



# INSTRUCTIONS FOR TURBIDITY MONITORING FORMS

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## *Purpose*

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The Department requires monitoring for some projects to provide reasonable assurance that project-generated turbidity does not violate water quality standards, pursuant to Section 373.414(1), F.S. In some cases, turbidity is visually assessed, and a physical water sample is only analyzed if there is a potential exceedance. In other cases, physical samples are collected at regular intervals during the day when construction is occurring. These fillable pdf turbidity forms provide a standard format for submittal of physical turbidity monitoring data to the Department. The data can be exported into a database, which is useful for evaluating project-related turbidity compliance. These forms are not intended to report data from visual turbidity monitoring.

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## *Field Guide for Turbidity Monitoring*

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To help you to understand the Department's turbidity monitoring requirements the DEP-SOP-001/01 FT 1600 Field Measurement of Turbidity was developed. You can view and download the field guide on the DEP website at:  
<http://publicfiles.dep.state.fl.us/dear/sas/sopdoc/2008sops/ft1600.pdf>.

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## *General Instructions*

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Turbidity Monitoring forms can be downloaded from the DEP website (<https://floridadep.gov/rcp/beaches-inlets-ports/forms/turbidity-monitoring-form>). In order to view, print, or fill out our forms, you should use the latest version of Adobe Reader, which you can download for free at <http://get.adobe.com/reader/>. If you are unable to download the form, you may request a copy from the relevant permitting or compliance [staff](#). *Note: the form cannot be previewed on some web browsers. If you encounter this problem, please download the form to your computer then open it using Adobe Reader.*

There are two versions of the turbidity form currently available online: "Turbidity Monitoring Form" and "Turbidity Monitoring Form – Additional Monitoring Stations"

Permits that require intermediate sampling (or other sampling at additional stations) should use the latter. The same version of the form should be used throughout the duration of the project to facilitate data management and analysis. Prior to the start of monitoring, please coordinate with the relevant compliance staff to ensure the correct version of the form has been selected.

**Signature.** Each turbidity form must be completed, signed, and submitted to the Department within the timeline specified in the permit. The signatory on this form, must certify that form was prepared under their direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted for accuracy and completeness.

**Calibration.** The instruments used to measure turbidity must be fully calibrated with primary standards within one month of the commencement of the project, and at least once a month throughout the project. Calibration with secondary standards must be verified each morning prior to use, after each time the instrument is turned on, and after field sampling using two secondary turbidity “standards” that bracket the anticipated turbidity samples. The date of the last calibration verification of the field instrument must be reported. Additionally, if the post-sampling calibration value deviates more than 8% from the previous calibration value, results reported will be evaluated as estimates and a description of any calibration or equipment problems should be reported.

The precision, accuracy, and limits of detection of the turbidity sampling equipment must meet the DEP turbidity requirements. All field instrument calibration documentation, as stipulated in section 5.2 of the FT 1600 Field Measurement of Turbidity Standard Operation Procedure, must also be submitted with the *Turbidity Scope of Works* pre-construction submittals.

**Sampling Event.** The turbidity monitoring form collects data for each sampling event. A sampling event consists of all turbidity samples collected for a construction activity (or turbidity source) during one sampling period. A sampling period is each time turbidity is sampled in accordance with the permit; typically, turbidity is sampled at least 3 times per day, 4 hours apart. If multiple activities are on-going (multiple sources of turbidity, e.g., at the beach placement site and at the borrow area), turbidity sampling efforts at each of these locations and their respective background locations would be considered separate sampling events and would require the completion of separate turbidity forms. As such, each turbidity form will include information on the compliance sample, the background sample, and any intermediate samples required for the placement area **or** the dredge area **or** for any other source of turbidity being monitored.

**Sampling Order.** Typically, the compliance sample is collected first, this allows the contractor to identify an appropriate location to collect a comparable background sample. Specifically, the background sample must be obtained at the permit-required distance from the activity, but it should also be taken at a similar offshore-distance and, where possible, at a similar depth as the location where the compliance sample was collected.

