

**PROPOSED SEWAGE TREATMENT PLANT FOR
ZAMBOANGA WATER DISTRICT,
MAGAY, ZAMBOANGA CITY**

12. SEWAGE ANALYSIS



TEST REPORT

Request Reference Number : R9-112019-CHE-0840
Date Submitted : November 20, 2019
Date Analyzed : November 20 – 25, 2019
Sample Submitted : Wastewater
Sample Descriptions : West Pumping Station
Date & Time of Sampling: 11/20/2019 @ 08:00 AM
Approx. 3 L sample, slightly turbid, in PET bottle and
800 mL (2 samples) in wide mouth glass jar.

Submitted by : Zamboanga City Water District
Address : Pasonanca, Zamboanga City


CHEMICAL / PHYSICAL TEST RESULT/S:


PARAMETER	TEST METHOD	RESULT
pH	Electrometric Method, SMEWW 4500-H* B., 22 nd ed., 2012	6.80 @ 25 °C
Biochemical Oxygen Demand, mg/L	Incubation (Dilution Technique) Method, SMEWW 5210 B., 22 nd ed., 2012	114
Phosphate, mg/L	Vanadomolybdophosphoric Acid Colorimetric Method, SMEWW 4500-P C., 22 nd ed., 2012	0.685*
Nitrate, mg/L	Cadmium Reduction Method, Hach Method 8192	21.0*
Ammonia Nitrogen, mg/L	Salicylate Colorimetric Method, Hach Method 8155	7.75
Oil and Grease, mg/L	Liquid-Liquid, Partition-Gravimetric Method, SMEWW 5520 B., 22 nd ed., 2012	6.50
***** Nothing Follows *****		

REMARKS:


- This report is based on the samples received by this office and should not be used for advertising purposes or sales promotion nor as basis for tariff or customs classification of imported commodity.
- This report shall not be reproduced except in full, without the written approval of the laboratory.

Analyzed By:


NOEL T. ARQUIZA, RCT
PRC Reg. No.: 0001440
Laboratory Analyst


JANICE T. ONG, RCh
PRC Reg. No.: 0010271
Laboratory Analyst

Certified By:


SHADAM E. SUGANOB, RCh
PRC Reg. No.: 0011422
Laboratory Analyst

Noted By:


ROSEMARIE S. SALAZAR
Laboratory Head

Approved for Release:


MARTIN A. WEE
Regional Director

Report Number : 11262019-CHE-1779
Date Released : 26 NOV 2019

Page 1 of 1

UNDERTAKING TO INDEMNIFY

KNOW ALL MEN BY THESE PRESENTS:

This Undertaking to Indemnify (the "Undertaking") is being executed this ___ day of _____ 20___, in _____ City by _____, a corporation duly established under Philippine Laws, with principal office address at _____, represented herein by its (position), (name), hereinafter referred to as the "Bidder" in favour of **AECOM INTERNATIONAL DEVELOPMENT, INC.**, a foreign corporation duly organized and existing under the laws of the U.S.A., with principal office address at Wilson Boulevard, Suite 700, Arlington, VA 22201, U.S.A., hereinafter referred to as "AECOM".

WITNESSETH:

WHEREAS, AECOM is providing technical assistance to the Zamboanga City Water District ("ZCWD") in connection with the bidding being conducted by ZCWD for the construction of an underground sewage septage treatment plant in _____ (the "Construction Project");

WHEREAS, AECOM, as technical consultant of ZCWD, developed a schematic design of the treatment plant (the "Schematic Design") that will serve as a reference design for the Bidder in relation to the Construction Project;

WHEREAS, the Schematic Design is being provided by AECOM for reference purposes only and the Bidder acknowledges and understands that it should develop its own design for the Construction Project;

NOW, THEREFORE, for and in consideration of the foregoing premises, the Bidder acknowledges that the Schematic Design is being provided strictly for reference purposes only and, in this connection, undertakes to hold free and harmless and indemnify ZCWD, AECOM, and its respective directors, officers, agents, employees and authorized representatives, against any and all losses, liabilities, responsibilities, damages, costs and/or expenses, including attorney's fees, arising out of or relating to any claim, demand, suit, judgment or any other cause of action brought by any party in connection with the Schematic Design, such as, but not limited to, damages to persons or properties arising from, or out of, any occurrence relating to the use of the Schematic Design.

The Bidder further waives all causes of action it may have, arising from the use of the Schematic Design, and undertakes that it shall not institute, commence any step, action or proceeding (whether legal, arbitral, administrative, criminal, civil, regulatory or otherwise), nor participate in any such step, action or proceeding in connection with, or relating to, the Schematic Design, against ZCWD, AECOM, and its respective directors, officers, agents, employees and authorized representatives, whether past, present or future, and shall take such steps as may be necessary to ensure that no such steps, actions, proceedings are instituted or commenced, but rather immediately dismissed.

