Variable Rate Irrigation Prescription Software

User Guide
Version 6.50

0998090_B

www.valleyirrigation.com

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General Information

About This User Guide

This user guide illustrates the proper installation and use of the Variable Rate Irrigation (VRI) Prescription software. This product works with the following 32- or 64-bit operating systems: Windows Vista, Windows 7, or Windows 8†. And, it requires that Microsoft .NET, version 4.0 be installed.

All information in this manual is based on information available at the time of printing. Valmont Industries Inc. reserves the right to make changes at any time without notice and without incurring any obligation. Specifications are applicable to equipment sold within the United States, and may vary outside of the United States.

Minimum Hardware Requirements

Notebook/Lap Top Computers

- A Notebook/Lap Top computer is recommended
- Pentium IV 2.6GHz 32- or 64-bit or equivalent
- 1 GB of RAM
- 40 GB, 7200RPM
- 150 MB or greater hard disk
- 2X CD-ROM (for software installation only)
- Video resolution of 1024 x 768, or higher, with 8 MB video RAM recommended
- Serial connection (referred to as the COM port). If a serial port is not available, a USB to serial port converter may be used.
- Other considerations when purchasing a notebook computer:
  - » **Screen Type** - A transflective screen (BriteView®, TruBrite®, XBrite®, UltraBrite®, etc) is visible in both subdued lighting and in direct sunlight. Transmissive (the common matte finish screens) nearly disappear in sunlight.
  - » **Size** - The computer must be an appropriate size that can be transported and positioned in the environment in which it is to be used.
  - » **Durability** - Rugged is recommended if the computer is to be transported and bounced around a lot. Some semi-rugged computers have internal hard disc vibration sensing to protect the media.
- Serial connection (USB to RS232 converter).

Installed Software

- Adobe Reader 8.0, or later, for display of the Installing the Variable Rate Irrigation (VRI) Prescription Software User Guide.
- CD Delivery - Put CD in the CD drive. If the CD does not auto start go to Start/Run and select the CD drive and the setup icon, then click OK.

† Windows is a registered trademark of Microsoft Corporation in the United States and other countries.

Overview

Zone Control

Valley's Variable Rate Irrigation (VRI) Zone Control system allows growers to optimize field irrigation applications by enabling varying rates of water to be applied to the field based on management zones and sectors. The VRI Zone Control prescription modifies the existing irrigation system by applying GPS coordinates to a control system which then turns the individual sprinklers on and off to achieve desired amounts of water.

Speed Control

Creating a VRI Speed Control prescription is good for growers who want to minimize costs but still receive the benefits of applying water more efficiently. The VRI Speed Control prescription software divides the field into 180 pie-shaped sectors for which you then establish watering rates to accommodate the variances in soil type, topography, etc. The uploaded VRI prescription speeds up and slows down the pivot to achieve the desired application depth across each sector.

Prescriptions

VRI Prescription software creates the irrigation plan that tells the irrigation system when and where to adjust the application depth in specific management zones and sectors in the field. This plan is based on topography information, soil data maps, yield data, and other user-defined information.

Introduction

Glossary of Terms and Acronyms

Following are definitions of terms and acronyms used in this manual.

Center Pivot Irrigation - A form of sprinkler irrigation consisting of several segments of pipe joined together in a span and supported by trusses, mounted on wheeled towers with sprinklers positioned along the length of the span. The system moves in a circular pattern, and is fed with water from the pivot point at the center of the arc

GPS (Global Positioning System) - A space-based satellite navigation system that provides location and time information in all weather conditions, anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites

Grid - Circular pattern of zones, sectors, and single zones.

Irrigation Zone - A predetermined area of a field requiring a unique watering plan. The area to be watered by a single control valve.

North Offset Angle - An angular offset, in degrees, relative to the north pole (zero-degrees north). This indicates the 0-degree pivot position for grid.

Prescription - Irrigation plan that tells the center pivot when and where to adjust the application depth in specific irrigation management zones in the field

Pivot - The centerpoint of the irrigation system, which feeds water to all of the sprinklers in the spans.

Pivot Length - Length of the pivot as measured from the pivot point to the end of the machine, which includes the overhang

Pivot Project - Collection of all prescriptions related to a single pivot. One project per pivot.

Pivot Road - Road/path/line from the center of the pivot to the outer ring; preferably on a zero-degrees north angle

Remote Telemetry - Measurement and transmission of data from a remote source

RTU ID (Remote Telemetry Unit Identification) - Three-digit, user-defined number identifying the remote telemetry device associated with the pivot

Sector - Pie-shaped portion of the grid.

Single Zone - Individual component of a zone. 180 single zones in one zone.

Speed Control - Irrigation system by which water is applied to the field in quantities based on the speed of the pivot over prescribed sectors of the field.

Sprinkler Package - The group of sprinklers installed on the irrigation system. Sprinklers may be mounted above the pivot pipeline, on the side of the pipeline or suspended on drop tubes below the pipeline.

Tracker Device - Remote monitoring and communication device used to report changes in equipment operation to the user, and to communicate user-initiated control commands to the equipment control panel.

Road Angle - Angle of road off of zero-degrees north. Valid values are 0 through 359.

VRI - Variable Rate Irrigation

Zone - The area to be watered by a single control valve. Circular portion of the grid.

Zone Control - Irrigation system by which water is applied to the field in quantities prescribed by management zones and zone sectors.

Create a Working Folder

Before you begin creating a pivot project, you must create a working folder. The working folder is where all the new pivots (projects), maps, images, and prescriptions, that you create or select with the Variable Rate Irrigation (VRI) Prescription software, are stored. The suggested format is as follows. (Refer to Figure 7-1.)

Drive

- VRI Files
  - Folder <Name of Pivot A>
  - Folder <Name of Pivot B>
  - Folder <Name of Pivot C>
  - Folder <Name of Pivot D>
    - Images Folder
    - Maps Folder
    - Pivots-Projects Folder
    - Prescriptions Folder

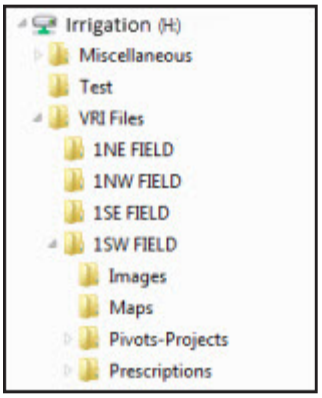


Figure 7-1 Folder format

Opening the VRI Application

To open the VRI application, double click on the VRI icon on your desktop. (Refer to Figure 7-2.)

Figure 7-2 VRI Icon

The Variable Rate Irrigation screen appears. (Refer to Figure 7-3.)

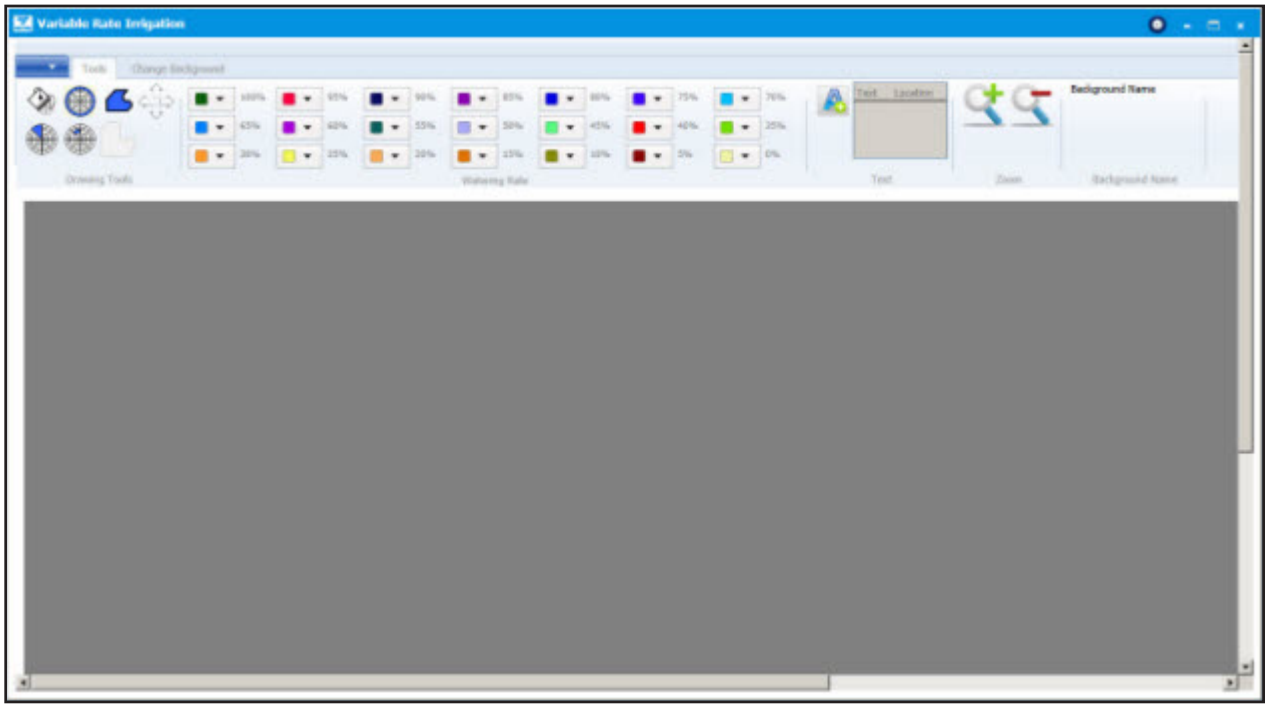


Figure 7-3

Create a Project and Prescription

Creating a Pivot Project

Note: Within VRI, each project defines one pivot. Each project can have multiple prescriptions. Multiple pivots will require multiple projects.

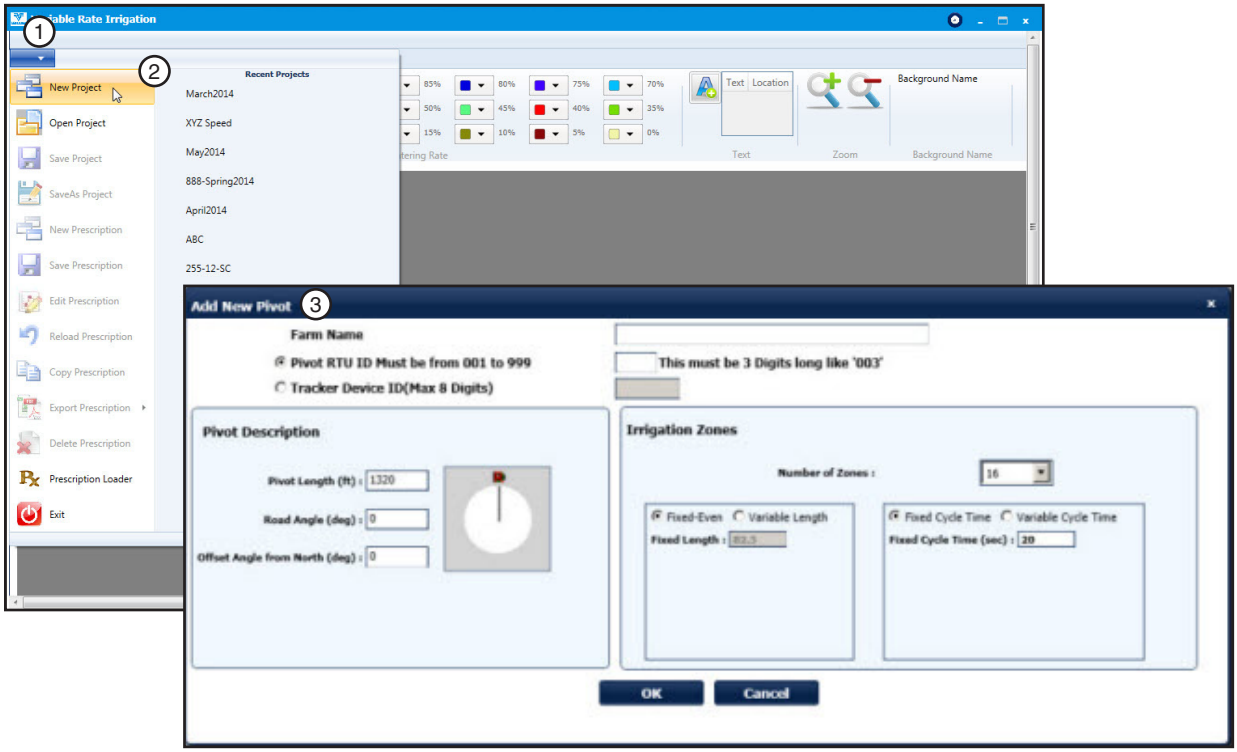


Figure 8-1 1. VRI Drop-Down Menu 2. Select New Project 3. Add New Pivot Screen

To create a VRI project, select **New Project** from the VRI drop-down menu. (Refer to Figure 8-1.)

The Add New Pivot screen appears.

Pivot Parameters

The Pivot Parameters section of the Add New Pivot screen provides fundamental information about the pivot. (Refer to Figure 8-2.)

1. Enter the farm name in the **Farm Name** field.
2. Select one of the following, and:
   - Enter the pivot's Remote Telemetry Unit (RTU) number in the **Pivot RTU ID** field. This is a user-defined number, and must be three digits long.

     or
   - Enter the Tracker Device ID in the **Tracker Device ID** field. The maximum length of this field is eight digits.

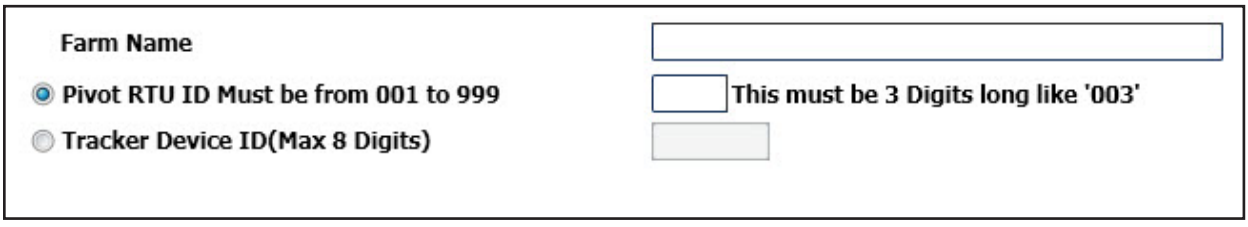


Figure 8-2 Pivot Parameters

Creating a Pivot Project

Pivot Description

The Pivot Description section of the Add New Pivot screen provides the physical and logistical information about the pivot. (Refer to Figure 9-1.)

1. Enter the pivot's total length in feet in the **Pivot Length** field. Length of pivot for VRI Prescriptions is from pivot point to end of machine which includes the overhang. The maximum length is 3,000 feet. The default length is 1320 feet.
2. If desired, enter the road angle in degrees (in relation to the Offset Angle from North) in the **Road Angle** field.
3. If desired, enter the offset angle in degrees in the **Offset Angle from North** field.

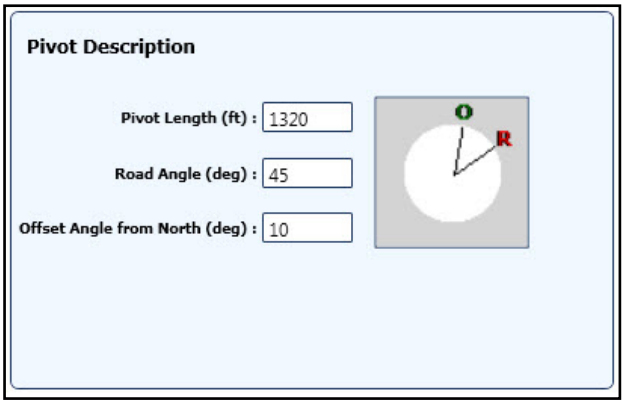


Figure 9-1 Pivot Description

Irrigation Zones

The Irrigation Zones section of the Add New Pivot screen provides information on the number of zones, their lengths, and the cycle time for each zone. (Refer to Figure 9-2.)

(Refer to the Irrigation Zones section of the Appendix for more information.)

1. In the Irrigation Zones section, select the number of pie-shaped zones in the **Number of Zones** drop-down menu. The maximum number of zones allowed is 30. (Refer to Figure 9-3.)

   NOTE: Select **1 Speed Ctrl** to implement VRI Speed Control.