## How to Fill out and Submit the Turbidity Form

1. You must use a separate form for each sampling event. The form must be filled in and submitted in accordance with the applicable permit.
2. Supporting information, including maps, and figures (e.g., screen shot of weather report) should be submitted as attachments at the end of the form. *Note: Please reduce the file size of the supporting information prior to uploading to the form because the size of the form itself cannot be reduced.*
3. Files should be saved using the following nomenclature:  
“PermitNumber\_Date\_Time”; for example: “0123456-001-JC\_MMDDYEAR\_2400”
4. Each form must be saved separately. **Do not** merge files into a portfolio or a single pdf. Typically, all turbidity monitoring data should be submitted within one week of analysis and all the forms describing the sampling events for that week shall be attached to one weekly email. Individual files can be grouped and zipped to facilitate transmittal via one email.

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### *Specific Instructions*

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**This form is divided into 6 parts. Each part should be completed as follows:**

#### **Part 1. General Information**

**DEP Permit Name:** Enter the full project name as it appears in the DEP Permit.

**DEP Permit Number:** Enter the number for the initial permit (with a JC or BI extension) unless that permit has been ‘superseded’ by a subsequent modification (usually with a JM or a BM extension). Format ‘0123456-00X-XX’

**Monitoring Firm:** Enter the name of the firm responsible for monitoring turbidity.

**Phone Number:** Enter the phone number of the primary point-of-contact for the monitoring firm, including the area code.

**E-Mail:** Enter the e-mail address for the point-of-contact for the monitoring firm.

**Date:** Enter the date of the sampling event. *Note: Date field must be entered MM/DD/YYYY; the drop-down arrow can be used to select a date using the calendar tool.*

**Description of Site, Activity, or Equipment:** Succinctly describe the construction site, equipment and activity that requires turbidity sampling to be completed. A concise description of the methods used to collect, handle, store, and analyze turbidity samples should also be provided in this field. For example, “Dredging at the offshore borrow

area using a cutterhead suction dredge; turbidity samples were collected using a Niskin Bottle Sampler and analyzed immediately using a Hatch Turbidimeter 2100Q”. *Note: Other comments and any additional details that do not fit within this text box should be entered in the comments field.*

**Activity Type:** Select the activity from the drop-down menu provided. *Note: if the type selected is ‘Other’ please provide details in the “Description of Site, Activity, or Equipment” field.*

**Calibration:** Use the drop-down menu to select “Yes” or “No” to indicate whether (or not) the equipment being used to measure turbidity was calibrated in accordance with the permit requirements. If “No” is selected, then the turbidity values provided will be considered estimates. Any issues with equipment or calibration should be described in the comments field. *Note: the calibration requirements are described in the [General Instructions](#).*

**Statement by responsible party:** Enter the name of the person responsible for implementing the sampling protocol and provide a signature to affirm the authenticity, precision, limits of detection, calibration of the meter, accuracy of the data and precision of the GPS measurements. *Note: if the individual responsible for signing off on the form is different from the individual who collected / analyzed the sample(s); then the names of all individuals involved in the sampling event and their roles (e.g., collected sample, analyzed sample, calibrated equipment, etc...) should be provided in the comments section.*

**Statement of monitoring requirements:** Enter a brief description of the mixing zone boundary and the numerical turbidity threshold. *Note: please describe the mixing zone boundary carefully as it relates to permit-required mixing zone and the direction of the plume during the sampling event. If the mixing zone boundary is a set distance, then enter that distance; if the mixing zone is a 150m x 1000m polygon, and the sample is collected along the offshore boundary, then the distance indicated would be 150m; however, if the sample is collected along the alongshore boundary then the distance indicated would be 1000m. Sometimes the mixing zone boundary is the nearest benthic resource (e.g., seagrass or hardbottom), not a distance; this should be described in the text box.*

## **Part 2. Weather and Water Conditions**

Provide information on the weather and water conditions at the time of sampling. Use the drop-down menus if available. Please ensure measurements are provided in the units specified by the form (e.g., kts for wind speed). In the text box, provide a description of any conditions not captured in the fields provided or provide your own narrative description of conditions. For example, the text box can be used to describe conditions as ‘Overcast, windy with chop’ or ‘Sunny, no wind, calm seas’. *Note: If unsafe weather conditions prevent sampling, then please attach a copy of a current weather report from*

*a reliable, independent source, such as an online weather service; there is a place to include attachments at the end of the form.*

### **Part 3 Location**

Provide the location of construction activities (dredge, fill, other source of construction-related turbidity requiring sampling) and the location of all sampling positions (background and compliance). The water depth of each location should also be reported. Please provide the Datum, the UTM Zone and complete both the Easting and Northing fields as well as the Latitude and Longitude fields; this allows data to be readily accessed in ArcGIS and Google Earth. Latitude and Longitude should be presented as decimal degrees with a 5-decimal level of precision (DDD.DDDDD<sup>0</sup>). Please include the negative sign when indicating the Longitude (-DDD.DDDDD<sup>0</sup>).

