then can take groups of analytes and bundle them together in suites. These suites were based on many of the water analysis conducted for this type of information. The suites comprise a set of analytes that are performed by one or more related laboratory analytical methods such as general chemistry anion and cations, heavy metals, physical parameters, etc.

3	Name of Suite	source Of Suite Template	Notes			
4	Basic data	USGS <a href="http://hotspringchem.wr.usgs.gov/datatype.php">http://hotspringchem.wr.usgs.gov/datatype.php</a>	SMR adj turbidity. All constituents are parameters measured using probes, commonly in the field, and involve no chemical analytical technique.	pH_field	pH_lab	specificConductance_mS
5						
6	waterQuality	Stephen Richard		pH	pH_method	SpecificConductance_mS
7						
8	common analytes	Stephen Richard	All reported constituents are from fraction indicated in fractionanalyzed field, i.e. total, dissolved, suspended. If dissolved and suspended results are available from the same sample, these would be reported as two observations.	fractionAnalyzed	pH	pH_Method
9						
10	base metals	Stephen Richard	All reported constituents are from fraction indicated in fractionanalyzed field, i.e. total, dissolved, suspended. If dissolved and suspended results are available from	fractionAnalyzed	Cd_mgL	Fe_mgL

[About](#) / [Notes](#) / [Resource Provider Information](#) / [Review/Notes](#) / [AqueousChem-BasicProperties](#) / **[AnalyteSuites](#)** / [SingleAnalyteObservation](#) / [DataMap](#)

Within any given data delivery suite, all the units of measurement will be the same. You will notice that in the template below, all the analytes have a unit of measurement in relation to the field name. Since special characters cannot be used in the feature headers, the units are presented in a recognizable (although not accurate) string, such as mg/L instead of mg/L with special character “/”.

Ba_mgL	Cs_mgL	Sb_mgL	As_mgL
Be_mgL	Br_mgL	Fe_mgL	H_mgL
Al_monomeric_mgL	Al_total_mgL	As_mgL	Au_mgL
Nitrate_mgL_lab	Nitrite_mgL_field	Nitrite_mgL_lab	NitratePlusNitrite_mgL
Nitrite_mgL	NitratePlusNitrite_mgL	Carbonate_mgL	Bicarbonate_mgL
O2plusAr_volpct	O2_volpct	N2_volpct	CO2_volpct

The “common suite” field will show the values most common with the analysis data at hand.

## Comments worksheet

### Basic Properties Reported for all Analyses worksheet

Within this Basic properties worksheet there are **spatial reference system columns; lat and long.**

12 | Page

It's important for this field to be populated because all the data delivery service sets are currently using WGS84 or NAD83 spheroids. It's important to know which datum for the spheroid is being used, because when a NAD27 or Clark86 spheroid is used, the map plots differently than intended and map data is skewed. . Providing the spheroid information will help to avoid this problem.

