

EQuIS for ArcGIS Training Exercises



EQuIS for ArcGIS Training Exercises

Table of Contents

EQuIS for ArcGIS
Adding a Facility3
Launching the EQuIS for ArcGIS Interface:
Determining Spatial Reference:7
Options Menu11
Application Options:
Documents Options:
Map Settings Options:
EZView Options:
Interfaces Options:
Labeling Features:
Un-Labeling Features:20
Related Tables21
Viewing Tables:
Joins and Relates:
Adding New Locations and Modifying Location Groups25
Adding and Editing New Locations25
Creating and Modifying Location Groups28
EQuIS View Lithology Tool
View Lithology
EZView Layer Builder32

EarthSoft – EQuIS for ArcGIS Training Exercises

EQuIS for ArcGIS Training Exercises

Create a Layer for a Single Location
Create a Layer with a Single Analyte:
Creating a Layer with Multiple Analytes:40
Create an Action Level Exceedance Layer:45
Creating a Groundwater Elevation Query Layer:47
Missing: Spider Diagrams with EnviroInsite
Golden Software's Surfer and ArcGIS:49
LogPlot Boring Logs
gINT Boring Log
Multi-Point 3D Functions: RockWorks, gINT and GMS49
Selecting multiple locations with the Digitize Line Tool
Rockworks - 3D Fence Diagrams56
GMS Lithology Export
CTech's EVS Export
Needs update, add to: Create 3D features Error! Bookmark not defined.
ArcGIS 3D Analyst Integration62

EarthSoft – EQuIS for ArcGIS Training Exercises



EQuIS for ArcGIS

Adding a Facility

EarthSoft's **EQuIS for ArcGIS** is an interface for ESRI's ArcGIS desktop applications that allows users to query, and map the information found in an EQUIS databases. The EQUIS for ArcGIS interface is ideal for displaying and effectively communicating project information.

IMPORTANT: The following fields must be populated in EQuIS Professional with corresponding values (e.g., the IDENTIFIER and COORD_TYPE_CODE fields in DT_FACILITY and DT_COORDINATE have to match and be populated) in order to use EQUIS for ArcGIS:

- DT_FACILITY.COORD_TYPE_CODE
- DT_FACILITY.IDENTIFIER
- DT_COORDINATE.COORD_TYPE_CODE
- DT_COORDINATE.IDENTIFIER

To determine if these fields have been populated properly, launch EQuIS Professional and view the ArcGIS toolbar at the bottom of the screen. If this toolbar is not populated, the fields listed above have not been populated properly.

Launching the EQuIS for ArcGIS Interface:

Launch the EQuIS for ArcGIS Interface in one of two different ways:

Directly within ArcGIS (*Recommended*) – Launch ArcMap/ArcScene from Windows Explorer. If the EQuIS for ArcGIS toolbar is not already available, select View > Toolbars > EQuIS for ArcGIS.



Note if the interface is launched from within EQuIS Professional, the facility you originally logged into will be displayed by default. Ignore (or turn off) the layer and continue with the steps below.

EarthSoft – EQuIS for ArcGIS Training Exercises



-OR-

From within **EQuIS Professional** – Select the **GIS** ribbon and then select the **ArcMap** icon from the **ArcGIS** group.



Figure 1 – GIS group of the Interfaces ribbon in EQuIS Professional

Select EQuIS > Add Facility from the EQuIS for ArcGIS toolbar. The EQuIS Professional login screen will



Figure 2 – Selecting Add Facility on the EQuIS for ArcGIS toolbar

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 4





Figure 3 – EQuIS Professional login screen

There are several options for adding a facility, which appear along the **EQuIS Login** toolbar. Hover your mouse pointer over each option to display the tooltip, which describes the option in detail:

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 5

EQuIS for ArcGIS Training Exercises Adding a Facility

Toolbar	Option	Purpose
Group		
Sample Locations Layer	Use Existing	Use this option if you already have the sample location layer created on your local drive. This option also checks the EQuIS database to ensure no changes have been made since the sample
		location layer was last created. If changes are detected then the sample location layer is automatically updated
	Overwrite Locations	Overwrites and creates a new sample location layer
	Do Not Map	Connects to the EQuIS facility without creating a sample locations
		layer. This is useful when running modules that do not interact with
		the sample locations layer.
Data	Open Tables	Opens the corresponding EQuIS database tables as part of the
Table		source in ArcGIS.
Options	Create Relates	Creates in-memory relates between the EQuIS database tables and
		the Sample Locations Layer. Relates can only be created when the
		'Open Tables' option is selected.
	Use Database	Opens the EQuIS Sample Locations Layer with a live connection to
	Tables	the SQL or Oracle database. This is the fastest option to open EQuIS
		5 database tables.
	Create Query	Opens each EQuIS database table using the Make Query Table
	Tables	ArcGIS geoprocessing tool.
	Copy Tables	Copies each populated EQuIS database to user geodatabase. This
	Locally	option is very helpful to view/analyze EQuIS data without an active
		connection to the EQuIS database.
	Use Existing	Uses any existing tables copied to your local file/personal
		geodatabase when using the Copy Tables Locally option. If the table
		does not already exist, it will be copied locally. This option is
		checked by default.

Select the Use Existing option and uncheck Open Tables.

Double-click on the Springfield training facility to log-in. The Springfield Spatial Reference screen opens.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 6



Springfield Spatial Reference	x		
Spatial Reference Undefined The spatial reference for this facility has not been set.			
Please select a map projection and coordinate units for this facility:			
Unix lowin Cool dinate System	Selection		
Map Units	Elevation Units		
Meters	International meter 🗾 👻		
< Ba	ck Next > Cancel		

Figure 4 – Springfield Spatial Reference screen

Determining Spatial Reference:

The first time a facility is opened in ArcGIS, or when a facility is opened without having a spatial reference defined (coordinate system/projection, coordinate bounds (domain), and xy (z) units), a custom dialog is displayed which displays the domain of the facility. The domain is based on the values in the facility's X_COORD, Y_COORD, and SURF_ELEV fields from the DT_LOCATION table.

Choose **Select** to edit the spatial reference properties.

On the XY Coordinate System tab of the Spatial Reference Properties screen, choose Select to define a predetermined coordinate system.

Browse to C: \Coordinate Systems \Projected Coordinate Systems \UTM NAD 1927 and select NAD_1927_UTM_Z one 17N.prj.

Click Add.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 7



Spatial Reference Properties	
XY Coordinate System X/Y Domain	Z Domain M Domain
Name: NAD_1927_UTM_Zon	∍_17N
Details:	
Projection: Transverse_Mercator False_Easting: 500000 000000 False_Northing: 0.000000 Central, Meridian: -81.000000 Scale_Factor: 0.999600 Latitude_Of_Origin: 0.000000 Linear Unit: Meter (1.000000) Geographic Coordinate System: GCS Angular Unit: Degree (0.0174532925 Prime Meridian: Greenwich (0.000000 Datum: D_North_American_1927 Spheroid: Clarke_1866	North_American_1927 19943295) 000000000000)
Select Select a predefine	d coordinate system.
Import a coordinat domains from an e feature dataset, fe	e system and X/Y, Z and M xisting geodataset (e.g., ature class, raster).
New Create a new coor	dinate system.
Modify Edit the properties coordinate system.	of the currently selected
Clear Sets the coordinat	e system to Unknown.
Save As Save the coordina	te system to a file.
	K Cancel Apply

Figure 5 – XY Coordinate System tab

The **XY Coordinate System** tab now displays the details of the predefined coordinate system you have chosen.

Click Apply and then OK.

EarthSoft

EQuIS for ArcGIS Training Exercises Adding a Facility

Springfield Spatial Reference	~ ~	x
Change Spatial Reference Edit the spatial reference for this	facility.	
Please select a map projection and c	oordinate units for this fa	cility:
NAD 1927 OTM Zone 17N	Sei	ect
Map Units	Elevation Units	
Meters 👻	International meter	•
< Bac	Next >	Cancel

Click **Next** on the **Springfield Spatial Reference screen**. A layer is created in ArcGIS and displays the different types of sampling locations in the Springfield facility. (This may take a few moments depending on the processor's speed.)



Figure 6 – Types of sampling locations layer for the Springfield facility

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 9





Note: The coordinate system selection (**NAD_1927_UTM Zone 17N.prj**) is stored in RT_COORD_TYPE so that you will not need to make this selection again for this database.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 10



Options Menu

The EQuIS for ArcGIS **Options** menu allows the user to change various settings within the EQuIS for ArcGIS interface. The **Options** menu includes setting options for the interface itself, for database connection options to EQUIS Professional, and for other interfaces, such as RockWorks and Surfer. In this exercise, we will explore the features within the EQUIS for ArcGIS **Options** Menu.