### **Part 4 Results**

Provide the turbidity values (NTUs), collection depth, and collection time for background and compliance locations. Collection depth is the water depth at which the sample was collected, not the water depth at that location. Collection time should be entered in 24 hour format (i.e., 1300 instead of 1:00pm). Please ensure your QAQC process includes a robust check of the time fields because 1:00 will be automatically converted to 0100 instead of 1300. Only relevant fields need to be completed in this section; if the permit does not require sampling at a particular depth (e.g., bottom), then the fields associated with that sampling depth can be left blank. The form will automatically calculate the difference between compliance and background stations based on the data entered. Use the drop-down arrow to select “Yes” or “No” to indicate whether (or not) the turbidity values are in compliance with the permit. *Note: If collection time differs significantly from analysis time please provide an explanation in the comments field.*

### **Part 5 Additional Stations**

*NOTE: This part is only relevant to the expanded version of the turbidity form (Turbidity Monitoring Form – Additional Monitoring Stations), which was developed for projects with intermediate sampling or other additional sampling requirements.*

Some permits require intermediate samples, i.e., samples at specific intervals between the compliance sample and the construction activity. Some permits require additional compliance samples, e.g., at the nearest seagrass edge or at the edge of the boundary to an Outstanding Florida Water. Additionally, project-related turbidity may be generated by other activities e.g., scow or pipe leaks, which should be sampled in accordance with permit conditions. At the top of this section, use the drop-down arrow to choose “Yes” or “No” to indicate whether (or not) intermediate sampling is required. If additional sampling is required by the permit, then provide the location and a description of each additional sampling station, as well as the turbidity values (NTUs), collection depth, and collection time for additional sampling stations in the fields provided. Generally, information in this section should be entered in the same manner as in [Part 3 Location](#)

and [Part 4 Results](#) above. Only relevant fields need to be completed in this section; if additional sampling was not conducted then the fields describing the location and collection details for additional samples can be left blank. *Note: in some cases, it may be advisable to submit a separate turbidity form for additional sampling; please consult with Department staff regarding the best way to submit turbidity data for your project.*

### **Part 6 Comments and Attachments**

Use the comment field to provide any pertinent information that was not captured by other fields in this form. The summary in the comments field should be used to describe conditions (e.g., obvious inlet plume distinct from project-related turbidity is influencing the compliance sample), to explain why no work occurred during the sampling period (dredge down due for remainder of day due to mechanical failure), and to explain any deviations from the permit-required protocol (e.g., calibration issues...). Additionally, this field can be used to provide a more detailed description of the location of sampling and / or construction, such as whether either or both of these locations are within an Outstanding Florida Water (OFW) or Aquatic Preserve (AP). The comments section can also be used to describe the purpose of sampling, such as regular compliance or additional sampling due to an exceedance; in the case of an exceedance, the comments section can be used to provide permit required information on exceedances (i.e., time and date construction ceased, corrective measures taken, likely cause of exceedance...). *Note: If additional sampling is required due to a turbidity exceedance, then each sampling event should be submitted on a separate form.*

The last section in this part of the form contains fields that allow you to attach supporting information such as maps, photographs, weather reports, and figures. Please provide a brief description of each attachment in the title field below each attachment. Please reduce the size of the attachments prior to uploading them to the form and only provide the necessary attachments; individually the size of the form may not be problematic, but cumulatively, the weekly submissions may be too large to email. Attachments can be removed using the gray “Remove Attachment” button. *Note: maps should include the compliance and background sampling locations, locations of all work / sources of turbidity, natural resource boundaries, and the boundaries of OFWs and APs in the project area. PDF documents cannot be attached to this form. If a PDF document needs to be submitted to the Department, please include it as a separate attachment to the email when submitting the completed turbidity forms.*