Chapter 3 – SWQM Station Location (SLOC) Request

All parametric data entered into the sampling module of the SWQMIS database must be associated with a permanent monitoring station identified by a 5-digit Station Identification code (Station ID). A SWQM Station Location (SLOC) Request is submitted via the SWQMIS interface to:

- Create a new permanent Station ID, or
- Make a change to an existing permanent Station ID.

Process for Requesting New Stations or Correcting Existing Stations

1. Review the inventory of existing stations in SWQMIS prior to requesting a new station. A station may already exist at or very near the desired sampling location. This can be done either by running a Station Inventory Report or by using the Map Viewer in SWQMIS. A new Station ID is not required if the proposed sampling location is within 400 meters up or downstream of an existing stream station, or within a 400 meter radius in reservoirs and bays and if the existing station is representative of the same hydrologic, biologic, or water quality conditions. If the existing station does not accurately represent conditions at the new sampling location, a new station is necessary. For example, if there are conditions such as discharge points, a confluence with an adjoining stream, restrictions of flow, dams, any construction that might affect the stream, or differences in water depth that could influence circulation, a SLOC Request accurately describing the new location should be submitted. If the specific sampling design requires stations closer together than 400 meters, please specify this in the Monitoring Stations "General Comments" section on the Attachments and Status page within the request.

2. The monitoring entity may submit a SLOC directly if they are authorized to log into SWQMIS. Alternatively, the submitting entity (TCEQ Program project managers in particular) may choose to do this on behalf of the monitoring entity. TCEQ Regional staff who perform SWQM monitoring submit SLOC requests directly. Anyone filling out a SLOC may choose to save the SLOC prior to submitting it, to continue editing the request later.

3. For new stations, all required fields in the SLOC Create screens must be filled out by the requestor: SWQMIS will not allow an incomplete SLOC to be submitted. To request changes to an existing station, the SLOC screen will open populated with the data already existing for that station. Make changes to any fields as appropriate. All other fields (where no changes are desired) should be left as they are. Fields are defined later in this chapter.

4. A map image with scale 1:24,000 or greater, clearly depicting any proposed new station location must accompany the SLOC request form. The map must unambiguously define any nearby major highways, roads, streams, or physiographic features to facilitate verification of the station location. All base maps must be a 1:24,000 scale (7.5-minute series) United States Geological Survey (USGS) topographic map and/or a spatially correct digital orthophoto quarter quadrangle (DOQQ) with resolution of at least 1 meter. The map image must include any major long description landmarks and must be labeled. More information and resources are included in the SLOC Maps section of this chapter.

5. The SLOC Request is entered into SWQMIS and submitted with a map attached. DM&A

verifies the entries made and the attached map follow the DMRG requirements for station locations before being elevated to the status of Pre-Production or Production.

6. The SLOC Request status will be Rejected and returned to the originator with comments if a map is not provided (for new stations or location changes to existing stations), if the request is incomplete, or if any other significant errors are identified.
7. When a SLOC Request is processed an electronic copy of the request is returned to the requestor and/or program project manager to be forwarded to the requestor. This acknowledgment includes the unique permanent Station ID to be used when submitting sample results collected at that station.
8. For expedited requests (less than 10 business days), please see the following section.

Expedited SLOC Requests

If for any reason it is necessary to create or correct a station faster than the usual turnaround of 10 business days, please refer to the following steps:

1. Submit a SLOC as described in the preceding section.
2. E-mail the SLOC Coordinator for your program area, requesting expedited processing and explaining the circumstances. Include the SLOC ID.

Batch Upload SLOC Requests

SLOC Request information may be uploaded to SWQMIS in ACSII pipe-delimited text file format instead of using the individual SLOC screens. All fields noted in the table below must be included in the text file whether the fields have values or are left blank. Required fields must contain a valid value. Optional fields may be left blank. Submit one or more request records per text file. Note that the "SWQMIS SLOC Batch Upload" screens also require that the user add a map attachment for each "Create SLOC"; there is a screen for this function.