### Analyte Dictionary Worksheet

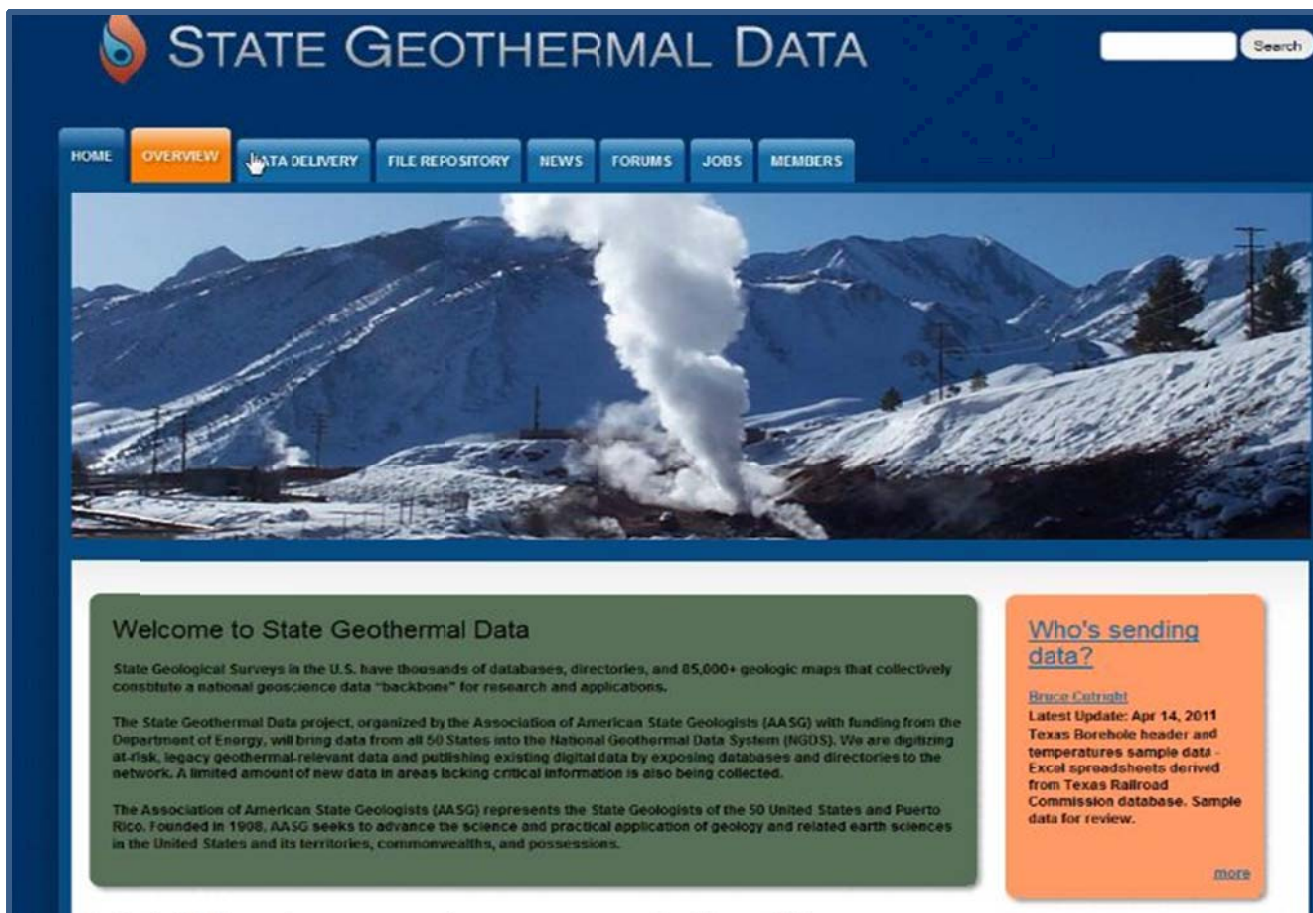
The Analyte Dictionary worksheet should have a clear description of the analyte definition as well as the units used for delivering them.

28	Ammonia	Ammonia	Ammonia as NH <sub>3</sub> . Ammonia is a compound of nitrogen and hydrogen (and so is covalently bonded) with the formula NH <sub>3</sub> . It is a colourless gas with a characteristic pungent odour.
29	AmmoniaUnits	AmmoniaUnits	mg/L
30	AnionTotal		
31	Ar_mmKg	Ar_mmKg	Argon is a chemical element represented by the symbol Ar. Argon has atomic number 18 and is the third element in group 18 of the periodic table (noble gases). Argon is the third most common gas in the Earth's atmosphere, at 0.93%, making it more common than carbon dioxide. Nearly all of this argon is radiogenic argon-40 derived from the decay of potassium-40 in the Earth's crust.
32	Ar_volpct	Ar_volpct	Argon as Ar. Argon is a chemical element represented by the symbol Ar. Argon has atomic number 18 and is the third element in group 18 of the periodic table (noble gases). Argon is the third most common gas in the Earth's atmosphere, at 0.93%, making it more common than carbon dioxide. Nearly all of this argon is radiogenic argon-40 derived from the decay of potassium-40 in the Earth's crust.
33	As	As	Arsenic as As. Arsenic is a chemical element with the symbol As, atomic number 33 and relative atomic mass 74.92. Arsenic occurs in many minerals, mainly combined with sulfur and metals, and also naturally in the native (elemental) state.