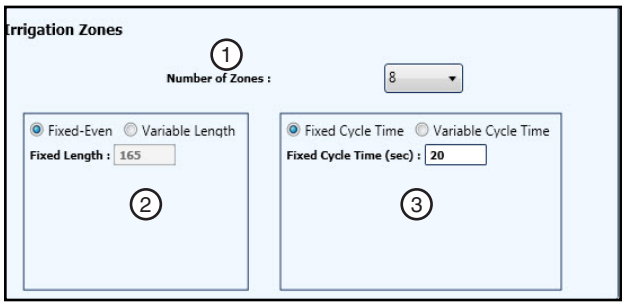


Figure 9-2 1. Number of Zones
2. Length of Zones
3. Watering Cycle Time for each Zone

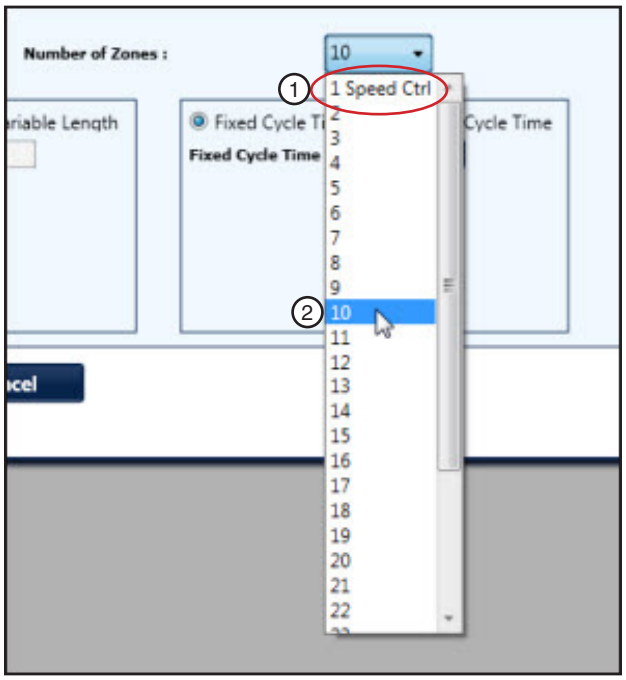


Figure 9-3 1. Speed Control
2. Number of Zones for Zone Control

Create a Project and Prescription

Creating a Pivot Project

Zone Length

2. If you are implementing VRI Zone Control, select either **Fixed-Even** or **Variable Length** to describe the irrigation zone length.
   - If you select **Fixed-Even**, the fixed length is equal to the pivot length divided by the number of zones. (Refer to Figure 10-1.)
   - If you select **Variable Length**, enter the individual lengths for each zone shown in the drop-down list box, beginning with zone 1 (closest to the center of the pivot). As each zone length is entered, it is deducted from the total pivot length. (Refer to Figure 10-2.)

   NOTE: If you are implementing VRI Speed Control, the zone length is the length of the pivot.

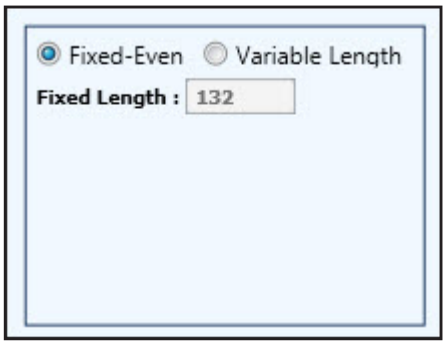


Figure 10-1 Fixed Length Selection

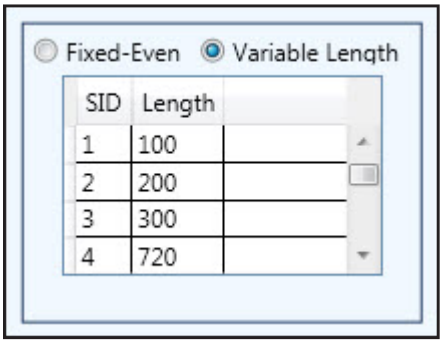


Figure 10-2 Variable Length Selection

Zone Cycle Time

3. Select either **Fixed Cycle Time** or **Variable Cycle Time** to describe the amount of time water will be applied to each zone.
   - If Fixed Cycle Time is selected, enter the desired cycle time. The fixed cycle time default is 20 seconds. (Refer to Figure 10-3.)
   - If Variable Cycle Time is selected, enter the cycle time for each zone shown in the drop-down list box, beginning with zone number 1. Range is 0 to 999 seconds. (Refer to Figure 10-4.)
     - » Typically a longer cycle time is assigned to zones near the pivot point because the span moves slower.
     - » Progressively shorter cycle times are assigned to zones as they get farther away from the pivot point because the span moves faster.

   NOTE: If you are implementing Speed Control, the cycle time is the specified time (in seconds) to complete one revolution divided by 180 sectors. Example: 86,400 (24 hrs / 60 min. / 60 sec.) / 180 = 480 sec. (8 min.)

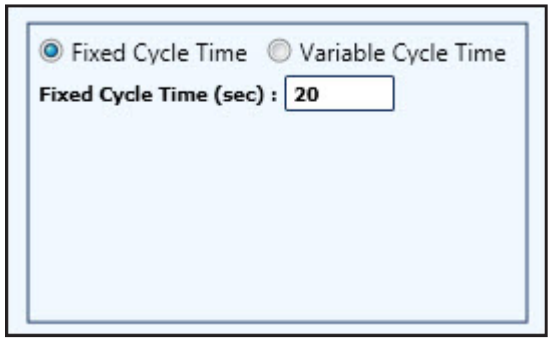


Figure 10-3 Fixed Cycle Time Selection

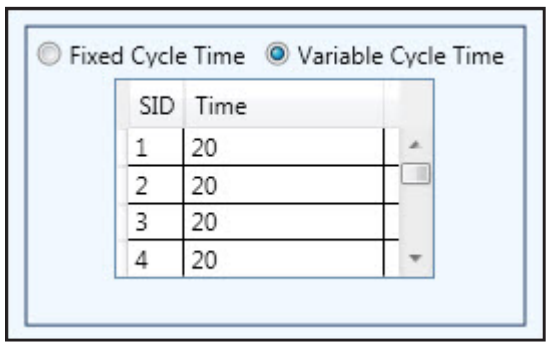


Figure 10-4 Variable Cycle Time Selection

Creating a Pivot Project

4. Click **OK** on the Add New Pivot screen. (Refer to Figure 11-1.)

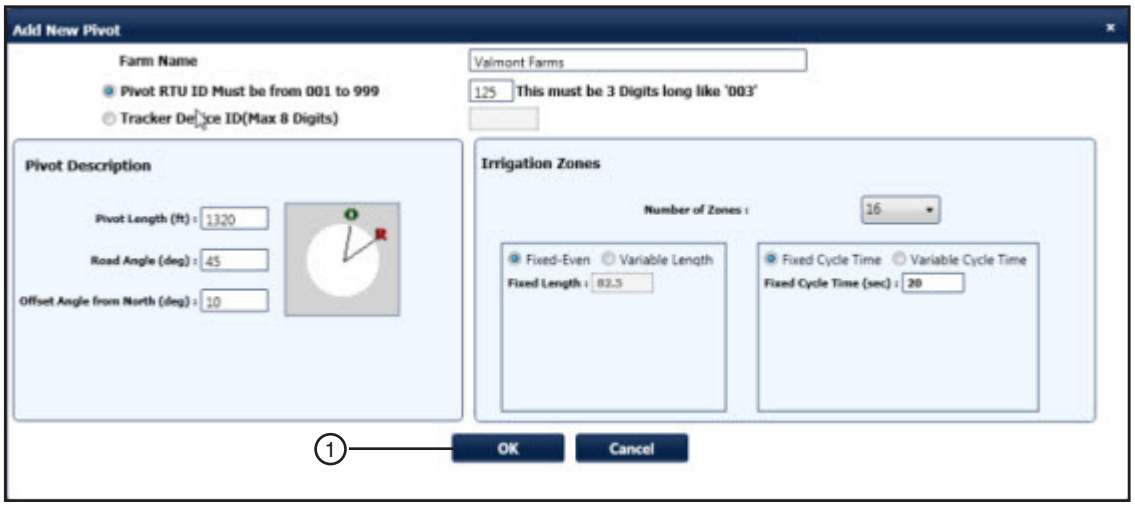


Figure 11-1 1. OK button

If any of the fields on the Add New Pivot screen have been left blank, the List of Errors screen appears on which the errors are identified. You must correct the errors before continuing. (Refer to Figure 11-2.)

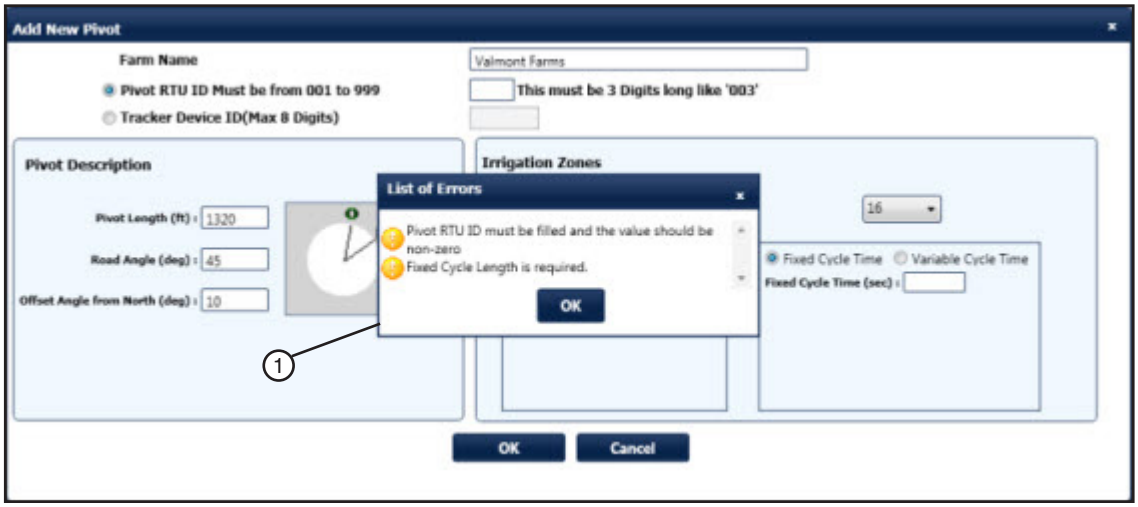


Figure 11-2 1. Error List

If there are no errors, the Prescription Name Entry Screen appears. (Refer to Figure 11-3.)

5. Enter the name of the pivot's prescription in the **Prescription Name** field.
6. Click **OK**.

Figure 11-3 Prescription Name Entry Screen

Create a Project and Prescription

Creating a Pivot Project

The Tools screen appears. You will use this screen to create a pivot prescription.

NOTE

- **When creating VRI Zone Prescriptions, a good understanding of the overall hydraulics of the center pivot, pipeline (if any), and pump is necessary to ensure equipment is not damaged by shutting off too many zones at once, thereby decreasing flow to less than the minimum flow rate.**
- **Most pumps will experience an increase in pressure as the flow is decreased. The minimum flow rate must be determined in order to calculate the maximum changes that can be made.**
- **A variable speed pump is a good option.**

Zone Control Tools Grid

The grid for the Zone Control pivot is a complete 360-degree circle, with yellow degree markers every 20 degrees. (Refer to Figure 12-1.) Between every two degree markers are 10 single zones in one circular zone. Considering that you can designate up to 30 circular zones for the pivot, it is possible that you could establish as many as 5400 single zones in the pivot grid.

The red marker on the pivot grid indicates the zero-degree pivot position on the grid. This point is based on the setting you selected in the **Offset Angle from North** field on the Add New Pivot screen.

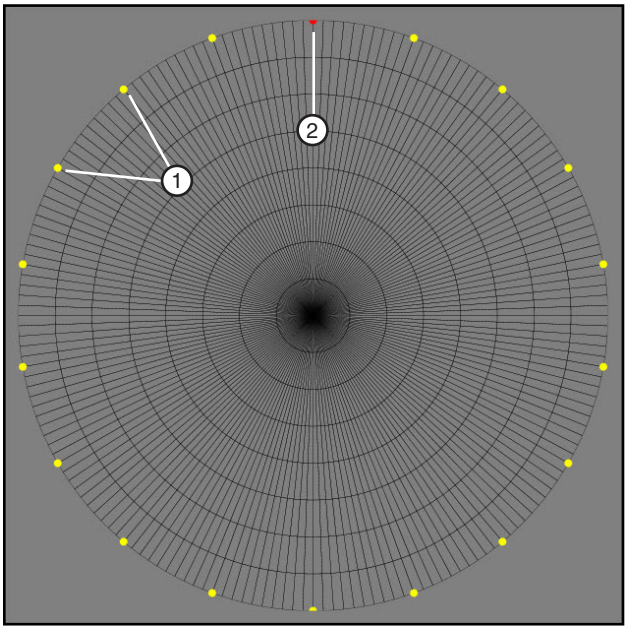


Figure 12-1 Zone Control Tools Grid

1. Degree Markers
2. Zero-Degree Pivot Position

Speed Control Tools Grid

The grid for the Speed Control pivot is a complete 360-degree circle with 180 two-degree sectors. (Refer to Figure 12-2.)

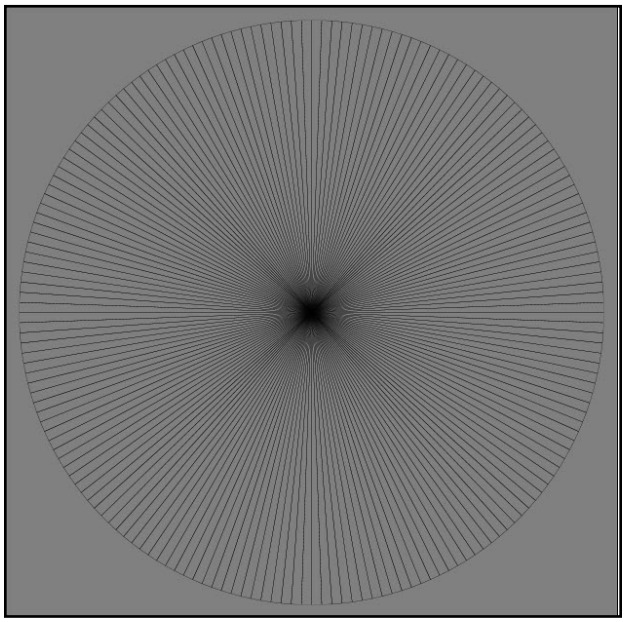


Figure 12-2 Speed Control Tools Grid

Selecting a Background Field Image

Background Field Image

The first thing to do when creating a pivot prescription is to select the image of the field to be used as the map's background.

1. Click the **Change Background** tab on the Variable Rate Irrigation screen. (Refer to Figure 13-1.)

   The Change Background screen appears. (Also refer to Figure 13-1.)

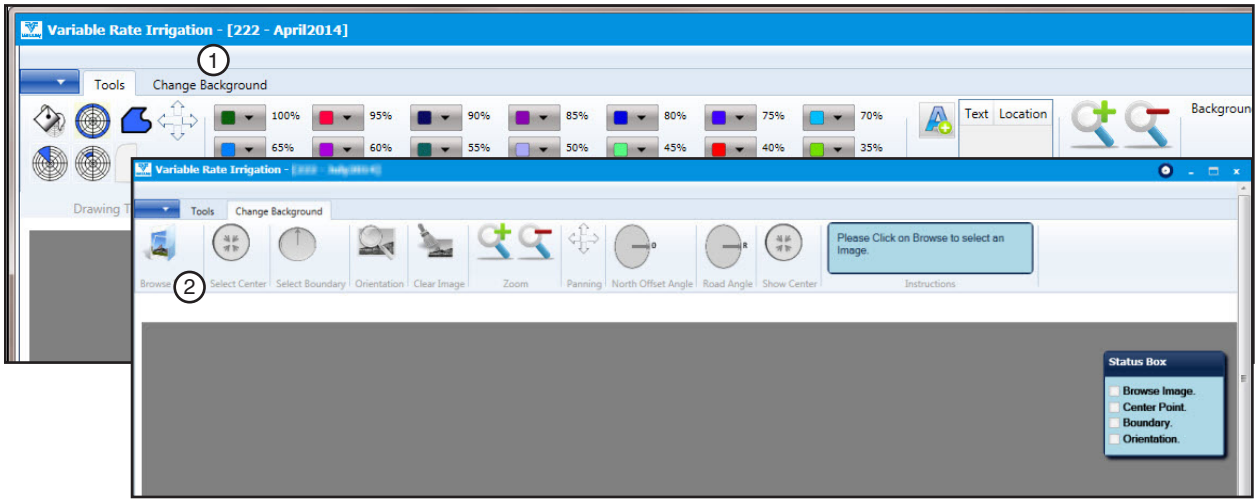
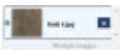


Figure 13-1 1. Change Background Tab
2. Change Background Screen

Following are descriptions of the buttons and boxes found on this screen.

	**Browse Image** - Opens the Images folder for the selection of the image of the field for which you are creating a prescription.			**North Offset Angle** - Displays a red arrow indicating the North Offset Angle selected when describing the pivot project.
	**Select Center** - Allows the selection of the center point of the pivot with the cross hairs tool.			**Road Angle** - Displays a yellow arrow indicating the Road Angle selected when describing the pivot project.
	**Select Boundary** - Allows the selection of the outer boundary of the pivot with the cross hairs tool.			**Show Center** - Places a red X on the image to indicate the center of the pivot.
	**Orientation** - Displays the zones selected when describing the project/pivot.			**Multiple Images** - Lists and displays all images related to the project/pivot. Individual images can be deleted from this list.
	**Clear Image** - Clears the selected image from the screen.			**Delete All Images** - Deletes all images from this list.
	**Zoom In** - Increases the detail of the image.			**Instructions** - Provides instructions for the Browse Image, Select Center, Select Boundary, and Orientation buttons
	**Zoom Out** - Decreases the detail of the image.			**Status Box** - Indicates which actions (Browse Image, Center Point, Boundary, and Orientation) have been completed.
	**Panning** - Used in conjunction with the **Zoom In** button to move the image around the screen.			

