

SILENT INSPECTOR USER'S MANUAL

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1 SILENT INSPECTOR DATA EXPLORER

Adding A Project

Typically, the first step in starting silent inspector is to create a new project in which Silent Inspector will monitor. To create a new project, first specify the Division and District in which to assign the new project. To specify division and district use the pull down menus as in Figure 1.1 to select the specified division and district. Once the division and district have been specified, a new project can be created in that district as follows:

What is a Project?

A project is a specifier of a given dredging assignment with characteristics such as contracts, location, cost, and time scale.

1. Right-click on **Projects** in the *Project View*, and select **New Project** as shown in Figure 1.2.
2. In the *Add Project* window, type in the Project name and select the *COE Division*, *COE District*, *Project type*, and *State* from the pull-down menus for the new project as shown in Figure 1.3. Note: Project names should be unique for a district.

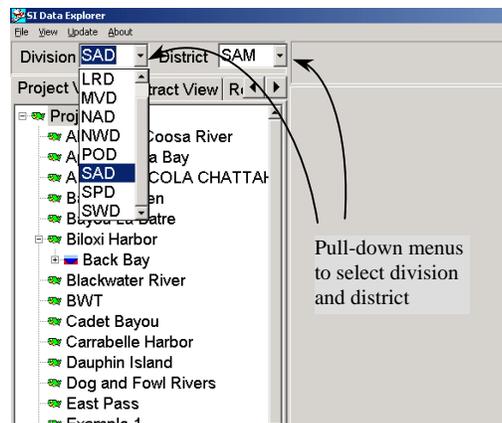


Figure 1.1. Select Division and District to assign the new project from the pull-down menu shown.

Optional Information about the project can be entered into the *Location*, *Previous Projects*, *Existing Projects*, *Local Cooperation*, and *Terminal Facilities* menus. When the fields are blank, the  icon will appear. When information is entered into the fields, an  icon will show up.

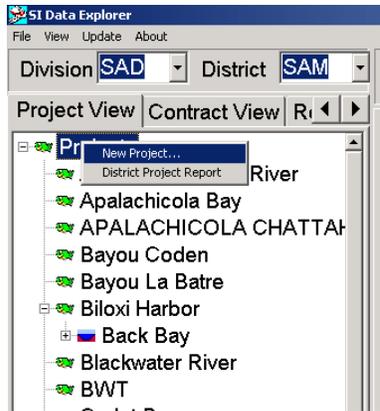


Figure 1.2. Creating a new project

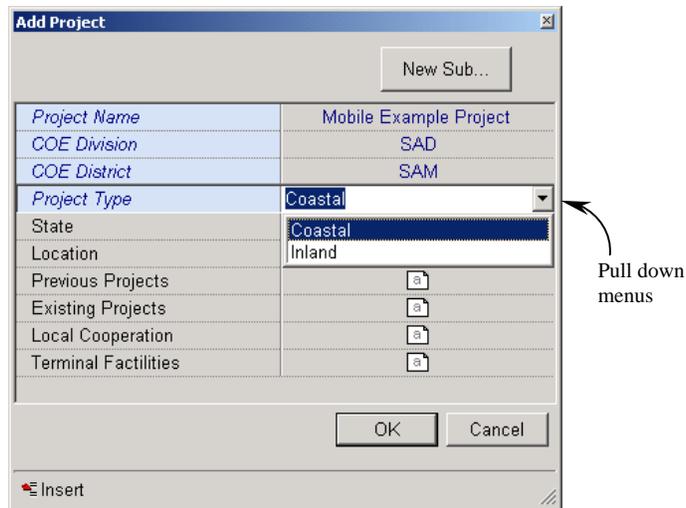


Figure 1.3. Add Project window

When finished adding the information for the new project, click **OK** in the Add Project window. Although the new project is now entered into the system, it may not show up on your screen in the project view. This can be corrected by clicking on **View / Refresh View** in the main pull-down menu of the program as seen in Figure 1.4. Furthermore, the **Show All Contracts** view should be checked for all contracts to appear. The new project will now appear in the Data Explorer window as seen in Figure 1.5.



Figure 1.4 View pull-down menu

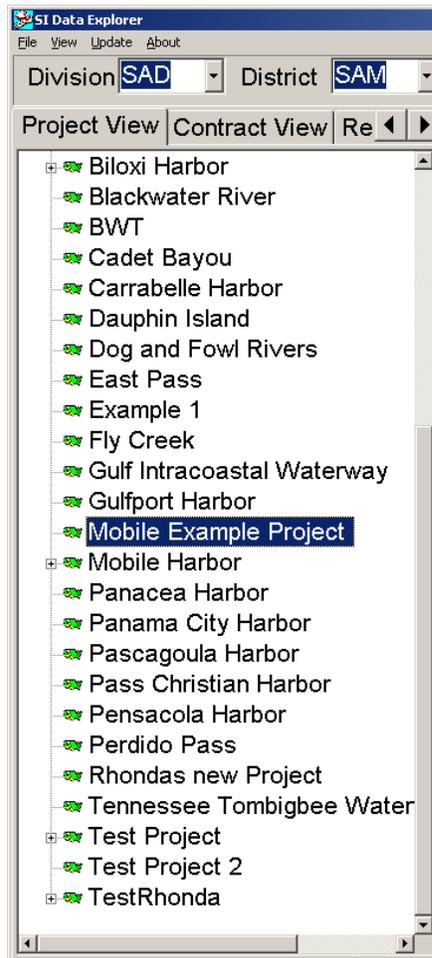


Figure 1.5 New project.

To edit information about the project (*i.e.* project name, type, location, *etc.*):

1. Right click on the project as shown in Figure 1.6.
2. Select ***Edit Project***

The project window will appear as it did in Figure 1.3, allowing change of any of the project information. Refresh the view after any changes are made to the project for these changes to appear on the data explorer screen.

Adding A Subproject

Once the project is entered into the system, sub-projects can be created for the project in an effort to segment the project up for organizational purposes. Creating a sub-project is quite similar to creating new project. To create a new sub-project:

1. Right-click on the project and select **New SubProject** as seen in Figure 1.6.
2. The prompt window will appear as in Figure 1.7 asking for the type of subproject (*channel or pool*) and a name for the sub-project. Select which project type is required and type in the name for the sub-project.
3. Click **OK**.

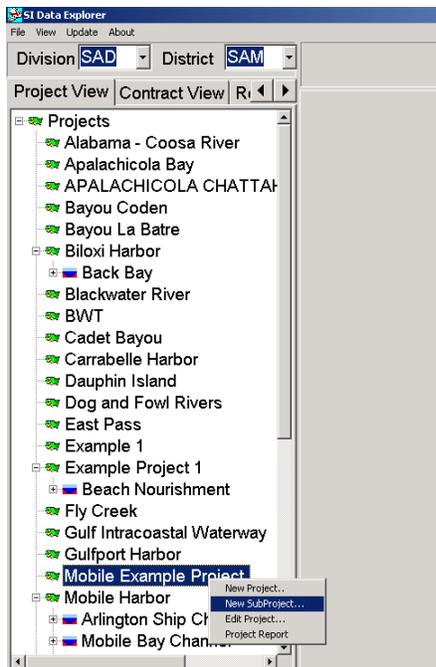


Figure 1.6. Right-Click on the new project and select **New SubProject**.

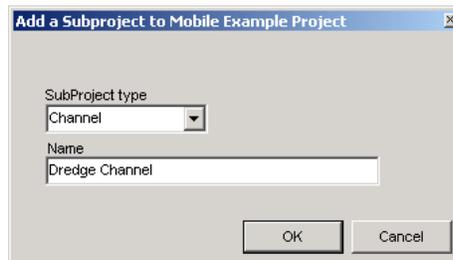


Figure 1.7 Sub-Project window.

The new subproject will now appear under the project as seen in Figure 1.8. Additional Sub-projects can be added to the project by repeating the last three steps. Editing the Sub-projects is similar to editing the project in the previous section.

To edit information about the sub-project:

1. Right Click on the sub-project and select ***Edit SubProject***.



Figure 1.8 New Sub-project

The subproject window will appear as it did in Figure 1.7 allowing for any of the information to be edited.

Creating A Contract

A contract is created in Silent inspector under a sub-project that describes the overall dredging assignment as appropriated by the Army Corps of Engineers. Every contract is specific and unique within a project. Creating a contract is similar to the previous procedures.

1. Right click on *contract* just below the sub-project as shown in Figure 1.9.
2. Select *New*

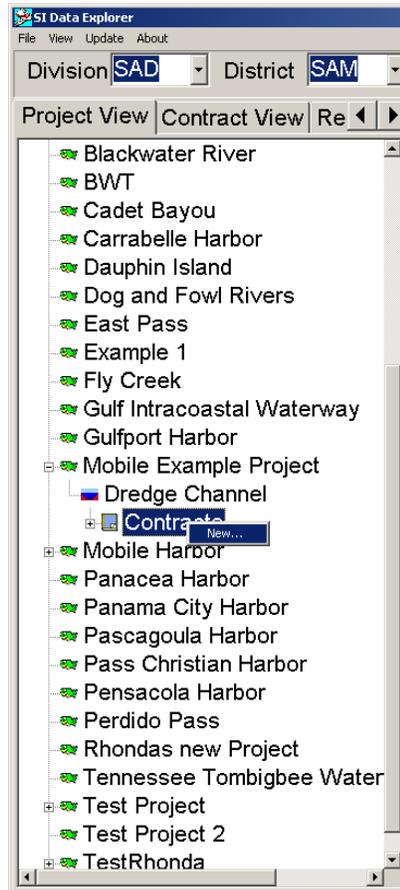


Figure 1.9 Creating a new contract

The *Add Contract* Window will now appear as in Figure 1.10. Information for the bid number and contract number must be filled in first to activate the rest of the fields. Once the contract and bid numbers are entered, the rest of the contract information can be entered in their respective boxes.

3. Click *OK* in the lower right corner of the *Add Contract Window*.
4. Refresh the view for the newly entered contract to appear under the sub-project.

The new contract should now appear as in Figure 1.11. If it is necessary to edit any of the contract information:

Figure 1.10 *Add Contract Window*

1. Right click on the contract as seen in Figure 1.12.
2. Select *edit* to bring up the contract window similar to Figure 1.10 to edit any of the contract information. Select *delete* to permanently delete this contract. Note: Once a contract is deleted, it cannot be retrieved.
3. Refresh the view in order for any changes to appear on your screen.

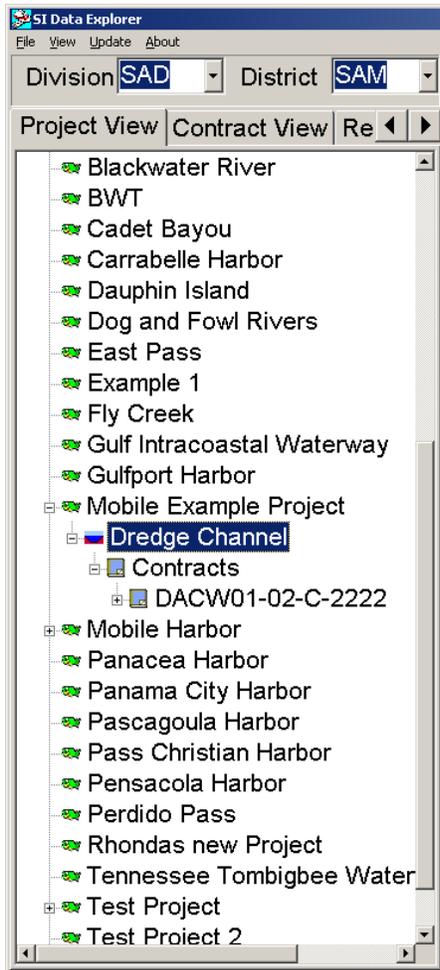


Figure 1.11. New Contract

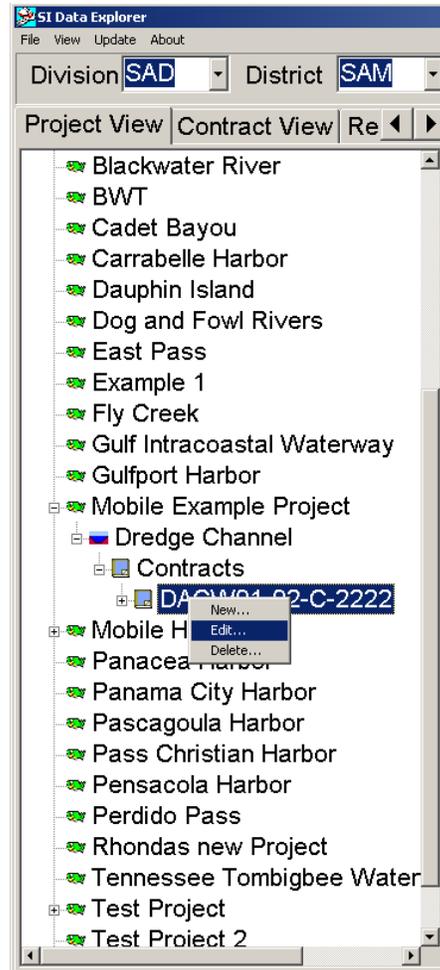


Figure 1.12 Editing a contract

Add Bid Items

To create a new bid item for the contract:

1. Right click on **Bid Items** under the corresponding contract as in Figure 1.13.
2. Select **New**.
3. The **Bid Items Details** window will now appear as in Figure 1.14. Fill in the data fields with the appropriate bid information.
4. Click **OK** and Refresh the view.

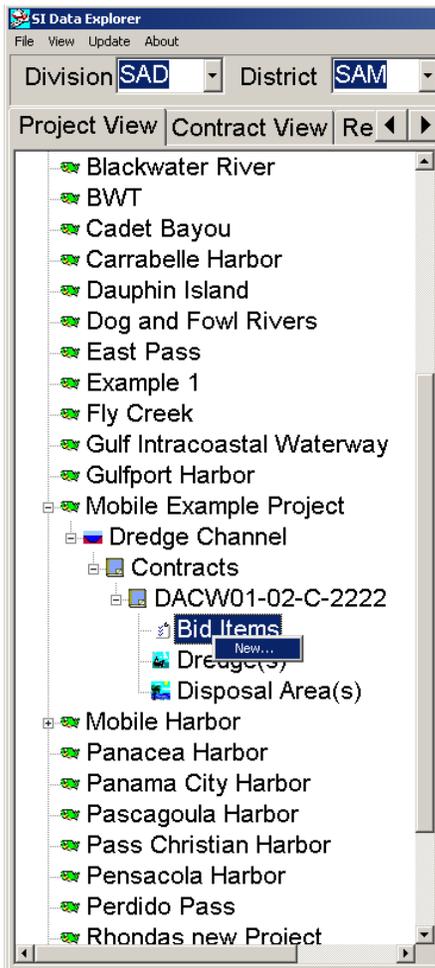


Figure 1.13 New Bid Item

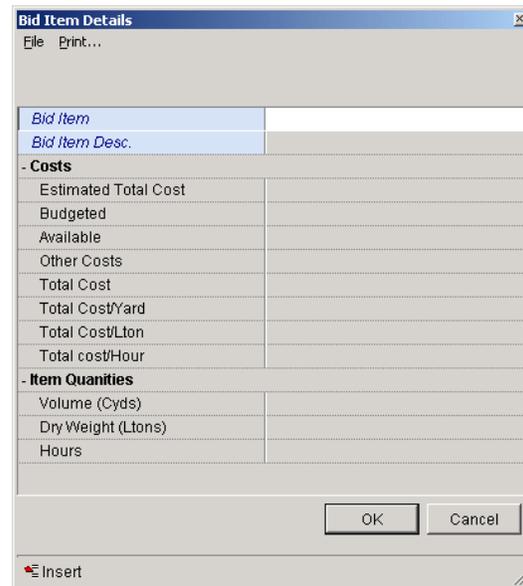


Figure 1.14 Bid Item dialog window

The new bid item will now appear on the right side of the Data Explorer window as seen in Figure 1.15. To edit the bid item after it has been entered:

1. Click on the Bid item as seen in Figure 1.15
2. Click Details in the upper right side of the window

The Bid Items Details window will now appear similar to Figure 1.14. Click **Edit** to edit any of the bid item information. Click **Delete** to permanently delete the bid item.

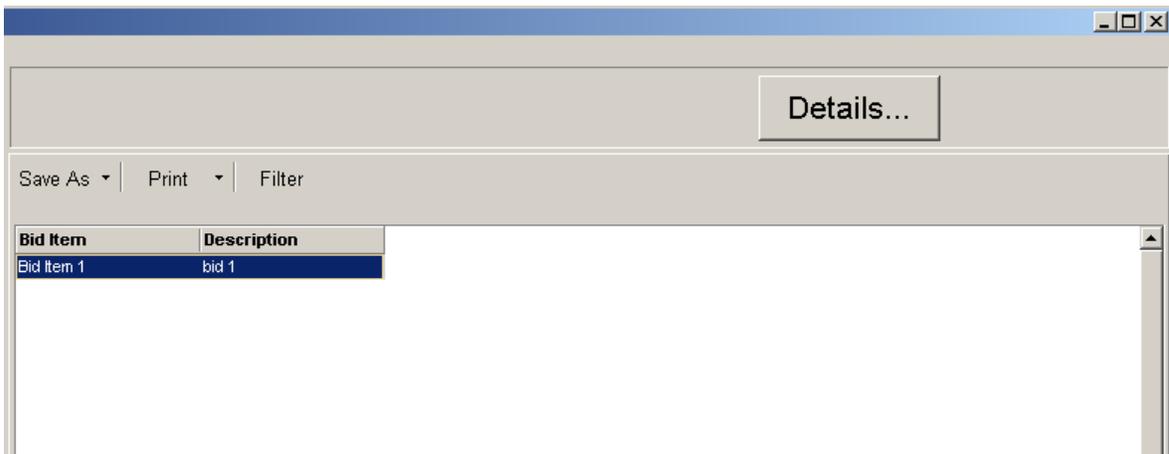


Figure 1.15 New Bid Item

Assigning a Dredge

Either an existing dredge or a new dredge may be assigned to the contract. An existing dredge is one whose parameters and characteristics are already entered into the SI system. A new dredge will require the user to specify these dredge characteristics.

