**REPORTING**

**ANALYTICAL & QUALITY ASSURANCE**

**A.** **General Requirements**

1. Overview

All analyses conducted for IDEM/OWQ must result in a written analytical report and an electronic data deliverable (EDD) transmittal via email. All analytical reports must be fastened or bound (no loose pages) and formatted to contain the compound/analyte names and methods listed alphabetically by method. Reporting and EDD transmittal requirements must be in accordance with the specifications outlined for individual IDEM/OWQ Branches. IDEM/OWQ utilize electronic reporting in concert with written reports. IDEM/OWQ may request the Contractor to submit a preliminary and/or final report in an electronic format such as Adobe® portable document format (pdf), in addition to the written report submission and the EDD.

Written and electronic reporting standards represent minimum reporting requirements and are subject to change. Contractors are required to work with IDEM/OWQ to update reporting standards as future IDEM/OWQ needs dictate. IDEM/OWQ will be the sole determiner of acceptable written and electronic reporting standards.

Contractor will be dealing with two IDEM/OWQ Branches, each having separate report formatting requirements as follows:

* **IDEM/OWQ, Watershed Assessment and Planning Branch (WAPB):**

The IDEM/OWQ, WAPB shall submit samples to the contractor in Groups called Analysis Sets. All IDEM/OWQ sample identification numbers listed on single or sequential chain-of-custody forms will be considered an Analysis Set or Sample Group. Each Analysis Set or Sample Group is to be reported individually and not combined with other Groups.

The WAPB has developed a set of criteria for handling written and electronic reporting. Laboratories must meet the specifications outlined in Attachment D5, *Electronic Reporting*, Section C, and work with IDEM/OWQ in evolving electronic reporting.

* **IDEM/OWQ, Drinking Water Branch (DWB):**

The DWB will submit samples to the Contractor in Projects identified by a Project ID and a DWB sample identifier (Sample ID), hereafter referred to as Sample Sets. Projects are highly variable with one or more samples submitted at the same time or over a period. Projects are to be reported individually and not combined with other Projects. Some Projects result in a spread-out sample submission and the DWB will request Contractors batch samples over a period within the analytical parameter’s holding time.

The DWB has replaced written reports with electronically transmitted reporting in pdf format. The DWB has a separate EDD format specified in this Attachment, at Section \C.2.

2. Contractor Online Client Account Portals

Contractor online client account portals do not meet written reporting, electronic reporting, or EDD delivery requirements.

3. Analytical Report Acceptance

a. Completed Report

An analytical report for a Group is considered completed when all individual reports, in a Group, contain all data for the required analytical parameters, all quality control information, a QA/QC certificate signed by the Contractor Quality Assurance Officer or equivalent representative, all EDD data received and validated, and all errors have been corrected by the Contractor. The analytical report must be accepted as completed by the responsible IDEM/OWQ contact or gatekeeper.

IDEM/OWQ will not provide the Contractor with a written notice of acceptance of a completed report.

IDEM/OWQ will notify the Contractor of discrepancies discovered upon review of the analytical report. The typical review cycle will be thirty (30) to sixty (60) days. This review cycle is independent of the fourteen (14) day requirements for invoicing (Attachment D - *Technical Specifications*, Sections A.3 and D.1.a). Contractors are responsible for correcting discrepancies found in an analytical report up to 180 days after the report’s “Delivery Date.” Beyond this time, IDEM/OWQ still may request copies of QC data and bench sheets in accordance with document retention records, as found in Technical Specifications, Section A.4.

b. Discrepancies

The Contractor will be given seven (7) business days, after notification of discrepancies, to provide all appropriate clarification and/or documentation, in writing, necessary to correct discovered discrepancies.

Contractors must notify IDEM/OWQ in writing of any discrepancies discovered by the Contractor, whether or not the discrepancies are known to IDEM/OWQ or the report has been accepted as completed by IDEM/OWQ.

4. Analytical Time & Reporting Requirements

a. Standard Reporting

The standard analytical and reporting cycle is 30 days. All standard cycle samples must be analyzed, a completed analytical report and an EDD delivered within 30 calendar days after receipt by the Contractor.