Create a Project and Prescription

Selecting a Background Field Image

Background Field Image (continued)

2. Click the **Browse Image** button on the Tools screen, select the image of the field for which the prescription is being created, and click **Open**. (Refer to Figure 14-1.)

   The image appears on the screen. (Also refer to Figure 14-1.)

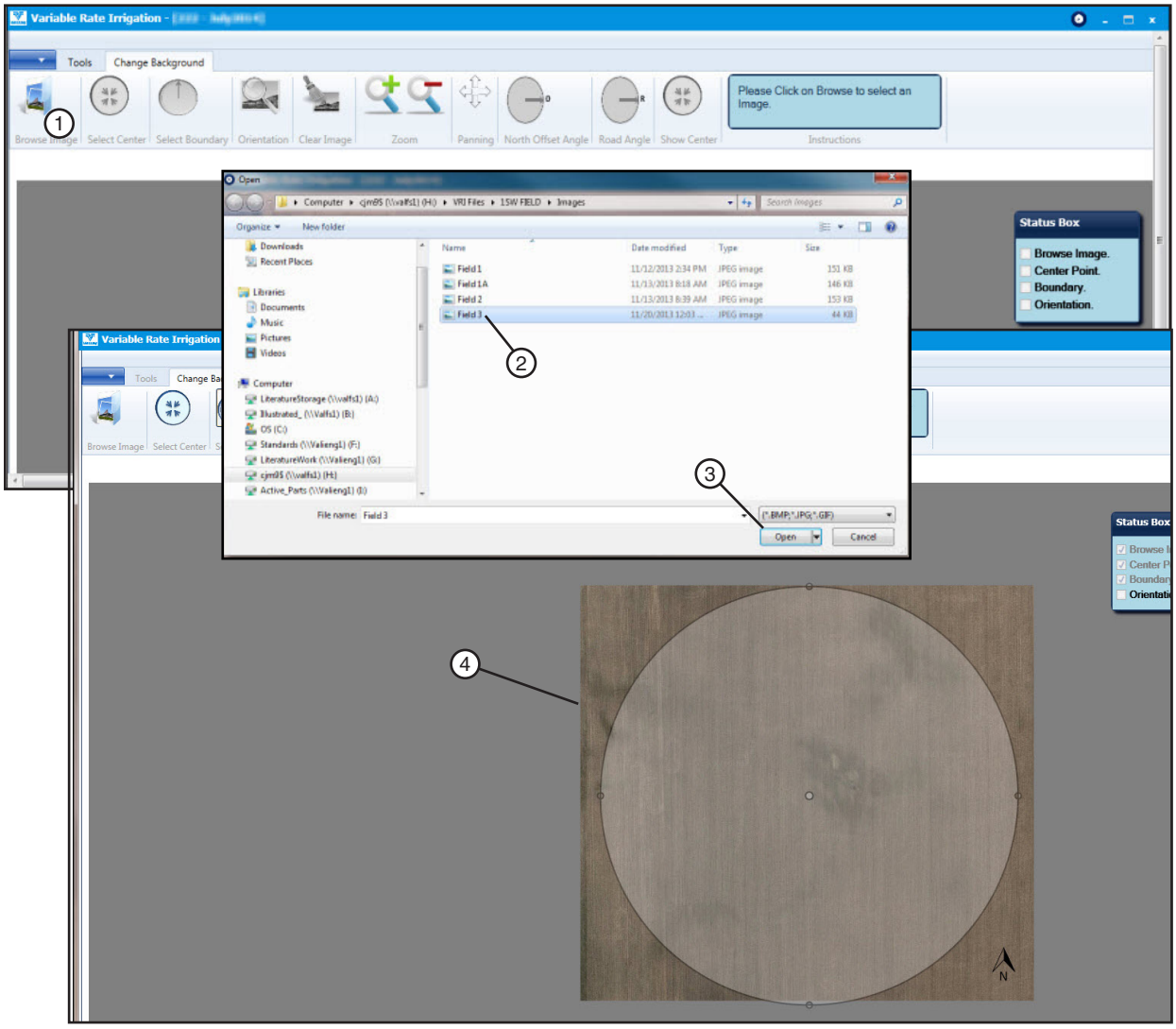


Figure 14-1 1. Browse Image button 3. Open
2. Image Selection 4. Background Image

At any point in the Change Background process, you may choose to erase the image and start over by clicking **Clear Image**.

A decision box appears asking if you want to clear the image from the list. (Refer to Figure 14-2.) If you select Yes, the image is cleared from the screen and erased from the list. If you select No, the image is only cleared from the screen.

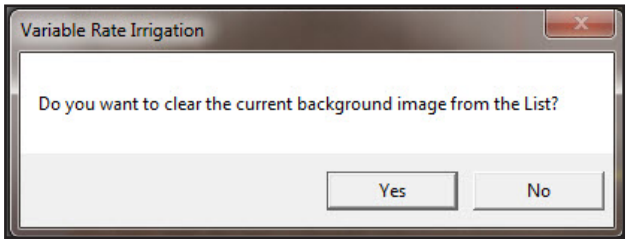


Figure 14-2 Decision Box

Selecting a Background Field Image

Background Field Image (continued)

3. Click the **Select Center** button, position the cross hairs over the center of the field, and left-click to set the centerpoint. (Refer to figure 15-1.)
4. Click the **Boundary** button, position the cross hairs at the edge of the field to identify the outer boundary of the pivot, and left-click to set the boundary.

   Note that both the centerpoint and the boundary of the image can be moved by clicking on the centerpoint indicator and one of the four boundary nodes.
5. Click the **Orientation** button to align the center and edge of the pivot grid with the image.

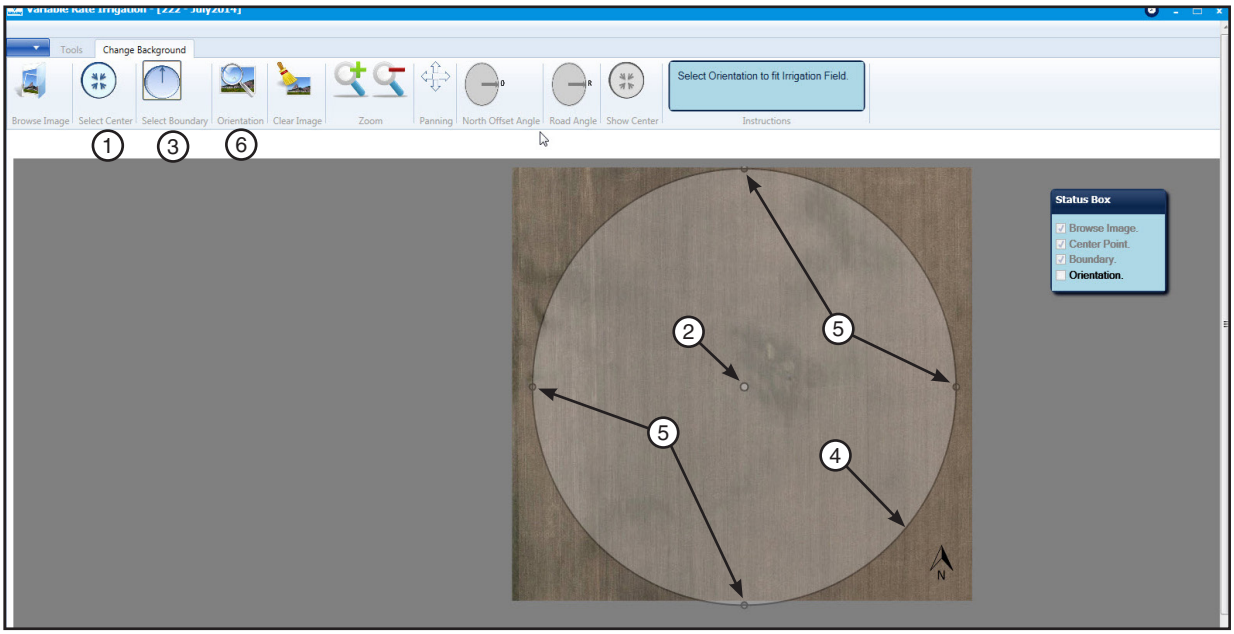


Figure 15-1
1. Select Center Button
2. Centerpoint Indicator
3. Boundary Button
4. Boundary
5. Boundary Node
6. Orientation Button

6. If you want, you may now click the **North Offset Angle** and **Road Angle** buttons to display these settings. (Refer to Figure 15-2.)

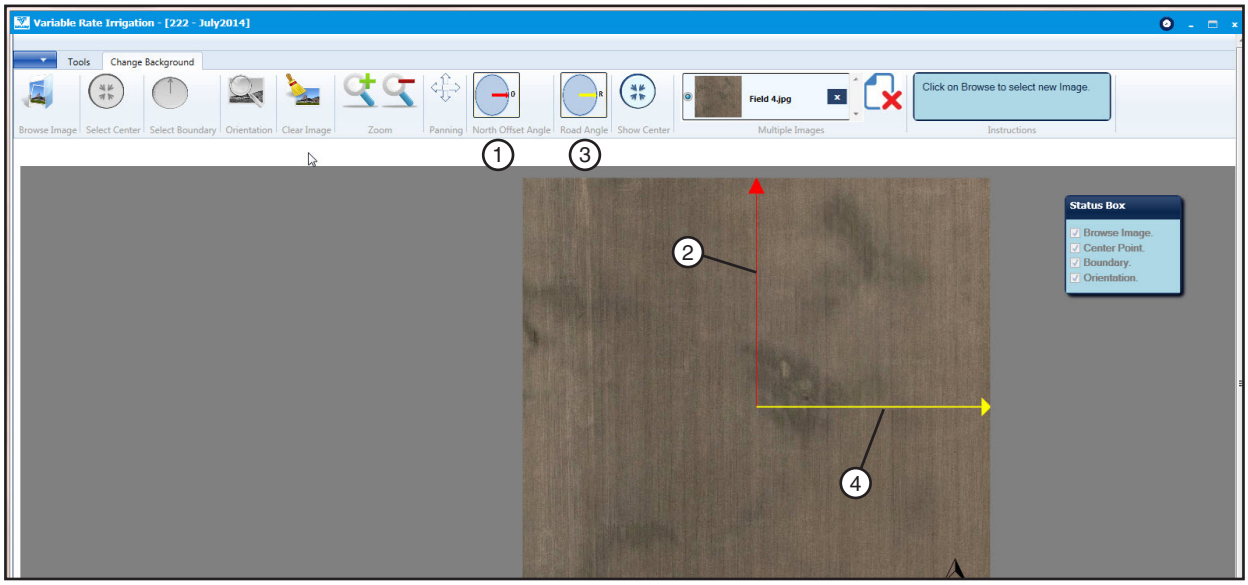


Figure 15-2
1. North Offset Angle Button
2. North Offset Angle at 0°
3. Road Angle Button
4. Road Angle at 90°

Create a Project and Prescription

Building a Prescription

After selecting the image of the field on the Change Background screen, you now will use the Tools screen to create the pivot's prescription. (Note that the RTU or Tracker Device ID and prescription name appear at the top of the screen.)

1. Click the Tools tab on the menu bar. (Refer to Figure 16-1.)

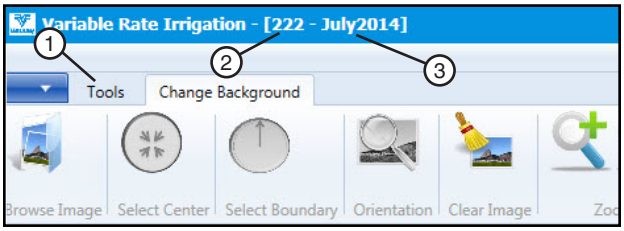


Figure 16-1 1. Tools Tab 2. RTU ID 3. Prescription Name

The Tools screen appears with the prescription grid overlayed on the image of the field. (Refer to Figure 16-2.) The Tools screen is used to create a new VRI-Speed (VRI-S) or VRI-Zone (VRI-Z) map, or to edit an existing map. The lines on the map outline zones and/or sectors.

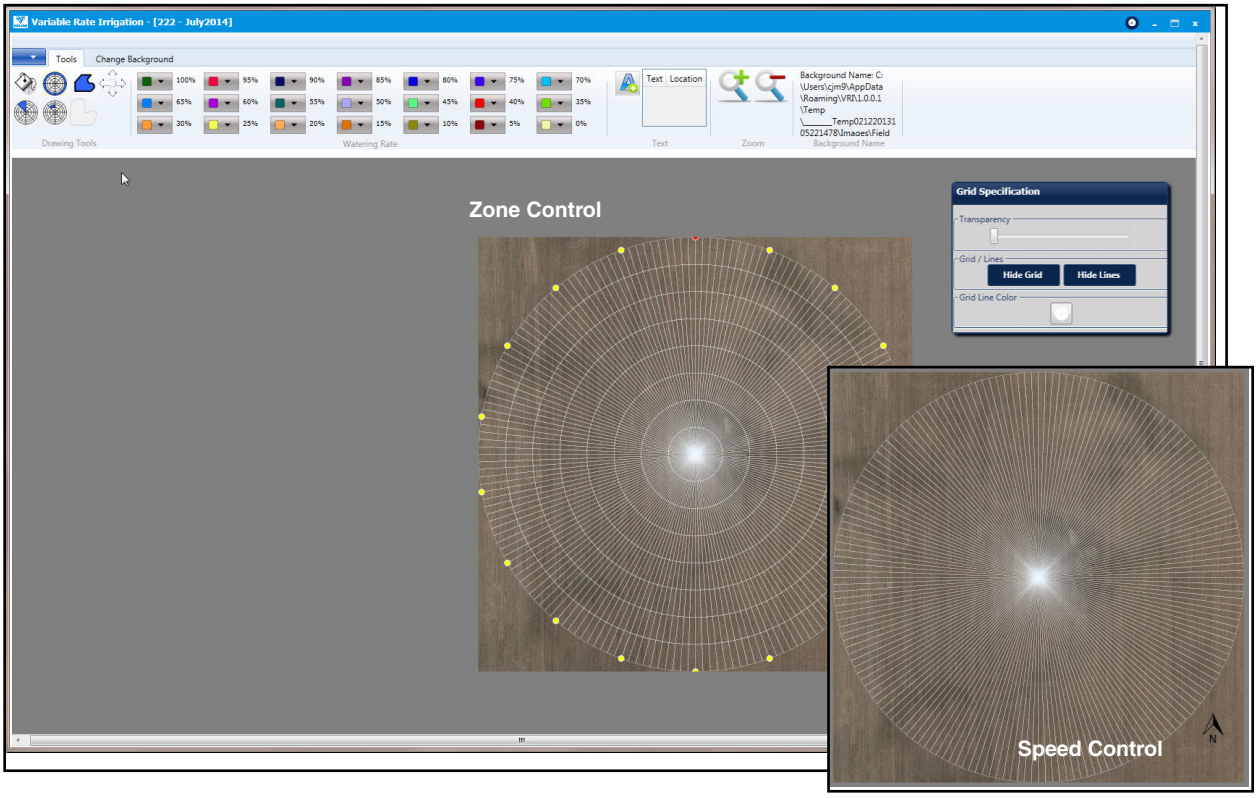


Figure 16-2 Tools Screen

Building a Prescription (continued)

Drawing Tools

The Drawing Tools section contains buttons that are used to define the area in which the watering rates are to be applied. (Refer to Figure 17-1.)

2. Select one of the following tools to identify a watering area:

   (1) **Adjacent Zone Tool** - Click anywhere on the map to fill all zones and/or sectors not already selected by another of the tools with the desired watering rate.

   (2) **Circular Zone Tool** - Click on a circular zone to fill all sectors within that zone with the desired watering rate. (VRI-Z only.)

   (3) **Polygon Tool** - Draw a multi-sided shape by left-clicking the mouse button at each position, then right-click the mouse button to complete the shape. (VRI-Z only.)

   (4) **Panning Tool** - Click after zooming the grid to move the grid around the screen.

   (5) **Sector Zone Tool** - Click in a sector, or sectors, to create a pie-shaped zone within which the desired watering rate will be applied.

   (6) **Single Zone Tool** - Click on a single zone to fill it with the desired watering rate. (VRI-Z only.)

   (7) **Hide Polygon Lines Tool** - Click to hide the lines of the polygon. (VRI-Z only.)