Field	Data Type	Length	Required/Optional
Station ID	Number	5	Must be blank for create request. Required for a change request.
Long Description	Alphanumeric	500	Required for create request. Optional for change request.
Temporary ID	Alphanumeric	10	Optional for create request. Optional for change request.
Requester	Alphanumeric	75	Required.
Latitude	Number	(+)9	Required for create request. Optional for change request. Latitude must be a positive value with 6 numbers to the right of the decimal. Positive symbol not required.
Longitude	Number	(-)9	Required for create request. Optional for change request. Longitude must be a negative value with 6 numbers to the right of the decimal and a negative symbol preceding the degree value.
Segment ID	Alphanumeric	4-6	Required for create request. Optional for change request.

Field	Data Type	Length	Required/Optional
Submitting Entity	Alpha	2	Required for create request. Optional for change request.
Collecting Entity	Alpha	2	Required for create request. Optional for change request.
Monitoring Type	Alpha	2	Required for create request. Optional for change request.
Permit Number	Alphanumeric	25	Required for create request only if Monitoring Type is RW (Receiving Water Assessment). Optional for change request.
USGS Gauge ID	Integer	8-15	Optional for create request. Optional for change request.
Stream Station Type Level	Integer	1	Required for create request. Optional for change request.
Stream Station Type Code	Alpha	6	Required for create request. Optional for change request.
Horizontal Organization	Alpha	2	Required for create request. Required for change request if Lat/Long entered.
Horizontal Reference	Alpha	10	Required for create request. Required for change request if Lat/Long entered.
Horizontal Description	Alpha	500	Optional for create request. Optional for change request.
Horizontal Date	Text	10	Required for create request. Required for change request if Lat/Long entered.
Horizontal Datum	Text	7	Required for create request. Required for change request if Lat/Long entered.
Horizontal Method	Text	5	Required for create request. Required for change request if Lat/Long entered.
Horizontal Accuracy	Number	4,2	Required for create request. Required for change request if Lat/Long entered.
Elevation Organization	Alpha	2	Optional for create request. Required if an Elevation is provided. Optional for change request. Required if an Elevation is provided.
Elevation	Number	6	Optional for create request. Required if an Elevation is provided. Optional for change request. Required if an Elevation is provided.

Field	Data Type	Length	Required/Optional
Elevation Date	Text	10	Optional for create request. Required if an Elevation is provided. Optional for change request. Required if an Elevation is provided.
Elevation Datum	Text	7	Optional for create request. Required if an Elevation is provided. Optional for change request. Required if an Elevation is provided.
Elevation Method	Text	5	Optional for create request. Required if an Elevation is provided. Optional for change request. Required if an Elevation is provided.
Elevation Accuracy	Number	4,2	Optional for create request. Required if an Elevation is provided. Optional for change request. Required if an Elevation is provided.

Example of create request:

|OKRY CREEK 80 METERS DOWNSTREAM OF US HWY 259 IN MORRIS COUNTY|08049565|tkirklan|32.86734948|-97.03917507|0841C|GS|GS|RT||08049565|1|STREAM|GS|OTHER||04/01/2009|NAD27|UNKNOWN|9999||||||

SLOC Maps

As long as the scale and readability are not negatively impacted, submission of a single map showing multiple sampling sites is encouraged. While in many cases it is not necessary to create individual maps for each SLOC, each “Create SLOC” request submitted via SWQMIS is required to include a map attachment. Requesters using GIS software who have ready-made maps may use the SLOC interface to attach these files. Those without map-generation options outside SWQMIS can use the Map tool in the SLOC General Information screen to capture a map image to use as the attachment.

SLOC Request Field Descriptions

The following fields must be completed by the requestor:

Station ID

The station ID is a 5-digit code that is automatically generated when a new site is created in SWQMIS and is used when submitting sampling results from that site. A station ID is supplied by the requestor only when requesting changes to an existing station in SWQMIS.