This Undertaking by the Bidder will survive any adjudication and/or voluntary settlement of any underlying third party claim.

SAMPLE DEED OF UNDERTAKING

IN WITNESS WHEREOF, we have hereunto set our hands this ____ day of
____ 20__, at _____, Philippines.

(BIDDER)

By:

[NAME]
[Position]

Signed in the Presence of:

ACKNOWLEDGMENT

REPUBLIC OF THE PHILIPPINES)
_____) CITY) S.S.

BEFORE ME, a Notary Public in and for _____ City, this ____ day of
____ 20__, appeared the following person who exhibited to me his/her
government-issued identification document/s, as follows:

	Government Issued I.D.	Date/Place Issued
[Name]	_____	_____
	_____	_____

known to me to be the same person who executed the foregoing instrument, and
acknowledged to me that the same is his/her free act and voluntary deed as well as that of
the corporation he/she represents.

This document, which pertains to an Undertaking to Indemnify, consisting of two
(2) pages, including the page on which this Acknowledgment is written, has been signed by
the party herein and his/her witnesses on each and every page thereof, and sealed with my
notarial seal.

WITNESS MY HAND AND SEAL, on the date and at the place first above written.

Doc No. ____;
Page No. ____;
Book No. ____;
Series of 20__.

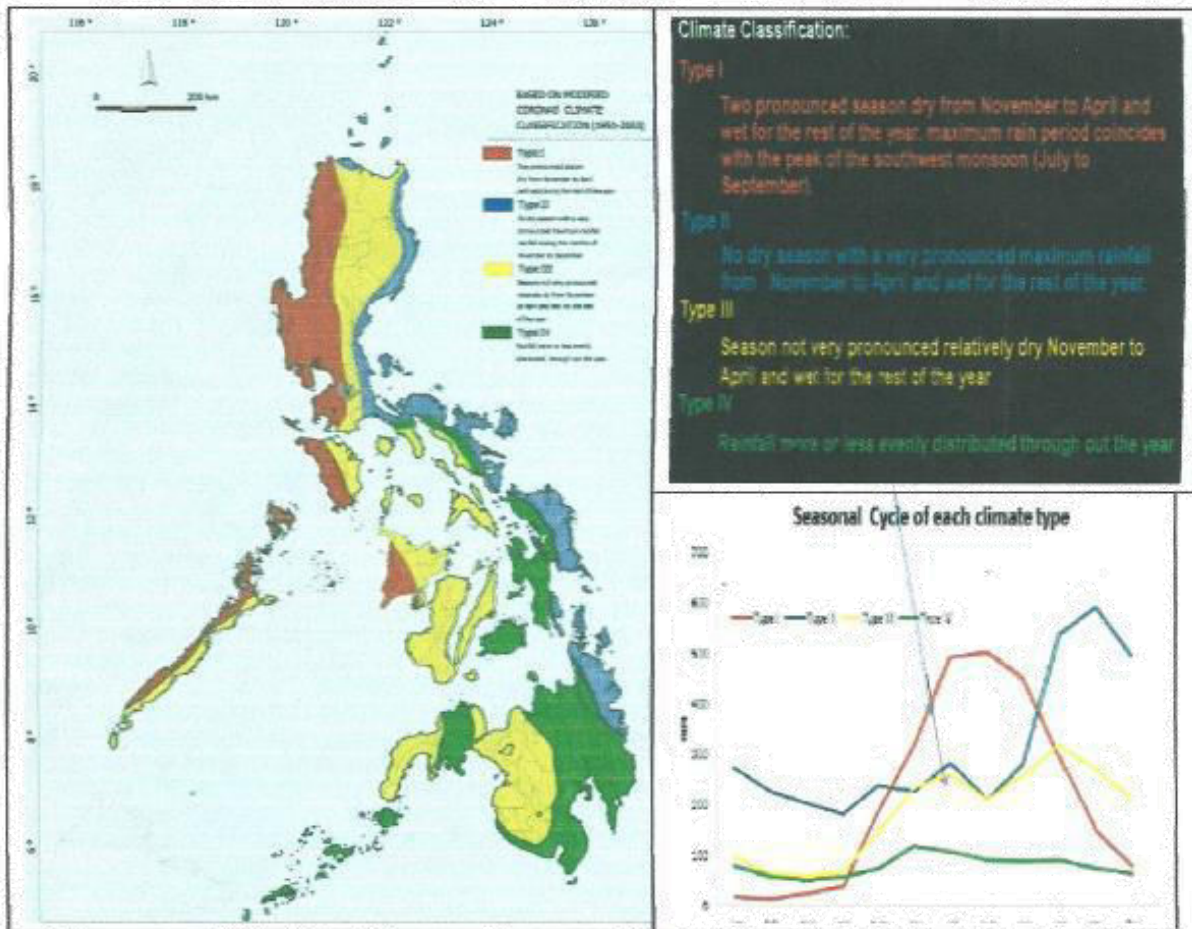
_____ { _____ }

13. PAG-ASA CLIMATOLOGICAL DATA



REPUBLIC OF THE PHILIPPINES
Department of Science and Technology
Philippine Atmospheric, Geophysical and
Astronomical Services Administration (PAGASA)
 Science Garden, Agham Road, Diliman, Quezon City 1100