## State Geothermal Data Website

<http://www.stategeothermaldata.org>



The new face of the State Geothermal Data website! If you are brand new to this site, an overview is available at <http://www.stategeothermaldata.org/overview>.

For those who are already familiar with the State Geothermal Data site, all the tabs at the top of the home page should be the same as what you're used to, with greater functionability.



On the home page you can view the **Who Is Sending Data** panel at the right side of the page. This advertises whose, when, where and what data has recently been sent in.

Lower down on the home page, you will find links to the latest Geothermal News, SGD.org Announcements, Employment opportunities, and Quick Links to what's most popular on the site.



<h3>Latest SGD.org Announcements</h3> <p><a href="#">Welcome to the new StateGeothermalData.org site!</a></p> <p>Last Updated: Mon, May 16, 2011</p> <p>StateGeothermalData.org has received a makeover, adding functionality and improved communications for sub-recipients of the State Geothermal Data Project and the public. For the public, this site provides a comprehensive overview of the project, automatic feeds to the most up-to-date and relevant news on geothermal energy, and access to all publicly available data on the State Geothermal Data Project including Webinars, White Papers, and completed deliverables.</p> <p>Members have the ability to access information on all stages of Data Delivery, including the data development cycle, technical discussions, user scenarios, vocabularies, and content model templates. They will also be able to login to access the member's repository, forums, and to upload reports and deliverables. The recorded webinars and training, as well as presentations from various conferences and invited talks, will also be available to project members.</p> <p>Employment opportunities related to the State...</p>	<h3>Geothermal News</h3> <p><a href="#">Annual U.S. Geothermal Power Production and Development Report</a> Tuesday, 17 May 2011</p> <p><a href="#">U.S. Geothermal Power Production and Development Report</a> Tuesday, 17 May 2011</p> <p><a href="#">Certified Geothermal Installer Training in Bloomington, IN</a> Monday, 16 May 2011</p> <p><a href="#">Geothermal Pipeline Still Growing, Industry continues regional expansion</a> Monday, 16 May 2011</p> <p><a href="#">Tapping The Earth For Energy Savings Year-Round</a> Monday, 16 May 2011</p> <p><a href="#">NREL Unveils New Cost of Energy Calculator</a> <a href="#">CREST</a></p>	<h3>Quick Links</h3> <ul style="list-style-type: none"> <li>• <a href="#">Content Model Templates</a></li> <li>• <a href="#">Upload Files</a></li> <li>• <a href="#">Report Due Dates</a></li> </ul> <h3>Recent Activity</h3> <p><a href="#">Post Your Questions in the Comments Here!</a></p> <p><a href="#">New Content Model Template</a></p> <p><a href="#">Who are the members of the Management Advisory Board? What is their role?</a></p> <p><a href="#">Who are the members of the Science Advisory Board? What is their role?</a></p> <p><a href="#">What is the due date for Phase-</a></p>
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## Content Model Templates

By using the Quick Links or the Data Delivery tab, located on the top of the home page, you can easily view the **Content Model Templates**.

There is a new version of the borehole template available in the Oil, Gas and Exploratory Well Templates link. Also newly posted is the Earthquake Hypocenter Template.

[Home](#) • [Data Delivery](#) » [Content Model Templates](#)

## Content Model Templates

Each of the [feature types identified](#) for geothermal data delivery will have an associated content model that defines the information contained in the interoperable interchange documents that deliver data from USGIN geothermal data system servers. The content model in its simplest form is a statement that some particular entity (or feature or observation) will have some list of properties. For example a content model for a record describing a book feature might include: title, author, publisher, publication date, publication place, number of pages, and an ISBN number (a URI).