Long Description

A detailed description limited to 500 characters is required. The description must be adequate to describe the exact location of the station. The description should not include directions to the station relative to landmarks, but should be concise and include enough specific information to allow someone to locate the station on a map with 25-meter accuracy. The name of the water body must be noted first, followed by relative location such as river meters/kilometers downstream or upstream of a named or numbered road or tributary preferably followed by the distance to a city or named feature on a map. The permit number of the target facility must be

included in the long description for sites that are reporting data for a Receiving Water Assessment (RWA). See the “Helpful Hints on Completing SLOC Requests” section of this chapter for more information about station descriptions.

Temporary ID

Any identifier used by the submitter to track a station requested but not yet established should be noted here. If, for example, a SLOC map is marked with ATPWD 23" to illustrate the location of the proposed station, ATPWD 23" should be noted in the temporary ID field. This may also be the unique identifier used by the submitting entity in their own database.

Requester

The SWQMIS User ID of the person making the request. If the SWQMIS User ID is used both the Submitter and the Requester will have access to the SLOC Request. If the Requester is not a SWQMIS User, note instead the proper name and Organization (such as “Bruce Ridpath, H-GAC”).

Latitude/Longitude

Latitude and longitude in standard decimal degree format must be used. The accuracy of the latitude/longitude coordinates is governed by the TCEQ’s Operating Policy and Procedure 8.11.02, Geographic Information Systems Positional Data, which requires accuracy of 25 meters. Latitude and longitude values in decimal degrees must be specified to the nearest 1/10,000th of a degree (four decimal places) to meet this accuracy requirement. Latitude and longitude coordinates are required and preferably determined by trained staff using a Global Positioning System (GPS) unit and appropriate post processing. Another accurate method is the interpolation of one meter resolution DOQQs or using the TCEQ Map Viewers. DOQQs for the entire state of Texas are available from the Texas Natural Resources Information System or via a TCEQ web viewer - see the SLOC Maps section of this chapter for more information on this viewer.

Program

Select the TCEQ program area the data reported from this station will be submitted through. The options to select rom are CRP, CWQMN, NPS, SWQM, Standards, and TMDL.

Submitting Entity

This is a 2-character code for the organization that will be submitting monitoring data from this location to the TCEQ. See Chapter 4 for a list of valid codes.

Collecting Entity

This is a 2-character code for the organization that will be collecting monitoring data at this location. See Chapter 4 for a list of valid codes.

Monitoring Type

This is a 2- or 4-character code for the type of monitoring that will be performed at this location. See Chapter 13 for a list of valid codes.

Permit Number

If the station is near or will be used to monitor discharge from a permitted facility, report the permit number. Do not use the number symbol (#); simply list the alphanumeric value (such as “123-7558-A”).

Segment ID

A Segment ID is a required 4, 5, or 6 character segment code determined from the Segment

Descriptions list as found in the Texas Surface Water Quality Standards (TSWQS), Texas Administrative Code (TAC), Title 30, Part 1, Chapter 307, Appendix C.

USGS Gauge ID

Submit the USGS gauge station ID for stations at the same location as a USGS gauge station. This number is obtained by reviewing USGS topographic maps or from the USGS site inventory.

Stream Station Level

Note the Level (1 through 5) of the Stream Station Type Code used. See Appendix B for information on Stream Stations Levels. Only Levels 1 through 2 are required unless samples are collected at the pipe, in which case all 5 levels become required.

Stream Station Code

Stations must be identified using the coding scheme listed in Appendix B. For example, a station that is considered to be within a mixing zone must be coded with the Level 2 value "NONAMB". The mixing zone is defined in the SWQM Procedures Manual, Volume 1 (1).

Horizontal Organization

The organization that generated the horizontal coordinates (latitude and longitude) for this station. Often, this is the same as either the Submitting Entity or Collecting Entity for the stations. Any Submitting or Collecting entity code listed in Chapter 4 may be used for this field.

Horizontal Reference

A code that specifically describes the precise location of the coordinate with reference to the facility, if applicable. For many ambient stations not associated with any facility, the code OTHER applies. Valid values are listed in Appendix D.