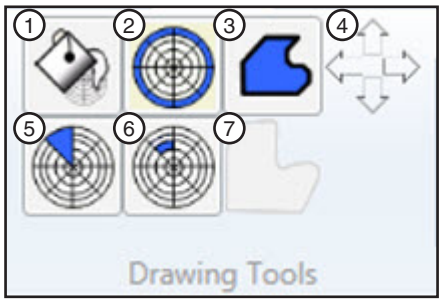


Figure 17-1
1. Adjacent Zone
2. Circular Zone
3. Polygon
4. Panning
5. Sector Zone
6. Single Zone
7. Hide Polygon Lines

Create a Project and Prescription

Building a Prescription (continued)

Watering Rate

The Watering Rate buttons are used with any of the Drawing Tools buttons to describe the amount of water to be applied to sectors and zones. The color-coded buttons range in 5 percent increments from 0 to 100 percent. (Refer to Figure 18-1.)

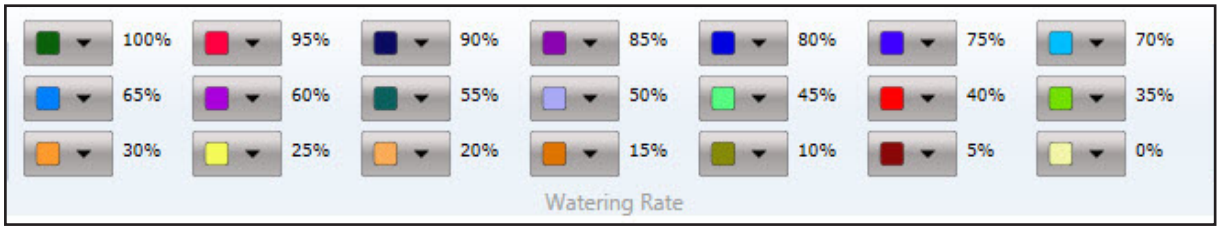


Figure 18-1 1. Watering Rates

3. Click the appropriate Watering Rate button.
4. Select the areas of the Zone Control prescription grid on which to apply the watering rate. (Refer to 18-2.)

   The example in Figure 18-1 displays the effect of using each of the drawing tools. Note that when you apply the Sector Zone tool (2) after first applying the Circular Zone tool (1), the Sector Zone overrides the Circular Zone. Likewise, applying the Circular Zone tool (3) after the Sector Zone tool (2) will cause another override.

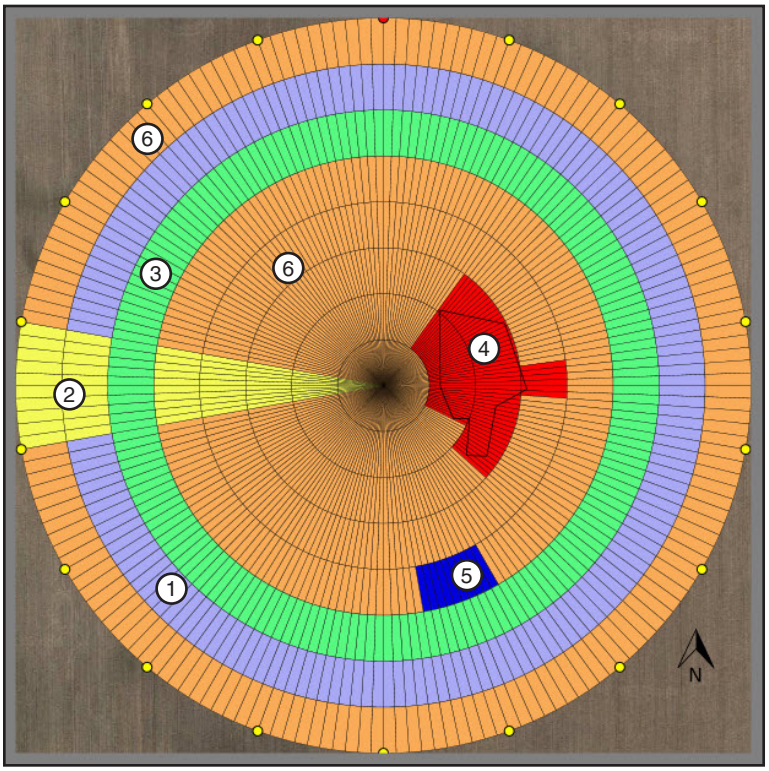


Figure 18-2 1. Circular Zone Tool Applied (50%) 3. Circular Zone Tool Applied (45%) 5. Single Zone Tool Applied (80%)
2. Sector Zone Tool Applied (25%) 4. Polygon Tool Applied (40%) 6. Adjacent Zone Tool Applied (20%

Building a Prescription (continued)

Watering Rate (continued)

Figure 19-1 is an example of what a Speed Control prescription grid might look like. It was created using the Adjacent Zone and the Sector Zone tools.

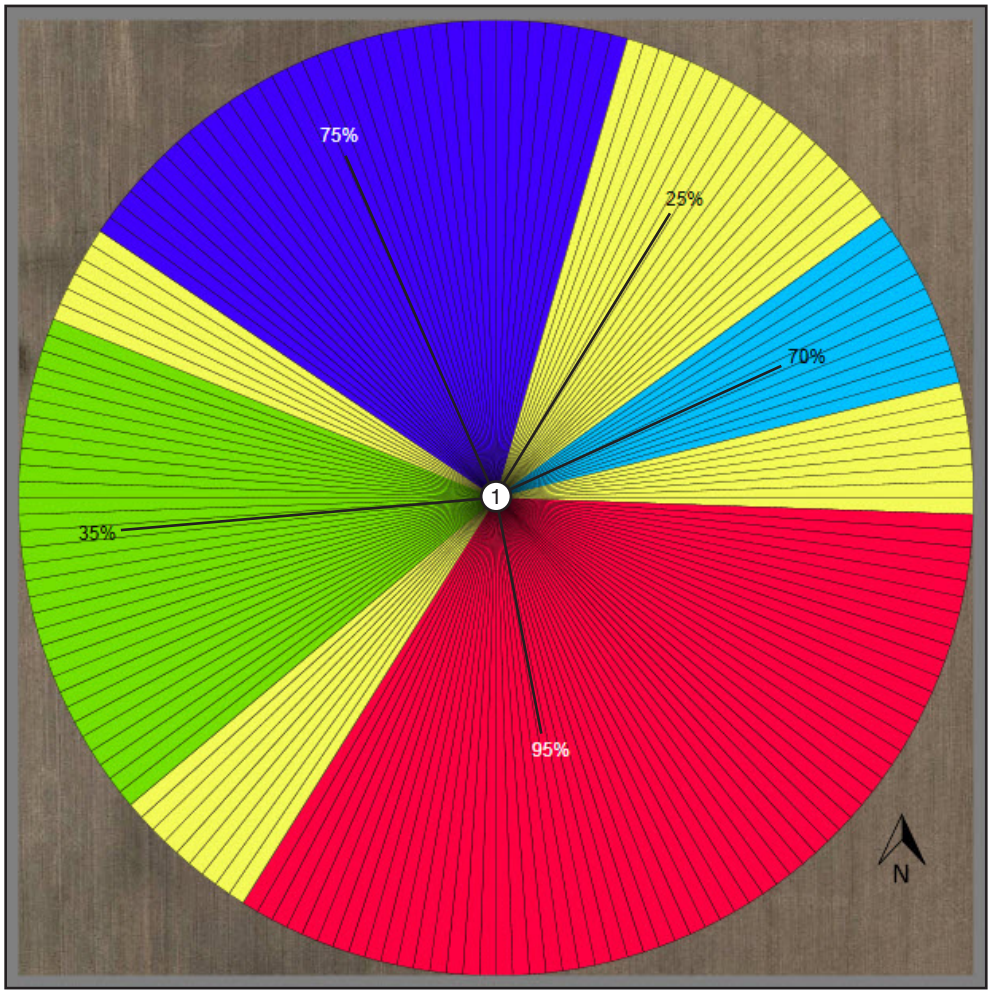


Figure 19-1 1. Speed Control Watering Rates

Create a Project and Prescription

Building a Prescription (continued)

Text

The Text tool is used to add text to the grid, and to edit or delete the text. (Refer to Figure 20-1.) Do the following to add text to the image.

1. Click the text icon.
2. Click on the area of the grid in which you want to place the text.

   The **Enter the Text** pop-up screen appears. (Refer to Figure 20-2.)
3. Enter the text you want displayed on the grid.
4. Click the **Font** button to change the appearance of the text.

   The Select Font pop-up screen appears. (Refer to Figure 20-3.)
5. Select the Font Family, Style Weight Stretch, and Font Color you want applied to the text.

   A sample of your selections appears in the Sample Text box.
6. Click **OK**.

   The **Enter the Text** box now displays the text as you want it to appear on the grid. (Refer to Figure 20-4.)
7. Click **OK**.

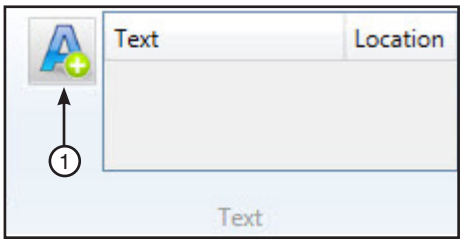


Figure 20-1 1. Text Icon

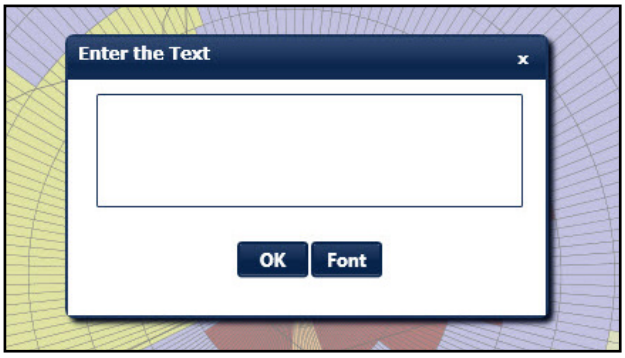


Figure 20-2 Enter Text Box

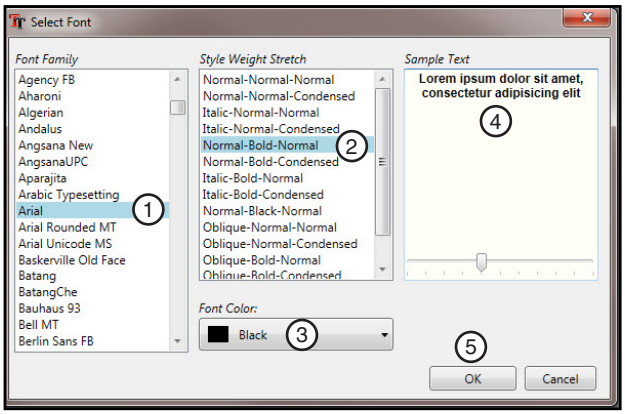


Figure 20-3 1. Font Family
2. Style Weight Stretch
3. Font Color
4. Sample Text
5. OK Button

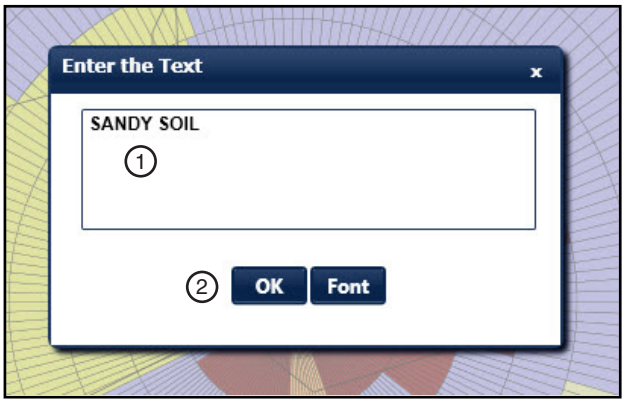


Figure 20-4 1. Desired Text 2. OK Button

Building a Prescription (continued)

Text (continued)

The text is now displayed on the grid in the position you wanted. (Refer to Figure 21-1.)

The Text tool now displays the text that was inserted, and its location on the grid. (Refer to Figure 21-2.)

Zoom

Use the **+** button to increase the size of the image, and use the **-** button to decrease it. (Refer to Figure 21-3.)

Background Name

The Background Name tool provides the file name and location of the background image being used for this grid. (Refer to Figure 21-4.)

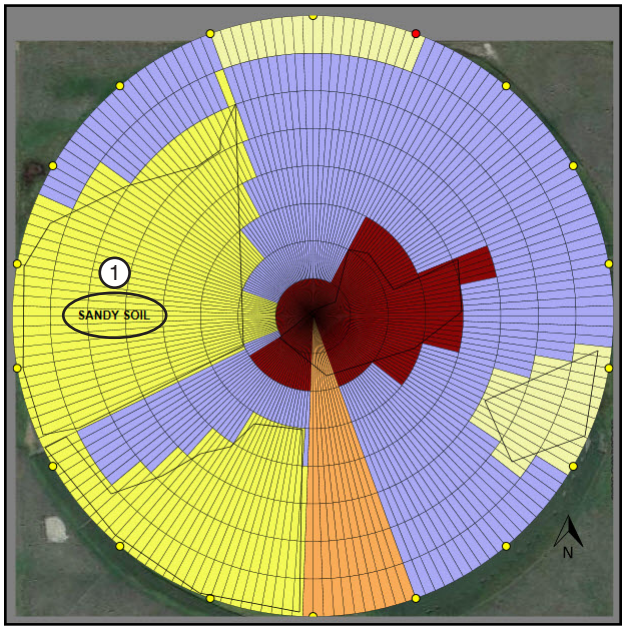


Figure 21-1 1. Inserted Text

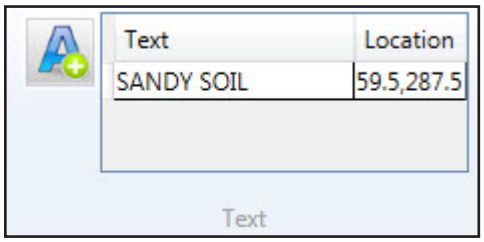


Figure 21-2 Text Tool with Text and Location

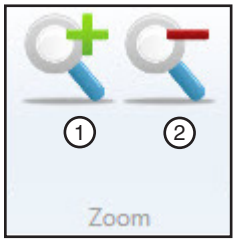


Figure 21-3 1. Zoom In
2. Zoom Out

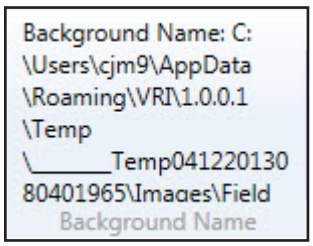


Figure 21-4 Background Name

Create a Project and Prescription

Building a Prescription (continued)

Grid Specification

The Grid Specification tool provides the means to change the appearance of the grid's transparency, grid, grid lines, and grid line color. (Refer to Figure 22-1.)

Transparency

At some point you may want to increase the transparency of the grid to view it in relation to the image behind it. To do this, click on the slider and move it to the right as far as you need. (Refer to Figure 22-2.)

The before and after affects of this can be seen in Figure 22-3.