Assigning an existing dredge

1. Right click on *Dredges* just below the contract number as seen in Figure 1.16.
2. Select *Assign*

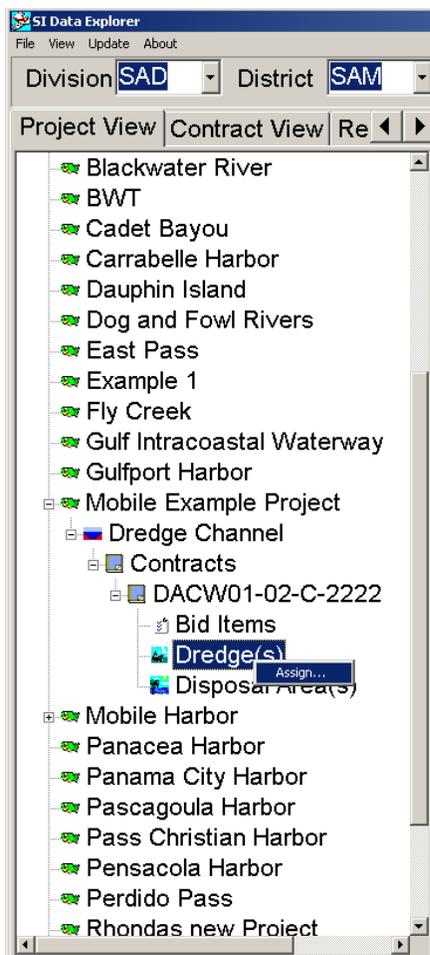


Figure 1.16 Assigning a dredge

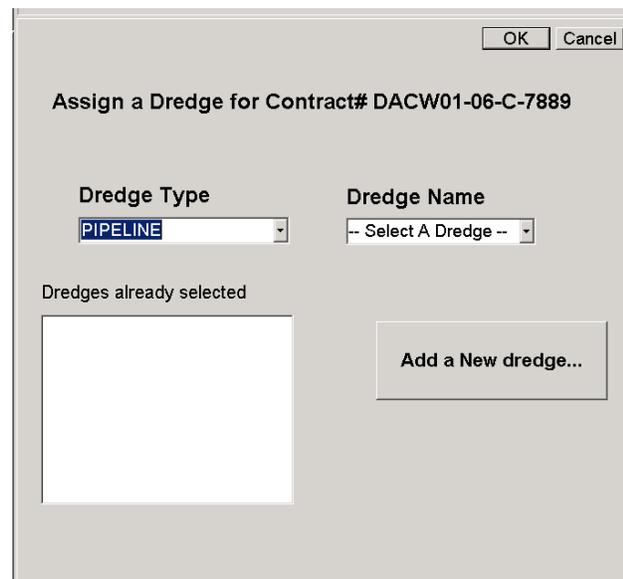


Figure 1.17 Dredge Assignment Window

3. The assign dredge window will now appear as in Figure 1.17. Use the Pull-down menu to select dredge type and dredge name.
4. Click *OK* in the upper right corner of the window.

Assigning a new dredge

1. Right click on *Dredges* just below the contract number as seen in Figure 1.16.
2. Select *Assign*
3. In the assign dredge window as shown in Figure 1.17, select the type of dredge required for the contract from the *Dredge Type* pull-down menu.
4. Click *Add New Dredge*.

The New Dredge window will now appear as in Figure 1.18, 1.19 or 1.20 depending upon what type of dredge was selected. Type in a name for the dredge as well as its specifications.

Dredge Name	
Owners	
Year Constructed	
Lifting Capacity (Ltons)	
- Bucket (Cyds)	
Max Size	
Typical	
Min Size	

Figure 1.18 New dredge window for Bucket dredge.

Dredge Name	
Owners	
- Characteristics	
Year Constructed	
Beam (ft)	
Length (ft)	
Horsepower	
- Draft (ft)	
Light	
Loaded	
- Speed (kts)	
Loaded	
Light	
- Hopper	
Volume Capacity (Cyds)	
Load Capacity (Cyds Sand)	
- Displacement (L Tons)	
Empty	
Max	

Figure 1.19 Hopper dredge window

Dredge Name	
Owners	
Year Constructed	
- Measurements	
Beam (ft)	
Length (ft)	
Spud Distance (ft)	
Ladder Length (ft)	
Swing Speed (ft/min)	
Trunion Elevation (ft)	
- Pump	
Pump Suction Diameter (in)	
Discharge Diameter (in)	
Max Horsepower	
Pump Model	
Pump Manufacturer	

Figure 1.20 Pipeline dredge window

5. Click **OK**

The new dredge will now appear under the project as shown in Figure 1.21. To edit the dredge information:

1. Right Click on the dredge as it appears in Figure 1.22.
2. Select Edit Dredge.

The dredge information window will now appear as in Figures 1.18, 1.19 or 1.20 depending upon what type of dredge.

3. Edit any of the dredge information, click OK and refresh the view

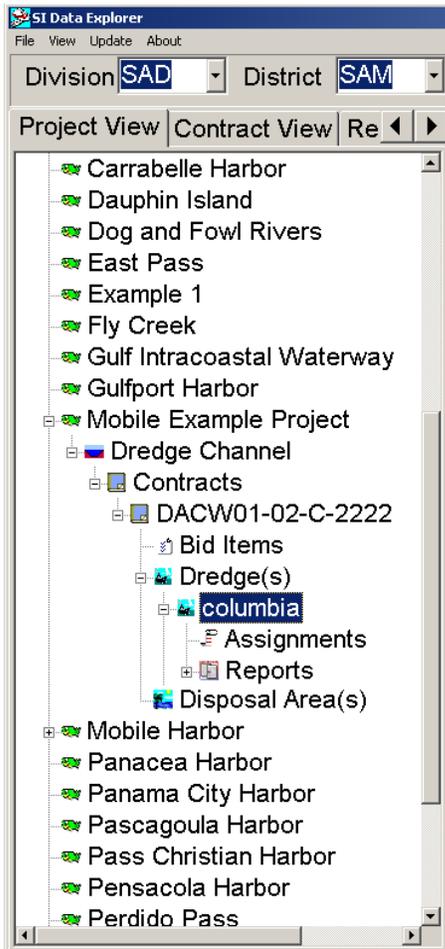


Figure 1.21 New dredge

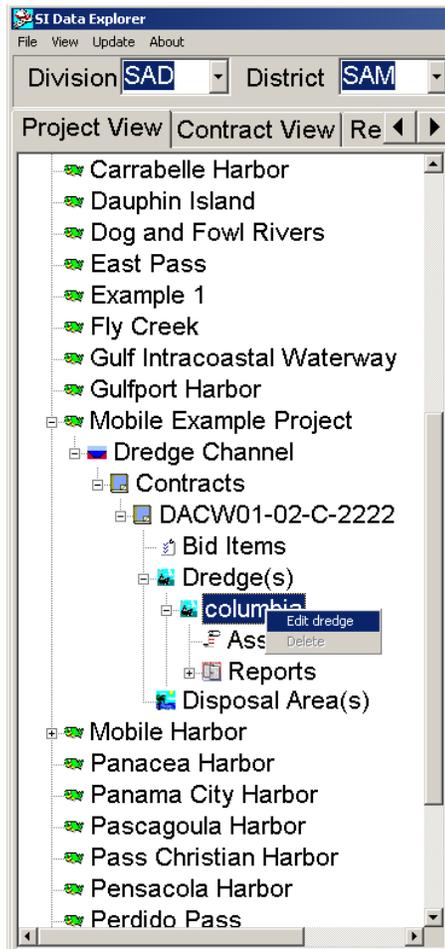


Figure 1.22 Editing the dredge

Add Assignments / Reaches

Assignments in Silent Inspector describe where a dredging operation takes place. Assignments also describe how much material will be dredged according to the bid item, and what costs are associated with this operation.

Specifying Location

Specifying a location for an assignment in Silent Inspector will depend upon how the channel is divided up for measurement. Channels can be divided into sections, ranges, tangents, stations, or river miles depending upon the Corps. District. SWG uses sections to divide a channel into smaller, more feasible pieces (see Figure 1.23). Tangents divide a channel at deflection points. Tangents start and stop at a noticeable bend in the channel in order to divide up a channel into several straight pieces in an attempt to simplify measurements (See Figure 1.24). Stations are measurements used to quantify the distance from the start of a

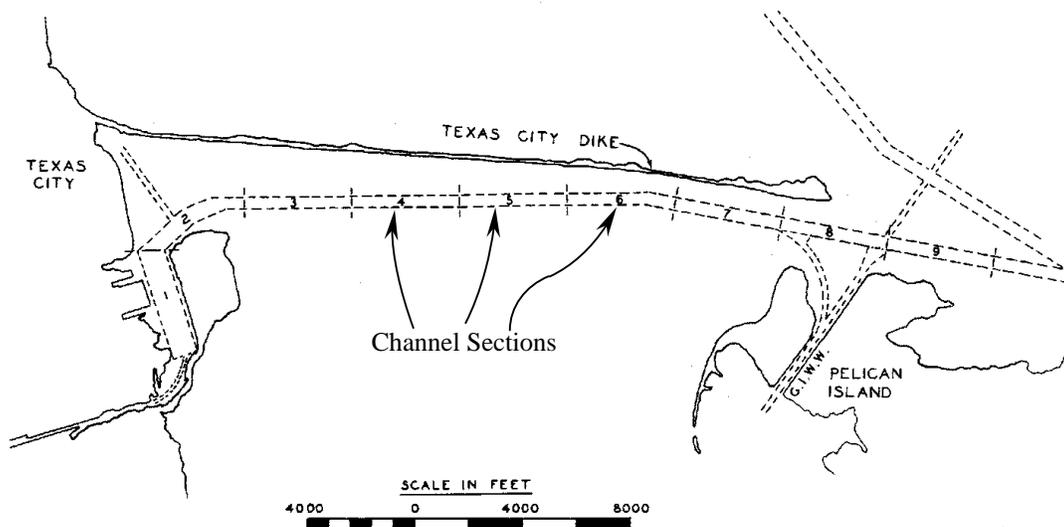


Figure 1.23 SWG example channel divided into sections

channel in hundreds of feet plus a remainder. For example, station 136+00 is 13600 feet from the start of its respective tangent, and station 136+23.6 is 13623.6 feet from the start of its respective tangent. River miles typically define the beginning and end of a riverine channel. Ranges are used by New Orleans Corps. District to define predetermined points along the channel. Because there are many different methods to describe the location of a

channel, Silent Inspector provides data fields that can accommodate these different methods simply and effectively.

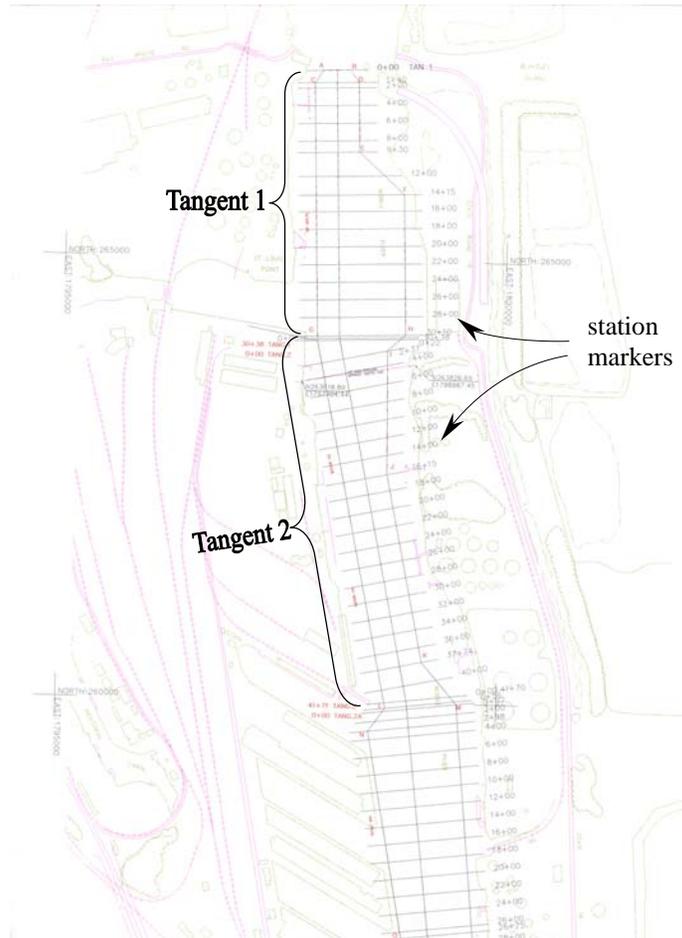


Figure 1.24 Tangents are used to divide up a channel at prominent bending points. Stations reference distance along a channel.

Creating a new assignment

To create a new assignment for a dredge in Silent inspector:

1. Right click on *Assignment* in the project view located under the dredge (See Figure 1.25) and select *New Reach*.

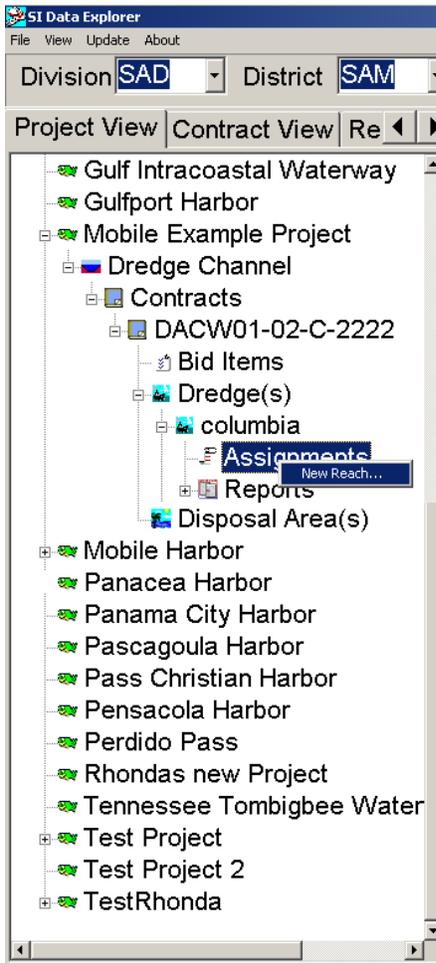


Figure 1.25 Right click on assignment to create a new reach

The Reach Details window will now appear as in Figure 1.26.

2. Fill in the appropriate information in the field boxes for the name of assignment, tangent or section (if applicable), and beginning and ending station, river mile, or range. For example, a project specified in tangents and stations will specify a location as in Figure 1.27a. A project specified in river miles will specify a location as in Figure 1.27b. Finally, a project specified in ranges will specify a location as in Figure 1.27c.

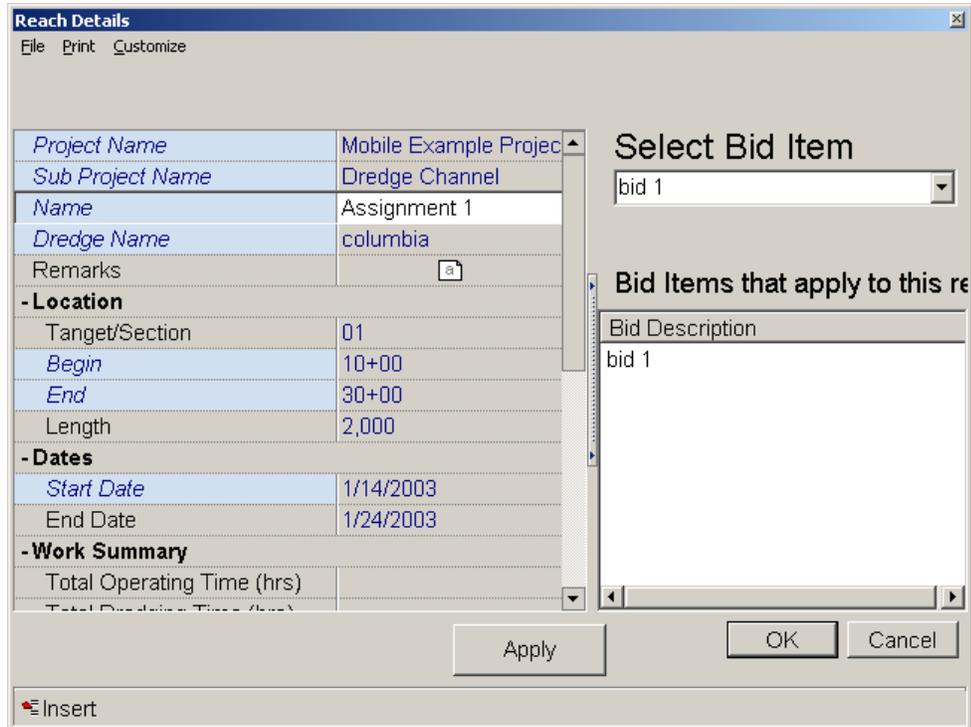


Figure 1.26 Reach Details Window

3. Specify the start date and end date from the pull-down menus and the remaining dredging production characteristics.
4. Finally, select the bid item(s) that apply to this assignment from the pull-down menu on the right side of the window.
5. Click **OK** and then Refresh the view

The assignment list will now appear in the right side of the data explorer window as in Figure 1.28.