Users may want to review the Options Menu and customize their Options Settings in the EQuIS for ArcGIS interface prior to adding a facility.

Application Options:

From the EQuIS for ArcGIS toolbar, select **EQUIS > Options**. The **EQUIS for ArcGIS Options** screen will open.



Figure 7 – Application Node from EQuIS for ArcGIS Options

- The Output Geodatabase Type options in the top-left pane allows for the selection of the format of the output feature class file, as a File Geodatabase or a Personal Geodatabase, and also select to create geodatabase class extensions.
- The Metadata options in the lower-left pane enable automatically updating the metadata associated with your EQuIS for ArcGIS project as follows:

EarthSoft – EQuIS for ArcGIS Tra	aining Exercises
----------------------------------	------------------

Page 11



Update metadata for all output created by	If checked, this updates the metadata for all
EQuIS for ArcGIS, can be viewed/edited	output created by the interface, and the
with ArcCatalog	metadata can be viewed and edited in
	ArcCatalog.
Automatically create metadata thumbnail	If checked, this will create a thumbnail image
image	with any metadata created.
Use 3D thumbnails when created in	If checked, 3D thumbnails will be used when
ArcScene	metadata is created in ArcScene.

- The *Settings* in the top-right pane are selected by default:
 - Show active EQuIS facility in application Title Bar
 - o Multipatch layers only visible in 3D Preview Window

In the lower-right pane, there are two options for the 'Add Facility' command Defaults:

Recreate the dt_location feature class every time the 'Add Facility' command is run" is the option that can be set to use the "**Overwrite Existing**" Sample Locations Feature on the EQuIS Login screen by default.

Connect to all populated EQuIS database tables and establish relationships when running the 'Add Facility' wizard is the 'Add Facility' Command.



Holding the mouse over the various selections in the **Options** window will display helpful tooltips.

The **Restore Default** button is available should you need to reset any of the selections on the **Options** window to the EQuIS defaults.

- 1. Select **Email Support** at bottom left to copy version information about the system and the EQuIS for ArcGIS interface to the clipboard.
- 2. Open an email client and paste the copied information into the email message.
- 3. Send the message to <u>help@earthsoft.com</u>.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 12



If an issue is encountered with the interface, this is a simple way to inquire to EarthSoft Support with pertinent details to facilitate resolution of the issue.

4. Close the dialog/email to return to the EQuIS for ArcGIS Options window.

Documents Options:

5. From the EQuIS for ArcGIS Options window, select the Documents tab.

EQuIS for ArcGIS 5.5.1011.210		
Application Doc	uments Map EZView Interface	s
Default document	properties	Save options during 'Add Facility' command
Category Keywords	EQuIS Environmental, database, EarthSoft	Data Source Options
Hyperlink Base		Store relative path names
Comments	Created with EQUIS for ArcGIS 5.5.1011.210	 Automatically save the map document after running the 'Add Facility' command Save thumbnail image with map
Restore Defaul	:s Email Support	OK Cancel

Figure 8 – Documents Options

- 6. In the left-hand pane, the **Default document properties** can be adjusted to include a **Category**, **Keywords**, a **Hyperlink Base**, and any **Comments** pertaining to the created document.
- 7. In the right-hand pane, the Save options during 'Add Facility' command include:

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 13



Data Source Options	Stores the file system path names to data sources as full path names
	Stores the file system path names to data sources as relative path names
Automatically save the map document after running the 'Add Facility' command	If selected, the map is automatically saved after a Facility is added.
Save thumbnail image with map	If selected, a thumbnail image of the map is saved with the map.

Map Settings Options:

1. From the EQuIS for ArcGIS Options window, select the Map tab.

EQuIS for ArcGIS 5.5.1011.210	x
Application Documents Map EZView Interfaces	
Page Layout Options for 'Add Facility' command Create map grid graticules Create index grid Create calibrated border Add Map Surrounds (North Arrow, Legend)	Layer Symbology Defaults
EarthSoft Styles Restore Defaults Email Support	Scale symbols when a reference scale is set Sample Locations Layer Symbolize by: Ioc_type OK Cancel

Figure 9 – Map Settings

The Page Layout Options for 'Add Facility' command pane offers the following options:

Create map grid graticules	If selected, map grid graticules are automatically created when a facility is added.
Create index grid	If selected, an index grid is automatically created when a facility is added.
Create calibrated border	If selected, a calibrated border is automatically created when a facility is added.
Add Map Surrounds	If selected, map surrounds, such as a north arrow or legend are automatically added to the map.

2. Select the EarthSoft Styles button.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 14



- 3. Expand the **EarthSoft.style** node from the tree on the left.
- 4. Select Marker Symbols to see the types of symbols that are available for point features.

Figure 10 – Marker Symbols for point features in the Style Manager



The **Category** corresponds to the EQuIS facility code (DT_FACILITY_FACILITY_CODE, e.g., **Springfield)**. The interface will first look for facility-specific symbols, and then look for any of the other categories that match the value being rendered. For sample location mapping, the value being rendered is DT_LOCATION.LOC_TYPE by default and this corresponds to the entries in the **Name** column in the style gallery.

5. Select Close to exit the Style Manager.

The Layer Symbology Defaults in the right-hand pane offer several options:

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 15



Color Ranges	Sets color ranges as the layer default, instead of graduated symbols.
Graduated Symbols	Sets graduated symbols as the layer default, instead of color ranges.
Class Breaks	Allows the number of class breaks used in symbology to be set.
Display counts for unique value renderer symbology	Counts for the unique value renderer symbology are displayed.
Create sample location layer as a group layer	Creates the sample location layer as a group layer.
Use log normalization for supported renderers	Log normalization is used when rendering specific layers.
Scale symbols when a reference scale is set	Sets symbols to the reference scale.
Create sample location layer as a group layer	Will break unique values of the sample locations layer into their own separate sub-layer.
Sample Locations Layer Symbolize by	Identifies the EQuIS field from the DT_LOCATION table which is used for symbolizing the Sample Locations Layer (DT_LOCATION.LOC_TYPE by default).

EZView Options:

6. From the EQuIS for ArcGIS Options window, select the EZView node.

Application	Documents	Мар	EZView	Interfaces	
EZView Laye Default C © Data © Geou V Nev V Use © Shor	erBuilder Butput Format Ibase Connectio database Featur er overwrite any '3D' Pie Charts I w symbology dia	n re Class/T y existing for chemic alog when	able layer quer al layer cri creating la	ies osstabs ayers	EZView LayerBuilder Multipatch Geometries Same radius for all locations Proportional to concentration Min/Max values above represent Fraction of each layer's extent for the radii Fixed map units to be used for all layers
Restore I	Defaults	Ema	il Support		OK Cancel

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 16



Figure 7 – EZView LayerBuilder window

There are several different options when creating layers with the **EZView LayerBuilder**, including:

Database connection	Allows the data to update as changes are made to the query.
Geodatabase Feature Class/Table	Creates a new geodatabase feature class/table each time the query is changed.
Never overwrite any existing layer queries	Preserves all existing layer queries when creating a new layer.
Use '3D' Pie Charts for chemical layer crosstabs	Uses Pie Chart symbology for all chemical layer crosstabs created.
Show symbology dialog when creating layers	Displays the symbology dialog when a layer is created.

In the **EZView Layer Builder Multipatch Geometries** pane are several options for Multipatch Geometries:

Same radius for all locations	All spheres will have the same radius.		
Proportional to concentration	Spheres will have radii proportional to their concentrations.		
Min/Max boxes	Enter the numeric min/max values, defined further below.		
Min/Max values as Fraction of each layer's extent for the radii	Min/max values of the spheres will represent the fraction of each layer's extent for the radii.		
Min/Max values as Fixed map units to be used for all layers	Min/max values of the spheres will represent fixed map units to be used for all created layers.		