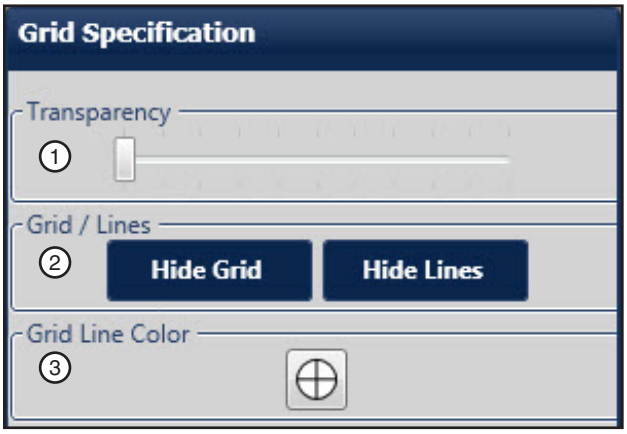


Figure 22-1 1. Transparency 3. Grid Line Color
2. Grid / Lines

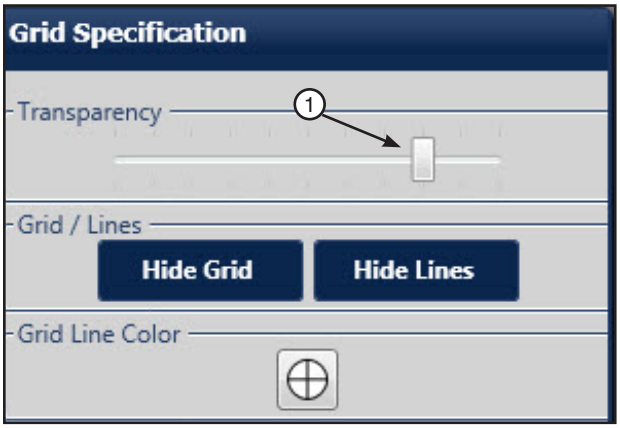


Figure 22-2 1. Transparency Slider

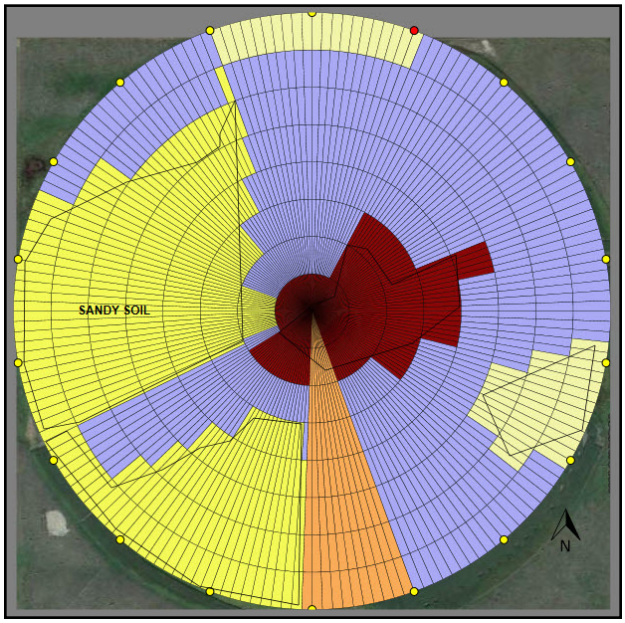


Figure 22-3 Image Before Increased Transparency

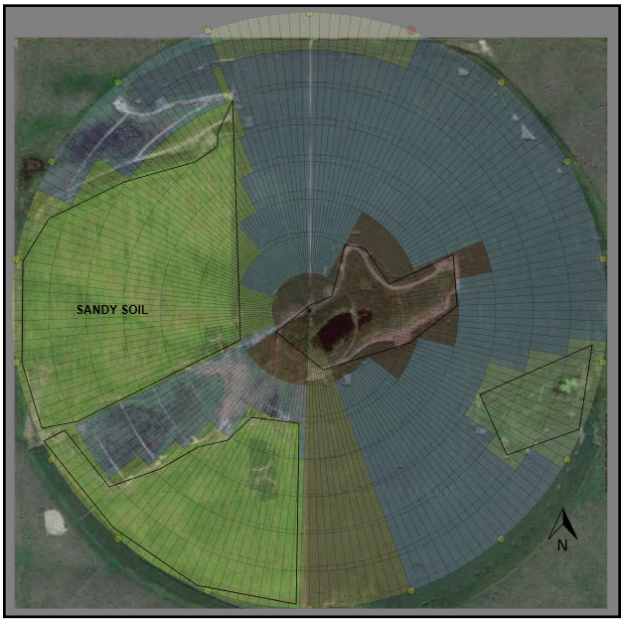


Image After Increased Transparency

Building a Prescription (continued)

Grid/Lines

You can hide the grid from view by clicking the **Hide Grid** button. (Refer to Figure 23-1.)

You will still see any text you have added to the grid and any polygon lines you may have drawn. (Refer to Figure 23-2.)

To hide the polygon lines, click on the **Hide Polygon Lines** drawing tool.

To display the grid, click **Show Grid** on the Grid Specification pop-up screen. (Refer to Figure 23-3.)

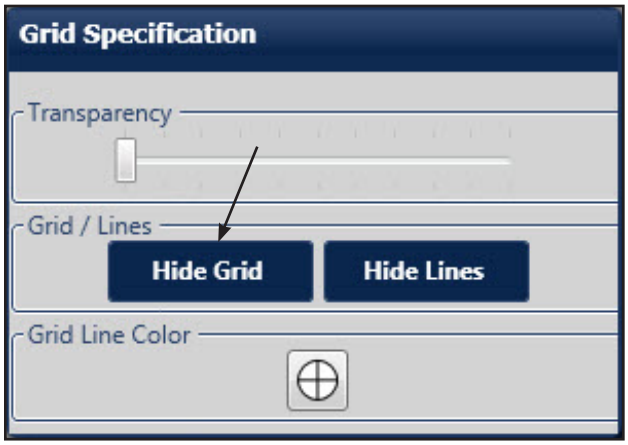


Figure 23-1 Hide Grid

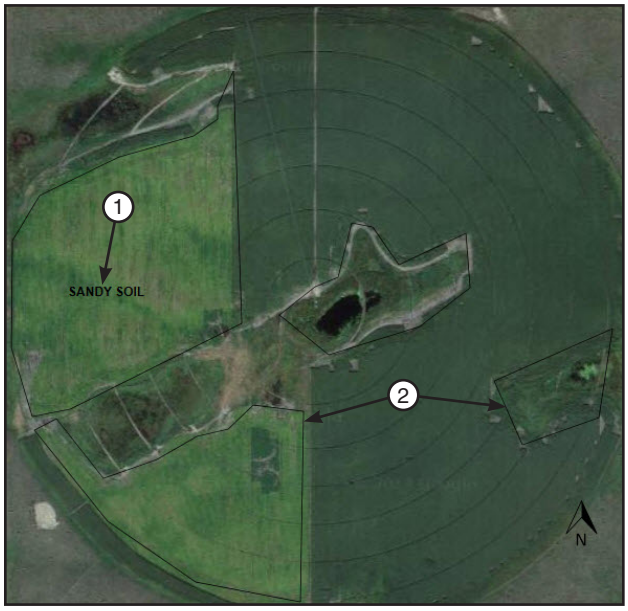


Figure 23-2 1. Inserted Text
2. Polygon Lines

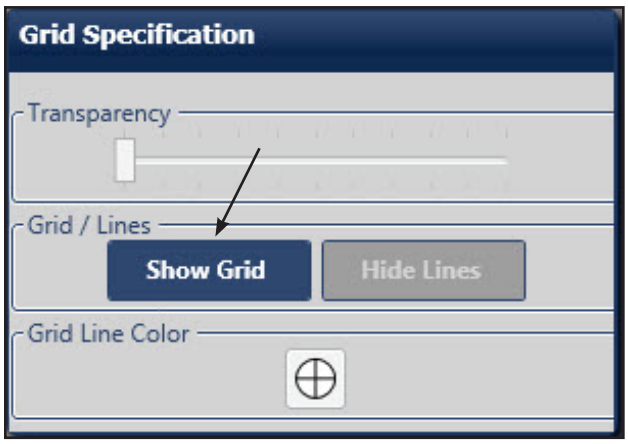


Figure 23-3 Show Grid

Create a Project and Prescription

Building a Prescription (continued)

Grid/Lines (continued)

You can hide just the lines of the grid by clicking the **Hide Lines** button. (Refer to Figure 24-1.)

Once again, you will still see any text you have added to the grid and, any polygon lines you may have drawn. (Refer to Figure 24-2.) To hide the polygon lines, click on the **Hide Polygon Lines** drawing tool.

To display the lines, click **Show Lines** on the Grid Specification pop-up screen. (Refer to Figure 24-3.)

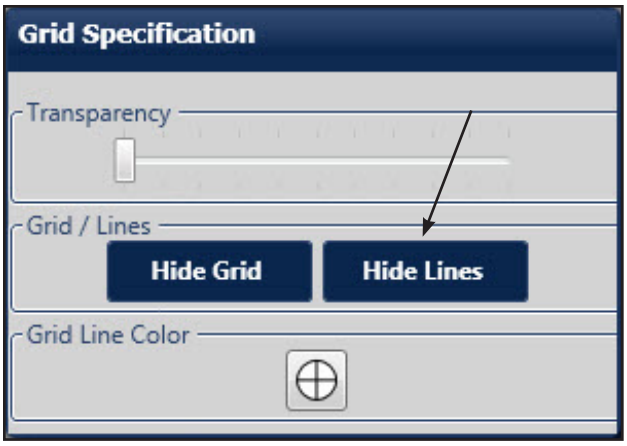


Figure 24-1 Hide Lines

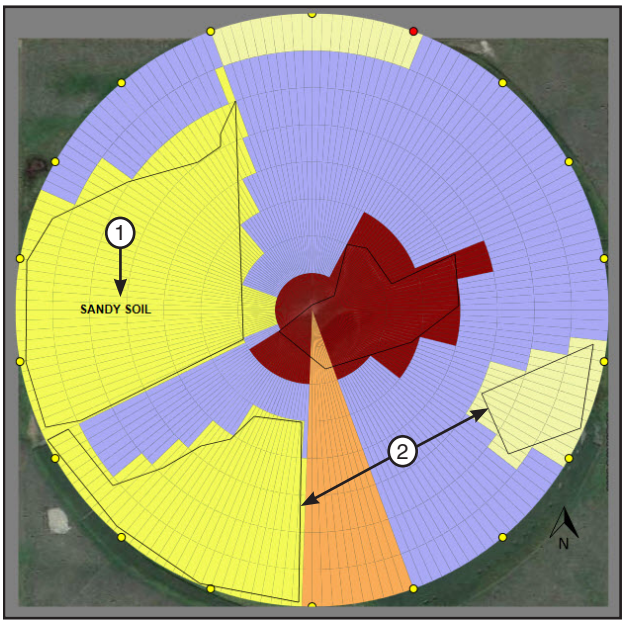


Figure 24-2 1. Inserted Text
2. Polygon Lines

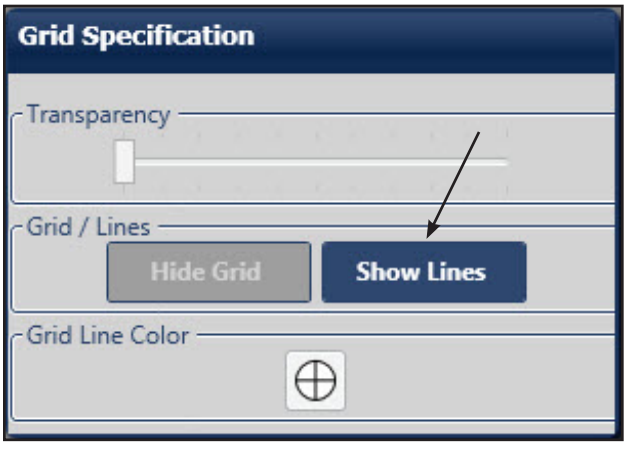


Figure 24-3 Show Lines

Building a Prescription (continued)

Grid Line Color

There may be times when the color of the grid lines needs to be changed to provide more clarity. To do this, click on the **Grid Line Color** icon, and choose the desired color. (Refer to Figure 25-1.)

The grid lines automatically change to the newly selected color. (Refer to Figure 25-2.)

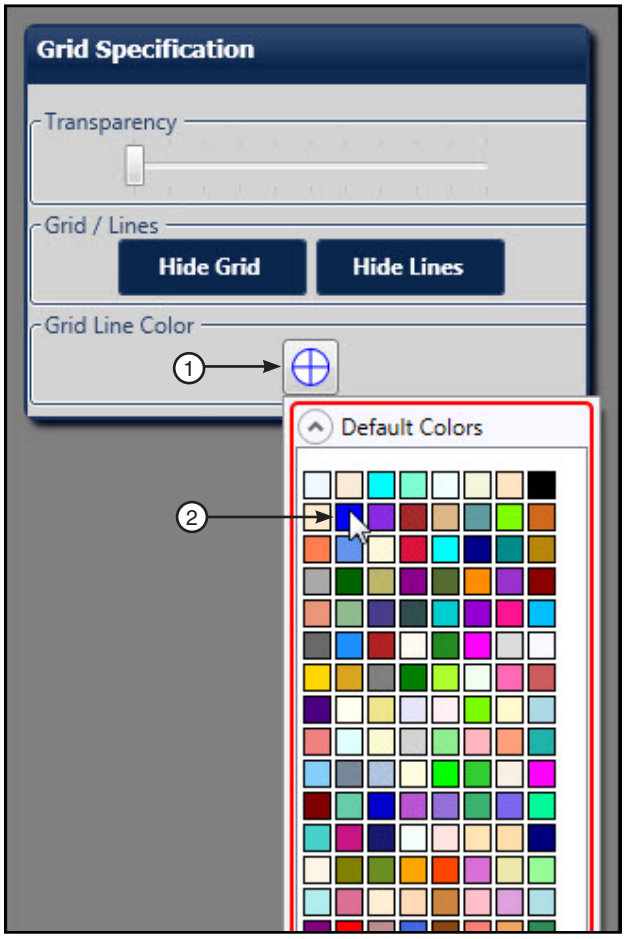


Figure 25-1 1. Grid Line Color Icon 2. Selected Line Color

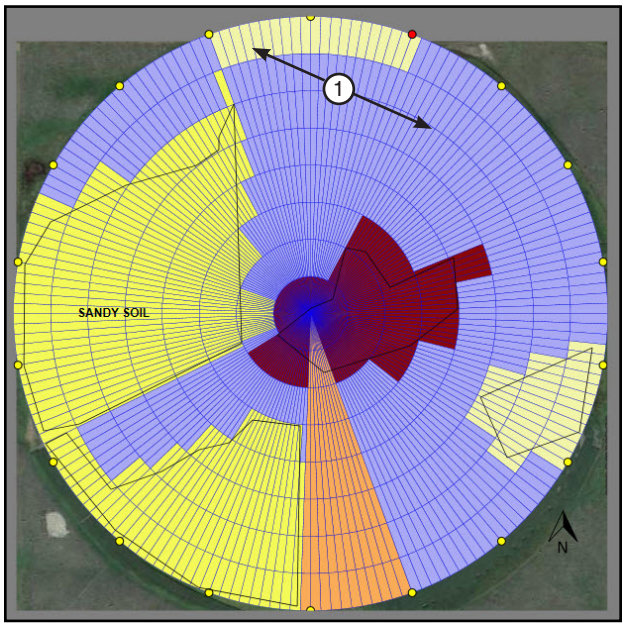


Figure 25-2 1. New Grid Line Color

Create a Project and Prescription

Working With Projects and Prescriptions

After you have created and saved a prescription, there are several things you can do with it, such as:

- Open
- Save As...
- Edit
- Reload
- Copy
- Export
- Delete
- Save

Opening a Project

In order to work with a prescription after it has been created and saved, you first need to open it. To do this, click on the VRI drop-down menu, and do one of the following.

1. Locate the project in the **Recent Projects** list, and click on its name to open it. (Refer to Figure 26-1.)
2. Click on **Open Project**, locate it in the appropriate project folder, and click on it to open it. (Refer to Figure 26-2.)

   The project prescription opens on the Tools screen.

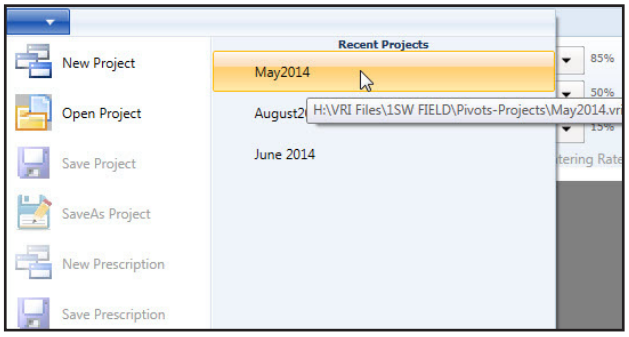


Figure 26-1 Open Recent Project

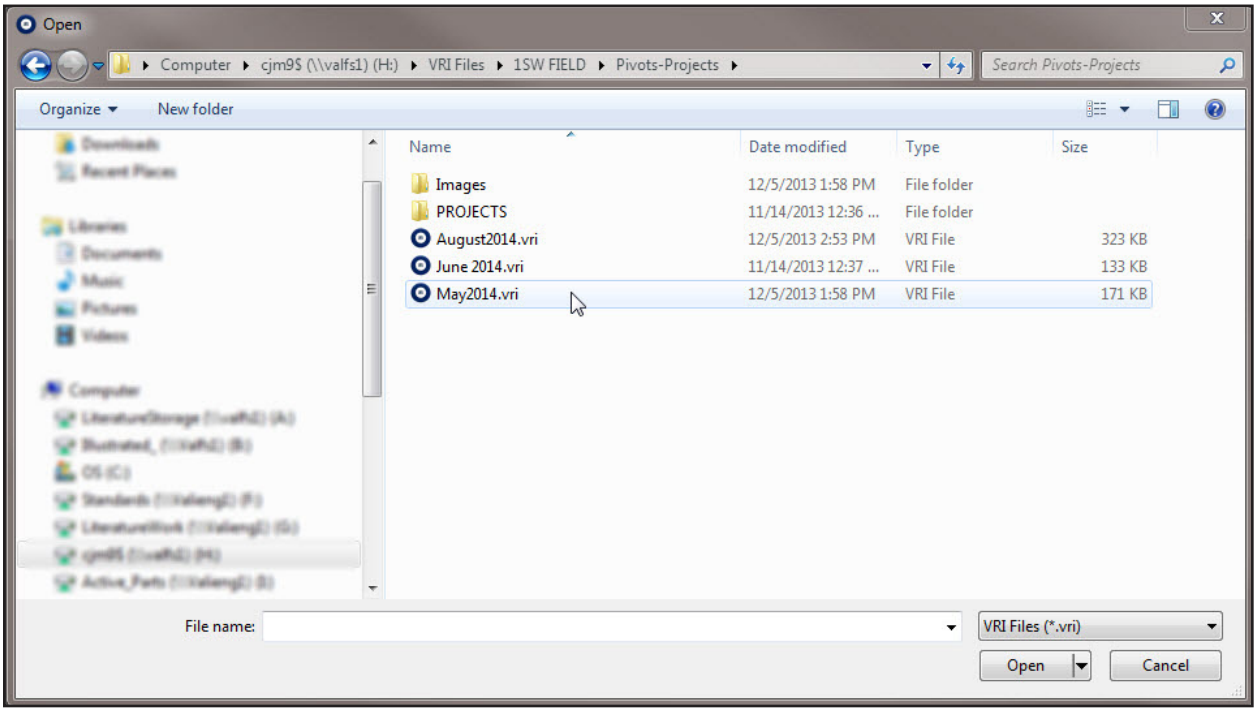


Figure 26-2 Open Project From Folder

Working With Projects and Prescriptions (continued)

Copying a Prescription

Once the project prescription has been opened, you can copy it and save it under another prescription name.