- Location	
Target/Section	01
<i>Begin</i>	10+00
<i>End</i>	30+00
Length	2,000

Figure 1.27a

- Location	
Target/Section	
<i>Begin</i>	River Mile 1.7
<i>End</i>	River Mile 2.0
Length	3

Figure 1.27b

- Location	
Target/Section	
<i>Begin</i>	Range 16
<i>End</i>	Range 20
Length	4

Figure 1.27c

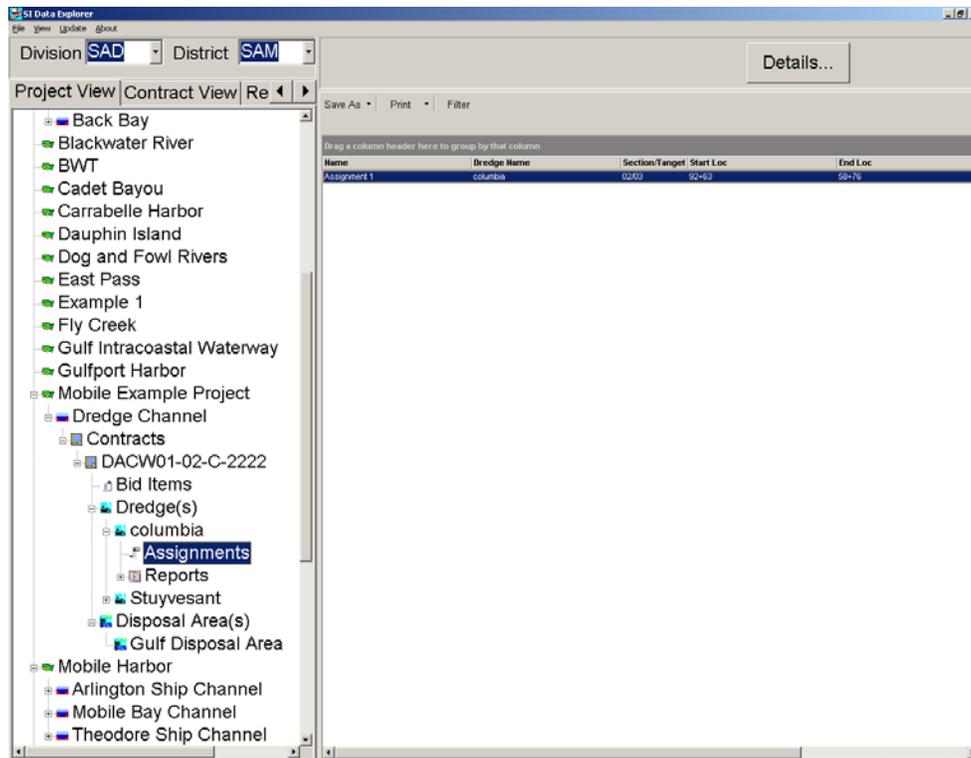


Figure 1.28 Once the assignment is created, it will appear in the right side of the Data Explorer window.

Editing an assignment

To edit an assignment after it has been created:

1. Click on the assignment in the right side of the window to highlight it as shown in Figure 1.28.
2. Click on **Details** in the upper right side of the window.

Reach Details	
Project Name	Mobile Example Project
Sub Project Name	Dredge Channel
Name	Assignment 1
Dredge Name	columbia
Remarks	
- Location	
Target/Section	01
Begin	10+00
End	30+00
Length	2,000
- Dates	
Start Date	1/14/2003
End Date	1/24/2003
- Work Summary	
Total Operating Time (hrs)	0
Total Dredging Time (hrs)	0

Figure 1.29 Reach Details Edit Window.

The Reach Details Edit Window will now appear with all of the assignment information as in Figure 1.29.

3. Click **Edit** to set the window into edit mode to change any of the assignment information. Clicking **Delete** will permanently delete the assignment. Clicking on **New** will create a new assignment as in the previous section.

Refresh the view after any making any changes.

Assigning Disposal Areas / Sub-areas

Either an existing disposal area or a new disposal area may be assigned to a contract. Similar to an existing dredge, an existing disposal area is one which has all of its parameters already stored in Silent Inspector. By contrast, a new disposal area must have its parameters specified by the user.

The entire disposal area is referred to as the primary disposal area. Within the primary disposal area are sub-disposal areas or cells (see Figure 1.30). When assigning a disposal area to a project in silent inspector, both the primary disposal area and the sub-disposal areas that will receive the dredge material are defined.

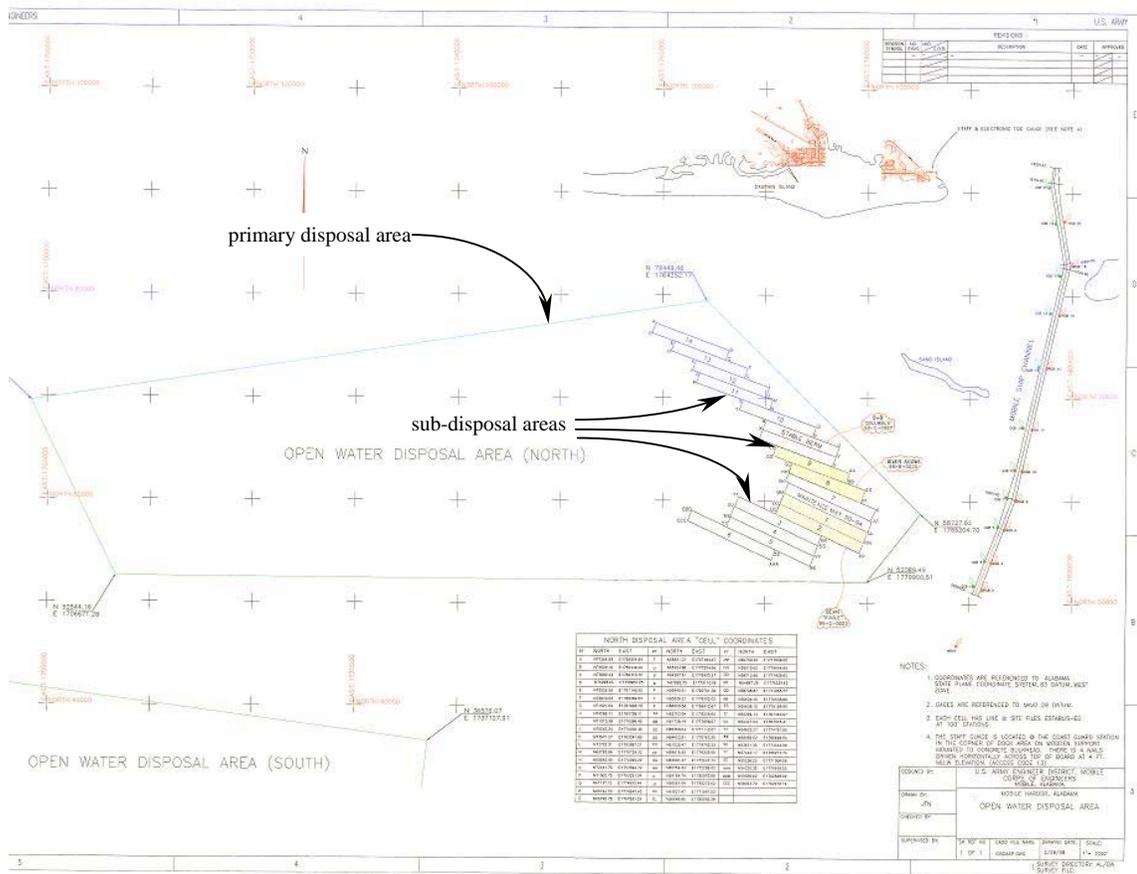


Figure 1.30 Primary disposal area and its sub-disposal areas.

Assigning an existing disposal area

To assign an existing disposal area in Silent Inspector for the dredged material to be placed:

1. Right Click on *Disposal Areas* just below the contract number as seen in Figure 1.31 and select *Assign existing DA to contract*.

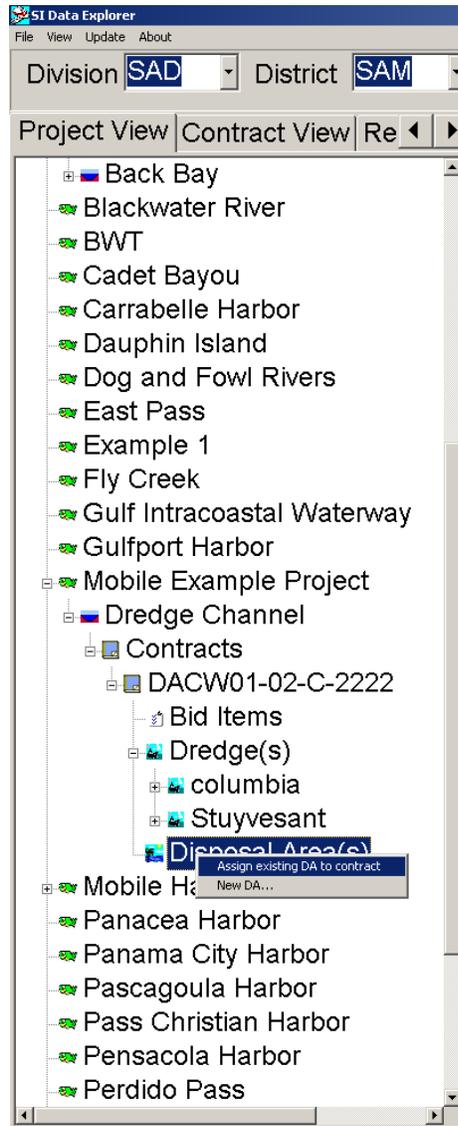


Figure 1.31 Right click on Disposal Areas

The New Disposal Area Window will now appear as in Figure 1.32. The existing disposal areas appear on the left side of the window.

2. On the left side of the window, click on the check box for the primary disposal area or the sub-disposal areas to be used for the project.
3. On the right side of the window, fill in the information for the volume and tonnage to be placed in each sub-disposal as well as any additional information in the dialog boxes provided.

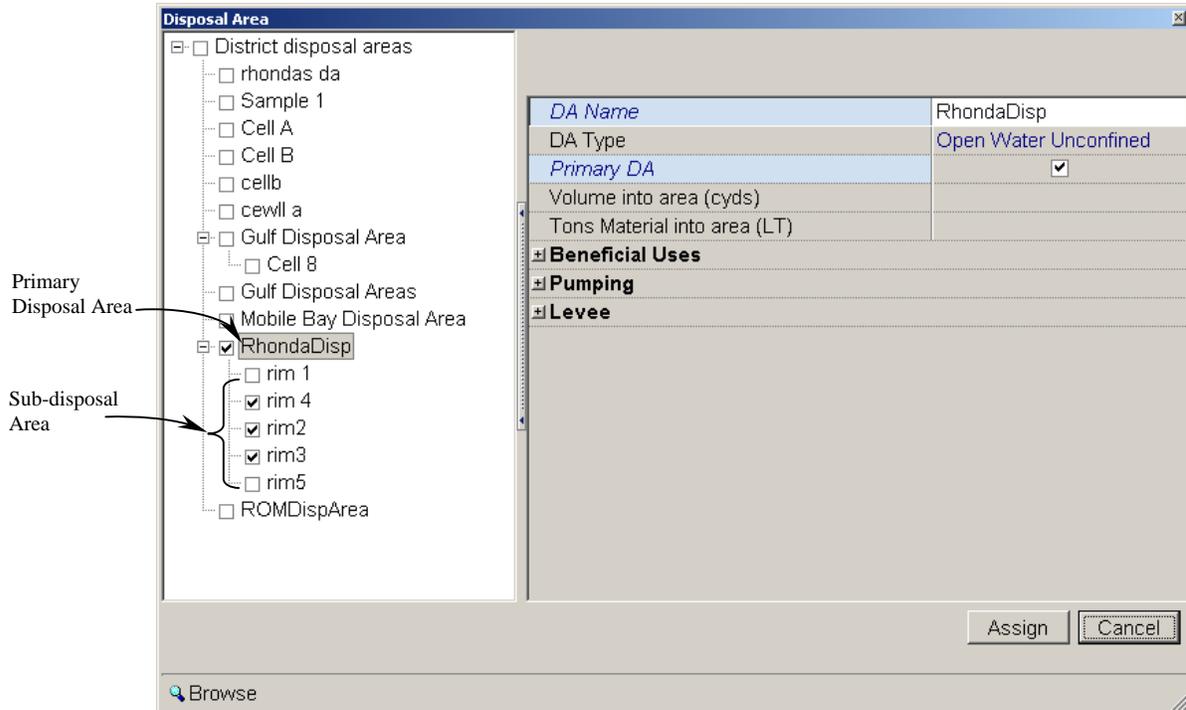


Figure 1.32 New Disposal Area Window.

4. Click *Assign* at the lower right corner of the window and refresh the view.

The assigned disposal area will now appear under the project in the Data Explorer window as in Figure 1.33.

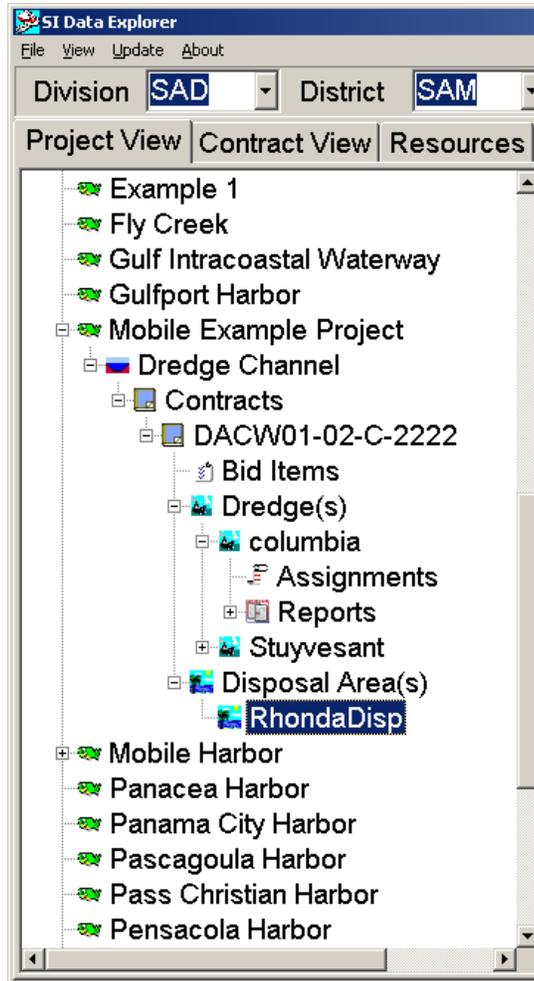


Figure 1.33 Assigned disposal area.

Assigning a new disposal area

A new disposal area must first be created then assigned to a contract. To create a new disposal area:

1. Right click on *Disposal Areas* as in Figure 1.31.
2. Select *New DA*.

The New Disposal Area Window will now appear similar to Figure 1.32.

3. In the field boxes, type in a name and type of disposal area as well as any other pertinent information within their field boxes. Note: The disposal area name should be unique for a district.

4. Click *OK*.

Once a new disposal area has been created it still has not yet been assigned to the project. Therefore, repeat the process for assigning an existing disposal area to assign the new disposal area to the project.

Editing a disposal area / Creating a new sub-disposal area

To modify a disposal area or to create a new sub-disposal area:

1. Click on the disposal area to be modified as shown in Figure 1.33.

The Disposal Area Edit Window will now appear as in Figure 1.34.

2. Click on the primary disposal area or the sub-disposal area that will be modified on the left side of the window.
3. Click *Edit* to modify the disposal area's or sub-disposal area's information.
4. Click *New SubArea* to create a new sub-disposal area and fill in the necessary information in the window provided.
5. Click *OK* and refresh the view.

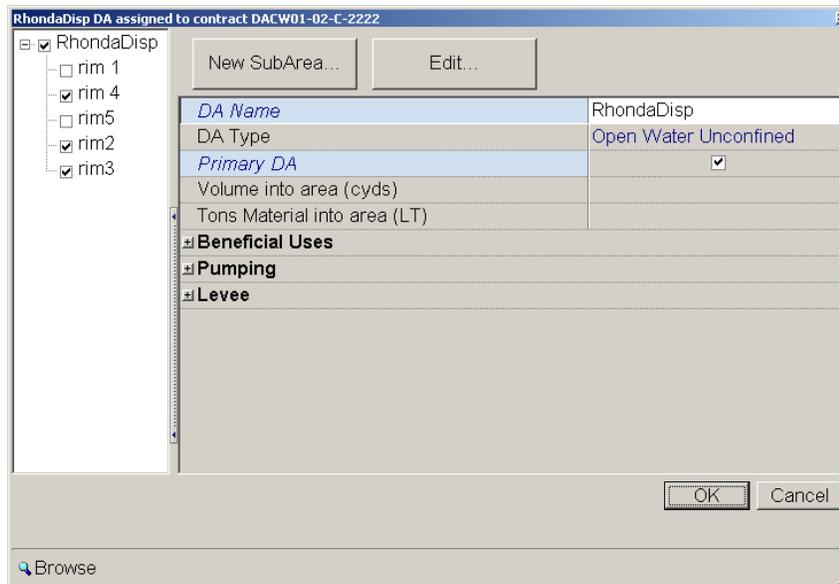


Figure 1.34 Disposal Area Edit Window.

Manual Load Summary

Creating a Manual Load Summary

A manual load summary is created in Silent Inspector to monitor and record dredge activity. Data for the manual load summary is directly entered and edited by the Silent Inspector user. To create a manual load summary:

1. Click on **Manual Load Summary** located under **Reports** for the particular dredge to be monitored as seen in Figure 1.35.