Horizontal Description

Additional information about the site location, such as driving directions or specific references for locating the site within a facility.

Horizontal Date

The date on which the horizontal coordinates (latitude and longitude) were generated.

Horizontal Datum

The horizontal reference datum used when collecting the horizontal coordinates. Valid values are listed in Appendix D. NAD83 is the most widely used since it is the datum used for DOQQ's and other popular mapping tools.

Horizontal Method

A code that defines the method used to generate the horizontal coordinates. Valid values are listed in Appendix D. The method code may also allow determination of the Horizontal Accuracy value as well.

Horizontal Accuracy

Assessment of the horizontal accuracy of the reported latitude/longitude coordinates expressed in meters. Accuracy will depend on the method of collection, procedures and equipment used, and/or the results of any statistically valid test of similar points. For example, coordinates obtained using a 1-meter DOQQ (including Google Maps) have an assumed accuracy of 5 meters, while those determined using a 1:24,000 scale topographic map will have an assumed accuracy of 12 meters. A value of 9999 should be entered if accuracy cannot be determined.

The following fields may optionally be completed by the requestor:

Note that if a value is reported for any of these fields, values for all six fields are then required.

Elevation Organization

The organization that generated the horizontal coordinates (latitude and longitude) for this station. Often, this is the same as either the Submitting Entity or Collecting Entity for the stations. Any Submitting or Collecting entity code listed in Chapter 4 may be used for this field.

Elevation

A value expressing the measured height above (or depression below) mean sea level, in meters.

Elevation Date

The date on which the elevation value was generated.

Elevation Datum

The vertical reference datum used when collecting the elevation value. Valid values are listed in Appendix D.

Elevation Method

A code that defines the method used to generate the elevation value. Valid values are listed in Appendix D.

Elevation Accuracy

Assessment of the accuracy of the reported elevation expressed in meters. Accuracy will depend on the method of collection, procedures and equipment used, and/or the results of any statistically valid test of similar points. A value of 9999 should be entered if accuracy cannot be determined.

The following fields are maintained by DM&A or automatically stored by SWQMIS:

Ambient Indicator

This Y/N code is an indicator of whether the site is considered to be representative of ambient conditions in the water body.

Authorizer ID

SWQMIS captures the User ID of the data manager who promoted the station record to production status.

Submitter ID

SWQMIS captures the User ID of the individual submitting a SLOC.

Established Date

The date a station was originally given production status in SWQMIS.

TCEQ Region

The TCEQ administrative Region in which the station falls, automatically assigned based on the station coordinates.

Basin

The SWQM-defined river basin in which the station falls, automatically assigned based on the associated Segment ID.

On-Segment Indicator

This binary indicator (yes/no) denotes whether the station falls directly within the bounds of a TCEQ classified or unclassified segment. If no, the station falls on a water body flowing into the associated Segment ID.

NHD Reach Code

The 14-digit USGS National Hydrography Dataset code for the water body segment at the station location.

County

The name of the Texas county in which the station falls, automatically assigned based on the station coordinates. For out-of-state stations or stations out in the Gulf of Mexico, this is the closest Texas county.

Level III Ecoregion

The EPA Level III Ecoregion designation at the station location, automatically assigned based on the station coordinates. Ecoregions maps based on EPA data are included in Appendix A.

Level III Ecoregion Reference Site Indicator

This binary indicator (yes/no) denotes whether the station was established as a reference site for the Level III Ecoregion – a minimally impacted location most representative of the naturally occurring conditions within that Ecoregion.

Level IV Ecoregion

The EPA Level IV Ecoregion designation at the station location, automatically assigned based on the station coordinates. Ecoregions maps based on EPA data are included in Appendix A.

Level IV Ecoregion Reference Site Indicator

This binary indicator (yes/no) denotes whether the station was established as a reference site for the Level IV Ecoregion – a minimally impacted location most representative of the naturally occurring conditions within that Ecoregion.