In order to achieve interoperability, the the information entities in the data system must use well documented encoding of the content model such that computer programs can be written to parse the interchange documents and extract the desired information. To document the encoding schemes, we are using MS Excel spreadsheet templates. Each template includes a list of the elements (fields, attributes) in a data record describing some entity.

### Templates

- [Active Fault Templates](#)
- [Basic Metadata Template](#)
- [Direct Use Feature](#)
- [Earthquake Hypocenter Template](#)
- [Hot Spring Feature Template](#)
- [Oil, Gas and Exploratory Well Templates](#)

## The State Geothermal Data Repository and Uploading Data

You can visit the file repository by either using the tab on the top of the website that says File Repository or by going to [http://www.stategeothermaldata.org/file\\_repository](http://www.stategeothermaldata.org/file_repository).

The repository has been set up so that you can automatically upload your data instead of emailing it, making the process easier. You can use the repository for acquiring sample data, sending in deliverables

and also for recording requirements and reports. This is a public repository so once data files are published in the repository, they are available to anyone and everyone. If you would like to view project specific files, login and select ALL FILES or enter a search term.

To get started uploading data, you will need to log in. If you're having an issue with your login name, or do not have one, see the User Names and Logging in to the State Geothermal Data Site section for more details.


After you log in, go to the home page, scroll down to find the Quick Links section, when there select the Upload Files link.

You should arrive at the Create Upload for File Submission page.

The screenshot shows a web application interface with a dark blue header containing navigation tabs: HOME, OVERVIEW, DATA DELIVERY, FILE REPOSITORY, NEWS, FORUMS, JOBS, and MEMBERS. Below the header, a breadcrumb trail reads 'Home » Add context » Create Upload for File Submission'. The main heading is 'Create Upload for File Submission'. The form includes several required fields marked with red asterisks: 'TITLE \*' with a text input; 'YOUR STATE \*' with a dropdown menu showing '- Select a value -' and a note 'Please select your state.'; 'REPORT CATEGORY \*' with a dropdown menu showing '- Select a value -' and a note 'Please select what type of report(s) are included. If you have files that belong in separate categories, please include only files for one category per submission form.'; 'ADD A NEW FILE \*' with a text input, 'Browse...' and 'Upload' buttons, and a note 'Files must be less than 96 MB. Allowed file types: txt xls xlsx doc docx pdf tiff gif jpg prj sbin sbx shp shx db zip.'; and 'NOTES FOR PROJECT ADMINS' with a large text area and a note 'If you have any additional info or if you selected "other" in the Report Category, please add a note in here.' At the bottom are 'Save' and 'Preview' buttons.

Here you will enter in the information necessary to upload your data. You will see a Title, Select your state, Report a category, choose your file(s), and Note for the Project Admins category's to fill or select. The red asterisks \*\*\* indicate what fields are required by you to fill, so you can successfully upload your files. Provide any notes or questions in the Notes box provided.

Do not forget to save. You should see something similar to this when your file has successfully uploaded.

