

The analysis of resource data frequently requires averaging quality data for each lithologic unit. A problem may arise because the quality parameters are often logged for different downhole intervals than the lithologic data. The INTERVAL compositing type provides a way to combine this information.

Procedure:

In the coal quality example used here, the coal seams were cored, and split into multiple samples by depth, which were then separately assayed. The geologic intervals were logged from the core as well. To compare or report the coal qualities for each drillhole, the individual samples must be combined into an average value for each seam in each hole.

INTERVAL compositing provides a way to combine the information from tables with down hole information recorded using different intervals. INTERVAL compositing requires the from-to intervals for the results to be provided explicitly.

The database structure should be in a typical geologic form with a collar table, a lithology table, and an assay table. (Survey data is optional, for the case of non-vertical drillholes.)

Begin by using the *DEFINE* program to add fields to the lithology table to hold the average for each of the quality values. These will be REAL, ACTUAL fields, with value range and precision appropriate for each. In this case, add two fields: *ave_btu* and *ave_sulfur*.

The database structure should look something like this:

```
Title: Composit technote 9307
Created: 1993/10/30;08:47 Modified: 1993/10/30;08:51
```

```
Table collars is a FLAT table with 23 records
collars_rec collars_nul hole_no easting
northing elevation td

Table lithology is a FLAT table with 231 records
lithology_rec lithology_nul hole_no l_from
l_to geology ave_btu ave_sulfur

Table assays is a FLAT table with 139 records
assays_rec assays_nul hole_no q_from
q_to q_btu q_sulfur
```

Next, run the *COMPOSIT* program to calculate the averages. The following values must be filled-in for the various *Setup* menus.

The *Fields* menu must be filled in with at least the following fields. Note that the *From:* and *To:* fields are provided from the assays table, the source of the data to be averaged.

Hole_id: *hole_no* **X:** *easting* **Y:** *northing* **Z:** *elevation* **From:** *q_from* **To:** *q_to*

The *Coordinates* menu must be filled in with fields from the lithology table, where the composited results will be written.

X: *lithology_nul* **Y:** *lithology_nul* **Z:** *lithology_nul*

Technote: Interval Compositing

The result locations are not needed in this case, therefore the *lithology_nul* field is used. In essence, the composite location is thrown away.

The *Assignment* menu should be filled in with the following:

Composite Field	Set to	Assay Field
<i>ave_btu</i>	=	<i>q_btu</i>
<i>ave_sulfur</i>	=	<i>q_sulfur</i>

The *Parameters* menu must have the following fields filled in:

Type: *INTERVAL* **Int from:** *l_from* **Int to:** *l_to* **Update type:** *OVERLAY*

Optional Fields: The total assayed length in the interval may be saved, by filling in the **LENGTH** option in the *Coordinates* menu.

The *Minimum length* in the *Parameter* menu can be set. If an interval is shorter than the minimum value, the composited value will not written.

Missing intervals in the assays table are ignored, and do not dilute the composite value. Null values are also ignored, but the assay length will be included in the composite length.

Before composit

Quality Lithology

0.12	Sand Stone
0.30	
0.23	Lime Stone
0.54	
0.32	Seam 1
0.41	
0.43	
0.26	Shale
0.39	
0.26	Seam 2
0.17	
0.13	Shale
0.23	
0.19	Sand Stone

After composit

Lithology, Average Quality

Sand Stone, .210
Lime Stone, .230
Seam 1, .415
Shale, .352
Seam 2, .273
Shale, .180
Sand Stone, .190

For more information on database set up consult the [“Database Setup for Drillhole Data” on July, 1991](#)
For more information on the *COMPOSIT* see [“Composit - Composite downhole data.” on page 1mo-3](#)