1. Select Copy Prescription in the VRI drop-down menu. (Refer to Figure 27-1.)

   The Prescription Name Entry Screen appears. (Refer to Figure 27-2.)

2. Right-click to highlight the “Copy of...” prescription name and erase it, if you want.

3. Enter the new prescription name and click **OK**.

   A pop-up screen appears verifying that the prescription has been successfully copied. (Refer to Figure 27-3.)

4. Click **OK**.

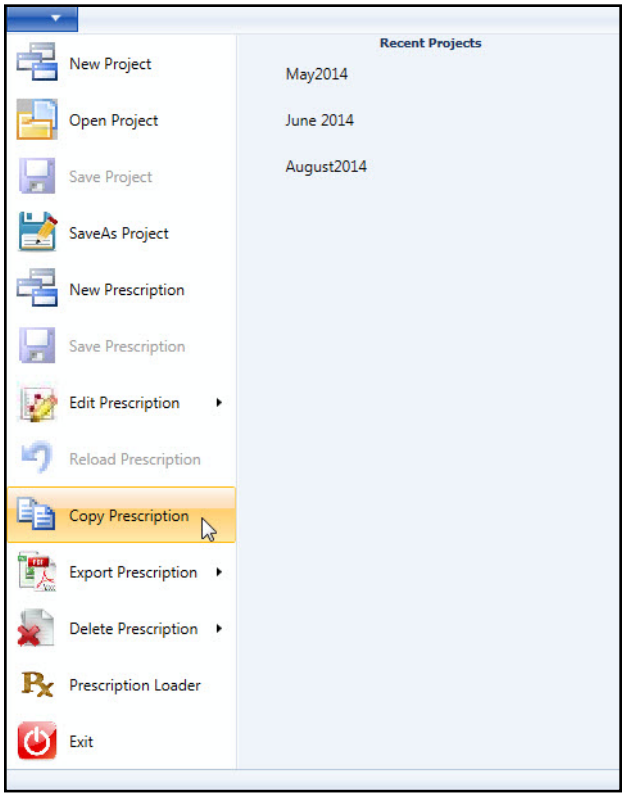


Figure 27-1 Select Copy Prescription

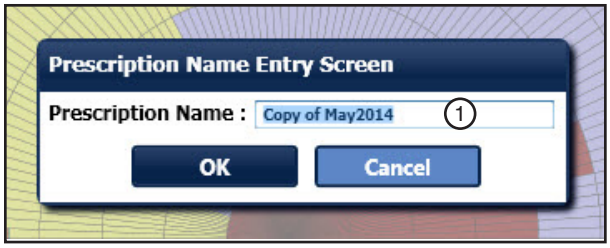


Figure 27-2 1. “Copy of...” Prescription Name Highlighted

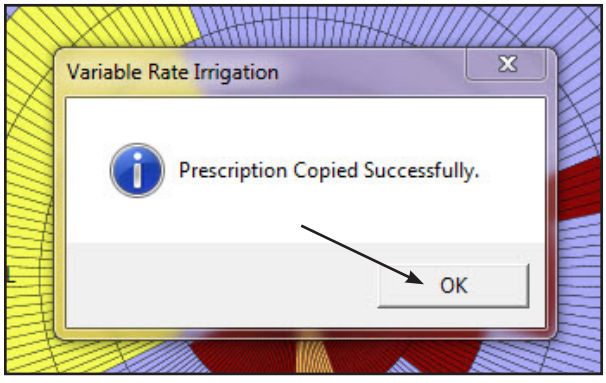


Figure 27-3 Successful Copy

Create a Project and Prescription

Working With Projects and Prescriptions (continued)

SaveAs Project

You may want to save the project under a different name or in a different location. To do this, open the project and do the following:

1. Click on the VRI drop-down menu, and select **SaveAs Project**. (Refer to Figure 28-1.)

   The Save As screen appears.

2. Locate the folder in which you want to save the new project, enter the new project name in the **File name** field, and click **Save**. (Refer to Figure 28-2.)

   A pop-up screen appears verifying that the project has been successfully saved. (Refer to Figure 28-3.)

3. Click **OK**.

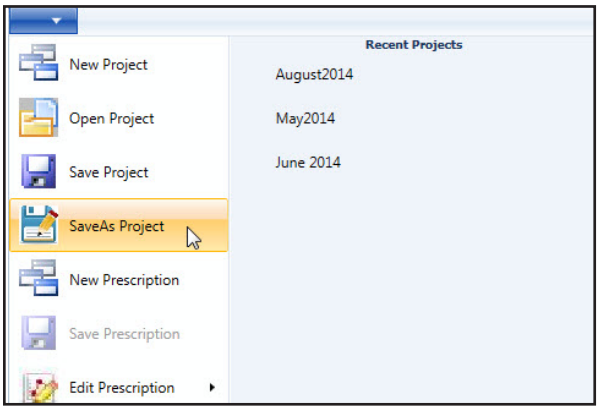


Figure 28-1 VRI Drop-down Menu

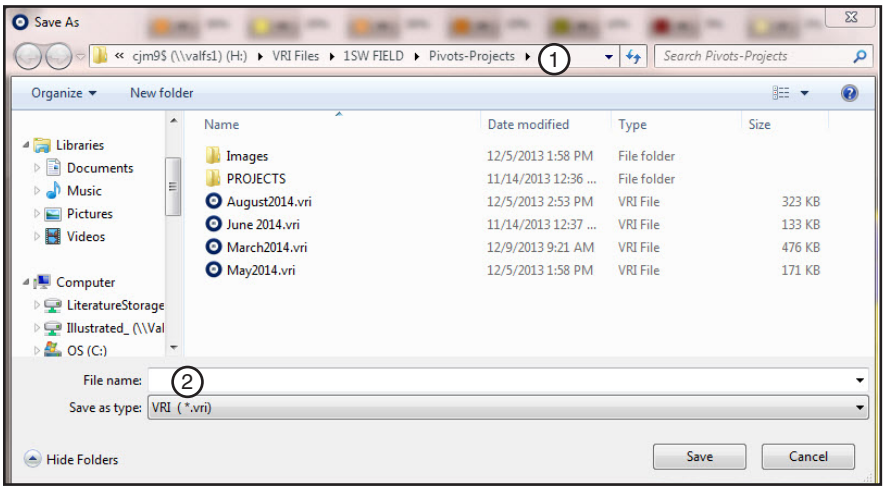


Figure 28-2 1. Folder Location 2. File Name Field

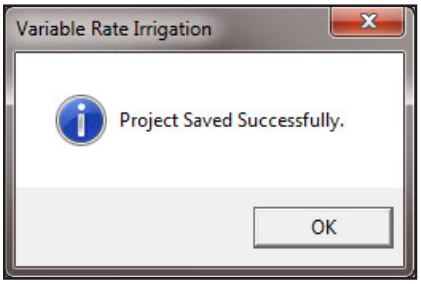


Figure 28-3 Successful Save

Working With Projects and Prescriptions (continued)

Editing a Prescription

Once the project prescription has been opened, you can change the watering rates for zones and sectors through the use of the Drawing Tools and Watering Rate buttons on the Tools screen. You can also change or delete any text you added to the grid. And, you can change the background image using the Change Background screen.

Reloading a Prescription

If, while you are editing a prescription but before you have saved the change, you find you have made a mistake or just want to change an edit you made you can reload the prescription and start over. To do this:

1. Select **Reload Prescription** in the VRI drop-down menu. (Refer to Figure 29-1.)

   A pop-up warning screen appears. (Refer to Figure 29-2.)

2. Click **Yes** if you want to discard your changes, or **No** if you do not.
3. If you select **No**, you are returned to the grid with the changes you have made.
4. If you select **Yes**, the prescription is reloaded without your changes.

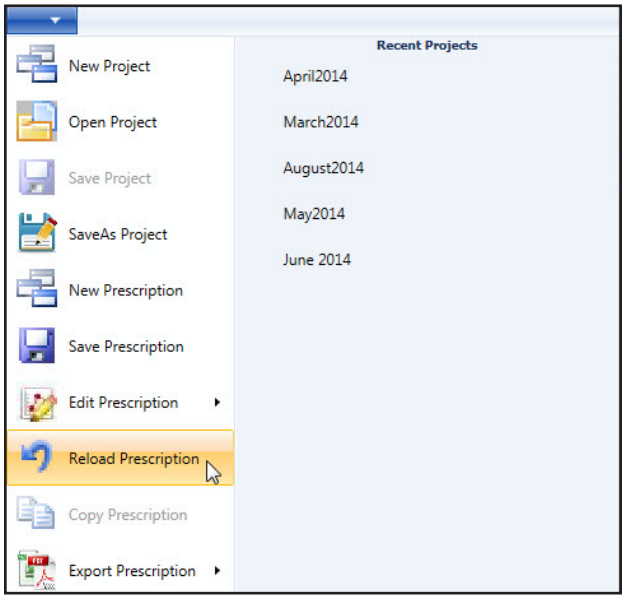


Figure 29-1 VRI Drop-down Menu

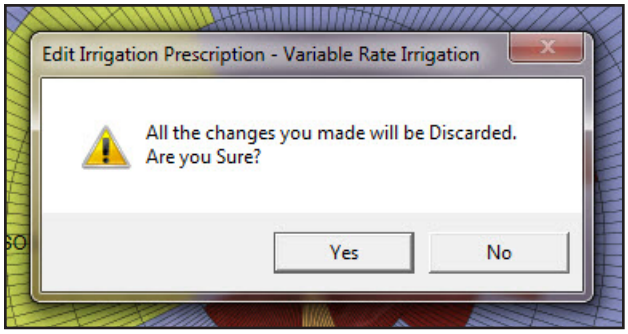


Figure 29-2 Discarding Changes Warning

Create a Project and Prescription

Working With Projects and Prescriptions (continued)

Exporting a Prescription

Within the VRI application, you can export a prescription to both a PDF (Portable Document Format) file and to a CSV (Comma-Separated Values) file.

Exporting to a PDF File

Exporting the prescription to a PDF file provides you with the ability to view its details online, to print a hardcopy, and to electronically share it with others.

To export a prescription to a PDF file:

1. Select **Export Prescription** in the VRI drop-down menu and click on **PDF**. (Refer to Figure 30-1.)

   The Select Images to Export screen appears. (Refer to Figure 30-2.)

2. Select the images to export by clicking in the appropriate checkboxes, and click **Export**.

   The Export screen appears.

3. Locate the folder in which you want to store the PDF file, and click **Save**. (Refer to Figure 30-3.)

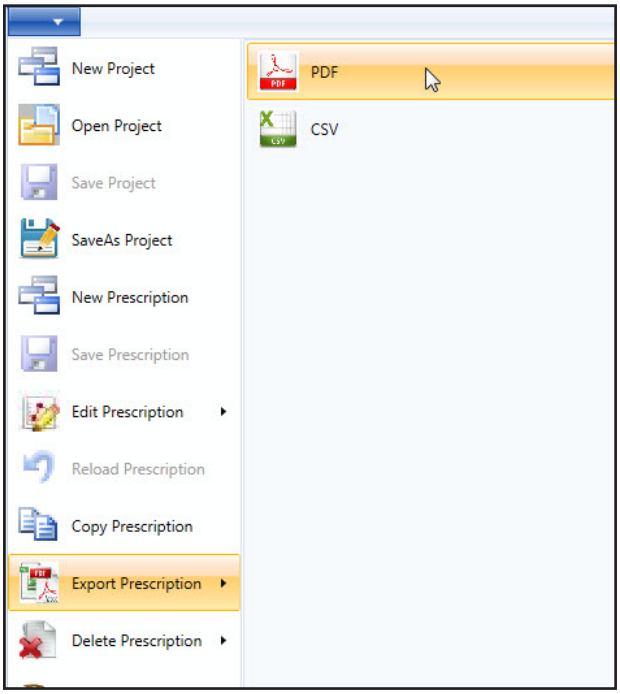


Figure 30-1 Export to PDF

Figure 30-2 1. Image Checkbox

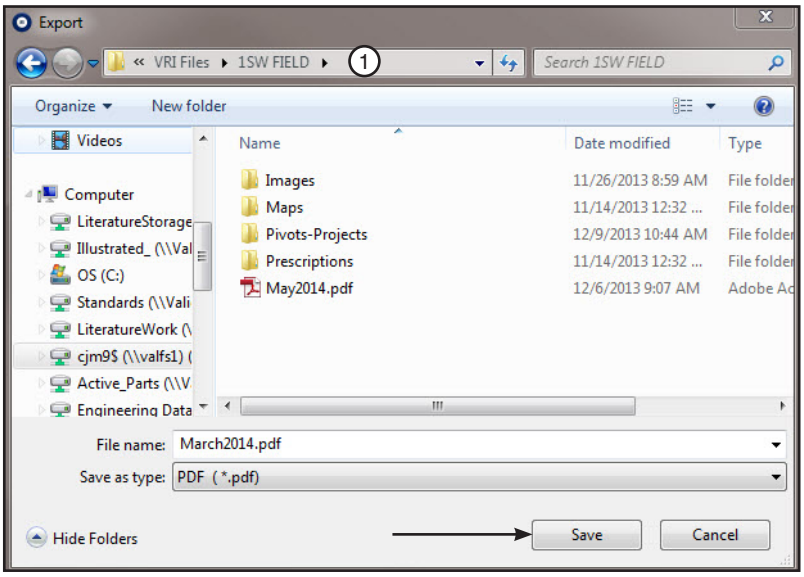


Figure 30-3 Export Screen 1. Folder Location

Working With Projects and Prescriptions (continued)

Exporting a Prescription (continued)

Exporting to a PDF File (continued)

A pop-up screen appears verifying that the prescription details have been successfully exported.

4. Click **OK**. (Refer to Figure 31-1.)
5. Open the PDF and you will see that you have available the following information.
   a. Cover Sheet - Includes Farm Name, Date the PDF was created, Prescription Name, RTU ID, Road Angle, Offset Angle, and a colored picture of the grid. (Refer to Figure 31-2.)
   b. Image Page - Includes the Farm Name, Prescription Name, and a colored copy of the image used in the prescription. (Refer to Figure 31-2.)
   c. Zone Information - Includes the Farm Name, Prescription Name, Zone Settings for Length and Cycle Time, and Zone Watering Rates for all zone sectors from 0 to 358 degrees. (Refer to Figure 31-2.)

