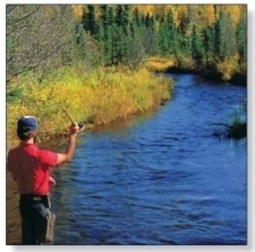
Observation Wells

Presented by Allan Wylie, IDWR

Date August 12, 2014



Outline

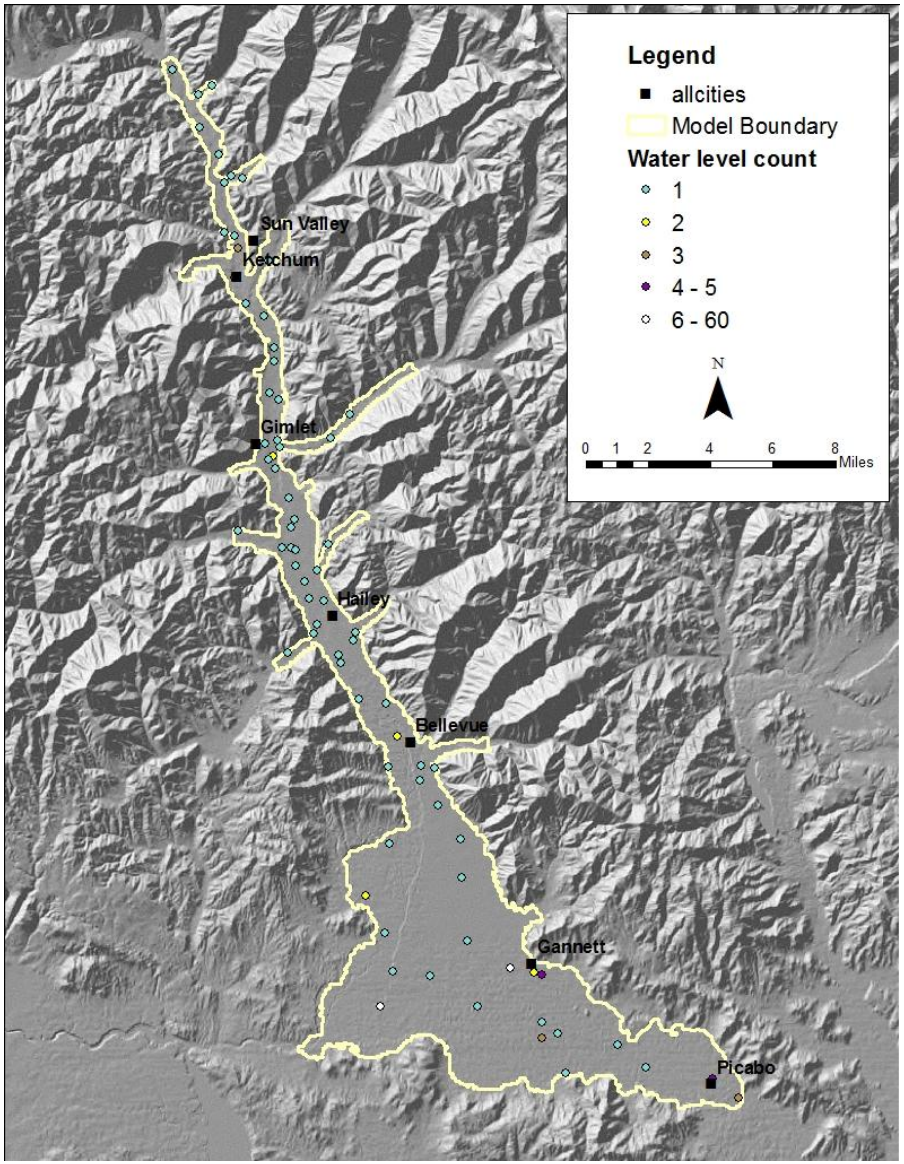
- Need for aquifer water-level data
- Sources of water level data
- Wood River Valley Water-level Database

The Need for Water-level Data

- Ground water model calibration involves matching model output with field observations.
  - We need field observations
    - River gains and losses
    - Water table elevations measured in wells