Interfaces Options:

From the EQuIS for ArcGIS Options window, select the Interfaces tab.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 17



EQuIS for ArcGIS 5.5.1011.210	x					
Application Documents Map EZView Interfaces						
RockWorks (RockWare)	Surfer (Golden Software)					
⊙ Not Installed	Label contours with 'Contours' in Style Gallery					
🔿 RockWorks 2004	- Pup hidden unless 'Allow Surfey modifications' is					
O RockWorks 2006	checked on the Contours with Surfer dialog					
ORockWorks 14						
RockWorks 15						
\fbox For 3D Fences, symbolize with EQuIS colors (rt_material) instead of style gallery symbols						
Show advanced options when launching 3rd-party application interfaces						
Restore Defaults Email Support	OK Cancel					

Figure 12 – Interfaces Options

When interfacing with RockWorks, several different options are available in the left-hand pane:

Not Installed, RockWorks 2004, RockWorks	Detects the version of RockWorks installed on		
2006, RockWorks 14 or RockWorks 15	the local machine.		
For 2D Foncos, symbolizo with EQuIS colors	Uses EQuIS colors from the RT_MATERIAL table		
(rt_material) instead of style gallery symbols	for 3D Fences, instead of the symbols in the		
	ESRI style gallery.		

Additionally, when interfacing with Surfer to create contours, two other options are available in the right-hand pane:

Label contours with 'Contours' in Style gallery	If selected, uses labels for contours that are set		
Laber contours with contours in style gallery	in the ESRI Style Gallery		
Run hidden unless 'Allow Surfer modifications' is checked on the Contours with Surfer dialog	If selected, Surfer will run in the background when creating contours, and will not open, unless the "Allow Surfer modifications" option is selected in the contours dialog.		

At the bottom of the Interfaces tab, there is also a checkbox that will open advanced options dialogs whenever a 3rd-party application or interface is launched (such as RockWorks or Surfer). This option displays the same dialog for gINT, LogPlot, GMS that EQuIS Professional uses when exporting files to these applications. When this mode is used with RockWorks 3D Fences, the gridding method and other parameters can be modified.

Select OK to close the EQuIS for ArcGIS Options menu.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 18



EQuIS for ArcGIS Training Exercises Labeling Features

Labeling Features:

The **ArcGIS Style Manager** provides categories of styles (style galleries) to enable standardization of all aspects of map symbology for consistent map documents. The EQuIS for ArcGIS Interface takes advantage of this feature by creating layers based on the EarthSoft style gallery (setup in the EQuIS for **ArcGIS Options** menu). In this exercise, we will learn how to label selected location features in the ArcGIS Desktop Interface.

With the Springfield Training facility already added, click on **Select Features** if from the main ArcMap toolbar.

Click on one of the locations to highlight it.

Q ArcView - ArcMap - EQuIS for ArcGIS: Springfield [Springfield23] File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help 🗋 🧀 🔚 👶 % 🗃 🛍 🗙 🗠 🗠 🚸 - 1.6,144 🔻 🛫 🗐 🌀 👼 🖸 🥍 📢 🖕 EQuIS+ Ψ× Table Of Contents • 🗽 🔍 🤤 📮 🔝 0 85 See 🖻 🗹 Springfield Locations (demos 0 Type of Sampling Locatio *** HONITORING WELL (24) SOIL BORING (20) SURF WATER SAMPLING (4 d) k (4) 0 1 (F) ** M (F sti

Figure 13- Selecting A Location in ArcGIS

Right-click over the selected locations and select **Label** from the dropdown menu. The DT_LOCATION.SYS_LOC_CODE labels appear for the selected locations.

EarthSoft – EQuIS for ArcGIS Training Exercises

Copyright © 2011 Earthsoft, Inc.

Comment [ELM1]: With v5.5.1, this right-click feature is not working.

Page 19

EarthSoft

EQuIS for ArcGIS Training Exercises Labeling Features



Figure 148 – Labeled locations

*

*

The EarthSoft style gallery is available for customizing the text style of the labels on a perfacility basis. Choose **Customize > Style Manager > EarthSoft.Style > Labels > Label from the ArcGIS**.

Un-Labeling Features:

To turn off the labels, right-click on the Locations layer and deselect **Label Features**. All of the labels from the selected locations are removed.

You can label all layer locations from the same menu without making any feature selection.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 20



EQuIS for ArcGIS Training Exercises Related Tables

Related Tables

In the EQuIS for ArcGIS Interface, users can access the contents of EQUIS tables to create custom layers in ArcGIS to use with other ArcGIS features. Users may also create joins and relates between EQUIS tables if both the **Open Tables** and **Create Relates** options are chosen when adding a facility into ArcGIS.

In this exercise, the user will view tables and relate tables using the EQuIS for ArcGIS Interface's tools.

Viewing Tables:

From ArcGIS, select **EQuIS** > Add Facility and select the **Open Tables** and **Create Relates**, and **Create Query Tables** options. Note that selecting these options results in longer loading time.



Figure 15- Selecting Locations in ArcGIS

Select the Springfield Training facility.

The EQuIS tables are listed in the **Table of Contents**. If no tables are listed, select the **List By Source** option for your Table of Contents window.

Tabl	e Of Contents
18:	R 😔 📮 🗄
	Rist By Source

Figure 16 – Table of Contents List By Source table display

After reviewing the tables, right-click on the Monitoring Well sub-layer of the Springfield *Metal Plating Facilities Locations* layer and select **Open Attribute Table**.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 21

EarthSoft

EQuIS for ArcGIS Training Exercises Related Tables

rile calt view	Bookmarks Insert Selection Geoproces:	sing Customize
	📄 🛍 🗙 🔿 🕋 🧄 🗸 (1:5,896)	• 14
Table Of Conte	nts 🕈 🕈 🗙	
s 😒 🖳 🧇 🖉		
🖞 📄 <i>i</i> Layers	<u>^</u>	
	Jsers\Administrator\Dc	
	т 🗊 Сору	
	× Remove	
7	Open Attribute Table	
	SO. Joins and Relates	
🕀 📑 den	nos.ec 🔬 Zoom To Layer	
•	dt_act 💭 Zoom To Make Visible	
11 FTTT	dt act	

Figure 17 – Opening the Attributes Table

- ₽ -	-	🛃 🛛 📲	×				
Springfield L pm,4133\ESDEMO)							
OBJECTID	*	Shape *	facility_id	sys_loc_code	loc_name	data_provider	s
	7	Point Z	1	B-4	B-4	TUTORLAB	SITE
	8	Point Z	1	B-42	B-42	TUTORLAB	SITE
	9	Point Z	1	B-44	B-44	TUTORLAB	SITE
	10	Point Z	1	B-45	B-45	TUTORLAB	SITE
	11	Point Z	1	B-46	B-46	TUTORLAB	SITE
	12	Point Z	1	B-47	B-47	TUTORLAB	SITE
	13	Point Z	1	B-48	B-48	TUTORLAB	SITE
	14	Point Z	1	B-49	B-49	TUTORLAB	SITE
1	15	Point Z	1	B-50	B-50	TUTORLAB	SITE
	16	Point Z	1	B-51	B-51	TUTORLAB	SITE
1	17	Doint 7	1	B 50	B 50	TUTORI AB	CITE

Figure 18 – Attributes table

Joins and Relates:

Select the first record (B-30) and then press and hold **Shift** to select through the fourth records (B-31, B-32 and B-33). These should be the only four records highlighted.

Select **show selected records** from the bottom toolbar in the Table window.



EarthSoft – EQuIS for ArcGIS Training Exercises

Page 22



EQuIS for ArcGIS Training Exercises Related Tables

	OBJECTID *	Shape *	facility_id	sys_loc_code	loc_name	data_provider	subt
F	1	Point Z	1	B-30	B-30	TUTORLAB	SITE 1
	2	Point Z	1	B-31	B-31	TUTORLAB	SITE 1
	3	Point Z	1	B-32	B-32	TUTORLAB	SITE 1
	4	Point Z	1	B-33	B-33	TUTORLAB	SITE 1
•							۴
ŀ	• •	1 → →	📕 💻 (4 out o	f 48 Selected)			

Figure 19 - Showing only the selected records

Select the **Related Tables** pull-down menu from the top toolbar and choose select **dt_sample:dt_sample**.



Figure 209 – Opening related tables

A second tab displays all of the DT_SAMPLE records related to locations B-30, B-31, B-32 and B-33 as selected from the first table.

Copyright © 2011 Earthsoft, Inc.

Select the Show All Records button from the bottom toolbar to view all records in DT_SAMPLE.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 23

Comment [ELM2]: Did not work with v5.5.1 and Arc 10.

