GUAM ENVIRONMENTAL PROTECTION AGENCY
Environmental Monitoring and Analytical Services

STANDARD OPERATING PROCEDURE

Sample Registration, Acceptance and Log-In

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Periodic Review:

Signature	Title	Date
RBP	Rudy Paulino Chemist	9/19/2022
RBP	Rudy Paulino Chemist	12/2/2022
AC	Antonia Camacho Chemist	03/17/2025

Revision Page

Date	Section	Summary of Changes	Initials
9/19/2022	3	Added Section 3.3 Analytical Reports Handling after analyses.	RBP
12/2/2022	3	Added a line 3.2.12 100 ml requirement for Water samples for P/A TC-EC	RBP
02/24/2025	3.3.2 3.1.4	Added "and/or the Chemist III" for the approval of the summary of all results Added "Specific parameters/methods for preservation and holding times of samples are found in the corresponding SOPs." Added a table of contents	AC
03/17/25	 3.2.9 3.2.11 3.2.13 3.2.14 3.3.3	Corrected gramatical and format errors in sections 3.1.5, 3.2.1, 3.2.5, 3.2.10, 3.2.13, and 3.3.1, Added "Any other flags or potential flags from QCs are flagged as comments on analytical reports." Deleted "An example of the sample log in printed from the Aspen® LIMS system is shown in Appendix C." as Aspen is no longer used. Added "This is because the MPN table used for quantifying results is based on 100 mL." for the minmium collection of sample volume for microbiological testing. Added section 3.2.14: "For other testings/analyses, enough volume of the samples should be collected to represent the overall matrices. The minmum volume or other amount for sample collection is stated in the respective SOPs." Deleted section 3.3.4 as it is included in section 3.3.3: Scanned copies are backed up in the LIMS Passport and kept for at least 10 years. Paper copies are kept for 5 years.	AC

CONTENTS

1 SCOPE AND APPLICATION

1.1 The Guam EPA laboratory receives samples from or through the other divisions within the agency. Samples may also be received from outside sources as requested. This SOP deals with the acceptance and registration of samples for the Guam EPA laboratory.

2 DEFINITIONS

2.1 LIMS - Laboratory Information Management System. This is the electronic recording of all samples processed in the laboratory.

2.2 SAP - Sampling Analysis Plan.

2.3 Sampling - is the collection of water samples for the purpose of analytical testing in the laboratory.

2.4 Sample Label - is the label attached or marked on the sampling bottle.

2.5 Element® by Promium - is the name of the software through which the LIMS is operated on.

2.6 Chain of Custody - (COC) is the most important form for all samples submitted to the laboratory. This form contains all the information on the sample and the conditions in which the sample was taken. It also contains the parameters required for analysis and the handling of the samples (i.e. who had custody of the samples up to the time the laboratory receives the samples).

2.7 Flag - a letter indicator that describes a sample or a result of analysis that is not done in a normal manner. For example a sample that was collected and placed in a cooler with no ice when the parameter requires the sample to be chilled, the sample will be flagged with a letter T. For analytical results, a letter J flagged is given to the result if for example the numerical result is between the minimum detection limit and the practical quantitation limit.

3 PROCEDURE

3.1 Sampling Procedures

3.1.1 The Guam EPA laboratory receives environmental samples from the other programs within the Agency on a continuous basis based on their respective Quality Assurance Project Plan (QAPP). These samples are processed and then either analyzed by the GEPA laboratory or sent to other laboratories for analysis, e.g. US EPA laboratory.

3.1.2 Samples are also accepted from outside sources on a case by case basis.

3.1.3 Prior to acceptance of any samples from the GEPA programs, an approved Sampling Analysis Plan (SAP) shall be submitted to the laboratory, The SAP shall include an approved sampling procedure, frequency and parameters required and location of sampling sites.

3.1.4 Specific parameters/methods for preservation and holding times of samples are found in the corresponding SOPs.

3.1.5 Personnel (private contractor or GEPA staff) shall be trained in the proper sampling techniques for all types of samples that they collect. There must be strict adherence to correct sampling procedures, complete identification of samples and prompt transfer of the sample to the laboratory.