Sources of Water-level Data

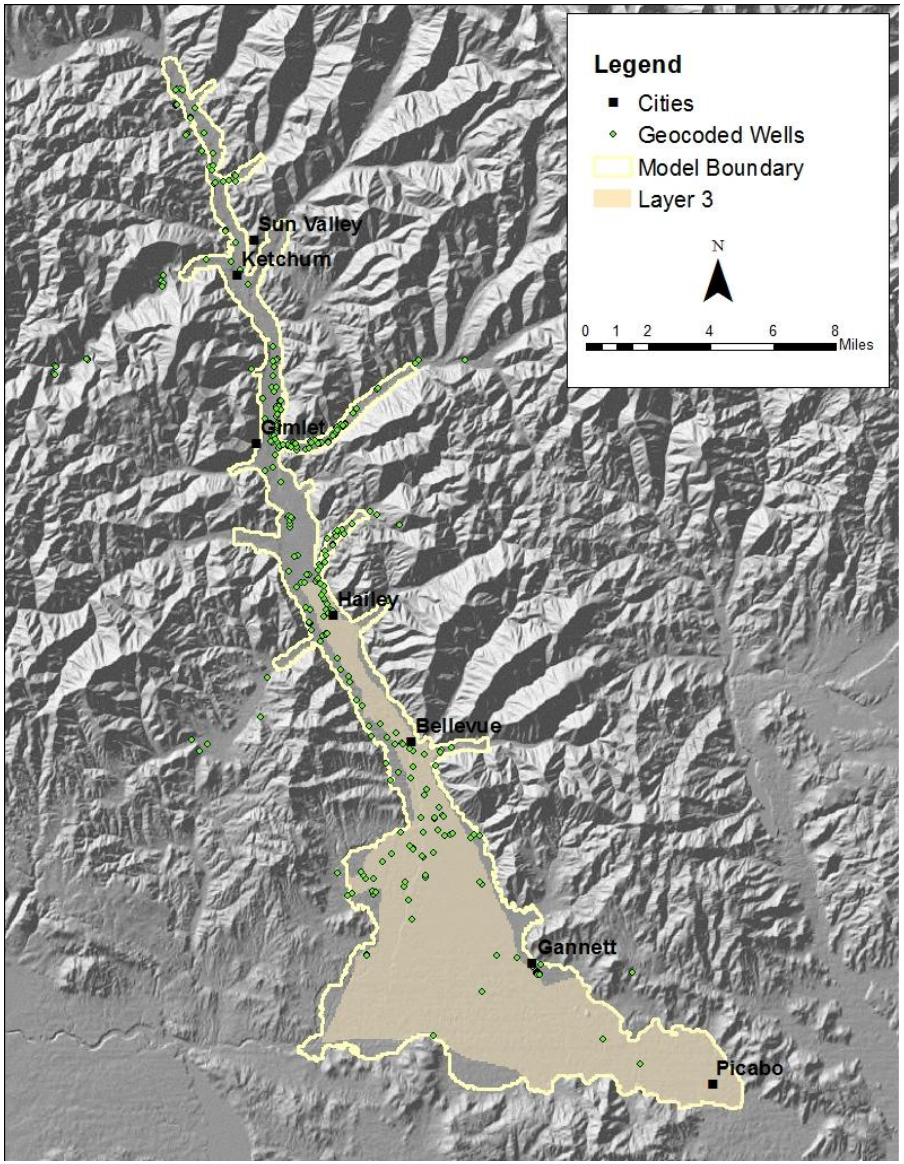
- USGS aquifer water-level database
  - National Water Information System (NWIS)
    - Over 850,000 records nation wide
- IDWR hydrologic database
  - Data collected by the USGS in Idaho
  - Data collected by the IDWR
  - Data collected for the IDWR
- Well driller reports
  - Data drillers are required to report to IDWR upon completion of a well included depth to water