EarthSoft

EQuIS for ArcGIS Training Exercises Related Tables

Tab	ole							
÷.		ም 🖓 🛛 🐀 🕯	ĸ					
dt	_sample							×
Г	OBJECTID	facility_id	sample_id	sys_sample_code	sample_name	data_provider	sample	
F	1	1	276	551349	551349	<null></null>	<null></null>	
	2	1	277	BLANK	TU-003A419314	<nuil></nuil>	<null></null>	
	3	1	278	TRIP BLANKA419315	TRIP BLANKA419315	<null></null>	<null></null>	
	4	1	279	TU-001A419312	TU-001A419312	<null></null>	<null></null>	
	5	1	280	TU-002A419313	TU-002A419313	<null></null>	<null></null>	
	6	1	281	TU-003A419314	TU-003A419314	<nul></nul>	<null></null>	
	7	1	282	B30_031502	<null></null>	<null></null>	<null></null>	
	8	1	283	B-30_19970315	B-30_19970315	<null></null>	<nul></nul>	
	9	1	284	B-30_19970613	B-30_19970613	<null></null>	<null></null>	
	10	1	285	B-30_19970911	B-30_19970911	<null></null>	<null></null>	
	11	1	286	B-30_19971210	B-30_19971210	<null></null>	<null></null>	
	12	1	287	B-30_19980310	B-30_19980310	<null></null>	<null></null>	
	13	1	288	B-30_19980608	B-30_19980608	<null></null>	<null></null>	
	14	1	289	B-30-14_19970103	B-30-14_19970103	<null></null>	<null></null>	
	15	1	290	B-30-2_19970103	B-30-2_19970103	<null></null>	<null></null>	
	16	1	291	B-30-32_19970103	B-30-32_19970103	<null></null>	<null></null>	
	17	1	292	B31_031502	<null></null>	<null></null>	<null></null>	
	18	1	293	B-31_19970315	B-31_19970315	<null></null>	<null></null>	
	19	1	294	B-31_19970613	B-31_19970613	<nul></nul>	<null></null>	Ŧ
1							. F	
Γ.		1 x x 🗐	- 1 /20 mm	at 261 Calasta				
L.,	• •	1 7 PI	- (38 out	or sur selected)				

Figure 21 – DT_SAMPLE attributes table

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 24



Adding New Locations and Modifying Location Groups

New locations and location groups are added to database from within the map by using the EQuIS for ArcGIS interface. This exercise outlines the process for creating new locations and digitizing coordinates from within the EQUIS for ArcGIS Interface as well as editing and creating new Location Groups.

N

Adding and Editing New Locations

-
- 1. Select the Feature Selection tool.
- 2. Select several locations symbolized as Monitoring Wells by drawing a box around them with the **Feature Selection** tool.
- 3. Select EQuIS > Utilities > Add/Edit Locations.



Figure 22 – Add/Edit Locations Menu

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 25



4. Expand Locations by Location Type, and expand the MONITORING WELL location type node. Review the data for the selected locations. Add and/or edit data as desired.

Location							8
🛛 🖬 🗣 🗈 🗙 🛛 🏹 🖡 🔳							
Locations by Location Type MONITORING WELL (24)	Location Information	1:					^
B-33 B-4	Code:			Parent Code:			
SOIL BORING (20) SURE WATER SAMPLING	Name:	B-33		Bore Id:			
No Location Type	Description:	Monitoring Well		Start Date:	01/02/1996	•	=
ter Locations by Location Group	Purpose:	Quarterly CERCLA		End Date:	01/02/1996	•	
	Type:	MONITORING WELL	-	Log Date:		-	
	Remark:						
	Location Identifier:						
	Major Basin:	RICHLAND	-	State:	ТХ		-
	County:	Cromwell		Subfacility Code:	SITE 1		-
	District:	8		Within Facility:	Y		-
							-
	•						•
	coord type code	identifier	×_coord	y_coord	elev	4	elev_unit
		1	-/8./91844	39.585622	679.31	rt	
		PRIMARY	-/8.830420935/9	39.560803161268	679.31	rt	
	STATE PLANE	1	215/346.9/6	38/111.234		_	
		PRIMARY	686388.98	4381051.52	204.81036	m	
	∢ [•
1							
· · · · · · · · · · · · · · · · · · ·	Add dt_coordinate						

5. Single-click on MONITORING WELL to highlight the location type and then select **Add Location** at top left in the Location Window.



Figure 10 – Add New Location

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 26



- 6. Enter the MW-100 as the sys_loc_code and any additional information for the location.
- 7. Select the **Digitize Tool**.
- 8. Click the point on the map where the location should be added.



Figure 11 – The Digitize Coordinates Button

- 9. Save your work.
- 10. Close the Add/Edit Location window.
- 11. Close ArcMap.
- 12. Re-open ArcMap.
- 13. Add the Springfield facility.
- 14. Select the **Overwrite Locations** option located in the upper-left of the *Add Facility* window's toolbar (and leave **Open Tables** unchecked) to ensure your new location will be added.



Figure 12 – Selecting the Overwrite Locations option

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 27





Creating and Modifying Location Groups

- 1. Click the Feature Selection Tool.
- 2. Select one or more locations.
- 3. Select the EQuIS Menu > Utilities > Create/Edit Location Groups. A new group is populated with the selected locations and a default group_code.
- 4. Name the group 'Hot Locations <your initials>'.
- 5. From the available parameters list, select; B-38, B-42, and B-48.
- 6. Right Click and select Add to Group.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 28



🕀 Analyte 🖌		Group Details					
PERC DAUGHTERS FIELDMEASUREMEN NASTY VOCS PAHS PCBS PRIORITY METALS	E	group_code group_date group_owner oroup_desc 4	Hot Locations SPI 01/11/2010 Location 5]
- SOT ANALYTES		Group Members					
TOTAL BTEX		repo	t_order	memb	ber_code	statu	is_flag
VOCS	-	¥ 1.		B-38		A.	
WG ANALYTES		2		8-42		A	
WSANALYTES		3		B-48		A	
Mot Locations SPF MONITWELLS SOIL SAMP	1	Available Memb	ers .				
-WG SAMP sys loc code member type loc name loc type loc desc				data_provid			
WS SAMP		29-MW115	sys_loc_code	1	MONITORING W	E	TUTORLAB
Material		29-MW145	sys loc code	29 MW145	MONITORING W	E	TUTORLAB
110,000	1			and the second			

Figure 13 – New Group Added

7. Save the new location group and close the Groups window.

Existing locations and location groups may be edited with these tools. Existing locations may be edited by going directly to the Utilities > Add/Edit Locations screen and paging through the locations or selecting the specific location and going to the Utilities > Add/Edit Locations screen. Location groups may be created and edited by going directly to the Create/Edit location groups

EarthSoft – EQuIS for ArcGIS Training Exercises



EQuIS for ArcGIS Training Exercises View Lithology

EQuIS View Lithology Tool

Within the EQuIS for ArcGIS interface, the **View Lithology** tool is available, which displays the lithologic profile of a location based upon data in DT_LITHOLOGY in the EQUIS database. This exercise will discuss using the View Lithology tool within the EQUIS for ArcGIS interface.

View Lithology

- 1. Add the Springfield Metal Plating facility.
- 2. From the ESRI Tools toolbar, choose the **Select Features** button.
- 3. Next, select one of the soil borings from the map by drawing a box around the boring (e.g. SB-4 in the upper middle quadrant).



Figure 14 – Selecting a Soil Boring Location

- 4. Once the location has been selected, right-click the blue dot to view the **Single Point Functions** menu and select **View Lithology**.
- 5. A new window opens, displaying the Lithology for this location.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 30

EarthSoft

EQuIS for ArcGIS Training Exercises View Lithology

thology	N R
File* View* Help* . 🚯 🔯 🏟 😰 🚄 🚸	• • .
	Data
00.04	Materials
58-04	Material : AASHTO
0	Material Type
SAND EVALE SAND 38	member_code
SILT 66	▶ A-1-a
CLAY	A-1-b +
LIMESTONE	
AQUIFER 1	Geologic unit type: geo_unit_code_1 💌
	Location 1D : S8-04
	Depth: 0.0000
23	Conference ACUITED 1
	George and Tweaters t
27.3	Desc 1: some calcareous mineralization and bl
upper -	Desc 2: Subsection 3-3
	Location Data
2	fadlity_id sys_loc_code bearing ;
	1 58-04
	1 \$8-04
443	1 58-04
	1 \$8-04
	1 S8-04
	1 58-04
60	J+= •
sert I	Data Cristian Indel Honoom Adamsed

Figure 15 – View Lithology Window

The **Lithology** window shows the lithology data for the selected location. If multiple locations are selected, they are all placed in the dropdown list on the form. If no locations are selected, all locations will be added to the Location ID dropdown list.

6. Close the Lithology window.

茶

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 31



EZView LayerBuilder

EQuIS EZView allows users to run the reports that are available in Professional and/or Enterprise and build layers using their output. In this exercise, you will learn how to create different types of layers in ArcMap using the EQUIS EZView tool.