3.2 **Sample COC, Registration and Acceptance**

3.2.1 Each sample container shall be identified by affixing a sample label on the container. This label shall contain the date, sample number or Field Sample ID number, source of sample, parameters required for analysis, and the collector's initials.

3.2.2 Complete identification of sample shall include a chain of custody (COC) and field records. Personnel collecting the samples shall record the time and date of collection and sign or initial on the COC and field records.

3.2.3 The Field records are field information that programs need for their report, which may include weather conditions or environmental conditions during sampling. Some information in the Field records is transcribed to the COC.

3.2.4 The COC is a laboratory document and is used during the submittal of samples to the laboratory by the collector. The laboratory keeps the white/original copy while the collector/program keeps the pink and the yellow copy is attached to the laboratory report with the analytical results. The COC should at the minimum contain the following information:

- Sample number or Field Sample ID number
- Date and Time sample was collected.
- Source of sample (name of location or sampling point and sample type which may be grab or composite) (See COC form in Appendix A)
- Preservative used/filtered. (Refer to the US EPA Manual for the Certification of Laboratories Analyzing Drinking Water 5th edition for a list of preservatives by parameters).

- Parameters required in the analysis. (See Appendix D for a list of GEPA parameters).
- Name of collector and initials/signature.
- Other specific info such as free chlorine residual (for drinking water), or remarks regarding the sample.
- Note any special comments in "Remarks" field of COC. For example, the cooler temperature is recorded for samples that need to be chilled.

3.2.5 If the samples' custody is transferred to another person or organization this should be recorded in the COC in the appropriate "Relinquished by - Received by" lines. They should also be properly time and dated.

3.2.6 A properly completed COC is shown in Appendix A.

3.2.7 The ultimate recipient of the samples is the laboratory. When the laboratory receives the samples they are registered in the Laboratory Sample Receiving Logbook (see Appendix B).

3.2.7 The sample then receives a GEPA laboratory number for tracking in the LIMS Computer system.

3.2.8 Should the samples fail to meet the holding time and other requirements, the samples will be flagged and the program manager from whom the samples were received will be informed. Examples of flagged samples are the following:

- Q - sample held beyond holding time.
- Y - sample collected in unpreserved or improperly preserved sample.
- T - sample collected in cooler with too high temperature.
- C - COC or documentation improperly completed.

3.2.9 If samples are flagged, the laboratory recommends re-sampling. If this is not possible and the program manager gives the approval to do the analysis on the samples. The results of the analysis will be reported as estimated with the corresponding letter flag as indicated in the example above. Any other flags or potential flags from QCs that are not listed in 3.2.8 are flagged as comments in the analytical report.

3.2.10 The sample information from the COC will then be recorded in the LIMS computer Sample Log Excel file and/or Element® LIMS system by opening the LIMS server computer with a password and user name in which only the Chemists would know.

3.2.11 The COC is kept in file for at least 5 years. This is in compliance with the US EPA Manual for the Certification of Laboratories Analyzing Drinking Water 5th edition.

3.2.12 For Microbiological test samples requiring a confirmation of presence/absence for Total Coliforms and E. coli, a minimum of 100 ml of sample must be submitted. This is because the MPN table used for quantifying results is based on 100 mL. Otherwise the sample is invalidated and rejected.

3.2.13 For other testings/analyses, enough volume of the samples should be collected to represent the overall matrices. The minmum volume or other amount for sample collection is stated in the respective SOPS.

3.3 Post Analysis Sample Handling

3.3.1 After the analyses is completed, an analytical report is created for all the samples in the batch as indicated by the COC.

3.3.2 The analytical report (AR) includes the following:

- COC (yellow copy)
- QC Data
- Summary of all results signed by the Analyst, Reviewer, and approved by the EMAS Division Administrator and/or the Chemist III.
- Any deviation in the analysis or QC data should be flagged and noted with an explanation of the discrepancy, corrective action and results that are affected by the flag.