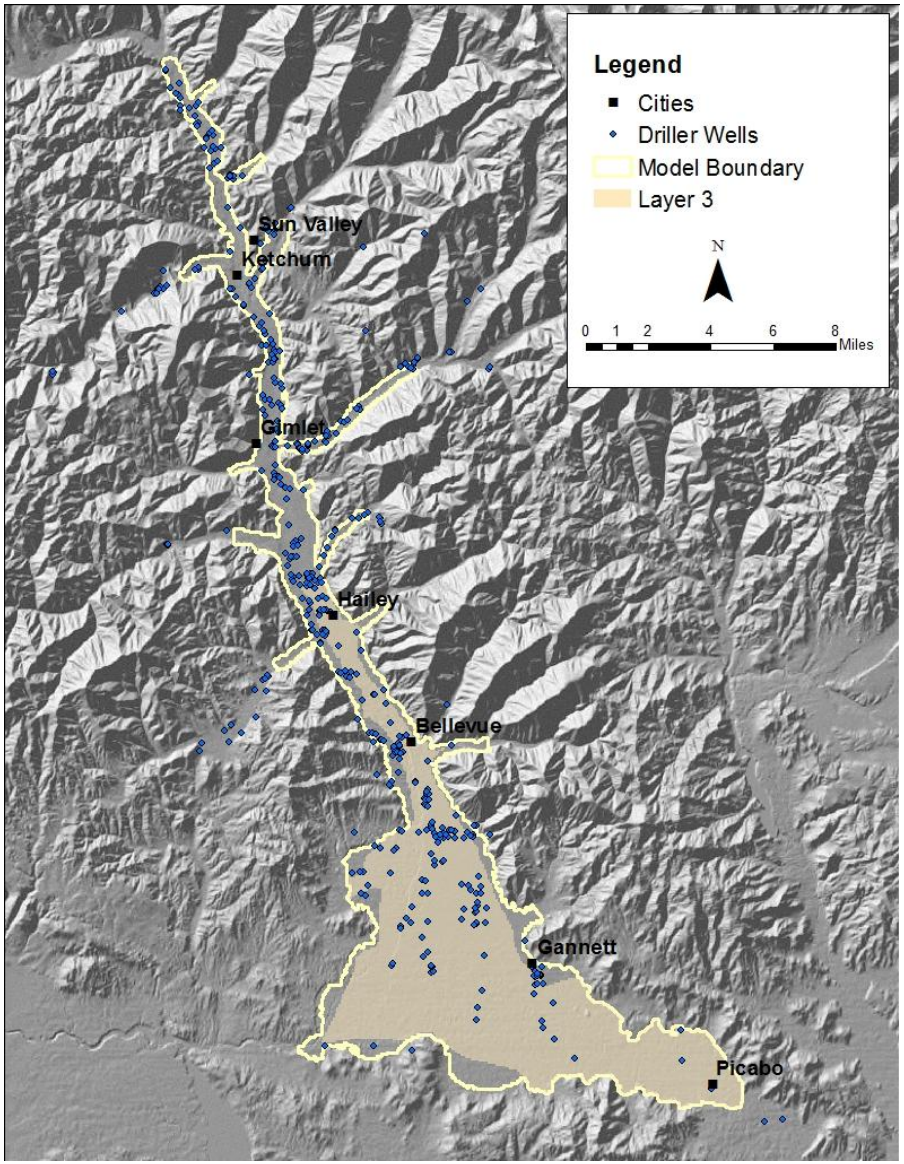
- 76 wells with 214 observations
- 120 in two wells
- 14 wells with more than 1 water-level
- 94 observations dispersed amongst 74 other wells
- Since download in June
  - Jim thinks there should be 98 wells
  - We have found other observation wells
  - We are making sure all measured wells are GPSed and updated in database.
  - Both the number of wells and the number of observations will increase
  - Significant percentage of the observations were collected by the USGS in Oct 2006

Additional water-level data are needed

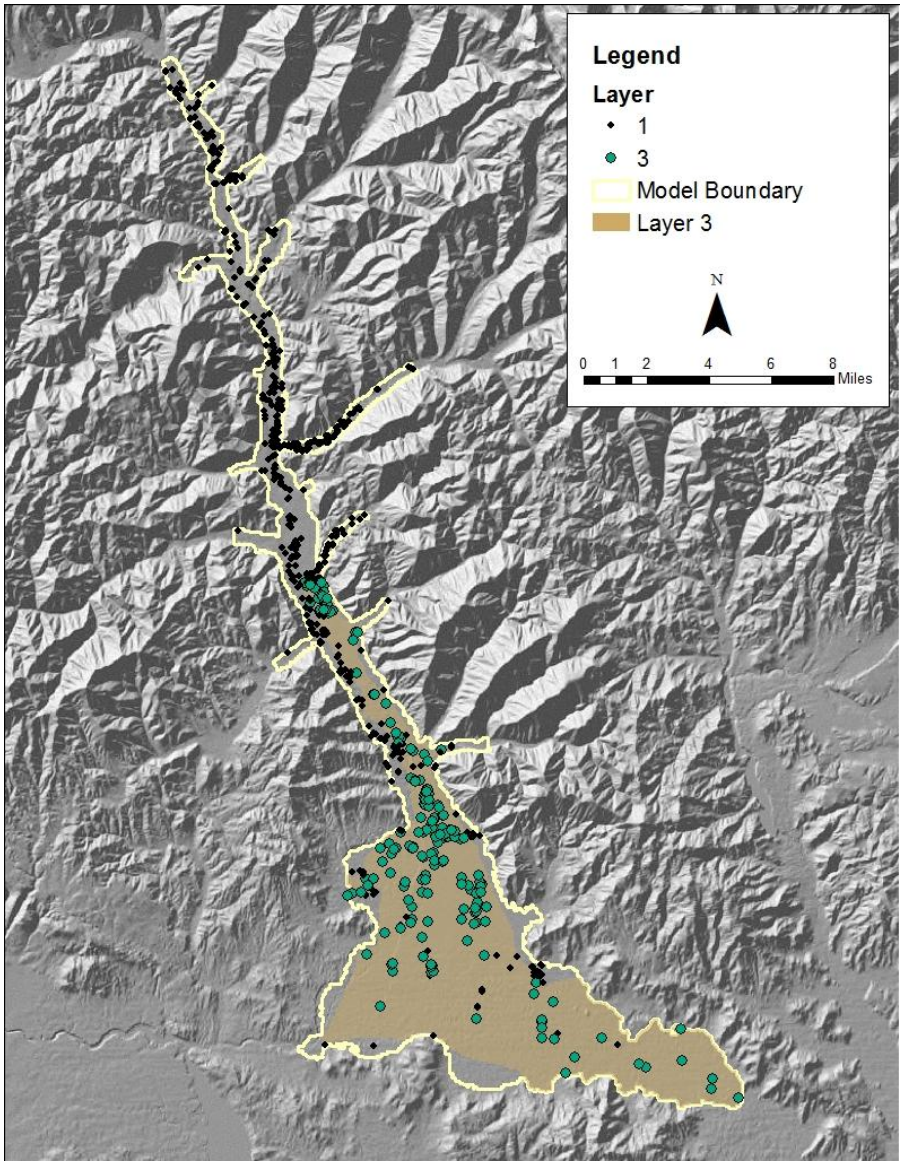
- Bartolino and Adkins (2012) evaluated 2,500 well driller reports to construct the bedrock surface map.
- Quality logs with good locations were selected
- Not all of these wells were drilled during the calibration period
  - Water-level data from these wells could be used to augment the observation well data