Create a Layer for a Single Location

The EQuIS EZView reporting utilities is accessible from the single point function menu, giving the user the ability to run a report on any selected location.

- 1. Select the B-48 Monitoring Well location using the Feature Select Tool \mathbb{N}^{2} .
- 2. Right-click, and hover over the EQuIS EZView utility.



Figure 16 – Selecting the Analytical Results report option

- 3. Select to run the Analytical Results report.
- 4. Select the following parameters:

LocationB-48 (should already be selected)MatrixWGAnalyteIndividual – Cis-1,2-Dichloroethene

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 32

EQuIS for ArcGIS Training Exercises EZView LayerBuilder



Figure 17 – Analytical Results Report for single location

- 5. Select Go to run the report. Approximately 6 records are returned in a tabular format.
- 6. Select **Open in ArcGIS** from the report toolbar.



7. From the EQuIS for ArcGIS wizard that opens, review the options that are available:

EarthSoft – EQuIS for	ArcGIS Training	Exercises
-----------------------	-----------------	-----------

Page 33

EQuIS for ArcGIS Training Exercises EZView LayerBuilder

Name and	Laver/Table Name	The name that will be displayed in the Table of
Farment	Luyer, rubie nume	Contents for the built lover
Format		Contents for the built layer.
	ArcGIS Output	The Laver can be a Database Connection meaning it
	Format	will undate as the data is undated in the database or
	ronnat	will update as the data is updated in the database, of
		can be saved to the <i>Geodatabase</i> , meaning it will be a
		static layer. The report can also be exported as a <i>Table</i>
		instead of a visual layer and has the same connection
		options.
Map Fields	X Coord, Y Coord, Z	The fields used from the selected EZView report that
	Coor, Value, and	will be mapped in the layer or table.
	Unit	
Symbology	Symbol Dropdown	The layer can be symbolized as <none>, Single Symbol,</none>
Renderer		Graduated Colors, Graduated Symbols, Water Levels or
		as Pie Charts.
	Symbolize using LOG	The mapped symbols can be sized using a LOG of the
	option	Value instead of the actual value.
	Symbolize NDs	The Non-Detects (if included in the report) can be
		symbolized, and will be displayed as a separate sub-
		layer.
	Create 3D	Pie Charts can be symbolized as 3D "beach balls" or
	Multipatch Spheres	multipatch spheres, if ArcScene is also installed and
		licensed.
Create Group	Create sub-layer for	Choose a field from the report for which to create
Layer	each unique:	unique sub-layers.
	Interval Ranges	For each layer, use the same interval range for all sub-
		layers, or use a different interval range for each sub-
		layer.

8. Confirm the default options as seen in the figure below, and then select **Next**.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 34

EQuIS for ArcGIS Training Exercises EZView LayerBuilder

Sel	ect the desired op	tion(s) for the new la	ver or standalone table
_		[8
Name and I	Format		
Lay	er/Table Name:	Analytical_Results	_B_49
ArcGIS	Output Format:	Database Connect	ion (Layer) 👻
Map Fields	:		Symbology Renderer
X Coord:	x_coord	*	Graduated Colors 🔹
Y Coord:	y_coord	*	✓ Symbolize using LOG option
Z Coord:	z_coord_avg *		V Symbolize NDs
Value:	report_result_v	alue 👻 👻	
Unit:	report_result_u	nit 👻	Create 3D Multipatch Spheres
V Create	Group Layer		
Create	sub-layer for eac	h unique:	Interval Ranges
chemical_name 🔹		Ŧ	Use same for all sub-layers
			Use different for each sub-layer

A layer (or table) is created, symbolizing the data as determined in the previous screen. This may take a few moments, depending on the speed of the processor.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 35

EarthSoft

EQuIS for ArcGIS Training Exercises EZView LayerBuilder



If there are multiple results for one location over the reported date range, the most recent date is displayed on the top, meaning the most recent result is the visible result of the layer.

Create an Animated Time-Based Layer:

淤

- 1. From the EarthSoft toolbar, select EQuIS EZView> Analytical Results.
- 2. Make the following selections in the *analytical_results* window:

Location	MONITWELLS
Matrix	WG
Analyte	Individual – Trichloroethylene (TCE)

3. Select Go. Greater than 100 records will be returned.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 36

EQuIS for ArcGIS Training Exercises EZView LayerBuilder

			Rows:	426 retrieved, 426 v	visible, 0 selected
facility_id	facility_code	sys_loc_code	loc_name	loc_group	loc_report_ord
1	Springfield	B-30	B-30	MonitWells	1
1	Springfield	B-30	B-30	MonitWells	1
1	Springfield	B-30	B-30	MonitWells	1
1	Springfield	B-30	B-30	MonitWells	1
1	Springfield	B-30	B-30	MonitWells	1
1	Springfield	B-30	B-30	MonitWells	1
1	Springfield	B-31	B-31	MonitWells	2
1	Springfield	B-31	B-31	MonitWells	2
1	Springfield	B-31	B-31	MonitWells	2
1	Springfield	B-31	B-31	MonitWells	2
1	Springfield	B-31	B-31	MonitWells	2
1	Springfield	B-31	B-31	MonitWells	2
1	Springfield	B-33	B-33	MonitWells	4
	6 . 6	P. 22	5.35	14 CH 11	

4. Select Open in ArcGIS.

- 5. Give your query the Layer/Table Name of **TCE Layer** in the EQuIS for ArcGIS Wizard and change your ArcGIS Output Format to Geodatabase (Layer)
- 6. Select **Next** to view the map.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 37







The following steps are for ArcMap 10 or later.

- 7. For each sub-layer (i.e.: Monitwells, Soil Boring, Surf Water Sampling) double-click on each and select the **Time** tab in the **Layer Properties Window**.
- 8. For each sub-layer, uncheck Enable Time on this Layer and select OK.
- 9. Select to **Open the Time Slider Window** from the toolbar.

Time Slider			23
	1/1/0001 12:00:00 AM		
e ò			
<< 1/1/0001 12:00:00 AM	N	3/1/2039 12:00:00 AM	[>>]

- 10. Select Time Slider Options 🗐.
- 11. On the **Time Display** tab, change the Time step interval to 2.0 months.
- 12. Change the **Time Window** to 2.0 months.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 38

EQuIS for ArcGIS Training Exercises EZView LayerBuilder

ime Display Time Extent	Playback Other	63	
Time zone:	<none></none>		······································
	Adjust	for daylight saving char	nges
Time step interval:	2.0	Montins 🔻	Restore Default
Time window:	2.0	Months	
Display date format:	<default:< td=""><td>•</td><td>. iv 1</td></default:<>	•	. i v 1
Display time format:	<none></none>		•

- 13. On the **Time Extent** tab, restrict the full time extent to the TCE_Layer (Detects). Note that the start and end times automatically update.
- 14. Change the End Time date to 06/15/1998.
- 15. On the **Playback** tab, change the duration to be all the way to *slower*.
- 16. Select OK to close the **Time Slider Options**.
- 17. Select **Play b** to animate the results and view how the results change over time.



- 18. To save the animation as an .avi movie file, select the filmstrip **III** from the **Time Slider** window, give the file a name, and select **Export**.
- 19. Close the Time Slider window.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 39



Create Chemical Sub-Layers for Multiple Analytes:

- 1. From the EarthSoft toolbar, select EQuIS EZView> Analytical Results.
- 2. Make the following selections in the *analytical_results* window:

Location	MONITWELLS
Matrix	WG
Analyte	Group:_PERC_Daughters
Start Date	01/01/1997
End Date	12/31/1997

3. Select Go. More than 100 records will be returned.

			Rows:	426 retrieved, 426 v	visible, 0 selected
facility_id	facility_code	sys_loc_code	loc_name	loc_group	loc_report_ord
1	Springfield	B-30	B-30	MonitWells	1
1	Springfield	B-30	B-30	MonitWells	1
1	Springfield	B-30	B-30	MonitWells	1
1	Springfield	B-30	B-30	MonitWells	1
1	Springfield	B-30	B-30	MonitWells	1
1	Springfield	B-30	B-30	MonitWells	1
1	Springfield	B-31	B-31	MonitWells	2
1	Springfield	B-31	B-31	MonitWells	2
1	Springfield	B-31	B-31	MonitWells	2
1	Springfield	B-31	B-31	MonitWells	2
1	Springfield	B-31	B-31	MonitWells	2
1	Springfield	B-31	B-31	MonitWells	2
1	Springfield	B-33	B-33	MonitWells	4
-	0 2 2 8 1	C. C	2212.8	1022 352190	