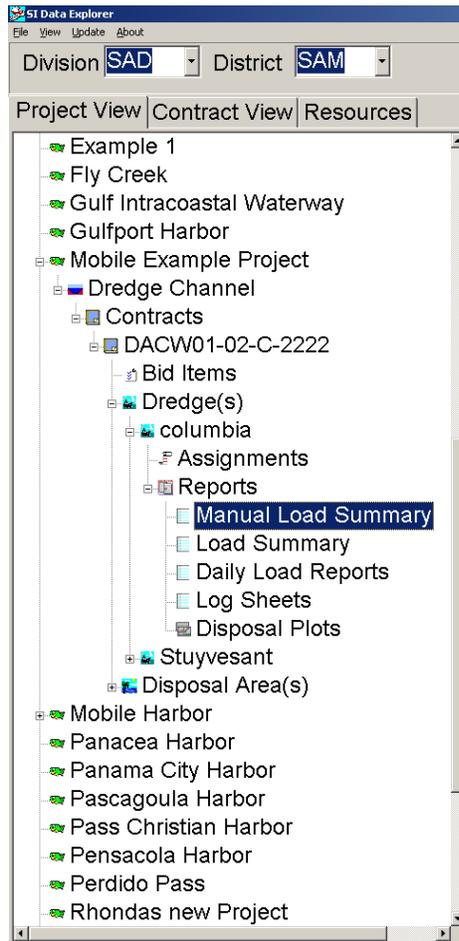


Figure 1.35 Manual Load Summary.

The manual Load Data window will now appear as in Figure 1.36.

2. In the Manual Load Data window, click **New** to enter data for a new dredge load.

3. Enter the values for the load data such as: load number, dredging time, turning time, sailing full time, sail empty time, disposal time, production in tonnage, and the date for the load (see Figure 1.37).

4. Once all of the data has been entered for a load, click *New* to create another load or

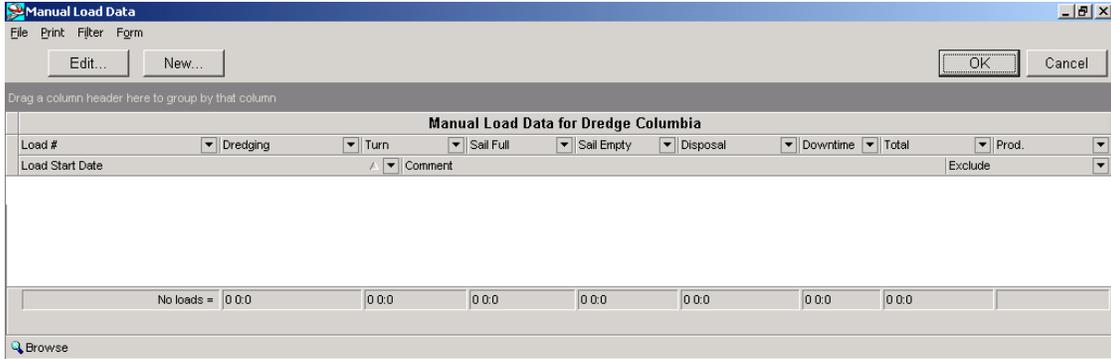


Figure 1.36 Manual Load Data Window

OK to save and exit the Manual Load Data window.

To edit any existing manual load data:

1. In the Manual Load Data Window, click on the load to be edited.
2. Click *Edit* at the top of the window.

Any of the fields for the load can now be edited as needed.

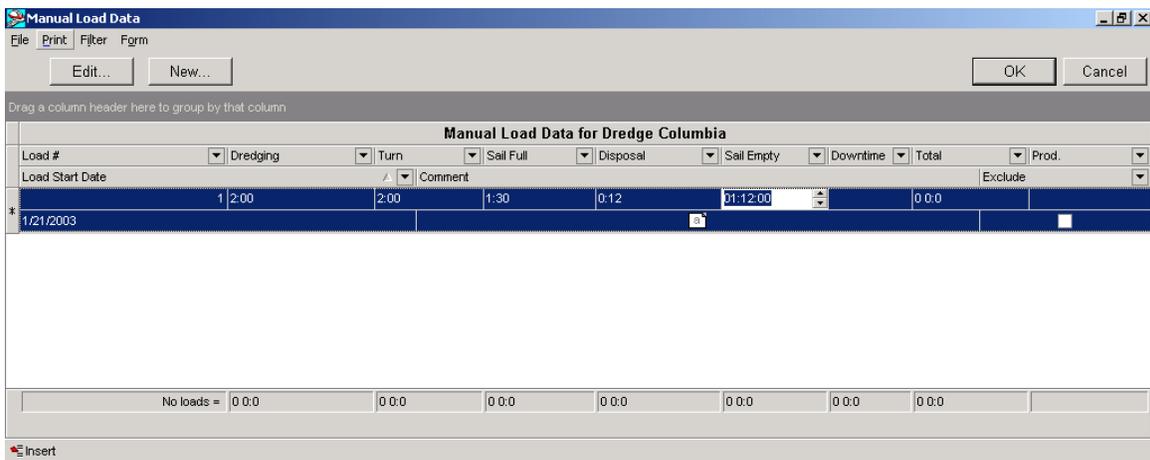
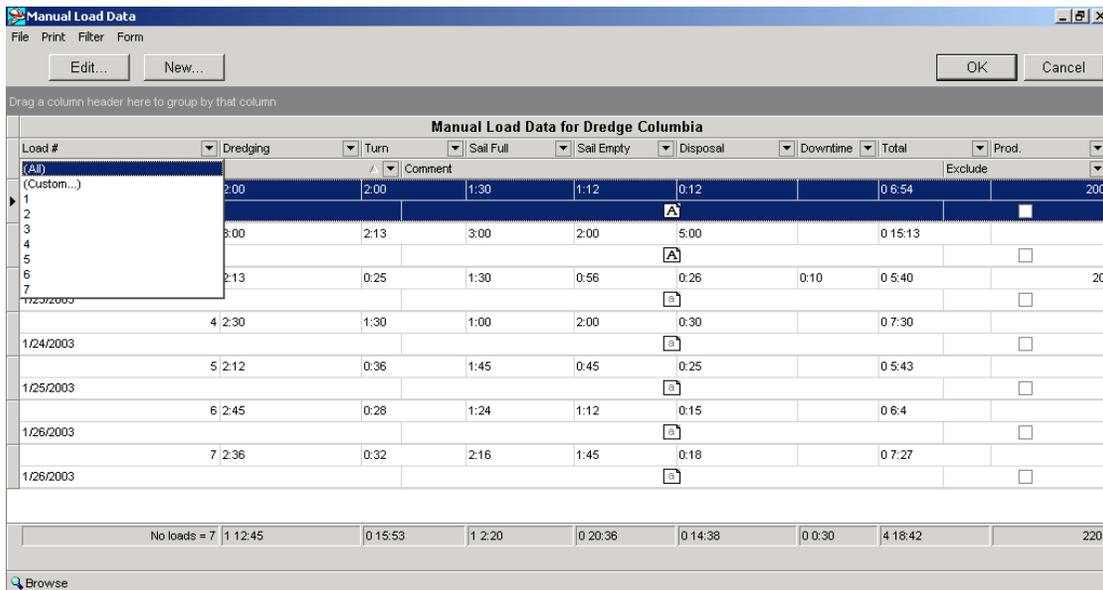


Figure 1.37 Entering data for the manual load summary

Filtering Manual Load Summaries

Sometimes, it may be necessary to view dredge loads that have a value or range of values of particular interest. To filter out dredge loads with these particular values:

1. Click on **Filter** located at the top of the window to activate the filter arrows on the column header. Clicking **Filter** again will deactivate the filter arrows.
2. Click on the dark arrow in the column header of the field to be filtered to bring down the pull-down menu (see Figure 1.38).



The screenshot shows a software window titled "Manual Load Data" with a menu bar (File, Print, Filter, Form) and buttons for Edit..., New..., OK, and Cancel. Below the menu bar is a header row for "Manual Load Data for Dredge Columbia" with columns: Load #, Dredging, Turn, Sail Full, Sail Empty, Disposal, Downtime, Total, and Prod. A pull-down menu is open over the "Load #" column, showing options: (All), (Custom...), 1, 2, 3, 4, 5, 6, 7, and 1/26/2003. The table below contains data for various dates in 2003, with a summary row at the bottom showing "No loads = 7" and various time and count values.

Load #	Dredging	Turn	Sail Full	Sail Empty	Disposal	Downtime	Total	Prod.						
(All)														
(Custom...)														
1	2:00	2:00	1:30	1:12	0:12		0 6:54	200						
2														
3	3:00	2:13	3:00	2:00	5:00		0 15:13							
4														
5														
6	2:13	0:25	1:30	0:56	0:26	0:10	0 5:40	20						
7														
1/23/2003	4 2:30	1:30	1:00	2:00	0:30		0 7:30							
1/24/2003														
1/24/2003	5 2:12	0:36	1:45	0:45	0:25		0 5:43							
1/25/2003														
1/26/2003	6 2:45	0:28	1:24	1:12	0:15		0 6:4							
1/26/2003														
1/26/2003	7 2:36	0:32	2:16	1:45	0:18		0 7:27							
1/26/2003														
No loads = 7							1 12:45	0 15:53	1 2:20	0 20:36	0 14:38	0 0:30	4 18:42	220

Figure 1.38 Filter pull-down menu

3. Select either the single value to be filtered out or select **custom** to filter a range of values. Selecting **custom** will bring up the Custom AutoFilter window as seen in Figure 1.39.
4. In the Custom AutoFilter window, select the parameter(s) and value(s) to filter the load data by.
5. Click **OK**.

Once the data has been filtered, only the dredge loads that meet the filter criteria will be displayed. From there, repeating the process for any of the columns can further filter data down. To remove the filter(s), click **Filter** at the top of the window. This will re-display all of the loads.

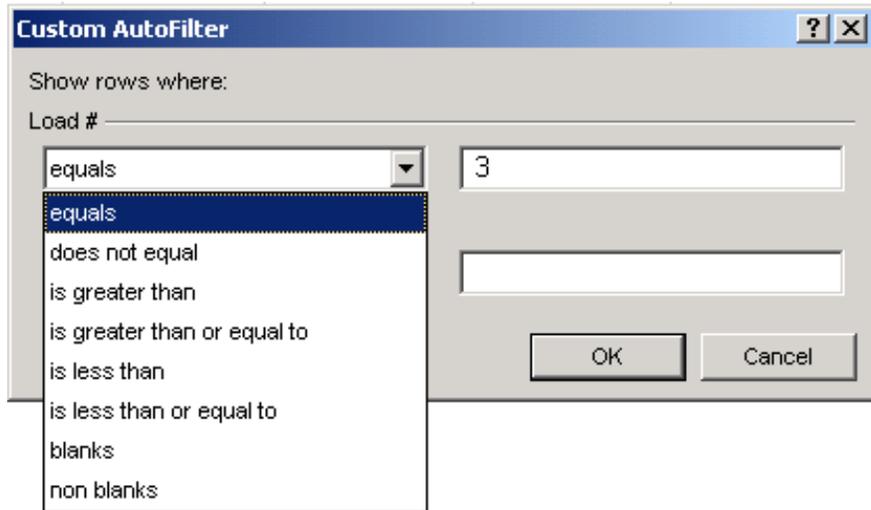


Figure 1.39 Custom AutoFilter window.

Sorting Manual Load Summaries

Dredge loads are normally put in order of their load number. However, dredge loads can also be manually sorted in ascending or descending order of any other field. For example, dredge loads can be sorted by dredging time in descending order. To manually sort dredge load data:

1. Click on the column header to sort the data by. A light gray arrow will appear inside the column header signifying either ascending or descending order of that column as shown in Figure 1.40.
2. Click the column header again to toggle between ascending and descending order.

To re-sort the data by load number, click on the load number column.

Load #	Dredging	Turn
2	1:00	1:00
1	2:00	2:00

Figure 1.40 Sorting by columns.

Grouping Manual Load Summaries

Dredge loads can be grouped by similar values of any column. For example, dredge loads that have the same date can be grouped together for viewing purposes. To manually group dredge load data:

1. Drag the column header of the field to group the data by into the dark gray area of the manual load data window as seen in Figure 1.41.

Load #	Dredging	Turn	Sail Full	Sail Empty	Disposal	Downtime	Total	Prod.
1	2:00	2:00	1:30	1:12	0:12		0 6:54	200
1/21/2003								
2	3:00	2:13	3:00	2:00	5:00		0 15:13	
1/21/2003								
3	2:13	0:25	1:30	0:56	0:26	0:10	0 5:40	20
1/23/2003								
4	2:30	1:30	1:00	2:00	0:30		0 7:30	
1/24/2003								
5	2:12	0:36	1:45	0:45	0:25		0 5:43	
1/26/2003								
6	2:45	0:28	1:24	1:12	0:15		0 6:4	
1/26/2003								
7	2:36	0:32	2:16	1:45	0:18		0 7:27	
1/26/2003								
No loads = 7								
0 17:16		0 7:44	0 12:25	0 9:50	0 7:6	0 0:10	2 6:31	220

Figure 1.41 To group by a particular column, drag the column header into the dark gray area.

The dredge load data will now be re-grouped by values of that field as seen in Figure 1.42.

2. Clicking on the light gray arrow next to the column header will then toggle between ascending and descending order of the values in that column.
3. To remove the grouping feature, drag the column header back to its original location. This will re-order the data according to load number.

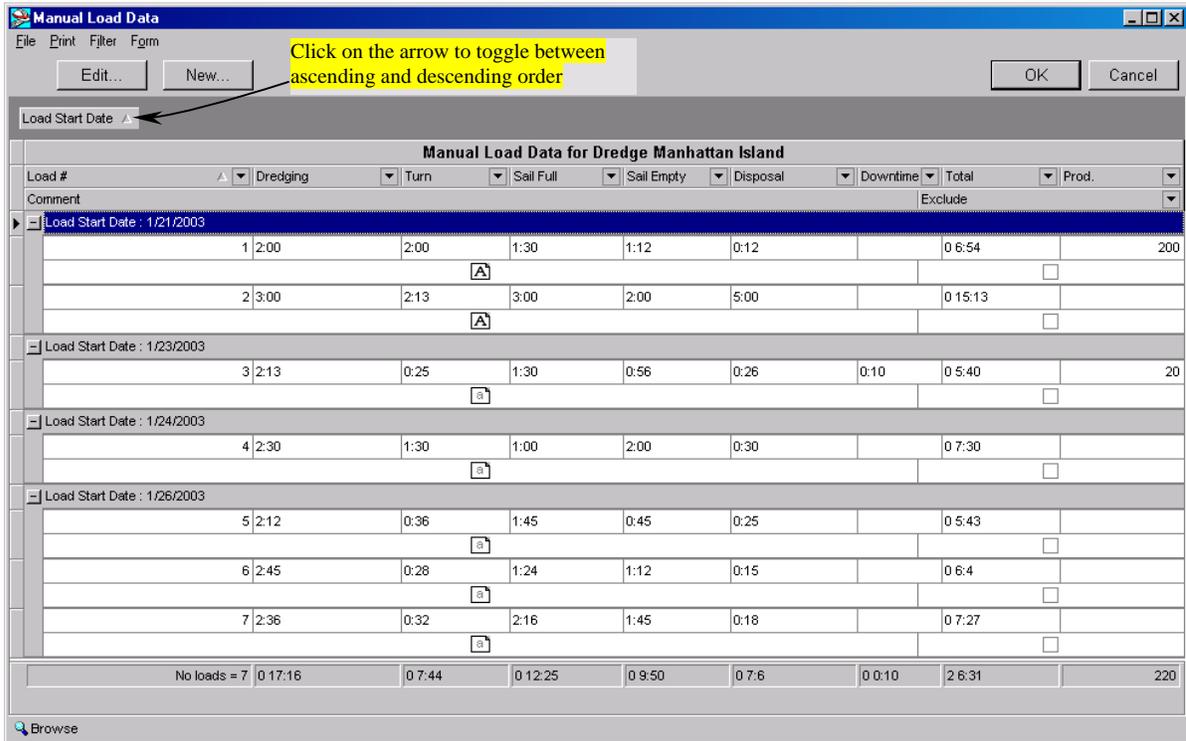


Figure 1.42 Dredge load data grouped by dredging time.

Log Sheets

Log sheets are created for a dredge in Silent Inspector to monitor and record useful information about the dredges activities. While the Manual Load Summary concentrates primarily on the elapsed time for each load, the log sheet includes more detailed information of dredging activities such as the location of dredging and estimated production. To create a log sheet in silent inspector, click on Log Sheets under reports as shown in Figure 1.43. The Log Sheets Window will now appear as in Figure 1.44. Log sheet entries are created, edited, filtered, and sorted in the same manner as Manual load summaries described in the previous section.