- Geocoded well logs
  - Geocoded = finding geographic coordinates from data such as stree addresses
  - 290 wells
  - 78 greater than 100 ft (30.5 m) in the area with 3 layers



- Driller located well logs
  - 501 wells
  - 168 greater than 100 ft (30.5 m) in the area with 3 layers



- Layer assignments
  - 501 wells
  - 168 greater than 100 ft (30.5 m) in the area with 3 layers

Wood River Model Water-levels

Criteria	Number of Observations
Observation Well Water-Levels	214
Geocoded Driller Reports	272
Driller Located Driller Reports	428
Total	914
1/1/1995 - 1/1/2000	308
1/1/2000 - 1/1/2005	361
1/1/2005 - 1/1/2010	245
Total	914

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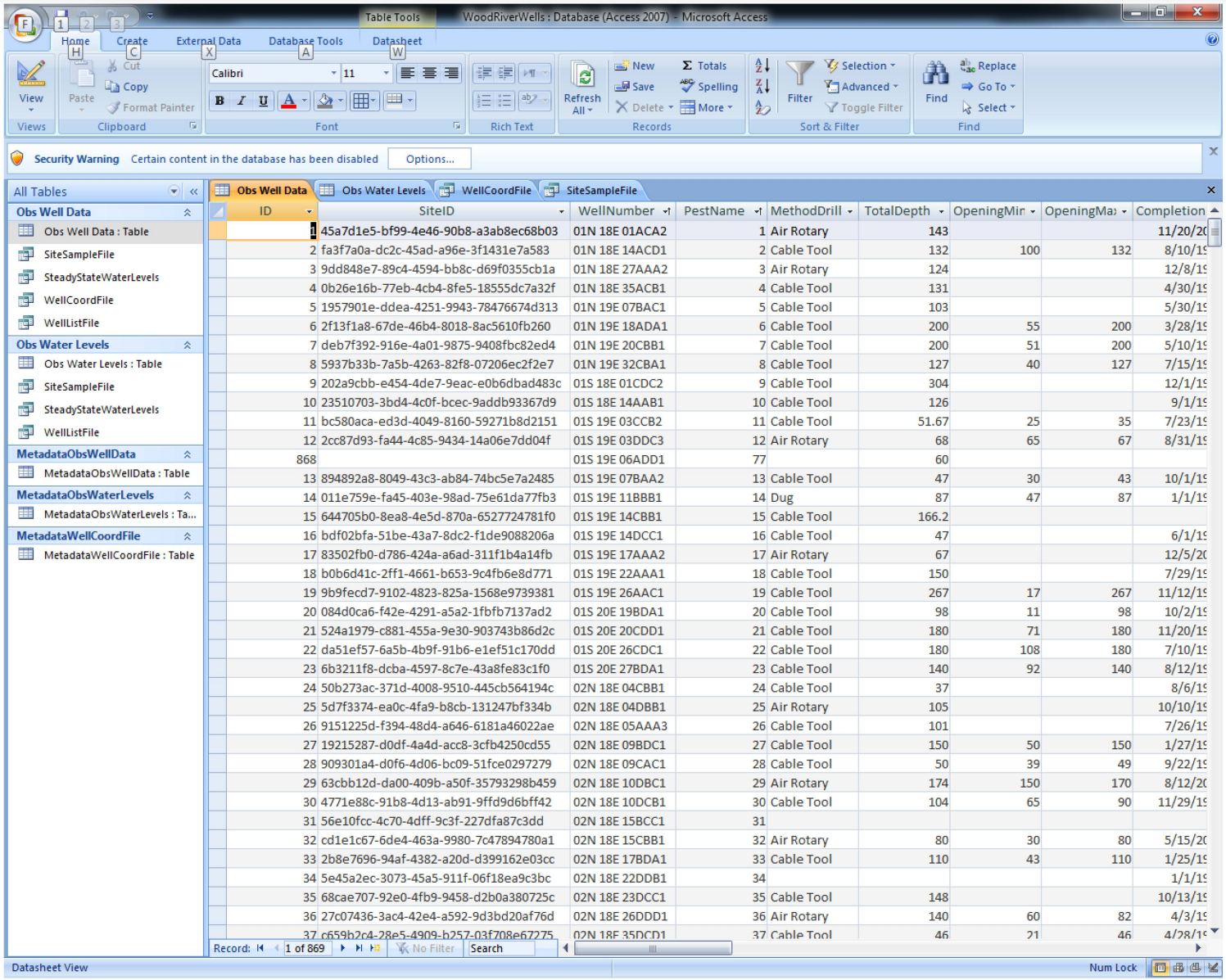