Verification of receipt of analytical reports will be by use of postmark, IDEM/OWQ stamped receipt date, or certified mail receipt. Additional specifications will apply for electronic reporting (see Part C, Item 2 of this attachment.)

IDEM/OWQ, at its sole discretion, may grant additional time for the generation of analytical reports.

b. Rush Groups & Reporting

The IDEM/OWQ must be given the capability to request an Analysis Set or Sample Group for one task of up to 20 samples to be analyzed and verbally reportable within 48-hours after receipt by the Contractor. The Contractor will be given an additional five (5) calendar days to submit the written report for 48-hour turnaround samples. The IDEM/OWQ must further be given the option to request up to an additional ten percent (10%) of the total contracted samples to be analyzed for one task and reported within 7 to 14 calendar days after receipt by the Contractor.

The IDEM/OWQ will endeavor to space these rush samples out over the period of the contract when possible. In no Analysis Set or Sample Group will more than 20 samples be submitted for a 48-hour or seven (7) calendar day turn-around in one 14 calendar day period, without the Contractor's consent and acceptance of the samples. Acceptance of the samples by the Contractor obligates the Contractor to meet all requirements of the contract resulting from this RFP.

c. Contractor Assisted Sampling

Within five (5) working days of Contractor assisted sampling, the completed originals of the chain-of-custody forms and the sample analysis request forms must be forwarded to the IDEM/OWQ. Analytical reporting requirements must be met, per Part A of this attachment. The IDEM/OWQ must be advised within five (5) working days of the sampling event, of the charge to the State for sampling activities.

d. Saturday & Sunday

Reporting deadlines falling on Saturday or Sunday will not be considered late if the reports are received the following Monday, unless IDEM/OWQ identifies the need to have results reported on a Saturday or Sunday.

5. Delivery Requirements

Analytical reports may be emailed or sent via first class, certified mail, priority mail, other next day delivery service approved by IDEM/OWQ or may be hand delivered. Written reports must be converted to pdf format and transferred to a MSDOS formatted DVD or CD. Analytical reports must be delivered to the responsible IDEM/OWQ Section as follows:

**DWB Reports:**

Indiana Department of Environmental Management

Attention: Mitt Denney

Office of Water Quality

Drinking Water Branch

IGCN 1201 MC 66-33

100 North Senate Ave.

Indianapolis, IN 46204-22251

Email: [mdenney@idem.in.gov](mailto:mdenney@idem.in.gov)

**WAPB Reports:**

Indiana Department of Environmental Management

Attention: Tim Bowren

Office of Water Quality

Technical and Logistical Services Section

2525 N Shadeland Ave, Bldg. 20 STE 100 (MC 65-40-2 Shadeland)

Indianapolis, IN 46218-1787

Email: tbowren@idem.in.gov

6. Confidentiality & Record Keeping

All information regarding IDEM/OWQ Analysis Sets or Sample Groups, samples, or projects is considered confidential. Release of any information to unauthorized personnel will be allowed only with the written permission of the IDEM/OWQ.

The Contractor must maintain documentation of chain-of-custody, Sample and Test Request Forms, bench sheets for sample and QA/QC analyses, analytical standard preparation and source, recorder outputs, instrument outputs, and final reports for a minimum of five (5) years, unless enforcement Groups dictate longer times. Originals of chain-of-custody and Sample and Test Request form shall be delivered to IDEM/OWQ upon request.

**B. Data Reports**

1. Overview

IDEM/OWQ sample analyses must be reported as outlined in the following sections. The specific items reported will be determined by the analytical method utilized. The level of QA/QC reporting will be indicated by the “Data Quality Assessment” (DQA) specified in **Attachment D3 – *Quality Assurance/Quality Control Data Criteria*, Table 1**, by the IDEM/OWQ gatekeeper, or **Attachment D2 – *Tasks Lists***.

2. Report Formats

Report formats are subject to IDEM/OWQ approval. Reports must be submitted to responsible IDEM/OWQ section in both a written and electronic copy. IDEM/OWQ may also request a preliminary and/or final report in an electronic format such as Adobe® portable document format (pdf) in addition to the submission in the IDEM/OWQ EDD format.

This section applies to written reports and electronic reports, except as noted.