STORET Station Type Primary

Analogous to the Stream Station Type Code (Level 1) also used to describe the station, this is a specific EPA code used in the national STORET database.

STORET Station Type Secondary

Analogous to the Stream Station Type Code (Levels 3-5) also used to describe the station, this is a specific EPA code used in the national STORET database.

General Comments

Any comments about the station, entered either by the Submitter or Authorizer.

Status

A station may exist in SWQMIS with one or more status designations at any given time. Stations available for data submission and reporting have a status of Production. When a SLOC is accepted for review by a data manager, it has a status of Pre-Production and is not yet available for use. SWQMIS station status options are Saved, Requested, Rejected, Pre-Production, and

Production.

Inundated Stations

Stations inundated by reservoir filling are given a status of Retired. The phrase "now inundated use #####" is added to the original station description to show the new reservoir station ID. The station is listed as off-segment if it is located above the normal pool elevation as identified in the TSWQS Appendix C, Segment Descriptions. If monitoring is ongoing at the same location (now in a new reservoir segment), a new station is created for reporting the post-inundation data.

Duplicate Stations

Stations may have been created at locations where a station already existed, through errors in description or latitude/longitude. Where these co-located or "duplicate" stations are discovered, some simple analysis is performed to determine the appropriate action. If no data has been reported to SWQMIS at either station, the lowest numeric station ID is retained for reporting. The other station is given a status of Retired in SWQMIS and is no longer available for reporting data. If one station has data and the other does not, the station with no data is retired and annotated as above. If both stations have data, interested parties are consulted to choose an acceptable course of action. There are also cases where, for legitimate monitoring purposes, stations are created in close proximity. Documentation will be maintained regarding the necessity of the seemingly duplicate stations in these cases.

Station Verbal Descriptions

Helpful Hints on Completing SLOC Requests

The description must contain concise, specific information that allows the station to be located within a 25 meter radius on any map or in the field. The description must be adequate for locating the station on USGS topographic or other maps that meet requirements outlined in the SLOC Maps section of this chapter. Useful information may include a nearby town, for example, "TRINITY RIVER 37 METERS UPSTREAM OF US 57 **NEAR** COLUMBUS" or "… **IN** COLUMBUS". If a station is not located near a city or town, it must be referenced to some other named, mapped feature. For stations on unclassified tributaries, write the most characteristic identifier first, such as "CAGONA CREEK AT US 29" or "CLEAR CREEK 2.57 KILOMETERS DOWNSTREAM OF SH 439 NEAR SISTERDALE". Descriptions are limited to 500 characters.

Do:

- Use the metric system to convey measurements.
- Report any measurement over 1000 meters in kilometers.
- CAPITALIZE all station descriptions.
- Use "AT" rather than "@".
- Spell out "STREET", "AVENUE", "RAILROAD", "ROAD", and similar words whenever possible; use common abbreviations such as "ST", "AVE", "RR", and "RD" only when necessary to save space.
- Use the term "UNNAMED ROAD" if the name of a road crossing is not obtainable. Unnamed roads must be referenced to an upstream or downstream named road. If no road is available to reference, a named tributary may be used.
- Use "WWTP" for Wastewater Treatment Plant rather than "STP (for Sewage Treatment Plant)."
- Use "UPSTREAM" and "DOWNSTREAM" rather than "ABOVE" and "BELOW".
- Use the abbreviated format indicated in the following examples for numbered roads:

HAYS CR 450 IH LOOP 610

FM 2175
SH LOOP 329
US 377
SH SPUR 160
IH 45
RR 620

- Use the format indicated in the following examples for roads with more than one name, separating the names with a slash:

TELEPHONE ROAD/SH 35
IH 45/US 75
SH 95/SH LOOP 230
PITTS STREET/NORTH MAIN STREET

- Use the format indicated in the following example for different road names on either side of a bridge, separating the names with a dash:

WAUGH DRIVE-YALE STREET

- For County Roads (CR), include the full name of the county road in the description:

WILLIAMSOM CR 258
CALDWELL CR 100

- Use "IMMEDIATELY" rather than "JUST" when distances are unknown, but less than 25 meters:
  . . . IMMEDIATELY UPSTREAM OF MAPLE STREET.
- Provide exact distances upstream or downstream in meters rather than feet when the distance is less than 1.00 Kilometer (such as 28 meters). Indicate the unit of measurement (meters, kilometers).
- Provide exact distances upstream or downstream in kilometers rounded to up to the nearest hundredth when the distance is greater than or equal to 1000 meters (1.07 kilometers).
- On reservoirs, provide distance from the center of a dam, a road crossing, or other named, mapped feature.
- Whenever possible, use only the four cardinal directions in descriptions. For example, use "100 METERS NORTH AND 200 METERS WEST FROM THE INTERSECTION OF IH 35 AND US 290" rather than "225 METERS NORTHWEST OF THE IH 35 US 290 INTERSECTION". This triangulated reference format is more precise.
- Use "UNNAMED TRIBUTARY OF" rather than "UNNAMED CREEK". Follow this with the name of the water body, "UNNAMED TRIBUTARY OF CANEY CREEK AT US 27". Since there may be more than one unnamed tributary of Caney Creek that crosses US 27, further description may be necessary. For example, "UNNAMED TRIBUTARY OF CANEY CREEK AT US 27 CONFLUENT WITH CANEY CREEK 2.57 KILOMETERS UPSTREAM OF IH 35", or "UNNAMED TRIBUTARY OF CANEY CREEK AT US 27 SOUTH OF ARAPAHO PARK".
- Unnamed tributaries with a waste water treatment plant (WWTP) discharge may be named for the treatment plant as in "CITY OF COMMERCE WWTP DITCH 53 METERS UPSTREAM OF DISCHARGE TO APPLE CREEK".
- WWTP effluent descriptions must identify the permit such as "CITY OF COLUMBUS WWTP PERMIT WQ 1857-02". Do not include a "#" sign in the permit number.
- Sometimes there may be no road or other feature on the map that can be used to describe a stream station. When there are no roads, the distance upstream or downstream from a confluence can be used as the reference location. In describing tributary locations using the mainstream confluence as the reference location, use the format "BARTON CREEK 2.53 KILOMETERS UPSTREAM OF ITS CONFLUENCE WITH THE COLORADO RIVER".
- When describing mainstream locations using a tributary as the reference location, use the format "COLORADO RIVER 4.82 KILOMETERS UPSTREAM OF SANDY CREEK".

Don't:

- Do not use station labels (letters and number, for example, "AA" or "D2") in long descriptions. If needed, alternate station names may be used in the Temporary ID field.
- Do not use the terms "CROSSING", "BRIDGE", or "HIGHWAY" unless it is an official, mappable part of the place or roadway name.
- Never use "AT" when the reference location used is a stream or WWTP outfall unless the station is specifically for sampling effluent (Stream Station Type Level 1 = PIPE). For monitoring the water body near the outfall, use "IMMEDIATELY UPSTREAM OF" or "IMMEDIATELY DOWNSTREAM OF"; for example, "ARROYO COLORADO IMMEDIATELY UPSTREAM OF THE DEWEYVILLE WWTP OUTFALL". Remember to report the permit number when monitoring adjacent to any permitted outflow.
- Do not use the pound sign (#), the ampersand symbol (&), parentheses, or any other special characters. Any punctuation used (commas, apostrophes, periods other than in numbers) may be removed from the verbal description by DM&A for consistency of format.

Monitoring Station Inventory Report

The Station Inventory Report generates a list of monitoring stations in the SWQMIS database. The Station Inventory Report can be used to verify that details about a monitoring station location are correct, as it includes all of the metadata elements listed in the SLOC Request Field Definitions section above. Users of SWQMIS should review the Station Inventory Report and/or use the Map feature prior to submitting a SLOC to determine whether a station that meets their needs already exists at or near their intended monitoring site. For non-SWQMIS users, a list of stations for each river basin can be viewed online.