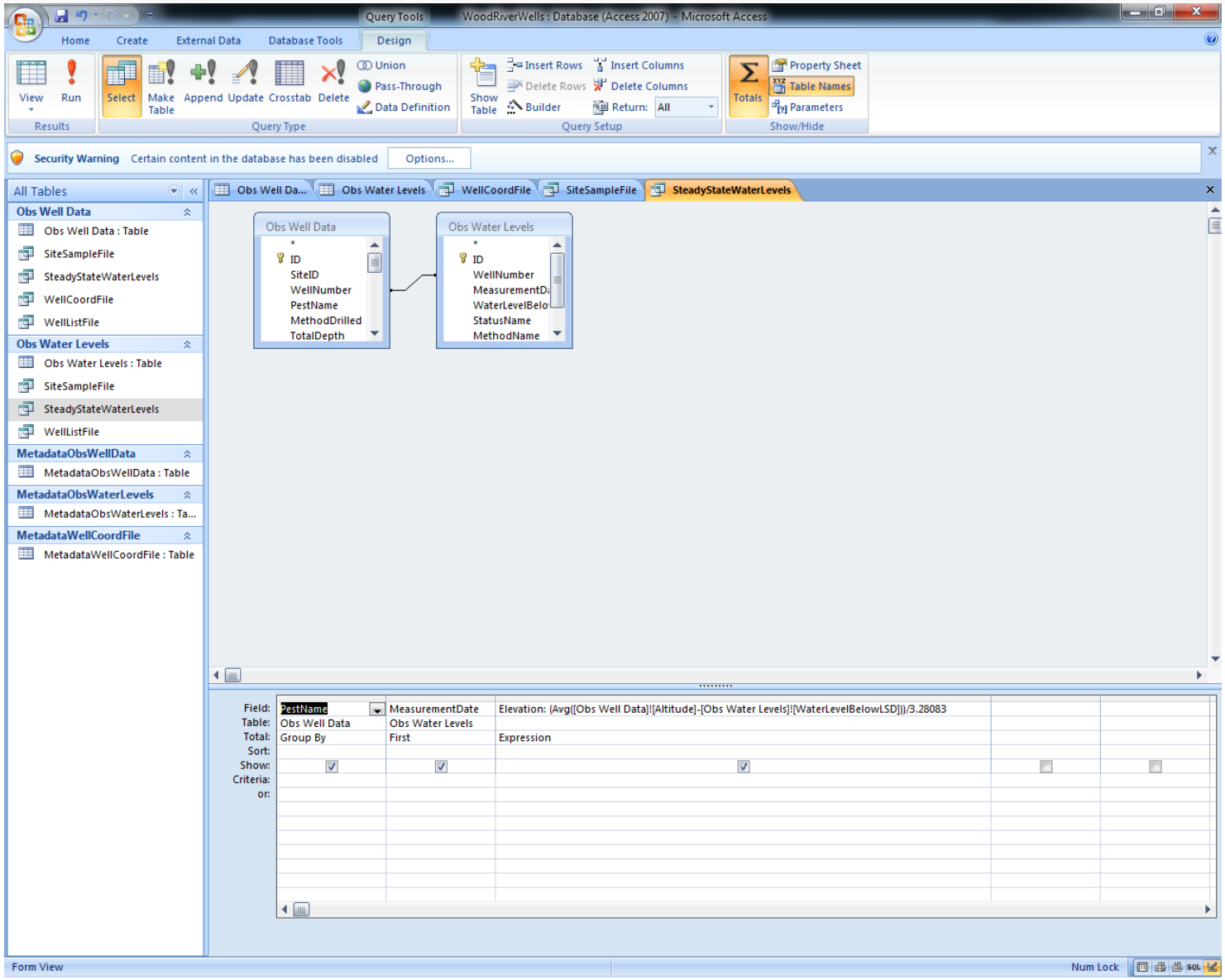
Query Tools
WoodRiverWells : Database (Access 2007) - Microsoft Access
Home
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Database Tools
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Crosstab
Delete
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Pass-Through
Data Definition
Results
Query Type
Show Table
Insert Rows
Delete Rows
Builder
Insert Columns
Delete Columns
Return: All
Query Setup
Totals
Property Sheet
Table Names
Parameters
Show/Hide
Security Warning
Certain content in the database has been disabled
Options...
All Tables
Obs Well Data
Obs Well Data : Table
SiteSampleFile
SteadyStateWaterLevels
WellCoordFile
WellListFile
Obs Water Levels
Obs Water Levels : Table
SiteSampleFile
SteadyStateWaterLevels
WellListFile
MetadataObsWellData
MetadataObsWellData : Table
MetadataObsWaterLevels
MetadataObsWaterLevels : Ta...
MetadataWellCoordFile
MetadataWellCoordFile : Table
Obs Well Da...
Obs Water Levels
WellCoordFile
SiteSampleFile
SteadyStateWaterLevels
Obs Well Data
*
ID
SiteID
WellNumber
PestName
MethodDrilled
TotalDepth
Obs Water Levels
*
ID
WellNumber
MeasurementDa
WaterLevelBelo
StatusName
MethodName
Field: PestName | MeasurementDate | Elevation: (Avg([Obs Well Data]![Altitude]-[Obs Water Levels]![WaterLevelBelowLSD]))/3.28083
Table: Obs Well Data | Obs Water Levels
Total: Group By | First | Expression
Sort:
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Criteria:
or:
Form View
Num Lock