- 4. Select Open in ArcGIS.
- 5. Uncheck Symbolize NDs and Symbolize using LOG option in the ArcGIS Export Format wizard.
- 6. Check Create Group Layer and leave other settings as defaults.
- 7. Select Next.
- 8. Sub-layers for all three chemicals will be created. If necessary, double-click on each and select the **Time** tab in the **Layer Properties Window**.
- 9. For each sub-layer, uncheck Enable Time on this Layer and select OK.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 40



Create Pie Charts with Multiple Analytes:

- 1. From the EQuIS Toolbar, select EQuIS EZView> Analytical Concentration Query.
- 2. Make the following selections in the *analytical_results* window:

Location	MONITWELLS
Matrix	WG
Task	WG97Q2
Analyte Group	VOC

3. Enter VOCs WG97Q2 in the Pick Reports field and click the adjacent Save icon 🚽



Figure 18 – analytical_results Window with Pick Report Selected

- 4. Select Go. 🖻
- 5. Click the **Crosstab** button from the tool bar.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 41



6		. 🖇 👎 🛤 🕾	🗷 💈 🥯 🖻	Crosstab	🛨 Open in Arco	iis 🖕			
			_				chemical_na	me 1,3-Dich	lorober
	sys_loc_code	y_coord	x_coord	z_coord_avg	zfrom	zto	units	report_result_val	ue repo
	8-30	4381154.6100000000	686573.6215000000	166.8474	171.8474	161.8474	ug/l	73.24	73.2
Ì	8-31	4381354.6100000000	686593.6200000000	166.3938	170,3938	162.3938	ug/l	73.83	73.8
I	B-33	4381051.5200000000	686388.9800000000	169.0104	177.5104	160.5104	ug/l	71.21	71.2
Ī	8-34	4381085,1200000000	686421.6800000000	167.2343	174.2343	160.2343	ug/l	76.83	76.8
	B-38	4381134.8200000000	686345.2800000000	168.463	173.463	163.463	ug/l	17.46	17.4
T	8-4	4381028.7100000000	686417.5700000000	173.8622	179.3622	168.3622	ug/l	54.41	54.4
I	8-42	4381084.9200000000	686434.2800000000	164.1672	169.1672	159.1672	ug/l	65.59	65.5
T	B-44	4381123.4700000000	686424.1800000000	167.774	172.774	162.774	ug/l	79.7	79.7
Ì	8-45	4381201.7900000000	686409.0100000000	166.698	171.698	161.698	ug/l	89	89
T	B-46	4381123.3100000000	686266.9500000000	168.8867	175.3867	162.3867	ug/l	54.86	54.8
1	8-47	4381196.630000000	686347.7700000000	170.5363	178.0363	163.0363	ug/l	53.31	53.3
T	B-48	4381174.9300000000	686256.0300000000	168.7154	172.6154	164.8154	ug/l	26.83	26.8
Ī	B-49	4381134.6900000000	686093.8000000000	166.3378	174.3378	158.3378	ug/l	53.6	53.6
T	8-50	4381014.7700000000	686219.1500000000	170.6914	175.6914	165.6914	ug/l	58.7	58.7
1	8-51	4381114.1800000000	686206.320000000	168.6397	175.6397	161.6397	ug/l	5.34	5.34
T	8-52	4381112,6500000000	686305.2800000000	167.4587	175.4587	159.4587	ug/l	83.16	83.1
I	B-53	4381057.6100000000	686503.620000000	168.8398	173.8398	163.8398	ug/l	46.32	46.3
İ	8-56	4381253.010000000	686316.3100000000	166.0077	171.0077	161.0077	ug/l	76.58	76.5
Ì	8-57	4381297.9600000000	686216.630000000	168.7285	173.7285	163.7285	ug/l	91.04	91.0
t	B-58	4381383.6800000000	686309.2500000000	165.8872	171.8872	159.8872	ug/l	68.61	68.6
Ì	B-59	4381330.720000000	686294.0500000000	167.8871	171.8871	163.8871	ug/l	21.85	21.8
İ	B-60	4381252,9200000000	686400.7500000000	166.4907	172.4907	160.4907	ug/l	76.55	76.5
t	8-75	4381233.2900000000	686258.5800000000	167.5729	173.5729	161.5729	ug/l	41.81	41.8



NOTE: The Y_COORD and X_COORD values must be included as Row Headers for your data to be mapped properly. The Column Headers, additional Row Headers and Tabbed Data may be any fields you would like to display in your labels. Select the back button to view and edit the crosstab configuration and select Go to re-run the crosstab after any changes have been made.

- 6. Review your cross-tabbed data and then select the **Open in ArcGIS** button.
- 7. In the ArcGIS Export Format Wizard, give your query a Layer/Table Name of VOC Layer.
- Ensure that the X Coord and Y_Coord values are populated with X_COORD and Y_COORD respectively. The other defaults may be used. Note that **Pie Charts** are the default symbology option.

EarthSoft – EQuIS for ArcGIS Training Exercises

EQuIS for ArcGIS Training Exercises EZView LayerBuilder

ame and F	Format			
Layer/Table Name:		VOCs		
ArcGIS	Output Format:	Geodatabase(Lay	er) -	•
ap Fields			Symbology Renderer	
X Coord:	x_coord		Pie Charts	
Y Coord:	y_coord		✓ Symbolize using LOG option	
Z Coord:	z_coord_avg	Ŧ		
Value:	1,3-dichloroben	zener/report		
Unit:	report_result_u	nit. 🔹	Create 3D Multipatch Spheres	
Create	Group Layer			
Create	sub-layer for eac	h unique: 	Interval Ranges Ouse same for all sub-layers Ouse different for each sub-layer	

Figure 19 – ArcGIS Export Format Window

9. Select Next.

Pie charts are plotted on each location with a key identifying what each color in the pie charts represents in your list of layers.



10. Click **Select Features** from the main ArcMap toolbar and select one pie charts.

11. Right-click in the selected area and click **Label** to label these features on the map.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 43





Figure 21 – Layers and Pie Charts

12. Right-click on the layer name in the Table of Contents and select Convert Labels To Annotation.

Store Annotation	1	Reference Scale	
In a database I In the map		1:4,623	
Create Annotation For			
 Al features C Features in c 	current extent	C Salected history	
Feature Layer		Annotation Group	
1001	VOCLayer Anno		
voc Løyer	VOCLayer A	110	
ou tayer	VOCLayer A	110	

Figure 22 – Convert Labels to Annotations Window

- 13. Select the In the map radio button under Store Annotation and click Convert.
- 14. Select the **Element Selector** .
- 15. Click on the labels on the map and drag them to a new location to better view the pie charts.

EarthSoft – EQuIS for ArcGIS Training Exercise	S
--	---

Page 44

EarthSoft

EQuIS for ArcGIS Training Exercises EZView LayerBuilder



Figure 23 – Labels and Pie Charts Spread Out to Read More Easily

Create an Action Level Exceedance Layer:

- 1. From the EQuIS Toolbar, select EQuIS EZView> Other.
- 2. The Open window appears, allowing you to use any report available in your EQuIS database.





Figure 24 – List of Available Reports in EQuIS Database

3. Select the Action Level Exceedances report. Click Open.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 45

EQuIS for ArcGIS Training Exercises EZView LayerBuilder

- 4. From the *Pick Report* drop-down, select **VOCs WG97Q2** from the previous section.
- 5. Select the B-30 VINYL CHLORIDE Action Level.
- 6. Click Go. 🖻
- 7. Review your data and select **Open in ArcGIS**.
- 8. Give your layer a descriptive name and select **Next**.
- 9. Right-click on your plotted layer and select "Label Features". The results will be labeled for all plotted exceedances.



EarthSoft – EQuIS for ArcGIS Training Exercises

Page 46



Creating a Groundwater Elevation Query Layer:

- 1. From the EQuIS Toolbar, select EQuIS EZView> Water Level Query.
- 2. Make the following selection in the Water_Level criteria window and leave the other selections as default:

Location	MONITWELLS
Date Range Start	02/17/1996
Data Range End	02/18/1996



- 3. Click Go. 🖻
- 4. Review your data and select Open in ArcGIS.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 47

EQuIS for ArcGIS Training Exercises EZView LayerBuilder

in and s	Sormat		
Lay	er/Table Name:	Water_Levels_MO	NITWELLS_
ArcGIS	Output Format:	Database Connect	on (Layer) 🔫
Map Fields			Symbology Renderer
X Coord:	x_coord	*	Water Levels 👻
Y Coord:	y_coord	*	Symbolize using LOG option
Z Coord:	exact_elev	+	
Water Elev:	exact_elev	*	
Unit:	depth_unit	*	Create 3D Multipatch Spheres
Create	Group Layer		
Create	sub-layer for eac	h unique:	Interval Ranges
		7	COUse same for all sub-lavers

Figure 26 – Naming Your Layer/Table Name for Exporting

- 5. Name your Layer/Table Water Level_MONITWELLS.
- 6. Note the default symbology is **Water Levels.**
- 7. Click Next.
- 8. Turn off your Sample Locations Layer to display only the water levels.