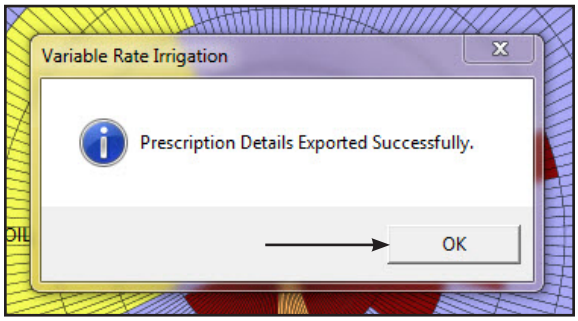


Figure 31-1 Successful Export

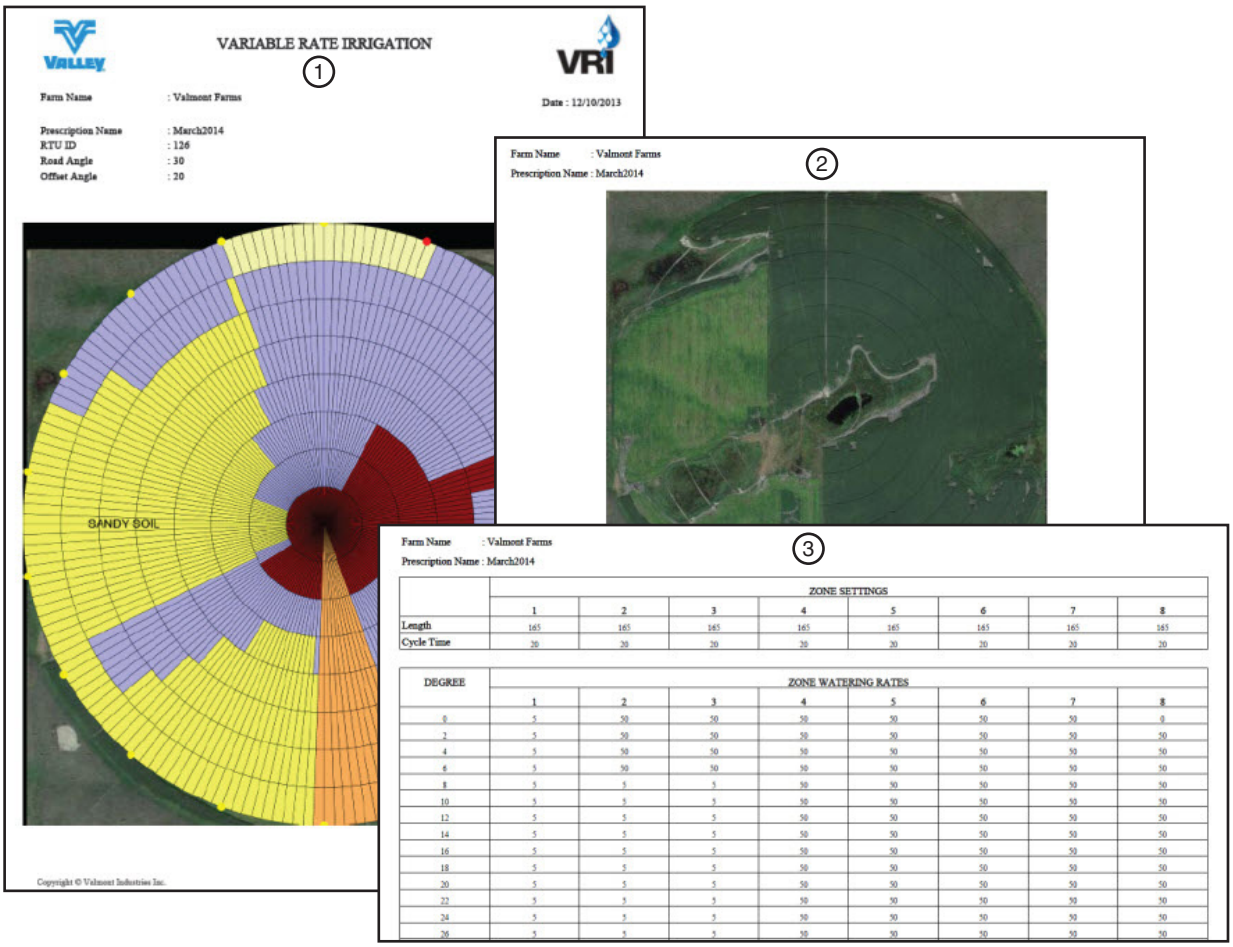


Figure 31-2 1. Cover Sheet 2. Image Page 3. Zone Information

Create a Project and Prescription

Working With Projects and Prescriptions (continued)

Exporting a Prescription (continued)

Exporting to a CSV File

Exporting the prescription to a CSV file provides you with the ability to import it into other data collecting programs, such as spreadsheets and databases, for reporting purposes. It can also be used for graphing and other such applications.

To export a prescription to a CSV file:

1. Select **Export Prescription** in the VRI drop-down menu and click on **CSV**. (Refer to Figure 32-1.)

   The Export screen appears.

2. Locate the folder in which you want to store the CSV file, and click **Save**. (Refer to Figure 32-2.)

   A pop-up screen appears verifying that the prescription details have been successfully exported.

3. Click **OK**. (Refer to Figure 32-3.)

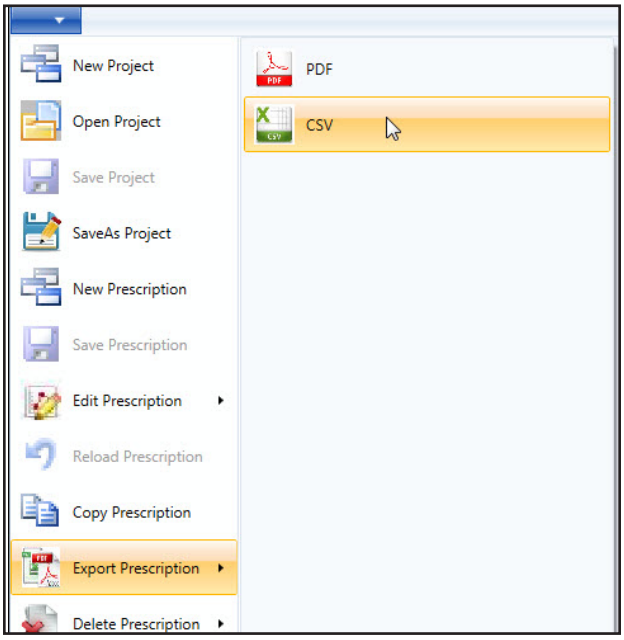


Figure 32-1 Export to CSV

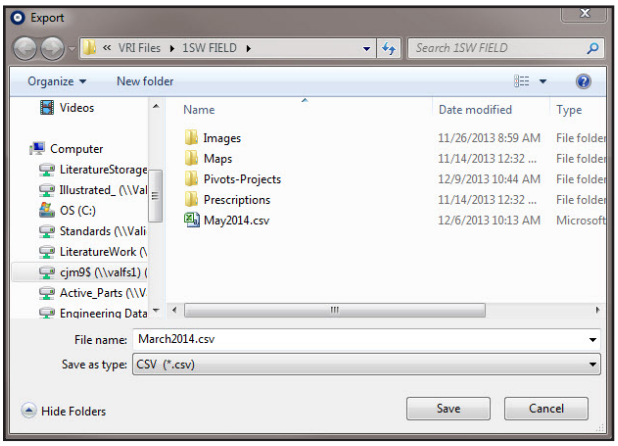


Figure 32-2 Folder Location

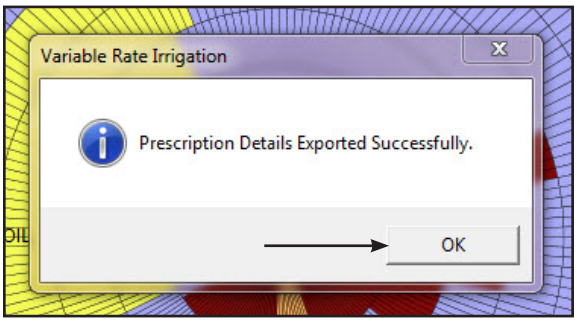


Figure 32-3 1. Successful Export

Working With Projects and Prescriptions (continued)

Exporting a Prescription (continued)

Exporting to a CSV File (continued)

4. Open the CSV file.

   You can see that it has been opened by a spreadsheet application. (Refer to Figure 33-1.)

   The file can also be imported into other data-gathering applications.

	A	B	C	D	E	F	G	H	I	J	K
1	Farm Name	Valmont Farms ①									
2	Prescription Name	Mar-14 ②									
3	RTU ID	126 ③									
4	Road Angle	300 ④									
5	Offset Angle	20 ⑤									
6	DEGREE	Zone - 1	Zone - 2	Zone - 3	Zone - 4	Zone - 5	Zone - 6	Zone - 7	Zone - 8 ⑥		
7	⑦ 0	5	50	50	50	50	50	50	0		
8	2	5	50	50	50	50	50	50	50		
9	4	5	50	50	50	50	50	50	50		
10	6	5	50	50	50	50	50	50	50		
11	8	5	5	5	50	50	50	50	50		
12	10	5	5	5	50	50	50	50	50		
13	12	5	5	5	50	50	50	50	50		
14	14	5	5	5	50	50	50	50	50		
15	16	5	5	5	50	50	50	50	50		
16	18	5	5	5	50	50	50	50	50		
17	20	5	5	5	50	50	50	50	50		
18	22	5	5	5	50	50	50	50	50		
19	24	5	5	5	50	50	50	50	50		
20	26	5	5	5	50	50	50	50	50		
21	28	5	5	5	50	50	50	50	50		
22	30	5	5	5	50	50	50	50	50		
23	32	5	5	5	50	50	50	50	50		
24	34	5	5	5	50	50	50	50	50		
25	36	5	5	5	50	50	50	50	50		
26	38	5	5	5	50	50	50	50	50		
27	40	5	5	5	50	50	50	50	50		
28	42	5	5	5	50	50	50	50	50		
29	44	5	5	5	50	50	50	50	50		
30	46	5	5	5	50	50	50	50	50		
31	48	5	5	5	5	5	50	50	50		
32	50	5	5	5	5	5	50	50	50		
33	52	5	5	5	5	5	50	50	50		
34	54	5	5	5	5	5	50	50	50		
35	56	5	5	5	5	5	50	50	50		
36	58	5	5	5	5	50	50	50	50		
37	60	5	5	5	5	50	50	50	50		

Figure 33-1

1. Farm Name
2. Prescription Name
3. RTU ID
4. Road Angle
5. Offset Angle
6. Zone Numbers
7. Zone Degrees (0 - 358)

Create a Project and Prescription

Working With Projects and Prescriptions (continued)

Deleting a Prescription

Individual prescriptions for pivot projects can be deleted without deleting the project. To delete a prescription, do the following.

1. Open the project whose prescription you want to delete.
2. Select **Delete Prescription** in the VRI drop-down menu, and click on the name of the prescription in the right-hand column. (Refer to Figure 34-1.)

   A pop-up decision screen appears asking if you are sure you want to delete the prescription.
3. Click **Yes**. (Refer to Figure 34-2.)

   You can click **No** if you have changed your mind.

   A second pop-up screen appears confirming that the prescription was successfully deleted.
4. Click **OK**. (Refer to Figure 34-3.)

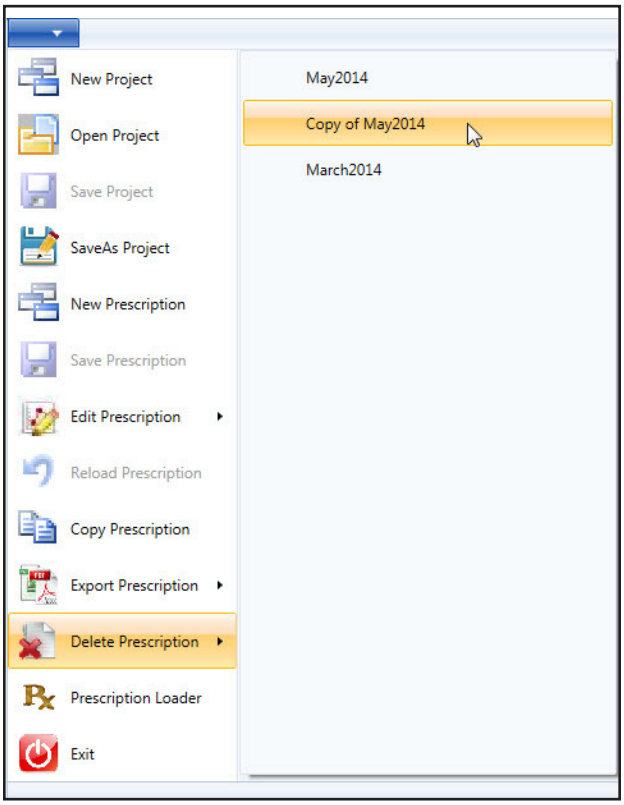


Figure 34-1 Delete Prescription

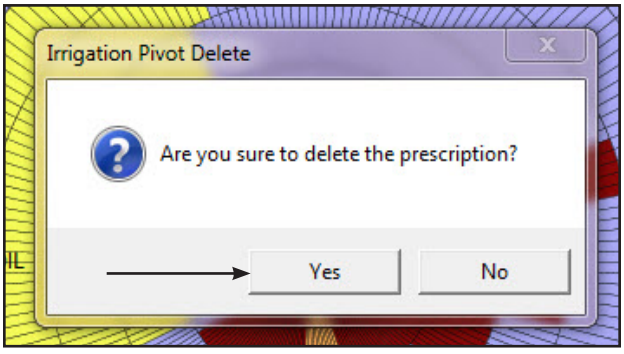


Figure 34-2 Delete Decision Pop-up

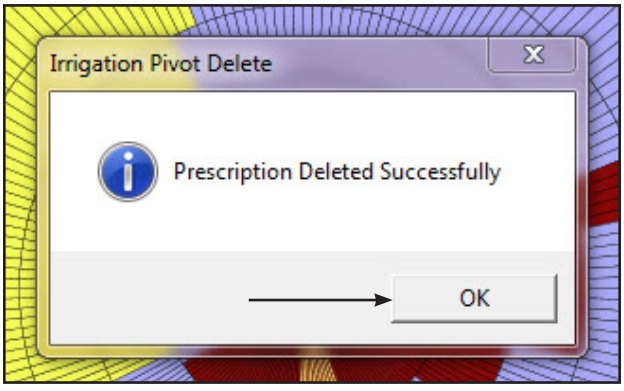


Figure 34-3 Deletion Successful

Working With Projects and Prescriptions (continued)

Saving a Pivot Project

In order to save a project, you must first save the prescription.

1. Select **Save Prescription** in the VRI drop-down menu. (Refer to Figure 35-1.)

   A pop-up screen appears stating that the prescription has been successfully saved. (Refer to Figure 35-2.)

2. Click **OK**.
3. Select **Save Project** in the VRI drop-down menu. (Refer to Figure 35-3.)

   The Save As screen appears.

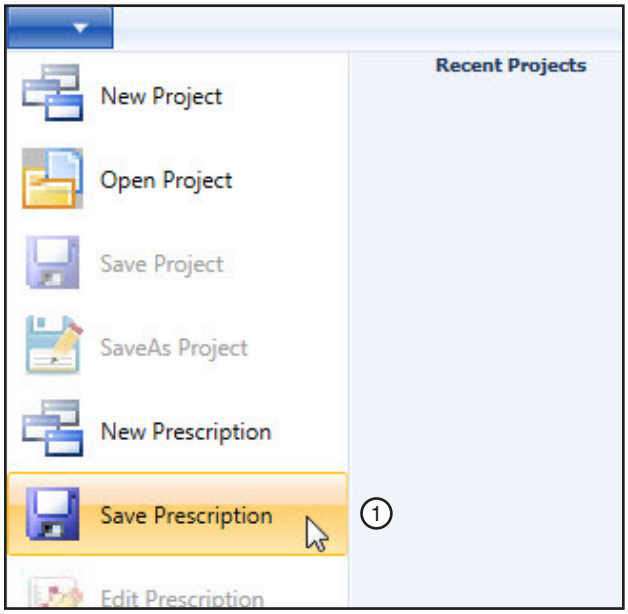


Figure 35-1 1. Save Prescription

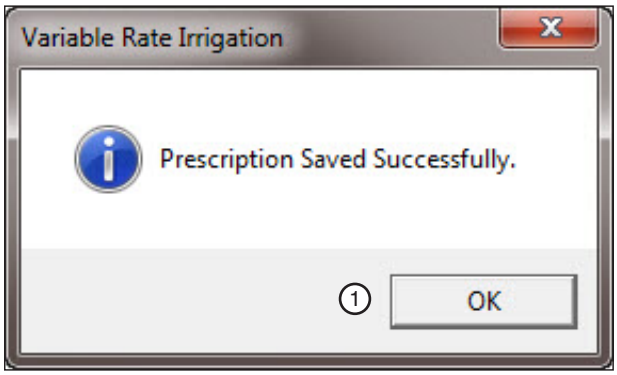


Figure 35-2 1. OK Button

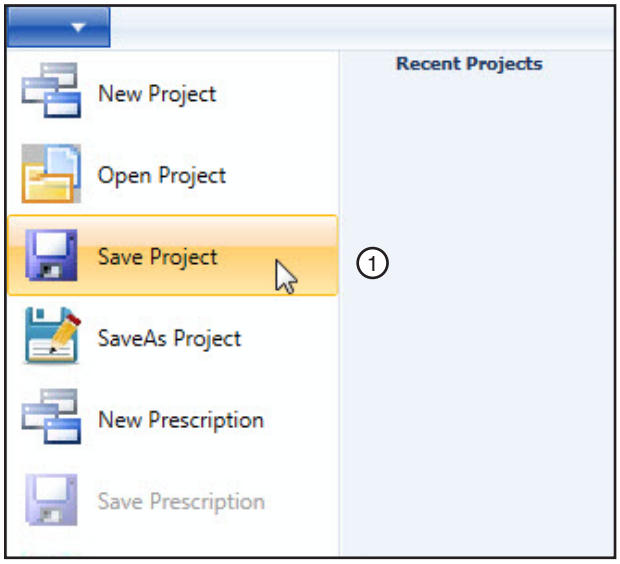


Figure 35-3 1. Save Project

Create a Project and Prescription

Working With Projects and Prescriptions (continued)

Saving a Pivot Project (continued)

4. Locate the folder in which you want to save the project, give the file a name, and click **Save**. (Refer to Figure 36-1.)

   A pop-up screen appears stating that the project has been successfully saved. (Refer to Figure 36-2.)