Analytical and QA/QC reports must be arranged such that general information is placed in a header and sample or QA/QC results are itemized. All analytical samples and QA/QC samples must have a unique lab identification number (applies to electronic reports also).

Report header information can contain the dates received, ID numbers, analytical method, descriptions, etc. Alternatively, any item can be listed along with the itemized results.

Itemized analytical results must contain the parameter name, CAS number, result, detection limit, and units on one line per parameter.

Itemized QA/QC results must contain the parameter name, CAS number, parameter target concentration, actual measured concentration, units, percent recovery (where applicable), and relative percent difference (where applicable) on one line per parameter. The QA/QC sample type must be clearly identified in the header or on the same line as the parameter name and results. If the QA/QC type is contained in the header, then a new page must be started for each QA/QC type reported. If listed on the same line as the parameter name and results, the QA/QC type must be grouped according to lab identification number; multiple QA/QC sample types can be listed on the same page with this format.

3. Analytical Report Contents

In general, analytical reports must contain a summary of analytical results, a summary of quality control results, a Project narrative (if needed), data qualifiers (see D4.B.3.d) for Watershed Assessment and Planning Branch’s data only, a cross reference of QA/QC parameters and sample numbers, completed chain-of-custody, and a signed QA/QC Certificate of Analysis.

a. Analytical Reports

Analytical reports must contain the following information; some items are method dependent and will not be applicable to a particular analysis:

1. Report Date (date report is completed).
2. Lab Identification number.
3. Contact Information for explanation of report.
4. IDEM/OWQ sample set or project number.
5. IDEM/OWQ sample identification number.
6. Lab sample identification number.
7. IDEM/OWQ sampling date and time (24hr format).
8. Date & time sample received at the Laboratory.
9. Sample digestion or extraction date & time (24hr format).
10. Sample digestion or extraction method.
11. Sample analysis date & time (24hr format).
12. Sample analytical method.
13. Sample dilution multipliers.
14. Sample prep and analysis batch numbers.
15. Sample parameter name.
16. CAS Number. Use the CAS Number assigned by IDEM if a unique CAS Number does not exist for the parameter.
17. Sample analytical result.
18. Method Reporting Limit (**MRL**) or Practical Quantification Limit (**PQL**) for each IDEM sample result and each **QC sample** result in the analytical run.   
    If the MRL is different than the IDEM/OWQ required CRQL, then report the actual MRL (3.18 \* Method Detection Limit).
19. Sample analytical result & PQL units. Results must be in the same units.
20. Data qualifiers per Table 1.
21. QA/QC report.
22. Acceptance Limits for QC samples.
23. Analytical sample/(QA/QC) number cross reference.
24. Copy of completed **IDEM/OWQ Chain-of-Custody.**
25. Completed copy of **IDEM/OWQ Sample and Test Request Form**.
26. Project Narrative (if needed).
27. Explanation of any Laboratory Flags included in the report.

b. QA/QC Reports

QA/QC reports must contain the following information: some items are method or analysis dependent and will not be applicable:

1) Data Quality Assessment Level 3 (DQA3)

All quality control data applicable for an analytical method and to an analytical batch containing IDEM/OWQ samples must be submitted. All initial quantities of QA/QC standards and samples, measured values under analytical conditions, and final results of calculations of RSDs, RPDs, percent recoveries, etc., must be submitted. Acceptance limits or ranges for QA/QC standards and samples must be submitted. A signed QA/QC certificate must be submitted. Bench sheets, chromatograms, recorder/integrator outputs, and spectrograms do not need to be submitted at DQA3.

2) Data Quality Assessment Level 4 (DQA4)

In addition to the required QA/QC submissions for DQA3, all bench sheets, chromatograms, recorder/integrator outputs, spectrograms, and other instrumental outputs must be submitted.

c. Narrative

If a failure in any single QA/QC parameter is encountered during an analysis or an analysis is in an out-of-control condition, a narrative must be included with the analytical report.

The narrative must list and/or explain, as needed, any QA/QC or analytical problem encountered – whether stemming from system, instrumentation, analyst, or sample matrix; the corrective action measure(s) taken; if corrective action measures as called for in the method were not taken; results of corrective measures taken; and the affected sample numbers.