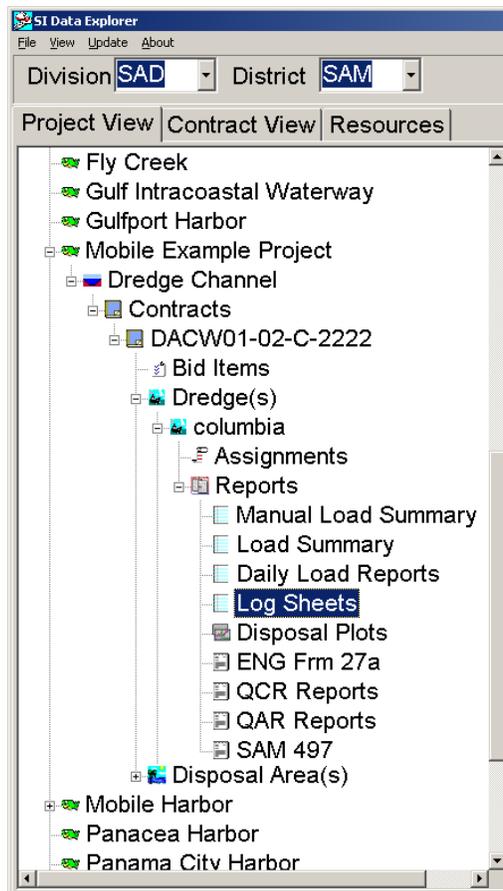


Figure 1.43 Log Sheets

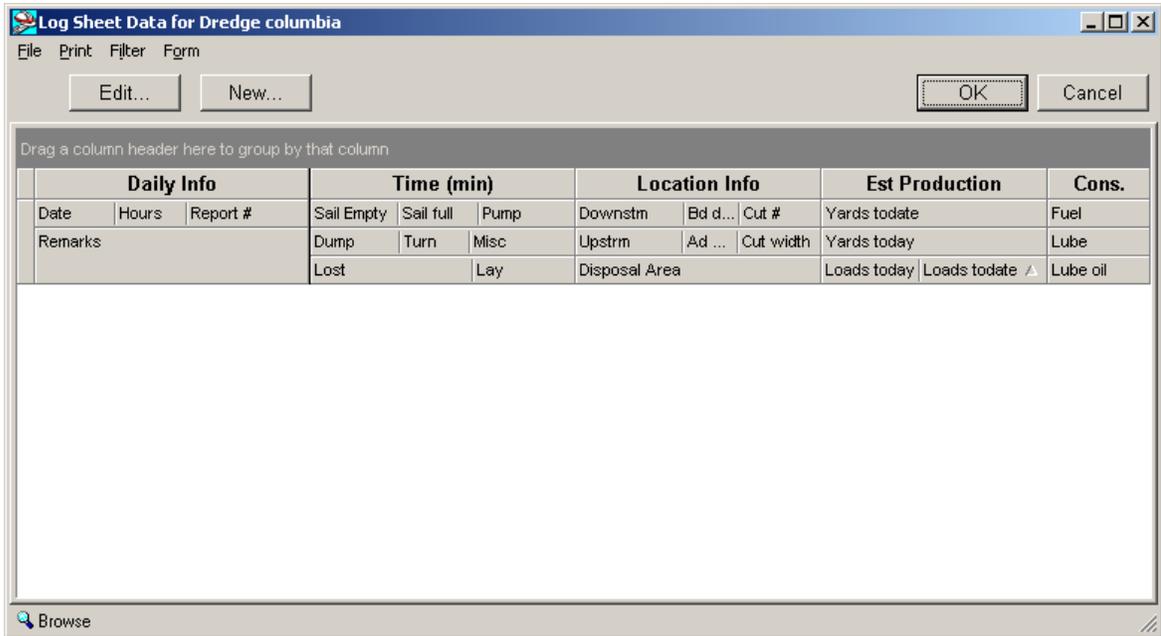
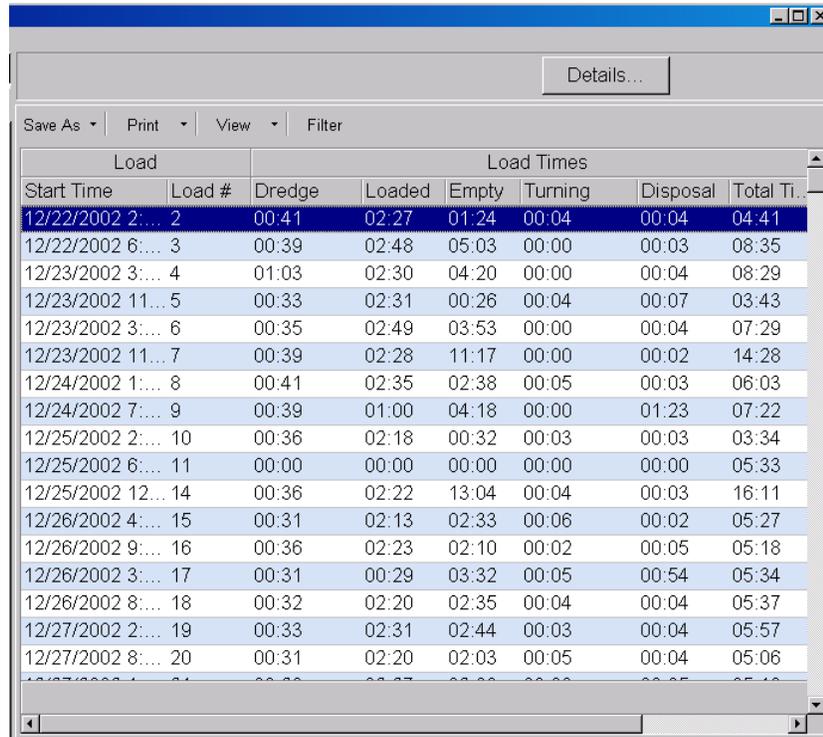


Figure 1.44 Log Sheets Window

Load Summary

Unlike manual load summaries, load summaries in silent inspector are automatically created from data that is sent directly from the dredge by satellite modem located on the dredge or uploaded from a zip disk. To view the load summary for a dredge on a specific project, click on **Load Summary** in the Silent Inspector Data Explorer window (see Figure 1.43). The load summary window will then appear as in Figure 1.45. The loads can be filtered in the same manner as for the manual load summary by:



Load		Load Times					
Start Time	Load #	Dredge	Loaded	Empty	Turning	Disposal	Total Ti...
12/22/2002 2:...	2	00:41	02:27	01:24	00:04	00:04	04:41
12/22/2002 6:...	3	00:39	02:48	05:03	00:00	00:03	08:35
12/23/2002 3:...	4	01:03	02:30	04:20	00:00	00:04	08:29
12/23/2002 11:...	5	00:33	02:31	00:26	00:04	00:07	03:43
12/23/2002 3:...	6	00:35	02:49	03:53	00:00	00:04	07:29
12/23/2002 11:...	7	00:39	02:28	11:17	00:00	00:02	14:28
12/24/2002 1:...	8	00:41	02:35	02:38	00:05	00:03	06:03
12/24/2002 7:...	9	00:39	01:00	04:18	00:00	01:23	07:22
12/25/2002 2:...	10	00:36	02:18	00:32	00:03	00:03	03:34
12/25/2002 6:...	11	00:00	00:00	00:00	00:00	00:00	05:33
12/25/2002 12:...	14	00:36	02:22	13:04	00:04	00:03	16:11
12/26/2002 4:...	15	00:31	02:13	02:33	00:06	00:02	05:27
12/26/2002 9:...	16	00:36	02:23	02:10	00:02	00:05	05:18
12/26/2002 3:...	17	00:31	00:29	03:32	00:05	00:54	05:34
12/26/2002 8:...	18	00:32	02:20	02:35	00:04	00:04	05:37
12/27/2002 2:...	19	00:33	02:31	02:44	00:03	00:04	05:57
12/27/2002 8:...	20	00:31	02:20	02:03	00:05	00:04	05:06

Figure 1.45 Load summary display.

1. Click on **Filter** at the top of the load summary window to activate the filter tool. When the filter tool is activated, arrows will appear in each column header as shown in Figure 1.46.
2. Use the pull-down menus from the arrows to set the filter criteria.
3. To deactivate the filter, Click on **Filter** at the top of the window.

Loads can be sorted by common attributes similarly to manual loads. Sorting the loads by different columns can be done by clicking on the column header to sort the data by clicking on the column header again will toggle between ascending and descending order for the values of that column. Detailed reports can be viewed for any load by clicking on the load

Figure 1.46 shows a software window with a table of data. The table has two main sections: 'Load' and 'Load Times'. The 'Load' section has columns for 'Start Time' and 'Loa...'. The 'Load Times' section has columns for 'Dredge', 'Loa...', 'Em...', 'Turning', 'Disp...', and 'Total ...'. The row for '12/23/2002 3:00:00' is highlighted in blue, indicating it is selected. The 'Filter' button is active, and dark arrows are visible in the column headers.

Load		Load Times					
Start Time	Loa...	Dredge	Loa...	Em...	Turning	Disp...	Total ...
12/22/2002 2:00:00	2	00:41	02:27	01:24	00:04	00:04	04:41
12/22/2002 6:00:00	3	00:39	02:48	05:03	00:00	00:03	08:35
12/23/2002 3:00:00	4	01:03	02:30	04:20	00:00	00:04	08:29
12/23/2002 11:00:00	5	00:33	02:31	00:26	00:04	00:07	03:43
12/23/2002 3:00:00	6	00:35	02:49	03:53	00:00	00:04	07:29
12/23/2002 11:00:00	7	00:39	02:28	11:17	00:00	00:02	14:28
12/24/2002 1:00:00	8	00:41	02:35	02:38	00:05	00:03	06:03
12/24/2002 7:00:00	9	00:39	01:00	04:18	00:00	01:23	07:22
12/25/2002 2:00:00	10	00:36	02:18	00:32	00:03	00:03	03:34
12/25/2002 6:00:00	11	00:00	00:00	00:00	00:00	00:00	05:33
12/25/2002 12:00:00	14	00:36	02:22	13:04	00:04	00:03	16:11
12/26/2002 4:00:00	15	00:31	02:13	02:33	00:06	00:02	05:27
12/26/2002 9:00:00	16	00:36	02:23	02:10	00:02	00:05	05:18
12/26/2002 3:00:00	17	00:31	00:29	03:32	00:05	00:54	05:34
12/26/2002 8:00:00	18	00:32	02:20	02:35	00:04	00:04	05:37
12/27/2002 2:00:00	19	00:33	02:31	02:44	00:03	00:04	05:57
12/27/2002 8:00:00	20	00:31	02:20	02:03	00:05	00:04	05:06

Figure 1.46 Filter is active when dark arrows are present in the column header.

and then clicking *Details* at the top of the window. The detailed report window will then appear as shown in Figure 1.47.

Figure 1.47 shows a 'Detail Report' window. The table has columns for 'Time', 'State', 'Port DDepth', 'Stbd DDepth', 'Fwd Dr', 'Aft Dr', 'Speed', 'Hopper Vol', 'Disp', 'Empty Disp', and 'Dredging'. The table shows data for various times and states, including EMPTY, PUMPOUT, and DREDGE. A summary row at the bottom shows totals for Dredging, Pumping, Turning, Empty, Loaded, Dumping, Pumpout, and Total.

Time	State	Port DDepth	Stbd DDepth	Fwd Dr	Aft Dr	Speed	Hopper Vol	Disp	Empty Disp	Dredging
12/23/2002 11:48:31 AM	EMPTY	0.0	9.9	6.1	10.1	6.5	2394.0	2886.0	2573.0	3.3
12/23/2002 11:48:42 AM	PUMPOUT	0.0	10.2	6.1	10.2	6.6	2390.0	2887.0	2573.0	3.3
12/23/2002 11:52:10 AM	EMPTY	0.0	10.4	6.4	10.4	6.3	727.0	2985.0	2573.0	3.3
12/23/2002 11:52:20 AM	PUMPOUT	0.0	10.2	6.4	10.4	6.2	657.0	2981.0	2573.0	3.3
12/23/2002 12:08:39 PM	EMPTY	0.0	10.1	6.0	10.1	0.2	2410.0	2856.0	2573.0	4.0
12/23/2002 12:11:36 PM	PUMPING	0.8	40.2	6.1	10.1	2.1	587.0	2880.0	2450.0	4.0
12/23/2002 12:15:14 PM	DREDGE	0.8	46.1	6.6	10.5	2.2	677.0	3050.0	2450.0	4.0
Dredging		Pumping	Turning	Empty	Loaded	Dumping	Pumpout	Total		
33.3		4.0	4.2	3.3	151.6	7.5	20.1	223.9		

Figure 1.47 Detailed report of load.

Disposal Plots

Disposal plots show the location of where dredge material was disposed for a certain dredge and contract. To view a disposal plot:

1. Click **Disposal Plots** for a contract as seen in Figure 1.43. The disposal plot for all recorded dredge loads will appear as shown in Figure 1.48.
2. Detailed state data for any of the disposal loads within the disposal plot can be viewed by clicking on the data point for a disposal load inside the plot. The detailed state data window will then appear as shown in Figure 1.49.

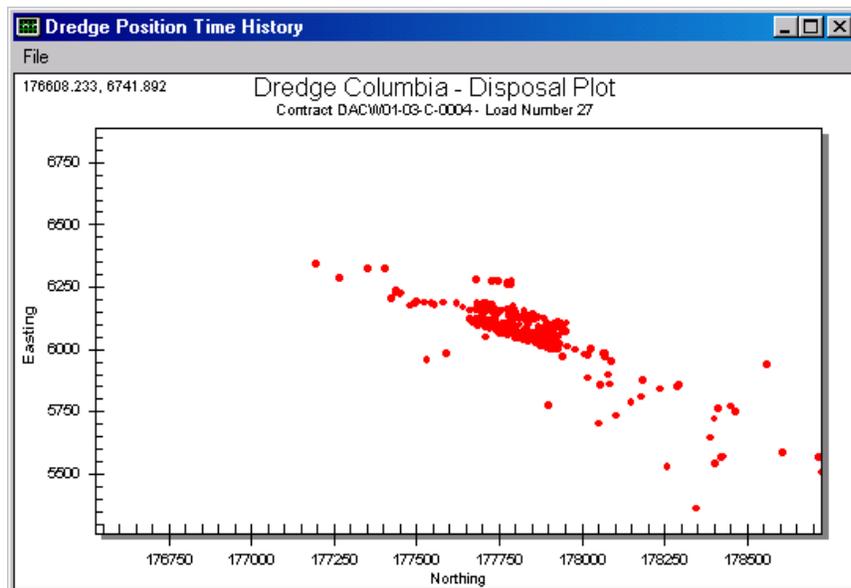


Figure 1.48 Disposal Plot

Detailed State data	
Dredge	Columbia
Start time	2/13/2003 9:30:08 AM
X position	1,775,907
Y position	59,806
State	DUMPING
Load Number	193
Fwd Draft	5.29
Aft Draft	10.37
Speed	7.8
Heading	138
Port drag depth	
Stbd drag depth	5.7
Hopper volume	309
Displacement	2,838
Tide	
Logic states	
Port pump mater	false
Stbd pump mater	false

Figure 1.49 Detailed state data

Project Reports

Viewing a Project Report

Similar to the Manual Load Summary and log sheet, a project report tabulates important details of the entire project. Information in the project report spans all aspects of project including: bid items, assignments, contracts, disposal areas, and dredges. To view a project report:

1. Right click on the project as shown in Figure 1.50 and select **Project Report**. The Project Report Window will now appear as in Figure 1.51

The column tree on the left side of the project report window as shown in figure 1.51 is used to toggle individual column displays on or off for report clarity. To toggle a column on or off, click on the check mark located next to the column name. Check marks will appear next to each column that is displayed. Filtering, sorting, and grouping the project report works similar to the manual load reports. Refer to that section for more information on the subject.

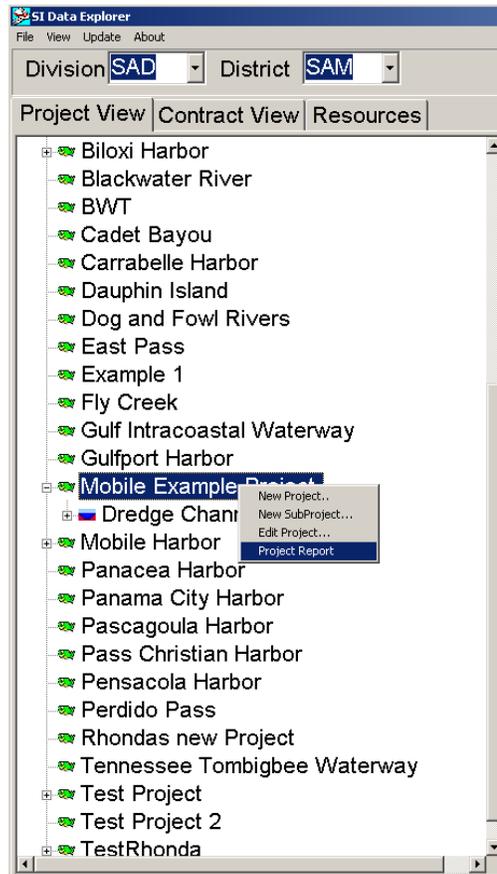


Figure 1.50 Project Report.

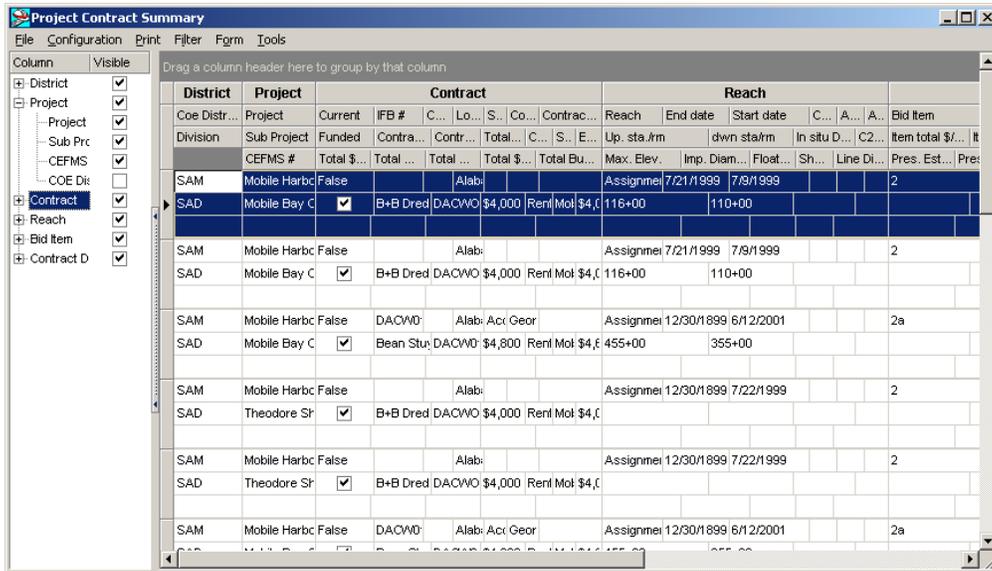


Figure 1.51 Project Report Window.