5. Click **OK**.

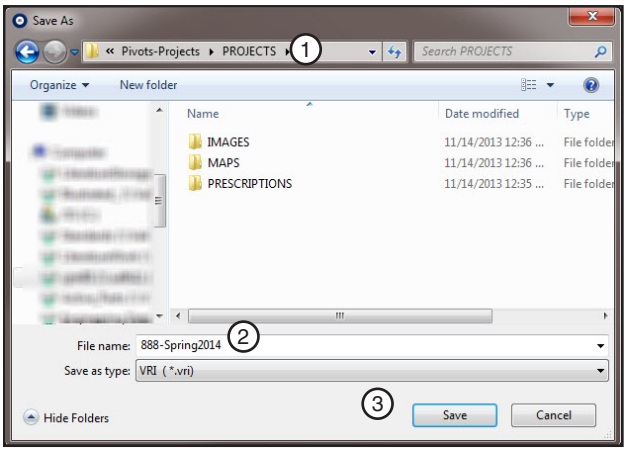


Figure 36-1 1. Folder Name
2. File Name
3. Save Button

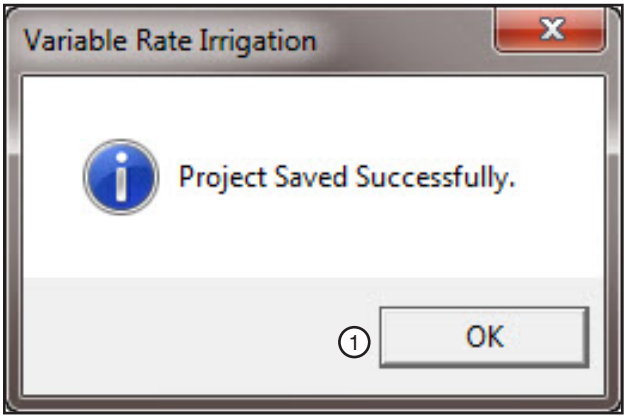


Figure 36-2 1. OK Button

VRI Prescription Loader

The VRI Prescription Loader application is used to convert the user-entered VRI prescription details into a format that can be read by a control panel in the field.

Hardware/Software Requirements and Prescription Upload Methods

Listed below are hardware and software requirements along with several methods for accessing and uploading prescriptions to a control panel or TrackerLT based on the product being used.

Hardware and Software Requirements

- Pro2 control panel software:
  - » Version 8.40 or above (VRI Speed)
  - » Version VRI 8.40 or above (VRI Zone)
- Select2 control panel software version 1.20 or above (VRI Speed)
- BaseStation2-SM software version 7.4 or above (VRI)
- TrackerLT software version 16 or above (VRI Speed)
- TrackerPro software version 1.0 or above
- TrackerSP software:
  - » GPRS version 12 (Compatible with VRI software in Pro2 and Select2 control panels)
  - » CDMA version 15 (Compatible with VRI software in Pro2 and Select2 control panels)

Prescription Upload Methods

- Prescription loader: Upload or save a prescription created with the VRI prescription map program.
  - » Upload a prescription directly to a Pro2 or Select2 control panel through a serial cable connection with a personal computer.
  - » Save a prescription in the C:\Program Files\ValleyBase\VRI folder on the computer hard drive for use with BaseStation2-SM.
- BaseStaton2-SM: Access a prescription saved by Prescription Loader in the C:\Program Files\ValleyBase\VRI folder on the computer hard drive for upload to a Pro2 or Select2 control panel through a data radio or phone connection. 300 and 1200 baud radios are not recommended.

Uploading a Prescription

- Tracker Web site: Access a prescription created with the VRI prescription software from the C:\VRI\RTU ID folder on the computer hard drive to upload through a wireless connection to a TrackerLT, or Pro2, or Select2 control panel with TrackerSP.

Loading Prescriptions

To load a VRI prescription:

1. Open the pivot project.
2. Select **Prescription Loader** in the VRI drop-down menu. (Refer to Figure 38-1.)

   The Prescription Loader screen appears. (Refer to Figure 38-2.)
3. In the Data Source File Selection section of the screen, select one of the following to identify the prescription's source:
   - **Use Valley VRI program Generated XML** (default)
   - **Use Third Party program Generate XML**
4. Select the RTU ID of the prescription that is to be loaded, or saved, by clicking the appropriate checkbox.

   The Prescription Loader screen appears. (Refer to Figure 42-2.)

   NOTE: The control panel RTU ID must be the same as the VRI prescription RTU ID you select in this section before you send data to the panel.
5. Select one of the following by clicking on the appropriate checkbox:
   - **Write to panel** - will cause the prescription to be sent directly to the control panel
   - **Save to file** - will cause the prescription to be saved either to a location of your choosing or to the C:\Program Files\ValleyBase\VRI folder
6. If you are writing to the panel, select the COM port to be used in the drop-down menu.

   NOTE: Use the 9-pin COM port on the control panel with constants set as Remote Control and with baud rate at 9600.

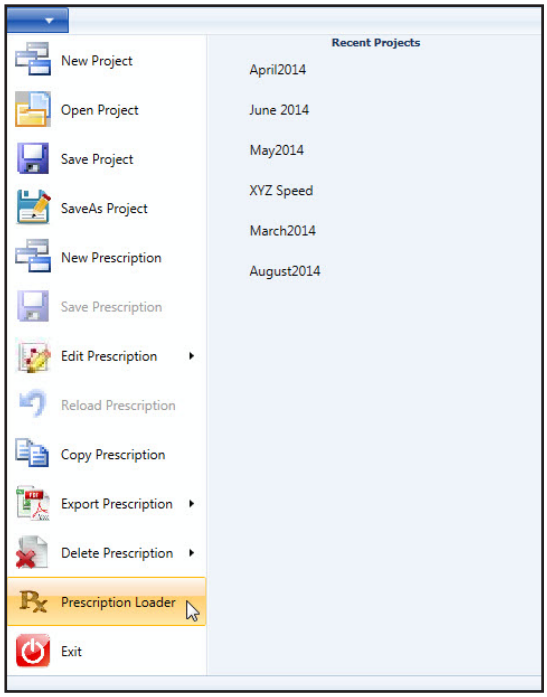


Figure 38-1 Select Prescription Loader

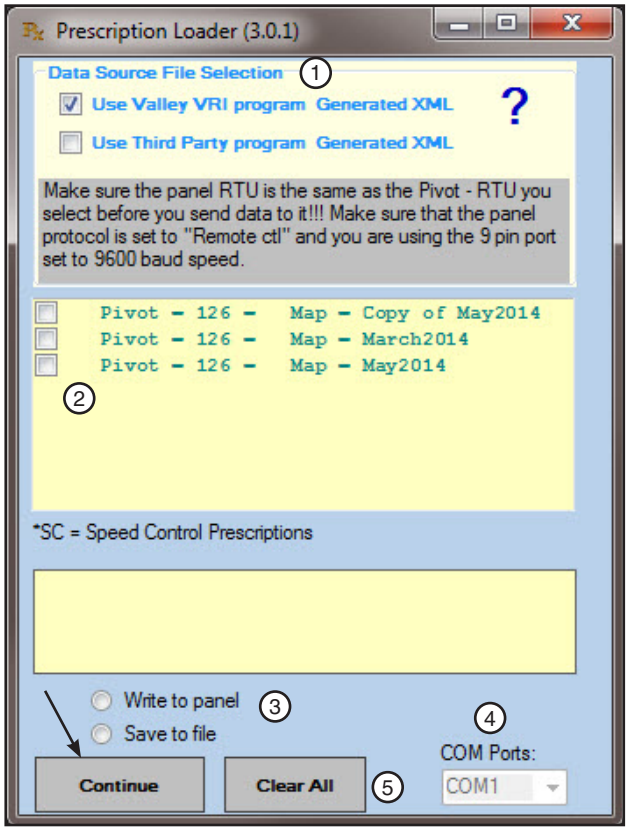


Figure 38-2 1. Data Source File Selection
2. Prescription Selection Section
3. Prescription Disposition Area
4. COM Ports Drop-down Menu
5. Clear All Button

7. Clicking **Clear All** removes all selections you have made on the screen.
8. Click **Continue** to be taken to the next screen.

Loading Prescriptions (continued)

If you selected **Write to panel** and clicked **Continue**, the file is sent to the control panel and the Prescription Loader screen is updated with the status of the data transmission. (Refer to Figure 39-1.)

NOTE: "All 64 records loaded" defines the sector details. This particular prescription has 16 zones, and the grid is divided into 4 quarters by the system. The prescription records are therefore calculated as 4 x 16 = 64.

If you selected **Save to file** and clicked **Continue**, the Browse For Folder pop-up screen appears. (Refer to Figure 39-2.)

9. Locate the folder in which you want to store the file and click **OK**.

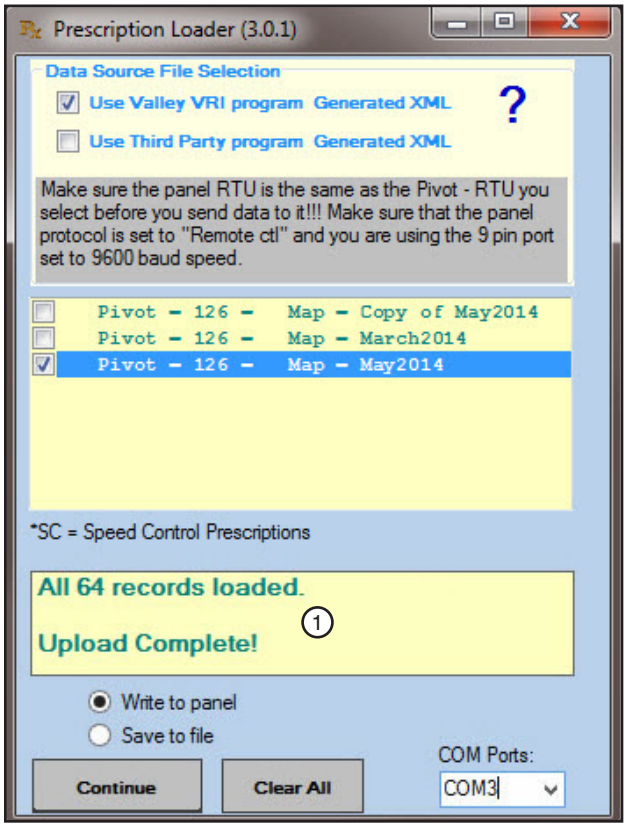


Figure 39-1 1. Data Transmission Status

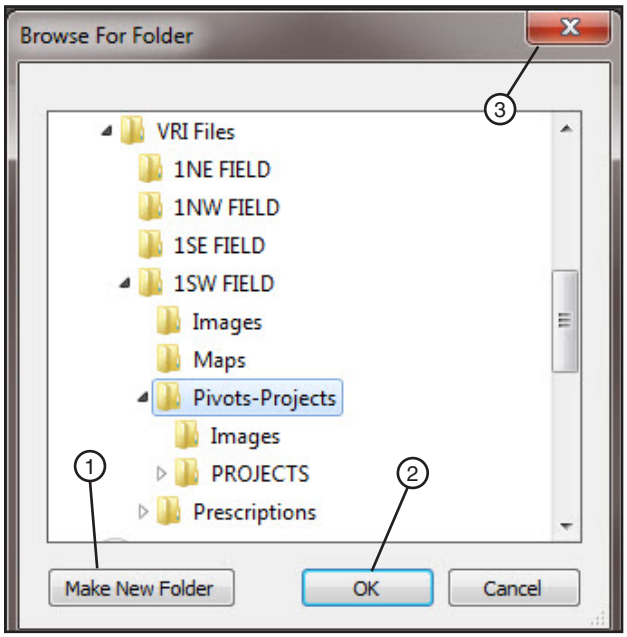


Figure 39-2 1. Make New Folder Button
2. OK Button
3. Close Button

Uploading a Prescription

- If you want to store it in a new folder, click **Make New Folder** and place it there.
- If you click the close button without specifying a location, the system automatically saves the file in the C:\Program Files\ValleyBase\VRI folder.

Loading Prescriptions (continued)

The Upload pop-up screen is updated to indicate that the file has been uploaded correctly. (Refer to Figure 40-1.)

10. Click **OK**.
11. Click the **Close** button on the Prescription Loader screen to exit the Prescription Loader application. (Refer to Figure 40-2.)

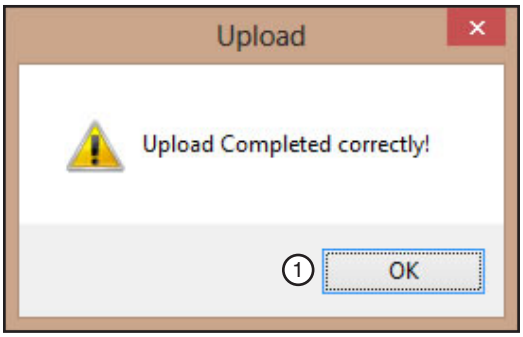


Figure 40-1 1. OK Button

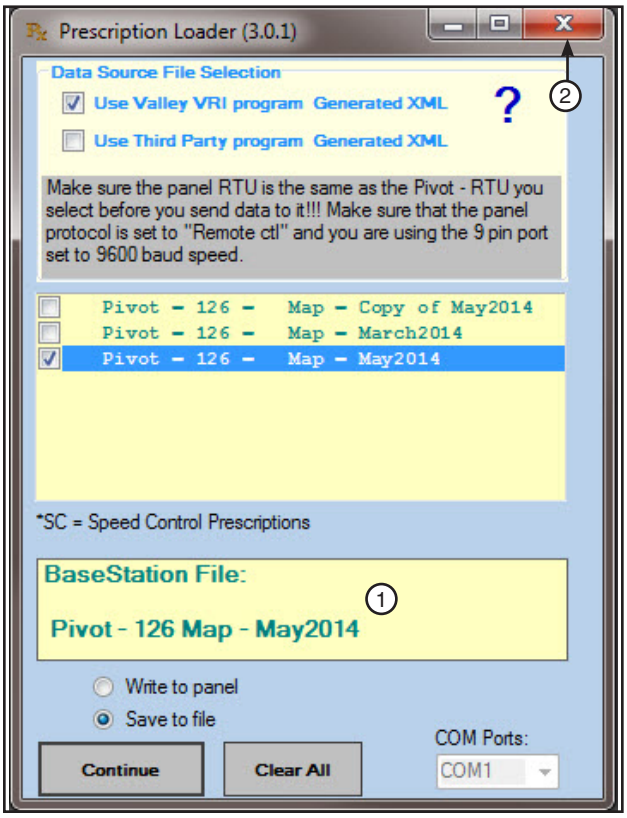


Figure 40-2 1. File Stored Indicator
2. Close Button

Irrigation Zones

Number of Sprinkler Zones

Number of Zones setting controls the number of zones shown on the map. Selection is made from the number of zones drop down list depending on the Variable Rate Irrigation (VRI) Control being used.

- VRI Speed Control, select **1 Speed Cntl** zone.
- VRI Zone Control, The range is from 2 to 30 zones. Example: If the number of sprinkler banks is set to 16 there will be 16 zones shown on the map from the pivot point to the edge of the field.

Sprinkler Zone Length (VRI Zone Control Only)

Sprinkler zone length controls the length for each zone shown on the map and is not available when **1 Speed Cntrl** zone is selected.

- When fixed value is selected, the zone lengths are equal to the pivot length entered in the pivot description divided by the number of sprinkler zones.
- When variable length is selected, the zone length on map can be customized to represent the actual length of the sprinkler group on the machine.
- One Valley VRI tower box controls two sprinkler zone solenoids. One sprinkler zone solenoid can control multiple sprinklers.
- Sprinkler zone number 1 in the list box is the sprinkler group next to the pivot point.
- Sprinkler zone length is an approximate measurement from the first sprinkler to the last sprinkler controlled by one solenoid.

If variable length is selected, enter the individual lengths for each sprinkler zone shown in the list box beginning with sprinkler zone number 1 and proceeding numerically. As each sprinkler zone length is entered it is deducted from the total pivot length. Lengths cannot be a negative number.

Sprinkler Zone Cycle Time (VRI Zone Control Only)

The sprinkler zone cycle time setting controls the pulse of each sprinkler zone and is not available when 1 Speed Cntrl zone is selected.

- Pulse times are calculated by dividing the cycle time setting by the percent timer setting (as a decimal). Example: If the cycle time is 20 and the percent timer setting is 20% then the pulse time will be 100 seconds. If the particular management zone is set to 50% then the zone will be on for 50 seconds and off for 50 seconds.
- The potential travel distance during a pulse cycle should be 1/2 or less of the wetted diameter of the sprinkler package to ensure proper overlap in the direction of travel
- When fixed cycle time is selected all the sprinkler zones will pulse at the same cycle time. The fixed cycle time can be entered by the user. The default is 20 seconds.
- When variable cycle time is selected a cycle time for each sprinkler zone shown in the list box is entered beginning with sprinkler zone number 1. The variable cycle time range is 0 to 999 seconds.
- Typically a longer cycle time is assigned to sprinkler zones near the pivot point because the span moves slower. Progressively shorter cycle times are assigned to sprinkler zones as they get farther away from the pivot point because the span moves faster.

Appendix