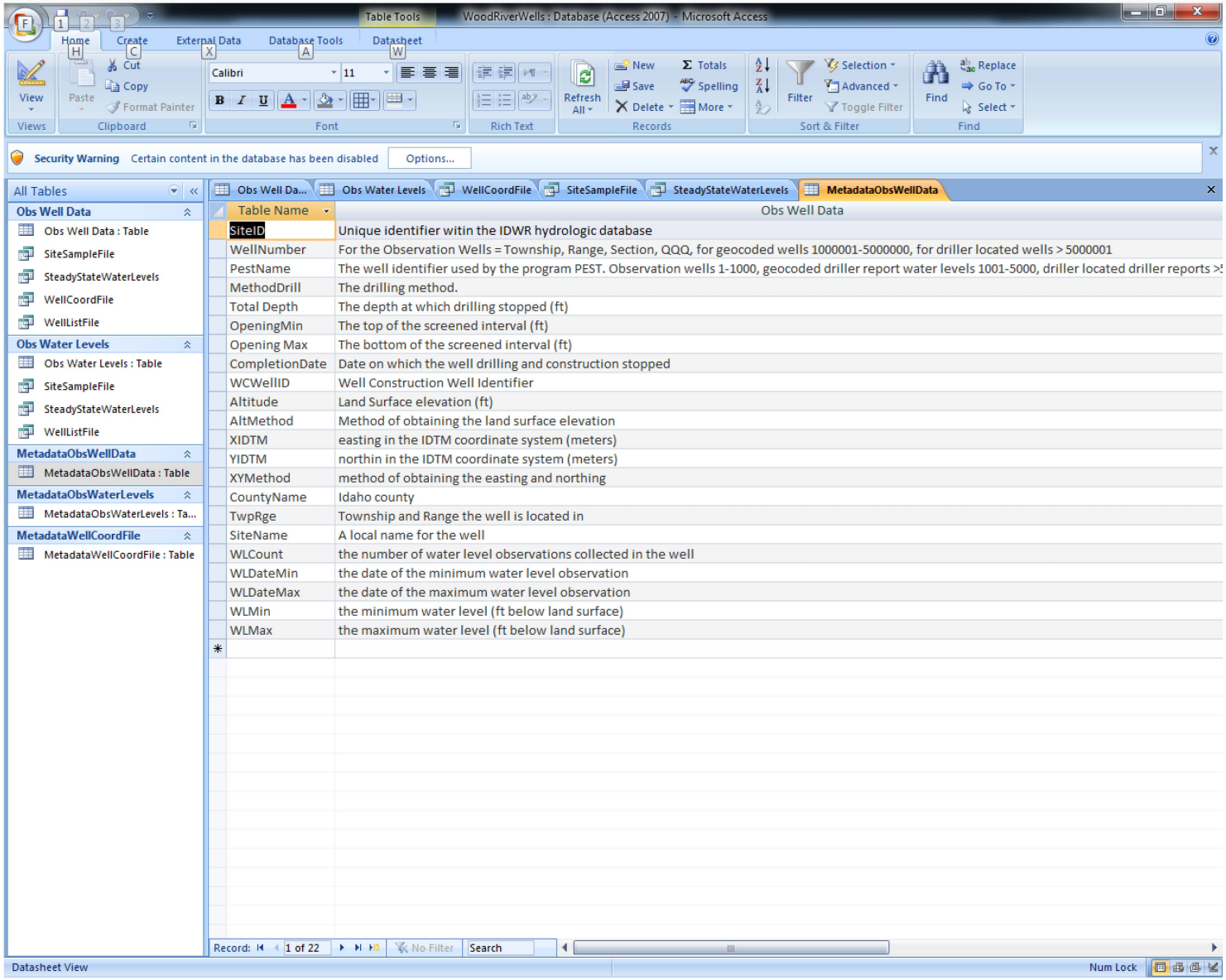
Table Tools
WoodRiverWells : Database (Access 2007) - Microsoft Access
Home
Create
External Data
Database Tools
Datasheet
Security Warning
Certain content in the database has been disabled
Options...
All Tables
Obs Well Data
Obs Well Data : Table
SiteSampleFile
SteadyStateWaterLevels
WellCoordFile
WellListFile
Obs Water Levels
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SiteSampleFile
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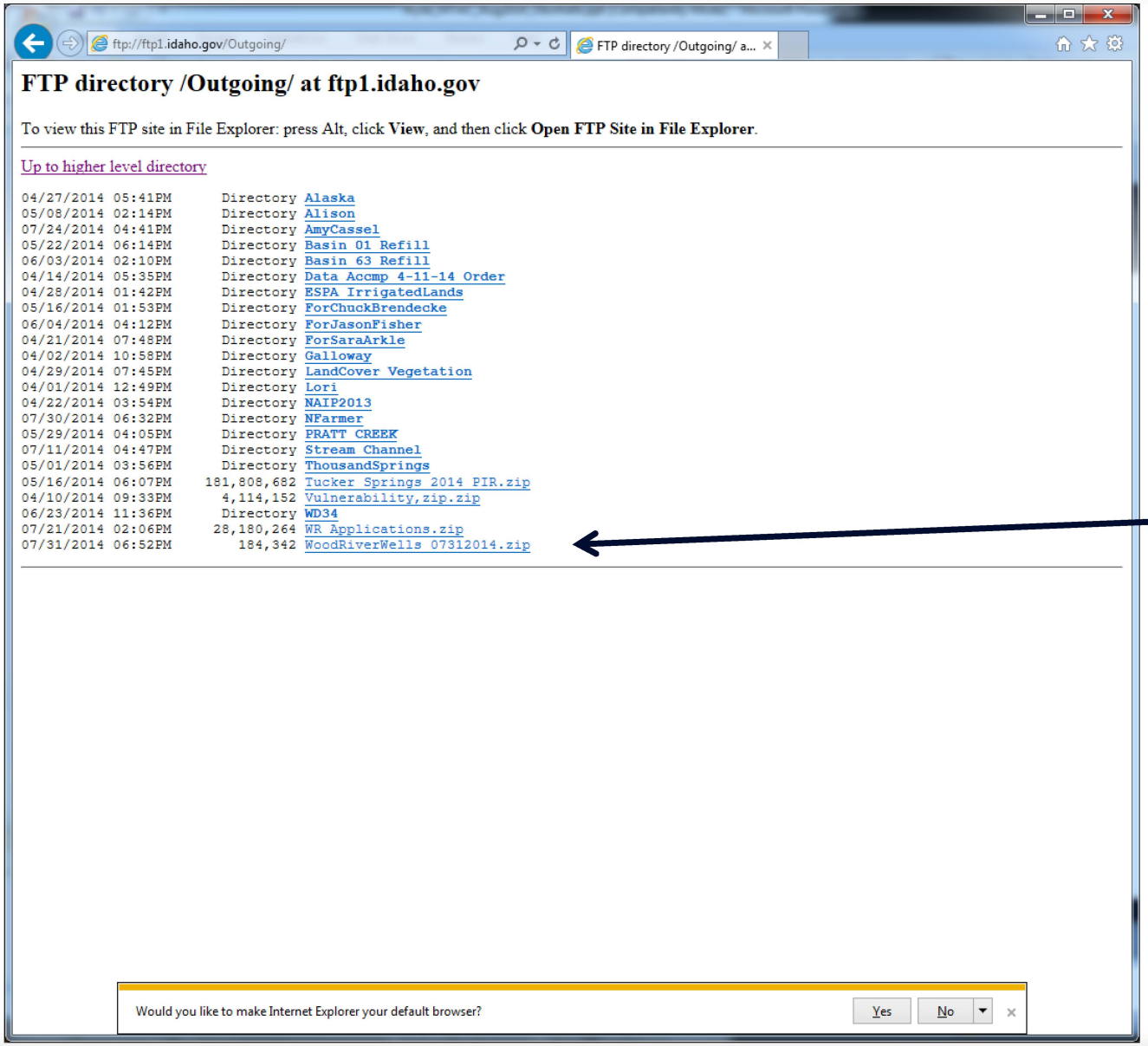
WellListFile
MetadataObsWellData
MetadataObsWellData : Table
MetadataObsWaterLevels
MetadataObsWaterLevels : Ta...
MetadataWellCoordFile
MetadataWellCoordFile : Table
Obs Well Da...
Obs Water Levels
WellCoordFile
SiteSampleFile
SteadyStateWaterLevels
MetadataObsWellData
Table Name
Obs Well Data
SiteID
Unique identifier witin the IDWR hydrologic database
WellNumber
For the Observation Wells = Township, Range, Section, QQQ, for geocoded wells 1000001-5000000, for driller located wells > 5000001
PestName
The well identifier used by the program PEST. Observation wells 1-1000, geocoded driller report water levels 1001-5000, driller located driller reports >
MethodDrill
The drilling method.
Total Depth
The depth at which drilling stopped (ft)
OpeningMin
The top of the screened interval (ft)
Opening Max
The bottom of the screened interval (ft)
CompletionDate
Date on which the well drilling and construction stopped
WCWellID
Well Construction Well Identifier
Altitude
Land Surface elevation (ft)
AltMethod
Method of obtaining the land surface elevation
XIDTM
easting in the IDTM coordinate system (meters)
YIDTM
northin in the IDTM coordinate system (meters)
XYMethod
method of obtaining the easting and northing
CountyName
Idaho county
TwpRge
Township and Range the well is located in
SiteName
A local name for the well
WLCount
the number of water level observations collected in the well
WLDateMin
the date of the minimum water level observation
WLDateMax
the date of the maximum water level observation
WLMin
the minimum water level (ft below land surface)
WLMax
the maximum water level (ft below land surface)
Record: 1 of 22
No Filter
Search
Datasheet View
Num Lock