Saving a Viewing Configuration

A viewing configuration can be stored to save the project report view's parameters such as column display, active filters, and sorting and grouping parameters for convenient retrieval. To save a viewing configuration:

1. Click on **Configuration / Save Current** in the Project Report Window. The Save Configuration Window will appear as shown in Figure 1.52 prompting for a name.
2. Type in a name for the viewing configuration and click OK.

The view can then be restored for later use by click **Configuration / Restore Configuration**.

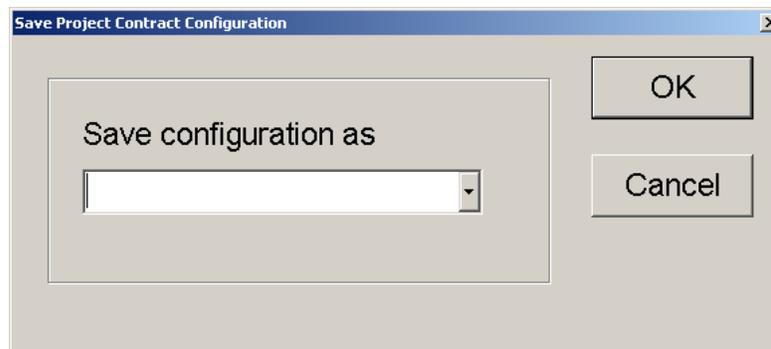


Figure 1.52 Save Configuration Window.

Data Explorer Contract View

Contracts in Silent Inspector can be viewed, grouped and sorted by common attributes such as contract type, contractor, dredge material volume and contract cost. To view the Silent Inspector Data Explorer in Contract View:

1. Select the division and district of the contract in the Data Explorer Window as shown in Figure 1.53. Click on *the Contract View* Tab to show dredging operations by contract (see Figure 1.53).

To view the primary attributes of all contracts:

2. Select *Contracts* at the top of the Contract View Window. To view the details of an individual contract, click on that contract in the Contract View Window (see Figure 1.54). New contracts can be created and existing contracts can be modified or deleted by right clicking on the contract in the Contract View Window.

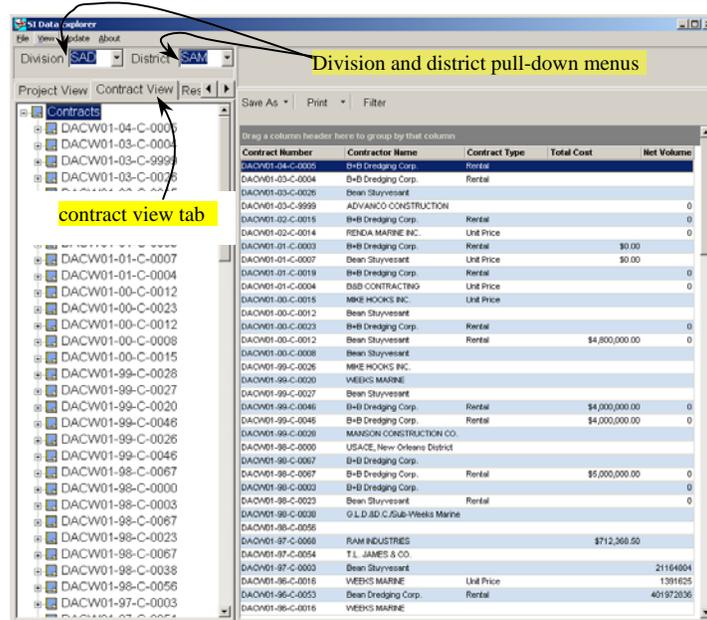


Figure 1.53. Silent Inspector Data Explorer Contract

Contracts can be grouped by similar attributes and filtered for specified criteria similarly to manual load summaries. Furthermore, viewing configurations for the Contract View can be saved and retrieved similarly to Project Reports.

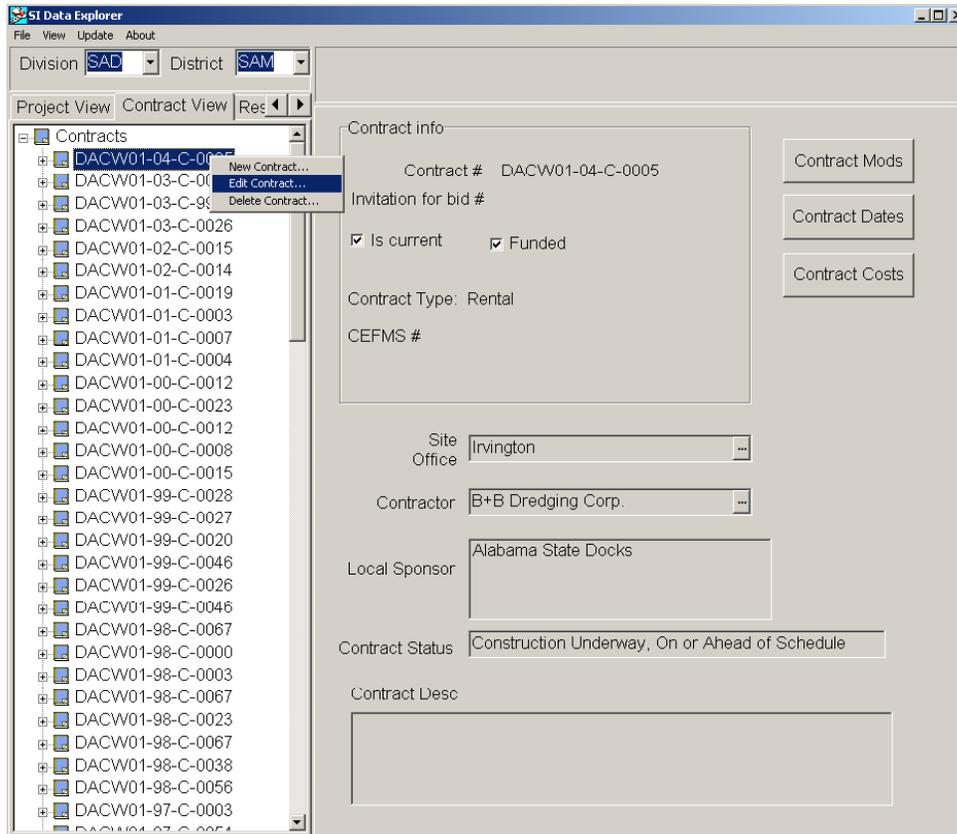


Figure 1.54. Viewing, creating, and modifying individual contracts.

Updating Silent Inspector

Periodically, upgrades are performed to the silent inspector system. To make sure that you have the most recent version of Silent Inspector, it is necessary to perform a system update. This is a procedure of simply downloading any update files. To update Silent Inspector:

1. Click on *Update* in the main pull down menu of the Silent Inspector data explorer window.
2. A message prompt will appear asking for download confirmation as in Figure 1.55. Click *Yes* to download these files.



Figure 1.55 File download confirmation prompt

2 PLOTTING HOPPER DATA IN SILENT INSPECTOR

Plotting Data Sets

To view a plot of Silent inspector data, first open the *SI_Plots* program from the windows start menu. The Data Plots command menu will now appear as it does in Figure 2.1. Select which project the data will be plotted from using the pull-down menus.

1. Select the Corps District from the District pull-down menu as in Figure 2.2.
2. Select the Project and corresponding channel, contract Number, and dredge from their respective pull-down menus as seen in Figure 2.3.
3. Specify the time range of data to plot from the pull-down menus as seen in Figure 2.4. Clicking on *Determine Valid Date Range* in the Data Plot window will automatically set the time range to span all existing data for the project.

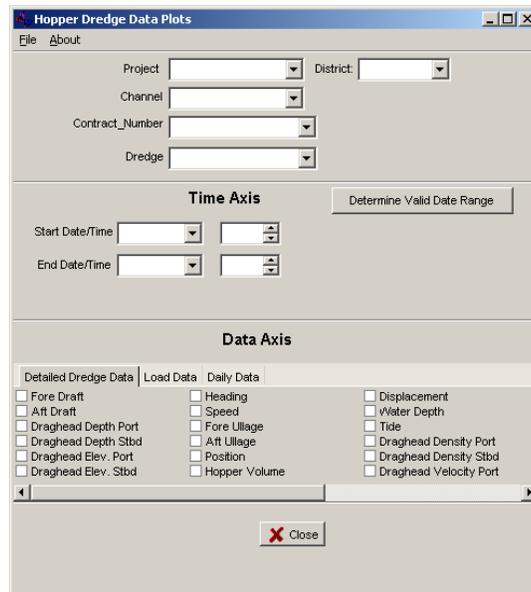


Figure 2.1 Data Plot command menu.

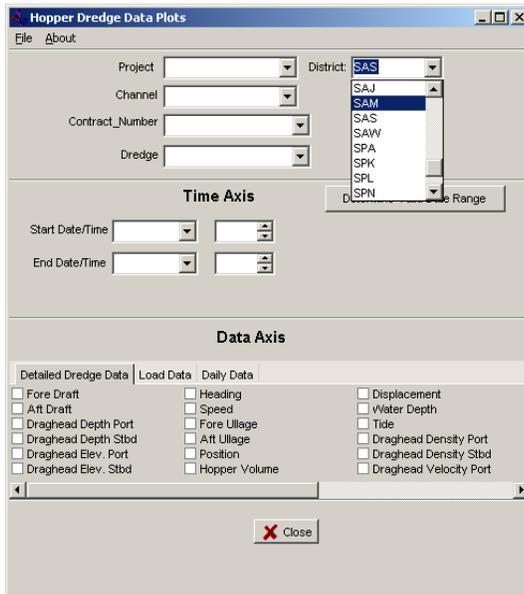


Figure 2.2 Select Corps District

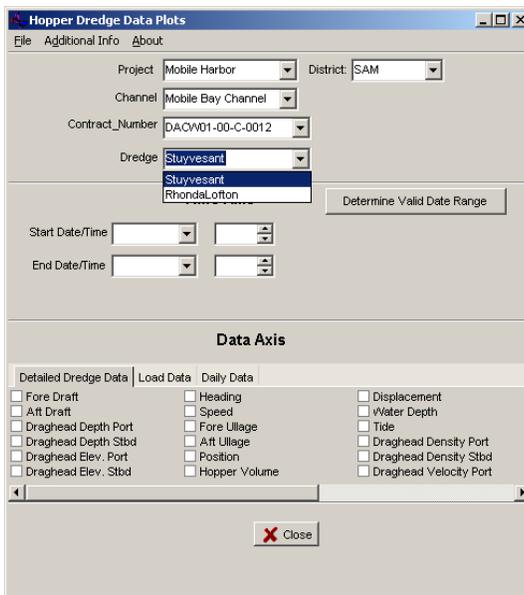


Figure 2.3 Select subsequent project identifiers

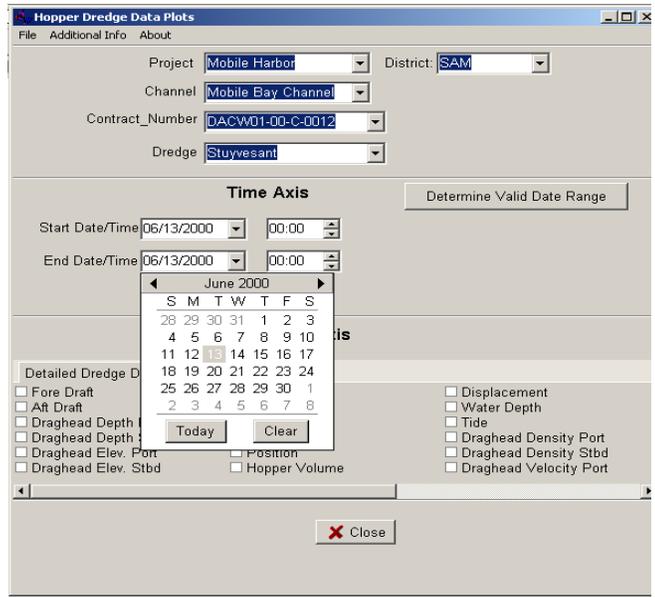


Figure 2.4 Time range pull-down menu.

4. Click on the toggle box next to the data sets to be plotted. Clicking on it again will deselect it. A check mark will appear in the toggle box of each data set that will be plotted as shown in Figure 2.5.
5. Click the **Plot** button at the bottom of the command window. The data will now be plotted as shown in Figure 2.6.

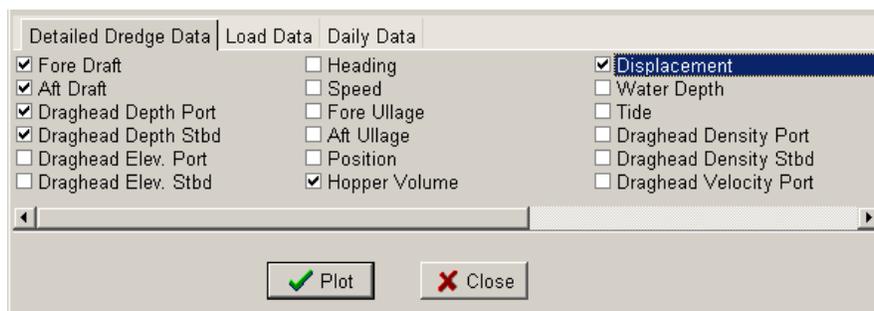


Figure 2.5 Selecting data sets to be plotted.

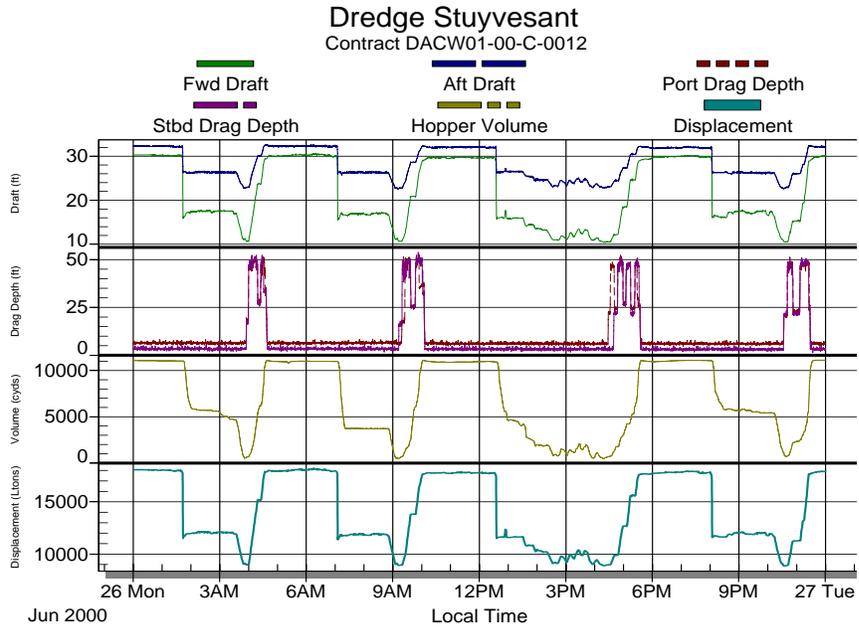


Figure 2.6 Typical Data Plot

Zooming In On A Plot

To zoom in on an area of particular interest:

1. Left-click on the mouse and hold while dragging a box around the area you want to zoom in on (See Figure 2.7). The plot should now zoom in on the area as shown in Figure 2.8.
2. To zoom out to the original plot view, right click inside the plot to bring up the plot options menu and select **Undo Zoom** as shown in Figure 2.9.

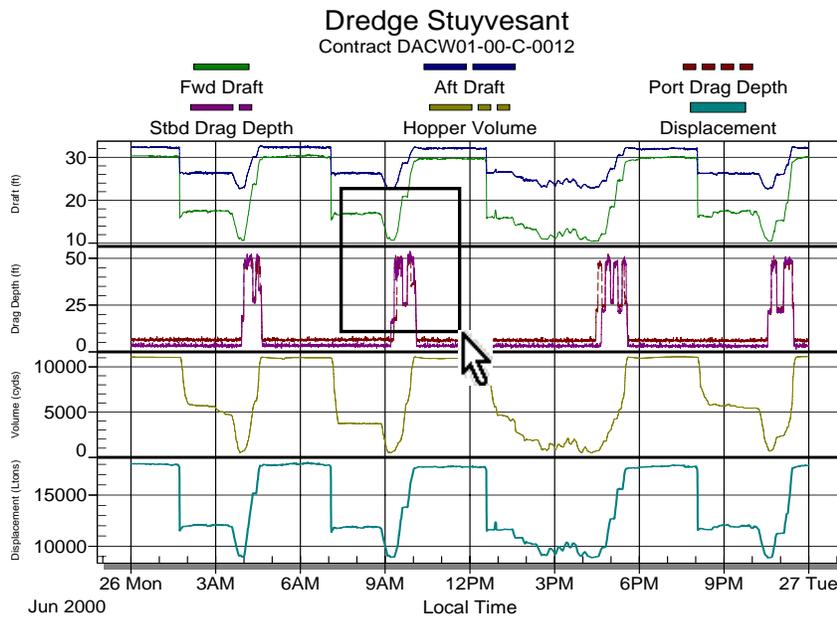


Figure 2.7 Clicking and dragging to select an area to zoom in.

