

## Source Water Assessment and Protection GPS Data Collection and Submission Standards

### GPS Certification

TCEQ OPP 8.12 permits only **certified** GPS data collectors to submit GPS data to the TCEQ. To become certified, an individual must pass a GPS certification training program. TCEQ staff may obtain GPS certification by attending a training course presented by either an internal GPS trainer or by a manufacturer-certified GPS trainer. Non-TCEQ staff may obtain GPS certification from a manufacturer-certified GPS trainer. Successful completion of either training course qualifies individuals to collect and submit GPS data to TCEQ but will not qualify them to serve as trainers.

Individuals who have successfully passed the training course must then obtain a GPS certificate number from the TCEQ GPS Coordinator.

### Acceptable GPS Technology

GPS units used to collect data must meet the minimum qualifications outlined in TCEQ OPP 8.12. At a minimum, GPS units used to collect data must be accurate to no less than 2-5 meters when differentially corrected. GPS units that do not meet this standard are not acceptable (Note: Recreational GPS receivers do not comply with TCEQ OPP 8.12).

### Dilution of Precision (DOP)

GPS data shall not be collected when the Precision Dilution of Precision (PDOP) value equals or exceeds 6.0. Do not use DOPs other than PDOP when collecting GPS data.

### Collection Methods

GPS data may be collected using one of three methods (These collection methods are explained in the SWAP GPS Standard Operating Procedures):

- **Superimposed** - The superimposed method involves standing close or upon the subject for which you are collecting GPS locational data.
- **Centroid** - The centroid method is used when the superimposed method cannot be used (e.g. PWS well inside a locked fence or structure).

### Differential Correction

All GPS data must be differentially corrected before it can be submitted to TCEQ. Differential correction may be performed either by post processing or by real time differential correction.

### Correction Status

All GPS data submitted must have a field indicating each record's differential correction status. There are only three selections available:

- Differential Correction - Indicates that the record has been differentially corrected.
- Realtime Corrected - Indicates that the record has been realtime differentially corrected.
- Uncorrected - Indicates that the record has not been differentially corrected.

### Horizontal Datum

All GPS data files must specify what horizontal datum was used to collect the data. The preferred horizontal datum is the North American Datum -1983 or the North American Datum -1927.

### Tables

Table 1 contains a list of GPS data attributes that should be submitted to TCEQ. Table 2 is a sample GPS data table showing how the data should look.

## Minimum Attributes

All GPS data submitted to TCEQ should conform to the data attributes defined in Table 1.

<b>Table 1 GPS Data Attributes</b>			
<b>Attribute</b>	<b>Data Type</b>	<b>Field Length</b>	<b>Description</b>
Latitude	Number	Double	Decimal Degree to a minimum of six decimal places
Longitude	Number	Double	Decimal Degree to a minimum of six decimal places. Negated.
Water Source Code	Text	10	TCEQ water source code
Collector Name	Text	50	Last Name, First initial
GPS Certificate Number	Text	8	TCEQ GPS Certificate Number
Collection Method	Text	15	Superimposed, Centroid, Offset
Datum	Text	5	Horizontal Datum (NAD83 or NAD27)
Max PDOP	Number	Single	Maximum PDOP value in effect during data collection
Organization	Text	50	Organization that collected data
Receiver Type	Text	50	GPS model name
Correction Status*	Text	50	Tells whether or not GPS data was differentially corrected
GPS Date	Date	N/A	Date GPS data was collected
GPS Time	Text	8	Time GPS data was collected
Total Positions Collected	Number	Integer	Number of positions collected/corrected

\* Data that is not differentially corrected will be rejected.

## Data Format

GPS data submitted to TCEQ should be in electronic format (dbf file format is preferred). The following is an example of how the data table should be structured. The data may be submitted via email, on diskette, or CD.

Table 2 Third Party GPS Data													
Example Data Table													
LatDD	LongDD	WTRSRC	Collector	GPS_CER T	H_DATU M	METHOD	ORG	Max_PDOP	RCVR_TYPE	CORR_STATUS	GPS_DATE	GPS_TIME	Unfit_POS
11.1110	-99.9990	G0000020A	Terry, D	95081107	83	Superimposed	TCEQ	4.4	GeoExplore r	Differential Correction	5/22/00	10:10 AM	51
11.1111	-99.9991	G0000020B	Terry, D	95081107	83	Centroid	TCEQ	5.2	GeoExplore r	Differential Correction	5/22/00	10:25 AM	108
11.1112	-99.9992	G0000020C	Terry, D.	95081107	83	Superimposed	TCEQ	3.5	GeoExplore r	Differential Correction	5/22/00	1:38 PM	56