EarthSoft – EQuIS for ArcGIS Training Exercises

Page 48



EQUIS for ArcGIS Training Exercises 3rd Party Interfaces and EQUIS for ArcGIS

3rd Party Interfaces: Surfer, EnviroInsite, LogPlot, gINT, RockWorks and GMS

The EQuIS for ArcGIS Interface allows users to visualize data for single or multiple locations using third party applications such as Surfer, gINT, and GMS. In these exercises, learn to send contours to Surfer, create Spider Diagrams with EnviroInsite, create logs using LogPlot and gINT, use the Digitize Line Tool to create fence diagrams with Rockworks, as well as export data to GMS and EVS.

Golden Software's Surfer and ArcGIS:

If Golden Software's Surfer is installed on the same machine where EQuIS Professional and ArcMap are installed, contours can be sent out to Surfer and then automatically added as an ArcGIS layer using the Contour with Surfer interface in the EQuIS dropdown.

- 1. From the EQuIS Toolbar, select **Contour with Surfer**.
- 2. Set the Layer and Field to contour in the Contours with Surfer Wizard.

EQuIS fo Grid	or ArcGIS and contour data us	ing Golden Softwar	e's Surfer applica	tion	r
Value to Grid	d and Contour				
Layer:	🚸 Water_Levels_N	IONITWELLS_	•	Grid selected	features
Field:	exact_elev		-	Gridlog-trans	sform
Method:	NearestNeighbor		•		
Grid Line Ge	ometry				
	Minimum	Maximum	Cell Size	Cell Count	
X-Directio	n 685908.99	686610.32	7.01	100	R.
Y-Directio	n 4381000.53	4381598.7	7.01	85	ſ
	📃 Use blanking	file אד	Set to Visi	ble Extents	

Figure 27 – Setting the Layer, Field and Method for Contours with Surfer

- 3. Select the Water_Levels_Monitwells layer created in the previous section and set the *Field* to **exact_elev**.
- 4. Set Method to Nearest Neighbor.
- 5. Click Next.
- 6. Right-click in the *Color Ramp* column.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 49

EQUIS for ArcGIS Training Exercises 3rd Party Interfaces and EQUIS for ArcGIS

Contours with Surfer				
Grid and contour	data using G	olden Software	's Surfer app	
Contour Levels	Minimum Default	Maximum Default	Interval Default	Contour Geometry Polyline contours
🕥 Irregular Intervals	[Surfer Leve Smoothing L	el File] .evel: High		 Polygon contours Do not import contour vectors
Miscellaneous Options				
Classified rend	erer	Include Import Import	DXF contour Vector Map	axis labels is and labels
Allow Surfer mod	fications	Shaft Le	ength, Min/M Frequency, X	lax 0.1 0.6 /Y = 4
		<	Back	Next > Cancel

Figure 28 – Contours with Surfer Color Ramp Column

7. Select Edit Symbols.

8. From the *Type* drop-down, select **Gradient Fill Symbols**.

mbol Property Editor	9	X
Preview	Properties:	
	Type: Gradient Fill Symbol Units: Points	•
	Gradient Fill	_
	Intervals: 5 🏯 Style: Linear 🗸	
	Percentage: 75 Color Ramp	
100 III	Angle: 90 🚔 Style:	
Layers		
	Outine	
+ × + 1		
		-1
	UK Cano	ei

Figure 29 – Color Ramp Properties Window

- 9. From the *Color Ramp Style* drop-down, select a **color gradient** of your choice.
- 10. Click **OK** through the Symbol screens.
- 11. Review the grid spacing and smoothing level and then click Next to create a Surfer plot.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 50

EQuIS for ArcGIS Training Exercises 3rd Party Interfaces and EQuIS for ArcGIS



Depending on the choices made in the selection process, a wide variety of output is available.

Spider Diagrams with EnviroInsite

If EnviroInsite is installed, location-specific crosstabs can be mapped by making a few parameter selections and sending the data out to EnviroInsite and automatically bringing the data back into ArcGIS. These location-specific crosstabs are also known as "**Spider Diagrams**" or "Chem Data Boxes".

- 1. From the EQuIS Toolbar, select EQuIS EZView> EnviroInsite Spider Diagrams.
- 2. Make the following selections:

Spider Diagrams	Types	Analyte Groups
	Crosstab Results	(Check)
Cartography	Create map/geodatabase	(Check)
	annotation	
Location	Individual	B-47, B-48, B-49
Fields	Screen Field- Use dt_well_segment	(Check)
	to define screen interval	
Sample	End	12/31/1998
Analyte	Group	_PERC Daughters
Action Level(s)		CLEANWATER INDUST

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 51

EarthSoft

EQUIS for ArcGIS Training Exercises 3rd Party Interfaces and EQUIS for ArcGIS

3. Click **Go .** EnviroInsite will automatically open and create the Spider Diagrams, and then close and export the Spider Diagrams to ArcGIS, where they will be displayed on the map.



4. If the diagrams are small, zoom in to view the actual results. Also, use the Element selector tool to select the diagrams and place them in different locations on the map (this only works if the Create map/geodatabase annotation was checked).

B-47	Cis-1,2-Dich loroethene (ug/L)	Trich loroe thy lene (ug/L)	Vinyl Chloride (ug/L)
03/15/1997	5.7	504.55	61.34
06/13/1997	5.83	475.65	69.12
09/11/1997	5.95	447.05	81.35
12/10/1997	6.17	406.27	91.95
03/10/1998	6.39	384.25	102.55
06/08/1998	6.54	359.08	113.92

*

NOTE: The format of the Spider Diagrams (background, font, color, etc.) can be changed by going to EQuIS> Options> Map> EarthSoft Styles.

LogPlot Boring Logs

If RockWare's LogPlot is installed, create boring logs on the fly from ArcGIS.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 52



淋

EQUIS for ArcGIS Training Exercises 3rd Party Interfaces and EQUIS for ArcGIS

Select EQuIS > Options and the Show advanced options when launching 3rd-party application interfaces on the Interfaces tab to access the export options available from EQUIS Professional. Please turn this feature on for this exercise.

- 1. Select a borehole using the Feature Select Tool.
- 2. Right-click on the borehole and select Create Log > LogPlot.



Figure 30 – Selecting LogPlot Menu Option



The output that is generated is determined by the data present in the database and the design file currently selected in LogPlot. Multiple templates may be created, but LogPlot requires that one remain as the default template.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 53

EQuIS for ArcGIS Training Exercises 3rd Party Interfaces and EQuIS for ArcGIS



gINT Boring Log

You will need a gINT a library (*.glb) and a gINT template (*.gdt), examples of which can be found in the ...\EarthSoft\EQuIS\Tutor\gINT\ directory.

- 1. In ArcMap, select a borehole using the Feature Select Tool .
- 2. Right-click the borehole and select Create Log > gINT Boring Log.
- 3. From gINT, select File>System Properties browse to the path ...\EarthSoft\EQuIS\Tutor\gINT

and select to open the gint us.gdt as the template.

 The EQuIS for gINT window opens. Select Browse undert the gINT Library (.glb) tab and then select to load the *gint us.glb* files (stored by default at C:\Program Files\EarthSoft\EQuIS\Tutor\gINT\).



EarthSoft – EQuIS for ArcGIS Training Exercises

Page 54



EQUIS for ArcGIS Training Exercises 3rd Party Interfaces and EQUIS for ArcGIS

5. Select the desired log output such as **CPT** from the Generate Output list.





Please note, Elevation and Depth data must be stored in the database in order to complete the following 3rd party exercises.

Selecting multiple locations with the Digitize Line Tool

The **Digitize Line Tool** allows users to digitize a sectional line and use it to interpolate data when creating geological profiles, cross-sections and 3D fence diagrams.