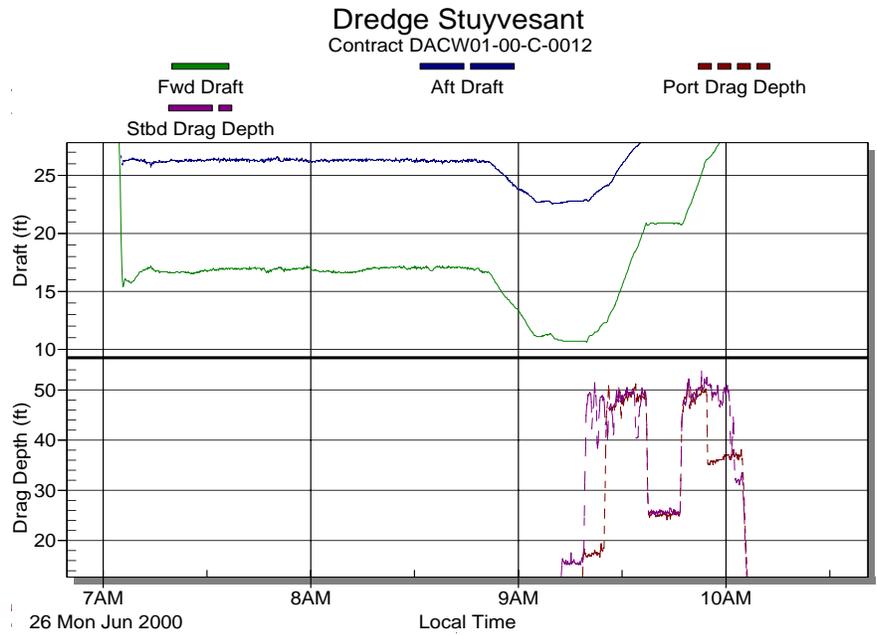


Figure 2.8 Plot after zooming in.

Editing A Plot

Although the plot produced may be sufficient for all intents and purposes, it might be necessary to modify the plot display for clarity. To modify the plot:

1. Right click anywhere inside the plot to bring up the plot options menu
2. Select *Customization Dialog* (See Figure 2.9)



Figure 2.9 Plot options menu

The Plot customization Screen will now appear as in Figure 2.10. Some of the features provided in the customization screen are mostly to accommodate the preferences of the user. However, many of the features are useful for improving the clarity of individual plots.

Some of the more useful modifying as follows:

1. **General:**

The general menu in the plot customization window as shown in Figure 2.10 can be used to change the plot title, viewing style (color or grayscale), grid-lines, and font size of the plot text.

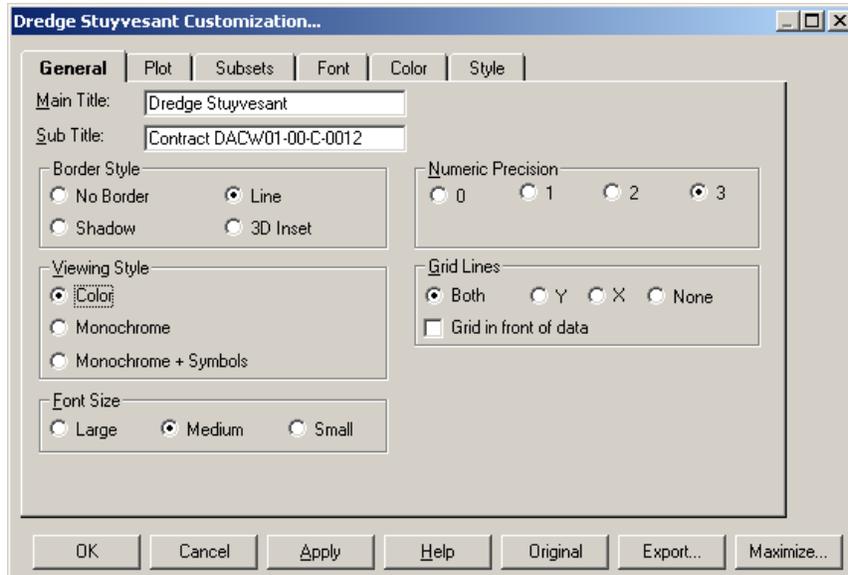


Figure 2.10 Plot customization window

2. *Plot Style:*

The plot style menu as shown in Figure 2.11 is used to control how data is plotted. The individual data sets can be plotted as lines points, bars, or any combination thereof. To change the plot style of a data set:

1. Click on the data set under *axes*.
2. Click on the plot style to modify the data set to.
3. Click *OK* or *Apply*.
4. To revert back to the original style, click *Original*.

1. *Subsets:*

The subsets menu as shown in Figure 2.12 is used to plot one or more of the data sets in the original plot without having to start the plot from the beginning. To plot only desired data sets:

1. Hold down the Ctrl key while clicking on the subsets to plot.
2. Click *OK*

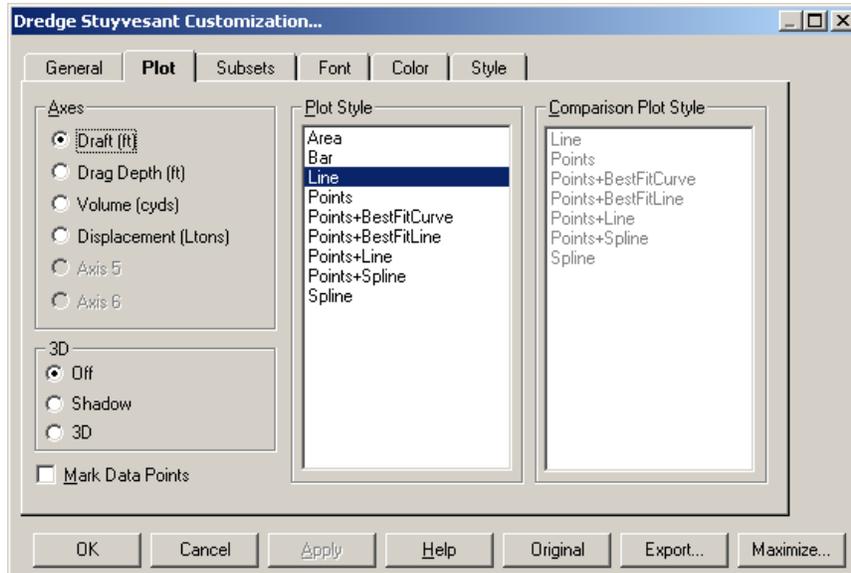


Figure 2.11 Plot style customization

3. The plot should now appear as shown in Figure 2.13 with only the data sets selected.
4. Click *Original* to revert back to all data sets.

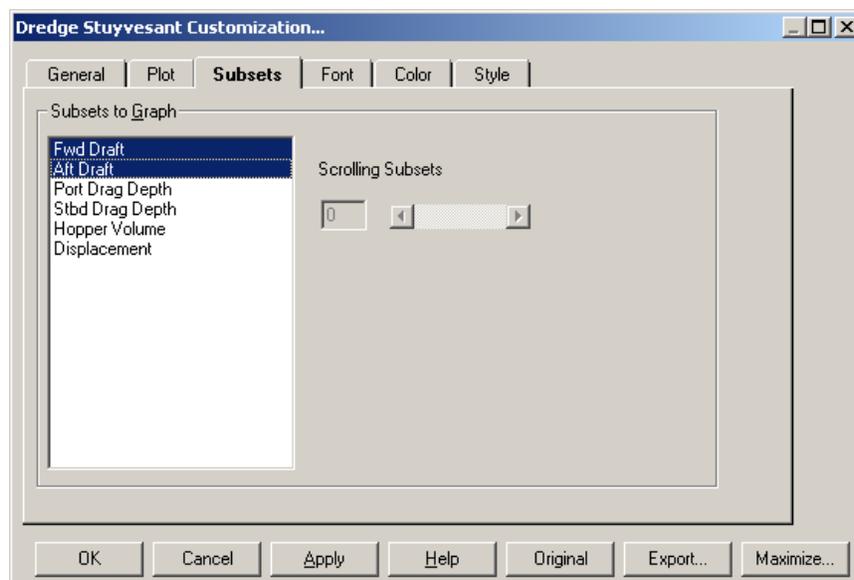


Figure 2.12 Subset Plotting

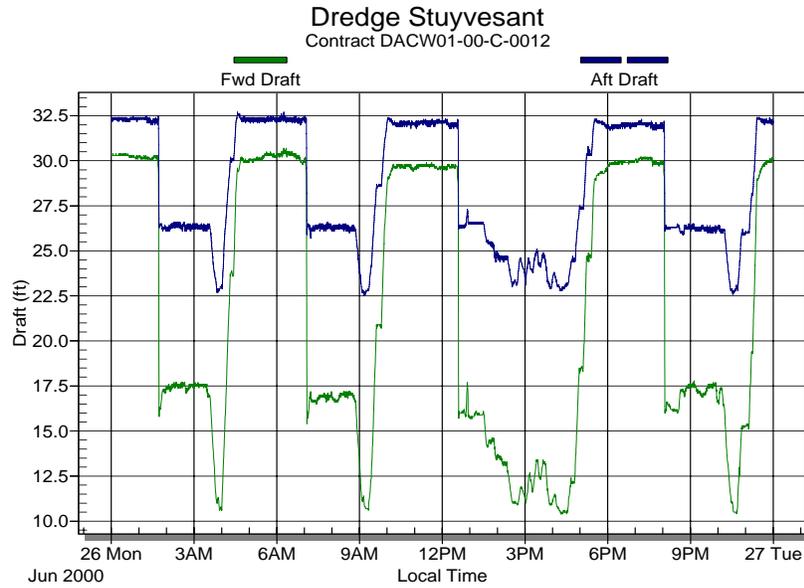


Figure 2.13 Subset Plot

4. *Style:*

The style menu as shown in Figure 2.14 is used to control the color, line type, and point style of the data sets. Changing the data style is performed in a similar manner to changing the plot style.

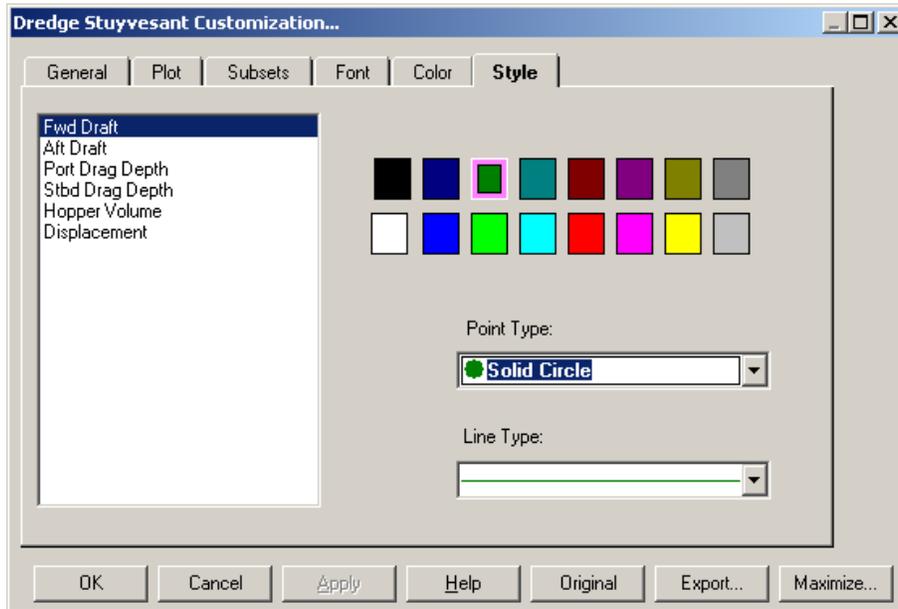


Figure 2.14 Data style

5. **Export:**

The graphical display of the plot as well as its corresponding data can be exported to the Windows clipboard, an external file, or a printer. Data can be exported as text and the plot exported as a graphic. To export the graphical display of a plot:

1. Click **Export** at the bottom of the plot customization window. The export window will then appear as shown in Figure 2.15
2. Select Metafile, BMP (bitmap), JPG, or PNG.
3. Under export destination, select clipboard, file, or printer.

If clipboard was selected, click **Export**. The graphic can then be pasted in any application that supports graphic files. If file was selected:

1. Click **Browse**. The *Save As* window will then appear as in Figure 2.16
2. Specify the drive and directory and file name to export the file.
3. Click **Export**.

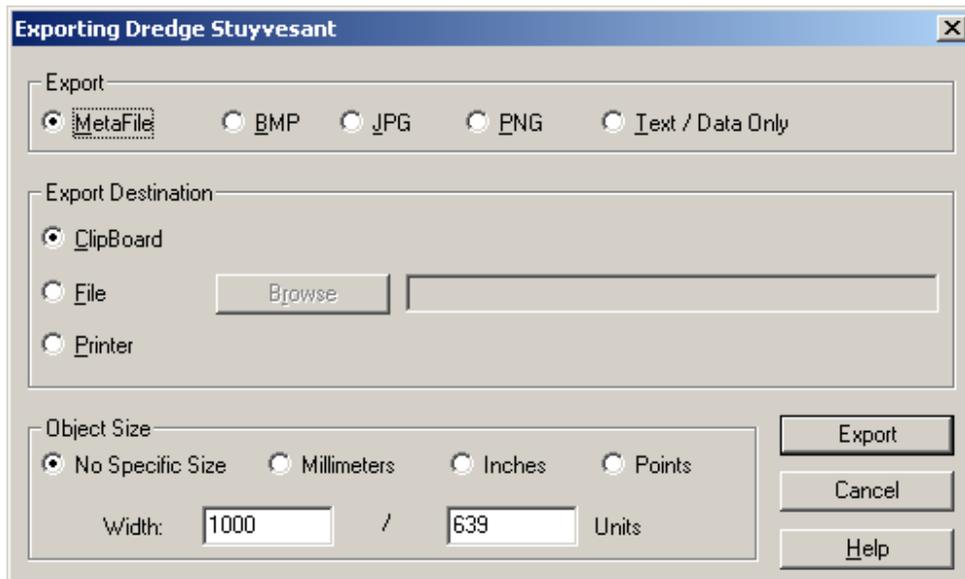


Figure 2.15 Export window

If printer was selected:

1. Click Print as shown in Figure 2.17. The print window will then appear as in Figure 2.18.
2. Select your favorite printer and click **OK**.

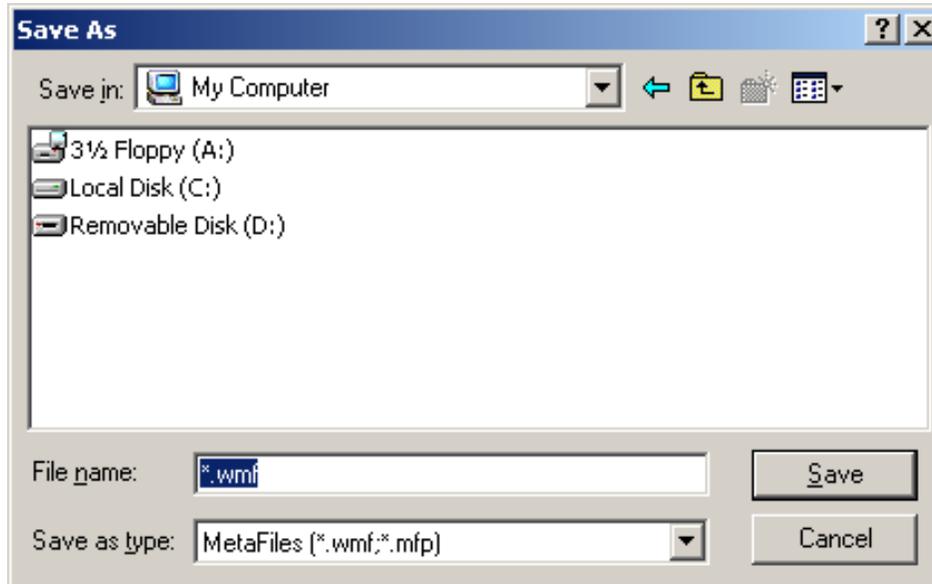


Figure 2.16 File export window.

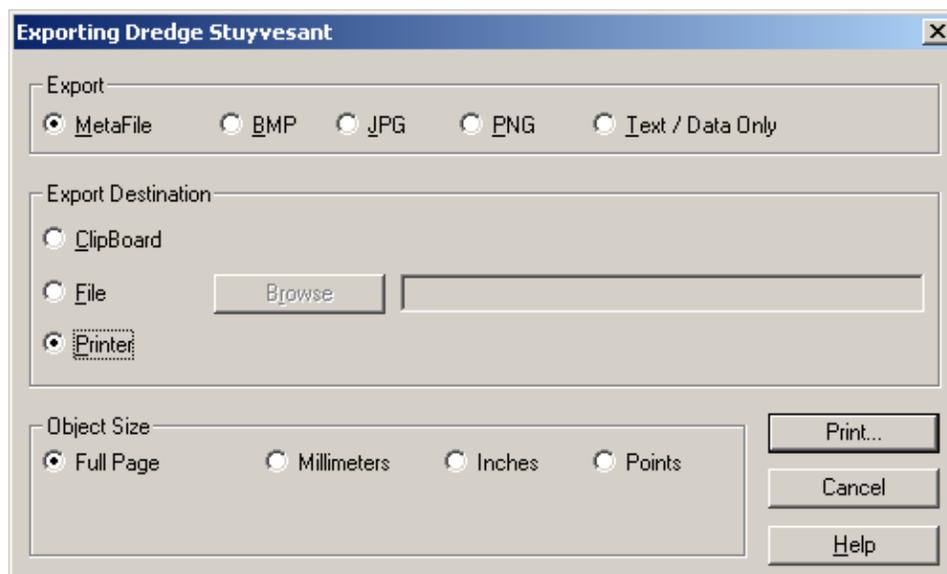


Figure 2.17 Exporting to printer.