For example:

Narrative Report

CCC (or CCV) failed at 63% (limits 80%-120%), instrument was recalibrated, CCC passed at 86%, all samples since last valid CCC (87%) were reanalyzed, CCC passed at 92%. Sample numbers AA01003- AA01010 were affected and reanalyzed.

or

A) CCC (or CCV) failed at 63% (limits 80%-120%)

B) Instrument was recalibrated

C) CCC passed at 86%

D) All samples since last valid CCC (87%) reanalyzed

E) CCC passed at 92%

F) Sample numbers AA01003- AA01010 were affected and reanalyzed.

The key here is to itemize the error, what was done to correct the error and proceed with the analysis. Be BRIEF, be CLEAR, and only add detailed explanations when needed. The lab may utilize any suitable format, subject to IDEM/OWQ approval, to convey the information in the narrative portion.

d. Data Qualifiers and Flags

**Table 1**, within this Attachment D4, lists data qualifiers and flags that must be used for Watershed Assessment and Planning Branch’s analytical results. The Contractor may use additional qualifiers, but the qualifiers listed and described in Table 1 may not be replaced by other characters or representations.

| Table 1: Data Qualifiers and Flags | |
| --- | --- |
| **Flags** | **Description** |
| **R** | **Rejected**. Result is not acceptable for use in decision making processes. |
| **J** | **Estimated**. The use of the result in decision making processes will be determined on **a case by case basis**. |
| **U** | **Between MDL and RL** -- The result of the parameter is **above** the Method Detection Limit (**MDL**) but **below** the Lab Reporting Limit (**RL**) and will be estimated. |
| **Q** | **QC Checks or Criteria** -- One or more of the QC checks or criteria are out of control |
| **D** | **RPD for Duplicates** -- The Relative Percent Difference (RPD) for a parameter is outside the acceptable control limits. The parameter will be considered estimated or rejected on the basis listed below:   1. If the Sample or Duplicate value is less than the RL, and the other value exceeds 5 times the MDL, then the sample will be **estimated**. 2. If the RPD is **outside** the established control limits (max. RPD) but **below** two times the established control limits (max. RPD), then the sample will be **estimated**. 3. If the RPD is **twice** the established control limits (max. RPD) or greater, then the sample will be **rejected**. |
| **B** | **Blank Contamination** -- This parameter is found in a field or a lab blank. Whether the result is accepted, estimated, or rejected will be based upon the level of contamination listed below:   1. If the result of the sample **is greater than the reporting limit** but **less than five times** the blank contamination, the result will be **rejected**. 2. If the result of the sample is **between five and ten times** the blank contamination, the result will be **estimated**. 3. If the result of the sample is **less than the reporting limit** or **greater than ten times** the blank contamination, the result will be **accepted**. |
| **H** | **Holding Time --** The analysis for this parameter was performed out of the holding time. The results will be estimated or rejected on the basis listed below:   1. If the analysis was performed between the holding time limit and 1.5 times the holding time limit, the result will be **estimated.** 2. If the analysis was performed outside the 1.5 times the holding time limit, the result will be **rejected**. |

e. Certificate of Analysis

The QA/QC Certificate of Analysis must be signed by the Contractor’s QA/QC Officer or equivalent representative. It is a certification of compliance with the requirements of this RFP, meeting the QA/QC requirements specified in the RFP or the analytical method utilized, and that the data has undergone internal review. An analytical report is not considered completed until the signed QA/QC Certificate of Analysis is received.

**C. Electronic Reporting**

1. **Reports for WAPB Datasets**

The IDEM/OWQ has developed analytical and QA/QC data transfer specifications. Contractors must submit the analytical and QA/QC data electronically, either to a Technical & Logistical Services Section specified e-mail address or mail on disk in the format specified in **Attachment D5, *Electronic Data Reporting Standards Watershed Assessment and Planning Branch.*** Electronic download of the data file and/or report file from a contractor’s website will be considered by IDEM.

Contractors, awarded laboratory contracts, must meet with IDEM/OWQ WAPB representatives, at 2525 N. Shadeland Avenue, Indianapolis, to evaluate the specified electronic reporting standards.