3.3.3 After the AR has been signed, the AR is scanned and saved in the appropriate folders in the LIMS computer. Scanned copies are backed up in the LIMS Passport and kept for at least 10 years. The paper copy is filed in the appropriate binder as to type of analyses or project and kept for at least 5 years.

4 REFERENCES

4.1 HACH Company. Model 2100 AN IS Laboratory Turbidimeter Instruction Manual, 3rd edition

4.2 US EPA Manual for the Certification of Laboratories Analyzing Drinking Water, 5th edition.

Appendix A: Chain of Custody

GUAM ENVIRONMENTAL PROTECTION AGENCY

CHAIN OF CUSTODY RECORD

IWM Catch Up
PROJECT NAME

ANALYSIS REQUESTED				
E.coli	NO_3	PO_4	Enterococci	

ASSIGNED LAB ID # 03808

SDG #

G. Prelosky
SAMPLER PRINT/SIGN

SAMPLER PRINT/SIGN

FIELD SAMPLE ID	DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION	CONTAINER QUANTITY	E.coli	NO_3	PO_4	Enterococci		NOTES
FB	2/3/25	8:25		X	Field Blank	1	X			X		
MTRP-2	↓	9:32		↓	Pigua River 2	1	X					+DO
3TOGCHA		10:30			Togcha River 3	2	X	X	X			
S-19		10:47			Pago Bay	2		X		X		+DO
PGRP-2		10:54			Pago River 2	1	X					↓

GP

RELINQUISHED BY: PRINT	SIGNATURE	DATE	TIME	RECEIVED BY: PRINT	SIGNATURE	DATE	TIME
G. Prelosky		2/3/25	11:20				
RELINQUISHED BY: PRINT	SIGNATURE	DATE	TIME	RECEIVED BY: PRINT	SIGNATURE	DATE	TIME
				A. Camacho		02/03/25	11:20
RELINQUISHED BY: PRINT	SIGNATURE	DATE	TIME	RECEIVED FOR LAB BY: PRINT	SIGNATURE	DATE	TIME

REMARKS

Appendix B: Laboratory Sample Receiving Logbook

GUAM EPA LABORATORY

Sample Receiving Log In

Date Received	SDG (Report No.)	Lab Sample ID (Work Order No.)	COC No.	Project	No. of Samples	Parameters Requested	Rec'd by
01/06/25	03798		02391	IWM	9 + IFB	E.Coli, ENTERO, NO3, TSS, Turbidity, TC	AC
1/7/25	03799		02392	IWM	10 + IFB	EC, NO3, PO4, TSS	VP
	03800		02393	IWM	3 + IFB	ENTERO, TSS	AA
1/9/24	03801		02394-7	RBMD	44 + 2FB	ENTERO	JF
↓	03802		02398	WORLD BEST SAND CO (SAND/AGGREGATE)	9	EC	JF
1/22/25	03803		02399	IWM	17 + IFB	E Coli, Ente, NO3, PO4, TSS	AC
1/23/25	03804		02400	IWB	9 + IFB	E.Coli, Entero, NO3, Turbidity, TSS	AC
1/27/25	03805		02401	IWB	9 + 1 FB	E. coli, Enterococci, NO3, TSS, Turbidity	KH
1/29/25	03806		02402	IWM Boat	2	TSS	AC
1/30/25	03807		02403	IWM	1	TSS	AC
02/03/25	03808		02404	IWM	6 + IFB	E.Coli, NO3, PO4, Entero	AC
02/04/25	03809		02405	IWM	5 + 1 FB	Entero, TSS	AC
02/11/25	03810		02505	IWM	3 + IFB	E.Coli, Total coli, NO3, Turbidity	AC
2/13/25	03811		02506-02507	RBMP	22 + IFB	ENTERO	AA
2/17/25	03812		02508	IWM	4 + IFB	E. coli, ENTERO, NO3, PO4, pH	AA