To export the plot data as text:

1. Click **Text / Data Only** in the export window.
2. Specify either clipboard or file as in the previous section.
3. Click **Export**. The data export window will then appear as shown in Figure 2.19.
4. If desired, select the data subsets and data points to plot. Otherwise select **All Data**. Select the export style (*i.e.* List or Table) and click **Export**. The data will then be exported to its specified location.

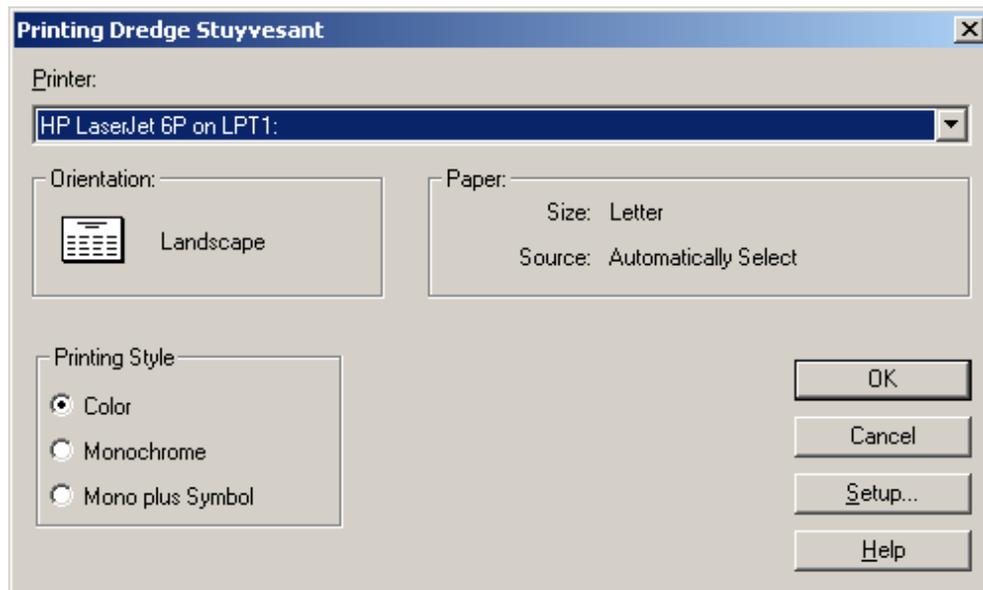


Figure 2.18 Printer menu

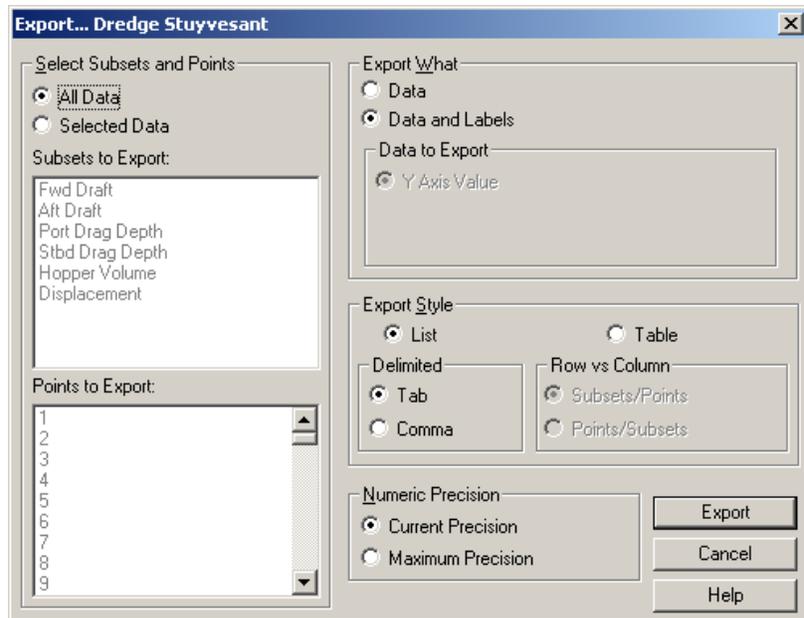


Figure 2.19 Data export window

3. ON DREDGE SILENT INSPECTOR

Onboard Display

The Silent Inspector Onboard Display is used to visually monitor dredge activities aboard the dredge. To open the Onboard Display:

1. Click on **Control Center** in the windows start menu to bring up the control center window as shown in Figure 3.1.
2. In the control center window, Click **Show Display**. The Onboard display will then appear as shown in Figure 3.2.



Figure 3.1 Control Center window

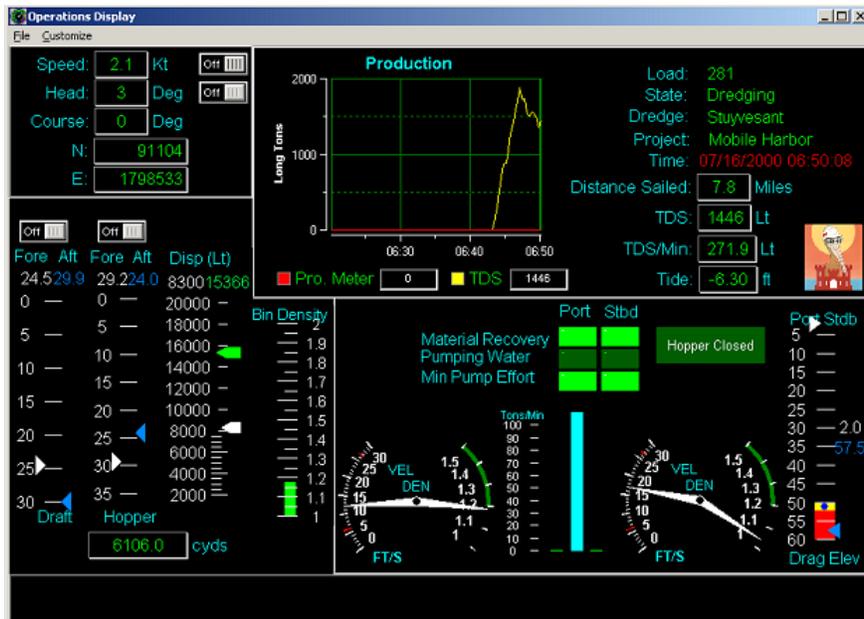


Figure 3.2 Onboard Dredge Display.

Data Transfer

Periodically, it is necessary to send data from the Silent Inspector computer aboard the dredge to the district office and to the SI database at WES. Data is downloaded from the dredge computer to a zip disk. The zip disk is then taken to the district office where it can then be sent via email to the database at WES. Typically, the zip disk is then taken back to the dredge so that data can be consolidated as much as possible on to one zip disk.

Data transfer from dredge to district office

To copy data to a zip disk with data already on it:

3. Click on **Control Center** in the windows start menu to bring up the control center window as shown in Figure 3.1.
4. In the control center window, Click **Read Return Receipt** to set the date of the last data transfer.
5. Click **Copy Data To Zip**. The Dredge Data Transfer Window will now appear as in Figure 3.3.
6. Select **Backup - mm/dd/yyyy** and click **Transfer**.
7. After the data transfer is complete, send the zip disk to the district office.

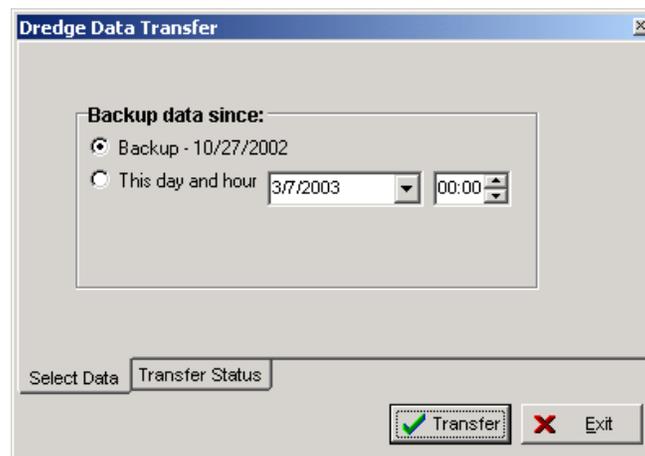


Figure 3.3 Data Transfer Date window.

If a blank zip disk is used:

1. Click **Copy Data To Zip** in the control center window. The Data Transfer Date window will now appear as shown in Figure 3.3.
2. Use the pull-down menu to select the date of the last data transfer.
3. Click **Transfer**.
4. Send the zip disk to the district office.

Data Transfer from district office to WES

To send the data to the SI database at WES:

1. Click **Send Data** in the SI Manager Station. The Send Data window will now appear as shown in Figure 3.4.

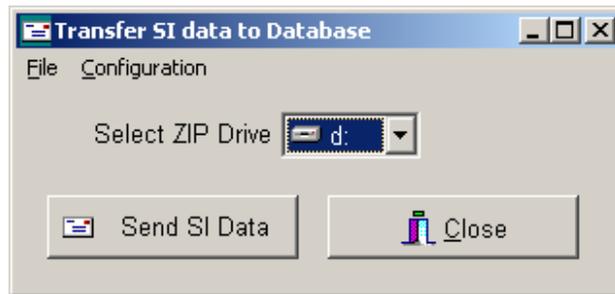


Figure3.4 Send Data window.

2. Select the drive letter for the zip disk from the pull-down menu in the Send Data window.
3. Click **Send SI Data**.

You should receive a confirmation email that the data from the zip disk has been sent. If no confirmation email is received, the SI database at WES did not receive the data.

4. SILENT INSPECTOR TRACK-PLOT VIEWER

Online Track-Plot Viewer

The Silent Inspector Track-plot viewer provides data and graphics of the dredge material disposal aboard hopper dredges. This viewer can be accessed online over a public accessible server. The Track-Plot Viewer allows the position of a hopper dredge to be monitored for any valid time and location. To view the placement tracking record for a hopper dredge:

1. Open the URL, http://www.satdata.us/coe/ssi_login.asp, to bring up the Placement Tracking Viewer login window as follows in Figure 4.1.



Figure 4.1 shows the login window for the Placement Tracking Viewer. It includes a logo at the top, a welcome message, and several input fields: User Name (ssi), Password (sssi), Choose District (SAW - WILMINGTON), Start Date (3/25/2003), and Days Back (3). There are also Continue and Reset buttons at the bottom.

Figure 4.1 Placement Tracking Viewer Login Window

2. Enter *ssi* for both the public username and password. Select the corps district from the pull-down menu. Enter the date in the *start date* dialog box in the format *mm/dd/yyyy* and select the number of days back from that starting date. For example, entering 10/25/2003 as the start date and 3 for the value in days back will bring up placement tracking data for 10/23/2003, 10/24/2003, and 10/25/2003. Click *continue*. A menu that lists the disposal sites for the corresponding information will appear as shown in Figure 4.2.

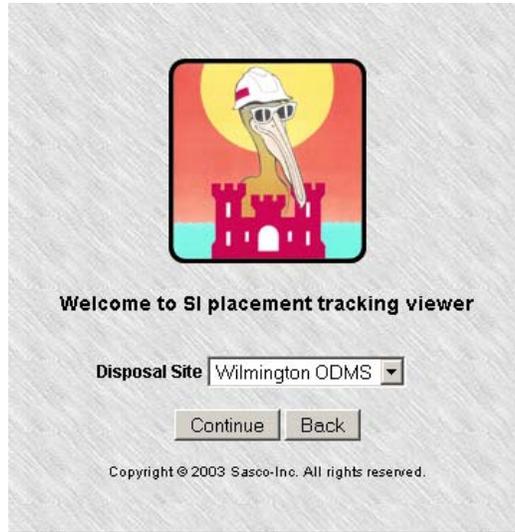


Figure 4.2 Disposal Site Menu

3. Select the disposal site from the pull-down menu and click *continue*. The tracking viewer screen will appear as shown in Figure 4.3.

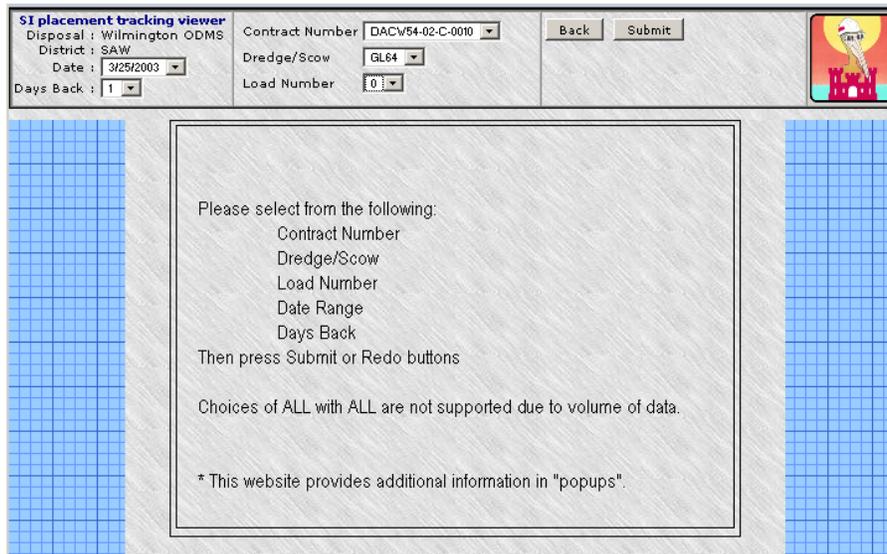


Figure 4.3 Tracking Viewer Screen

4. In the tracking viewer screen, select the contract number, dredge, and load number from the pull-down menu located in the upper center screen. Click *submit* located in the upper right-hand corner of the tracking viewer. The track-plot will then appear as in Figure 4.4.

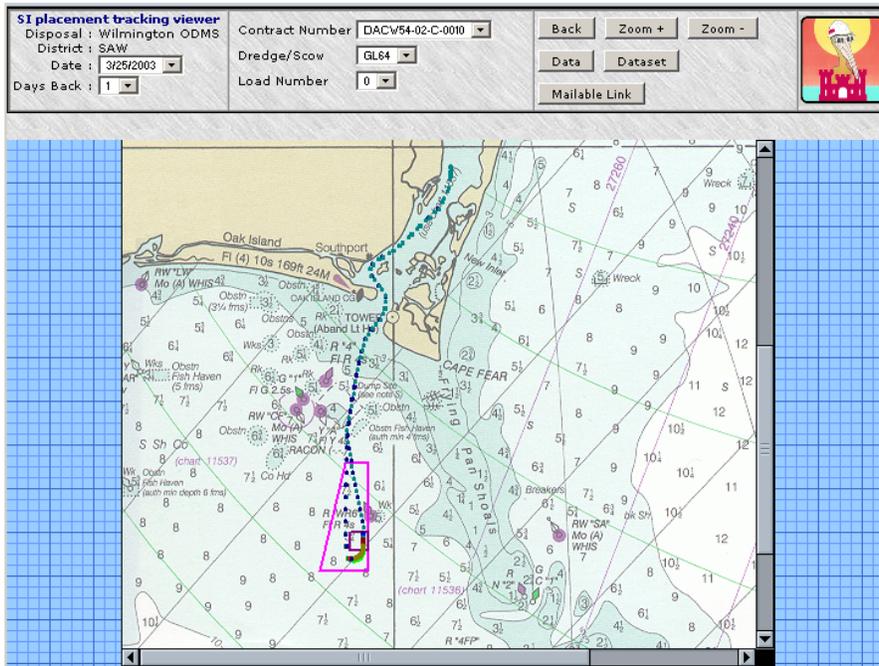


Figure 4.4 Track Plot

5. SILENT INSPECTOR DATA EXPORT

Data Export Program

The Silent Inspector Data Export Program can export the data for a contract in silent inspector into a *csv* file that can be accessed by any spreadsheet application. To export Silent Inspector contract data:

1. Open the *Data Export* Program in the Windows Start Menu under *SI Manager Station*. The Data Export Window will now appear as in Figure 5.1.

The screenshot shows the 'Dredge Data Export' application window. The title bar reads 'Dredge Data Export' with standard window controls. The menu bar includes 'File', 'Data string', and 'About'. The main interface is divided into several sections:

- Project Information:** Project (Mobile Harbor), District (SAM), Channel (Mobile Bay Channel), Contract_Number (DACW01-03-C-0004), and Dredge (Columbia) are all set via dropdown menus.
- Time Axis:** Start Date/Time (7/19/2003, 12:00:00 AM) and End Date/Time (7/21/2003, 12:00:00 AM) are set. A 'Load No.' field is set to 1. A 'Determine Valid Ranges' button is present, with status text: 'Data Start Date = 12/20/2002' and 'Data End Date = 7/20/2003'. The 'Export by' section has radio buttons for 'Load' and 'Date Range' (selected).
- Data Selection:** A 'Time Axis' section contains two tabs: 'Detailed Hopper Dredge Data' and 'Analyzed Hopper Dredge Data'. Under 'Detailed Hopper Dredge Data', 'Fore Draft' and 'Aft Draft' are checked. Other options include Draghead Depth Port, Draghead Depth Stbd, Draghead Elev. Port, Draghead Elev. Stbd, Heading, Course, Speed, and Fore Ullage. Under 'Analyzed Hopper Dredge Data', options include Aft Ullage, Position, Hopper Volume, Displacement, and Water Depth.
- Buttons:** At the bottom, there are 'Write CSV' (with a green checkmark icon) and 'Close' (with a red X icon) buttons.

Figure 5.1 Silent Inspector Data Export Window.

2. Select the Corps district as well as the Project, Channel, Contract Number, and Dredge. Select the date range of the data to be exported, and check off the data sets of data to be exported.