

bioaccumulation testing will also be conducted. Biological samples must be taken from the same stations as the previous sediment chemistry samples.

### 7.3 POSITIONING METHODS

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A precision navigation system should be used to navigate to and record all sediment sampling locations to a geodetic accuracy of  $\pm 3$  meters. In most cases, samples should be obtained as near as possible to the target locations provided in the project sampling plan. Such accuracy can be obtained with a range of positioning hardware, such as microwave transponders, differential GPS, electronic measuring devices, etc. The exact positioning system to be used and associated QA/QC procedures should be documented in the sampling and analysis plan.

Sampling location data will be entered into Ecology's Environmental Information Management (EIM) system referenced to North American Datum of 1983 (NAD 83) or the World Geodetic System 1984 (WGS 84). If sampling locations are referenced to a local coordinate grid, the local grid should be tied to NAD 83 or WGS 84 to allow conversion to latitudes and longitudes. The North American Datum of 1927 (NAD 27) is outdated and should not be used. **Table 7-1** outlines the required level of accuracy.

**Table 7-1. Required accuracy for sample positioning**

COORDINATES IN:	LEVEL OF ACCURACY
Degrees Minutes Seconds	2 decimal places
Degrees Minutes	4 decimal places
Decimal Degrees	6 decimal places
State Plane	Nearest foot
UTM	meters, with 1 decimal place

### 7.4 SAMPLING METHODS

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The goal of sediment sampling for characterization of each individual DMMU is to collect a sample (or a number of composited samples) which will be representative of the DMMU. The accuracy of this representation can be increased vertically by taking core samples from the sediment/water interface down to the maximum proposed depth of dredging (including overdepth) and horizontally by increasing the number of samples taken. The DMMP agencies have established minimum sampling requirements (see Chapter 5) based on volumetric measurements. The type of sampling required, however, depends on the type of project. The sampling methodology to be used should be presented in the sampling and analysis plan along with the rationale for its use.

#### 7.4.1 Core Sampling

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For projects with heterogeneous sediment and for new-work dredging, the proponent will be required to take core samples from the sediment/water interface down to the maximum depth of dredging, including overdepth and Z-samples.

There are numerous gear options available for obtaining core samples. These include impact corers, hydraulic push corers, vibracorers, augers with split spoons or Shelby tubes, etc. The methodology chosen will depend on availability, cost, efficacy, type of sediment, and anticipated sediment recoveries.