- Click Digitize section line from the EQuIS toolbar.
 The cursor becomes a crosshair on the map for drawing the line of your cross-section or profile.
- 2. Click at the point on the map where you want the line to begin.
- 3. Click to map where you want any 'turns' in the line to occur.
- When all segments are complete, double-click to end your section line. The EQuIS Geological Profiles toolbar opens.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 55

EarthSoft

EQUIS for ArcGIS Training Exercises 3rd Party Interfaces and EQUIS for ArcGIS

举

The **Add** additional line segments option is available in the EQuIS Geologic Profiles toolbar after you have finished your initial line.



Figure 32 – Suggested Digitized Line

Rockworks - 3D Fence Diagrams

If RockWorks is installed, create a 3D fence or 3D geologic projected fence.



Multiple versions of RockWorks are supported with the EQuIS for ArcGIS Interface. Please check with EarthSoft Support if the version of RockWorks installed on the machine is not working with the interface.

Notice the slider bar on the left end of the EQuIS Geologic Profiles toolbar. This bar allows you to modify the number of locations that will be included in RockWorks interpolation. Change the slider value and note that the locations to be included in the *Fence Diagram* are outlined on the map.

- 1. From the **Type** pull-down menu on this toolbar, select the **3D Projected Fence (RW 15)** or **3D Fence** option.
- 2. Click Go. Rockworks opens and automatically processes the request.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 56



EQuIS for ArcGIS Training Exercises 3rd Party Interfaces and EQuIS for ArcGIS

EQuIS Geologic Pro	ofiles												8
-0	21	: 🄸 Add	Profile Name	33	Group	Material	•	Туре	3D Projected Fence (RW15)	• [A	Advanced Mode	€	Go
				Fig	ure 33	– 3D Fence Ty	/pe	Opti	on				

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 57



EQUIS for ArcGIS Training Exercises 3rd Party Interfaces and EQUIS for ArcGIS

The Rockworks application is launched.

3. A new 3D Fence Layer is added to ArcMap and is displayed in the EQuIS 3D Preview Window.



GMS Lithology Export

- 1. If the 3D Preview window is still open, close the window.
- 2. In ArcGIS Desktop, select a group of locations with by using **Select Feature**



Figure 34 – Selected group of locations

3. From the EQuIS toolbar menu, select Export GMS.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 58

EarthSoft

EQUIS for ArcGIS Training Exercises 3rd Party Interfaces and EQUIS for ArcGIS



- 4. Select **Export Borehole Data** to export the borehole data.
- 5. Select **Plan View** from the **GMS** toolbar to display the 3D lithology for each location.



CTech's EVS Export

Both geology and chemistry data can be exported for use in CTech's high-end 3D visualization applications (e.g., EVS, EVS-Pro, MVS, and MAS).



Geology data can be exported in the uninterrupted, pre-geology format (*.PGF). The *.PGF format is compatible with the Geologic Indicator Kriging (GIK) found in the Krige3D module in EVS Pro/MVS. The recommended approach is to export as PGF format, and use the interactive tools or GIK to define the geologic layers.

1. In ArcGIS Desktop, select a group of locations with by using the **Select Feature** button

- 2. From the EQuIS toolbar menu, select CTECH Export (EVS).
- 3. The EQuIS for EVS interface opens, with the locations from Step 1 selected:

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 59



EQUIS for ArcGIS Training Exercises 3rd Party Interfaces and EQUIS for ArcGIS

🔤 EQuIS for EVS					
Locations Geology	y Chemistry				Export Files
sys_loc_code 🛛 🗸	loc_name 🛛 🏹	data_provider 🛛 🏹	subfacility_code 🛛 🏹	loc_desc ^	Geology
B-4	B-4	TUTORLAB	SITE 1	Monitoring Well	Tring of the O
B-42	B-42	TUTORLAB	SITE 1	Monitoring Well	L/> Pre-Geology (*,pgr)
B-44	B-44	TUTORLAB	SITE 1	Monitoring Well	ES Borehole Geology (*.geo) UNAVAILAB
B-45	B-45	TUTORLAB	SITE 1	Monitoring Well	ES Geology Multi-File (*.gmf) UNAVAILA
B-46	B-46	TUTORLAB	SITE 1	Monitoring Well	Chemistry
B-47	B-47	TUTORLAB	SITE 1	Monitoring Well	FC on character (# and)
B-48	B-48	TUTORLAB	SITE 1	Monitoring Well	Lo an Chemistry (***CSV)
B-49	B-49	TUTORLAB	SITE 1	Monitoring Well	E,S 3D Groundwater Chemistry (*.gwc)
B-50	B-50	TUTORLAB	SITE 1	Monitoring Well	₿\$ Groundwater Chemistry Time (*.gwt)
B-51	B-51	TUTORLAB	SITE 1	Monitoring Well	FS Soil Chemistry Time (*.sct)
B-52	B-52	TUTORLAB	SITE 1	Monitoring Well	
B-53	B-53	TUTORLAB	SITE 1	Monitoring Well	
B-56	B-56	TUTORLAB	SITE 1	Monitoring Well	
B-57	8-57	TUTORLAB	SITE 1	Monitoring Well	
				Monitoring Well	
				Monitoring Well	3
B-60	B-60	TUTORLAB	SITE 1	Monitoring Well	
B-75	B-75	TUTORLAB	SITE 1	Monitoring Well	
5B-01	SB-01	TUTORLAB	SITE 2	Exploratory Bor	
5B-02	5B-02	TUTORLAB	SITE 2	Exploratory Bor	
5B-03	SB-03	TUTORLAB	SITE 2	Exploratory Bor	
5B-04	SB-04	TUTORLAB	SITE 2	Exploratory Bor	
				Exploratory Bor	
60.0V	CD-04	TUTODIAD	CITE O	Carl Internet	

Figure 36 – EQuIS 5 for EVS Interface with Selected Locations

4. Navigate to the **Chemistry** tab, and select the *Analyte Group* **PERC_DAUGHTERS** and then click **Go** on the report.

ocations Geology	Chemistry	
Method(s):	ber(s):	
Lab Matrix(e	s): (s): al(s):):	II

Figure 37 – Chemistry Tab with PERC_DAUGHTERS Analyte Group Selected

- 5. Next, from the Export Files pane on the left, select **3D Chemistry (.csv)** and save your file to an appropriate location.
- 6. When you are prompted on whether or not you would like to preview this file, select **Yes**.
- 7. When EVS opens, select Version to run: EVS for ArcView and select Launch EVS for ArcView.
- 8. Next close the SLICE_EASTING and SLICE_NORTHING windows, and the model will be drawn.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 60

EQuIS for ArcGIS Training Exercises 3rd Party Interfaces and EQuIS for ArcGIS



Figure 38 – 3D EVS for ArcView Model

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 61



EQuIS for ArcGIS Training Exercises ArcGIS 3D Analyst Integration

ArcGIS 3D Analyst Integration

If 3D Analyst is installed and licensed on your system, click on the **ArcScene (3D Analyst)** toolbar item from the EQuIS for ArcGIS menu.

1. From the EQuIS for ArcGIS Menu select Create 3D Features

Create 3D Features			x
Create 3D Features Select options for	for Springfield23 creating 3D wells, lith	ology, and down	hole point profiles
V Wells		🔽 Create 3D	Lithology
0 Default We	ell Depth	19	Default Diameter for Lithology/Well Segments
Well Segments (screen	s, filter packs) xaggeration		Column Offset Position
Features	Output Feature Clas	s Names	
Multipatches	Wells		Use Selected Locations
 3D polylines 	WellSegments		Do not overwrite
Evtruded Points	Lithology		existing layers
0	DownholeProfile		features, if found
	`	< Back	Next > Cancel



2. In the new window, select Use existing 3D features, if found and click Next.

EarthSoft – EQuIS for ArcGIS Training Exercises

Page 62



EQuIS for ArcGIS Training Exercises ArcGIS 3D Analyst Integration

Select options for creating	3D wells, lit	hology, and downhole point	profiles
Create Downhole Point Profiles			
Scaling for Profile Bounds		Parameter	NULL Value
I ke min/may at each horehole		CLASS FR	-99
C/ ose minimitax ac each borenoie		PORE PRESSURE	-99
Use same scale on all profiles		RATIO	-99
		SLEEVE STRESS	-99
osc logionnal scaling		TIP STRESS	-99
Planar(XY) Axis			
O Maximum Length	19	Quadrants	Single-Axis
Percentage of deepest profile's depth		26	8
Axis Origin Offset Distance	0	215	26.3

Figure 40 - "Use existing 3D features, if found" option selected

3. Select **Next** on the next screen as well. The 3D Preview window opens and displays the 3D lithology data as well as the locations.



EarthSoft – EQuIS for ArcGIS Training Exercises

Page 63