Database with 'current' water-level data

- Go to ftp://ftp1.idaho.gov
- Login using the account name idwrgen and the password Rg7d952O (capital O, not the number 0)
- Click "View" then click "Open FTP Site in Windows Explorer" This will open a new window.
- Log in again using the same user name and Password
- Click "Outgoing" to get files from IDWR. Look for "WoodRiverWells_07312014.zip"
- Drag "WoodRiverWells_07312014.zip" from FTP site onto your desktop.
- Unzip and enjoy.


ftp://ftp1.idaho.gov/Outgoing/
FTP directory /Outgoing/ a...
FTP directory /Outgoing/ at ftp1.idaho.gov
To view this FTP site in File Explorer: press Alt, click View, and then click Open FTP Site in File Explorer.
Up to higher level directory
04/27/2014 05:41PM Directory Alaska
05/08/2014 02:14PM Directory Alison
07/24/2014 04:41PM Directory AmyCassel
05/22/2014 06:14PM Directory Basin 01 Refill
06/03/2014 02:10PM Directory Basin 63 Refill
04/14/2014 05:35PM Directory Data Accmp 4-11-14 Order
04/28/2014 01:42PM Directory ESPA IrrigatedLands
05/16/2014 01:53PM Directory ForChuckBrendecke
06/04/2014 04:12PM Directory ForJasonFisher
04/21/2014 07:48PM Directory ForSaraArkle
04/02/2014 10:58PM Directory Galloway
04/29/2014 07:45PM Directory LandCover Vegetation
04/01/2014 12:49PM Directory Lori
04/22/2014 03:54PM Directory NAIP2013
07/30/2014 06:32PM Directory NFarmer
05/29/2014 04:05PM Directory PRATT CREEK
07/11/2014 04:47PM Directory Stream Channel
05/01/2014 03:56PM Directory ThousandSprings
05/16/2014 06:07PM 181,808,682 Tucker Springs 2014 PIR.zip
04/10/2014 09:33PM 4,114,152 Vulnerability,zip.zip
06/23/2014 11:36PM Directory WD34
07/21/2014 02:06PM 28,180,264 WR Applications.zip
07/31/2014 06:52PM 184,342 WoodRiverWells 07312014.zip
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Yes
No

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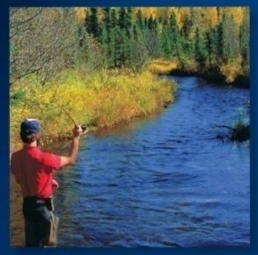

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