1. **Reports for DWB Projects**

DWB general electronic data (e-data) reporting requirements are specified in this Attachment. Modifications to the general requirements may be found in Task specifications where additional data fields are required.

* 1. General Requirements

Contractors must submit the DWB’s analytical and QA/QC data electronically on a report basis to a DWB specified e-mail address in the format specified below. Adjustments to the data specification can be discussed with the Contractor. The goal of the DWB is to work within the Contractor’s structure; however, Contractors must transmit data electronically and meet the minimum file formats specified in this section. IDEM/OWQ DWB must approve any alterations to the specification and field names used by Contractors.

The DWB may request other data fields that are available from Contractor’s laboratory information system (LIMS) and data fields that are more specific to the analysis being performed and reported. This may result in more than one data transfer specification for DWB e-data.

Contractors may use their acronyms for tests, QC descriptions, etc. Contractors must supply electronic cross references with IDEM definitions. Contractors must supply IDEM with updates to the acronyms should the Contractor change their acronym.

The DWB will work with DWB specified subcontractors to meet e-data reporting requirements.

* 1. Data Format Standards

A data set is a single or a sequential group of chain-of-custody forms (from the same sampling event or project) submitted at the same date and time. Each sample (analytical or QA/QC) in a data set must be transmitted at the same time, in the same file. More than one dataset can be transmitted in a single file. All data must be pipe (|) separated. Other delimiters and/or separators may be approved by the DWB. In all instances where data is absent, a separator must be inserted.

* 1. Data File Format
     1. The file name for the transmitted file will start out with the current date (date generated is acceptable), “Project ID”, and have the extension \*.txt in the following format: yyyymmdd??????????.txt. An example is: 2006051400850015.txt
     2. The first row must list the field names in the same order as the data.
     3. Only one analyte or parameter must be listed per row.
     4. Quality control data must be submitted in the same file as the analytical data.
     5. Quality control data type will be denoted in the Sample Type field. For example a LCS, LFB, or CCC, etc.
  2. Data Row Format

An analytical or QA/QC data row must contain the following:

* + 1. IDEM Sample ID - The identification number assigned by IDEM as found on the chain of custody.
    2. Lab Initials – Initials or abbreviation of laboratory name used
    3. Lab Sample ID – Sample identification number assigned by the laboratory.
    4. Lab Report ID – The identification assigned to the report or laboratory sample batch.
    5. Sample Type – What is the type of sample, e.g. field sample, matrix spike, laboratory fortified blank, etc. The sample type will be a set of abbreviations or names used by the lab or provided to the lab to discern samples, sample replicates, and QA/QC types.
    6. Date and Time Sample Taken in the format mmddyyyy hh:mm:ss.
    7. Date and Time Sample Received in the format mmddyyyy hh:mm:ss.
    8. Analytical Run Number – Number or identification assigned by the laboratory to a collective group of quality control and samples analyzed in an analytical run.
    9. Preparatory Run Number – Some laboratories utilize a preparatory run number to link QC data with each other and samples. Not all laboratories use this number.
    10. Date and Time Prepped in the format mmddyyyy hh:mm:ss – Also known as extracted date or date sample was prepared for analysis. Some laboratories will only record an extraction date.
    11. Date and Time Analyzed in the format mmddyyyy hh:mm:ss.
    12. Method – Analytical Method.
    13. CASRN – Chemical Abstracts Registry Number.
    14. Analyte – Analyte or parameter being analyzed.
    15. Analytical Result – Final concentration or analytical result.
    16. Result Flag – Analysis flag. Typically this will be a column where a laboratory will list a BDL, <, j flag or other data qualifier to denote when a sample result is below the detection limit, not detected or otherwise constrained.
    17. Detection Limit – Detection limit for the analyte. This is typically the reporting limit.
    18. Unit – The Unit the analytical results and detection limit are reported. The analytical result and detection limit must be in the same reporting unit.
    19. Instrument ID – Labs storing the identification of the instrument used for analysis, in their LIMS, should report that identification here.
    20. Comments – Any comments stored with the analytical run or sample delivery. Additional analysis, result or sample comments may be included here.