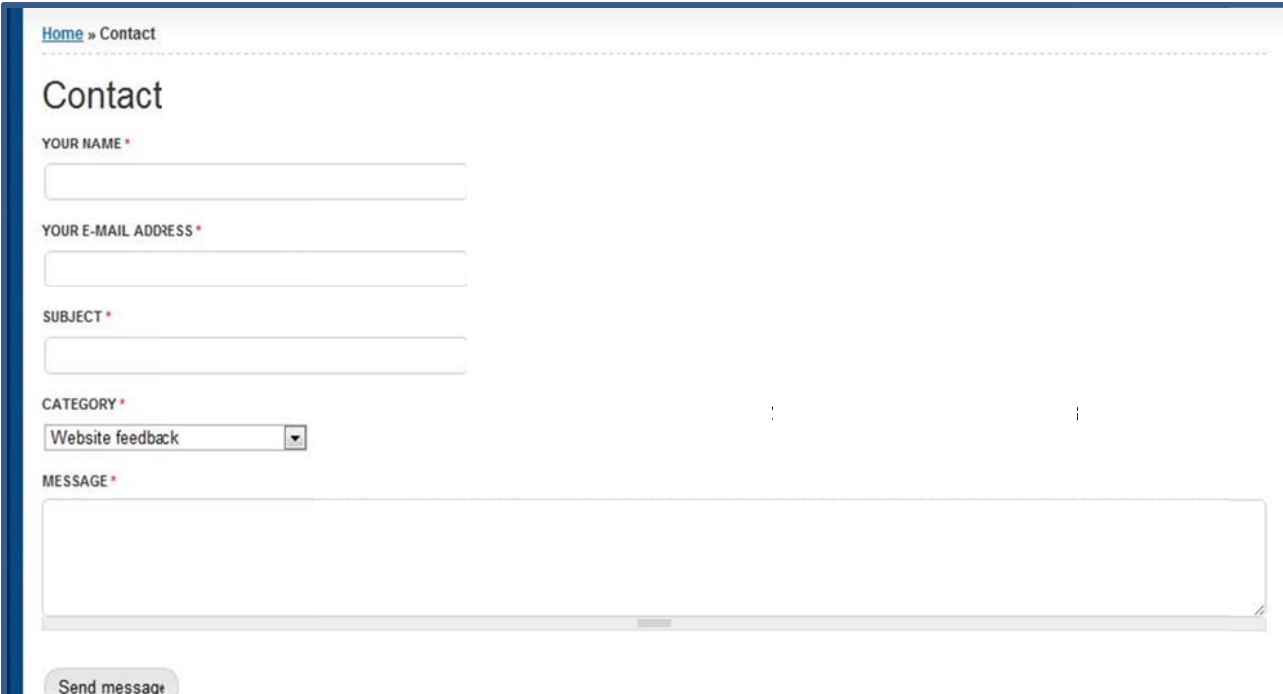
	<p>File Name</p> <p>Green Check to say your file has been uploaded</p> <p>Your username and date uploaded</p> <p>State Name</p> <p>Category Chosen</p>
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## User Names and Logging in to the State Geothermal Data Site

If you were a member of the website before the many changes, you should have received an email with information on your user name, password and how to log in. The username should have your First initial and you full last name all lowercase, ex. jbaker, for Joshua Baker. Your password should also be set to "password."

If you were unlucky enough to not receive an email with this information, please contact Kim Patten, Project Manager, at the Arizona Geological Survey.

You can contact the Arizona Geological Survey by selecting the CONTACT link on the website, which is located on the top right corner of the every page. Here you can choose who to contact, and explain why.





## Job Postings

**Position Title:** [Mineral Resource Data Curation Intern / Metadata Librarian](#)

Arizona -- Phoenix

[Geothermal Data Project Position](#)

**Job Description:**

**\*\*THIS POSITION WILL REMAIN OPEN UNTIL FILLED. THE FIRST REVIEW OF RESUMES WILL BEGIN IMMEDIATELY. ANY ADDITIONAL RESUMES WILL BE REVIEWED AS NEEDED.\*\***

*The Arizona Geological Survey is seeking individuals with an interest in data curation to assist with the digitizing of the files and records of the former Arizona Dept. of Mines & Mineral Resources as part of the implementation and deployment of interoperable geoscience data services on the Internet. The AZGS is working on a geoscience information system to allow discovery, evaluation, and access to data hosted by the USGS and state geological surveys, using the Geoscience Information Network. The AZGS effort is focused on the implementation of Open...*

**Position Title:** [Mineral Resource Data Intern](#)

Arizona -- Phoenix

[Geothermal Data Project Position](#)

**Job Description:**