The Philippine Climate



Seasons

Month	December-February	March-May	June-August	September-November
Rainfall	DRY		RAINY	
Temperature	COOL		HOT	
Season	Cool Dry	Hot Dry	Rainy	

"tracking the sky... helping the country"



REPUBLIC OF THE PHILIPPINES
Department of Science and Technology
Philippine Atmospheric, Geophysical and
Astronomical Services Administration (PAGASA)
 Science Garden, Agham Road, Diliman, Quezon City 1100

RAINFALL (in Millimeter, mm)

STATION: ZAMBOANGA CITY, ZAMBOANGA DEL SUR
YEAR: 2014

LATITUDE : 06°54'18"N
LONGITUDE: 122°04'30"E

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	5.2	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	75.6	Trace	Trace
2	Trace	0.0	0.0	0.0	0.0	0.0	20.3	Trace	0.0	28.2	0.0	0.0
3	Trace	0.0	0.0	0.0	0.0	0.0	5.0	0.0	20.6	1.6	0.3	0.0
4	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	22.2	6.8	0.2	1.0
5	0.0	Trace	0.0	5.8	0.0	0.0	Trace	0.0	13.2	11.3	3.6	0.0
6	8.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	4.0	64.8	10.6	0.0
7	2.4	0.0	0.0	0.0	0.0	0.0	0.5	0.4	0.5	10.8	5.9	0.0
8	1.0	4.4	0.0	3.8	Trace	0.0	2.4	Trace	36.8	46.2	7.7	0.0
9	0.5	0.8	0.0	0.0	2.4	2.4	0.0	Trace	0.0	20.0	7.6	0.0
10	3.0	1.0	Trace	0.0	0.0	0.0	Trace	Trace	0.0	15.5	8.1	0.0
11	3.5	1.0	0.0	0.2	Trace	0.0	1.6	0.0	0.0	0.0	6.4	0.0
12	6.6	7.4	Trace	1.4	3.8	Trace	0.0	0.0	0.0	0.0	7.0	0.0
13	7.7	4.6	4.2	1.2	5.7	1.2	0.0	0.4	25.0	0.0	7.6	0.0
14	0.4	0.0	96.0	0.0	0.0	0.2	4.6	0.0	0.0	0.0	0.0	0.0
15	Trace	1.2	0.0	0.0	0.6	19.2	9.6	Trace	0.0	0.0	Trace	0.2
16	0.0	1.0	0.0	0.0	0.0	8.2	0.0	61.4	0.0	0.0	Trace	0.0
17	Trace	0.0	1.0	0.0	Trace	8.4	0.0	1.8	1.8	0.0	0.0	5.4
18	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	Trace	Trace	0.0	11.4
19	Trace	0.0	0.0	1.0	0.2	0.0	1.0	0.0	0.0	0.0	0.2	6.6
20	0.0	0.0	0.0	0.0	0.0	Trace	7.2	1.0	0.0	0.0	Trace	12.8
21	0.0	0.0	Trace	0.0	0.0	0.0	0.0	11.0	0.0	0.0	0.0	0.4
22	0.0	0.0	0.2	0.2	0.5	0.2	0.0	0.0	1.5	0.0	0.0	0.0
23	0.0	0.0	4.8	0.3	1.2	0.0	0.0	0.0	9.8	0.4	0.0	1.4
24	0.0	0.0	4.4	0.0	4.1	0.0	0.0	Trace	0.0	Trace	0.0	0.0
25	0.0	0.0	9.8	Trace	0.8	0.1	0.6	2.8	0.0	0.0	Trace	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	2.0	Trace	5.2	0.2	2.2	0.0
27	0.0	0.0	0.0	0.0	39.4	0.2	4.3	0.0	22.4	0.2	Trace	0.0
28	0.0	0.0	0.2	0.1	0.0	0.0	19.3	3.2	0.4	0.0	0.0	1.0
29	0.0		0.0	Trace	0.0	2.7	30.0	26.3	0.4	Trace	3.6	1.3
30	0.0		0.0	0.0	0.6	0.3	0.0	0.0	2.6	24.2	0.0	4.0
31	0.0		Trace		1.6		0.0	2.0		0.0		21.2
TOTAL	38.3	21.6	122.4	14.6	60.9	43.1	109.4	110.3	166.4	305.6	71.0	66.7
AVERAGE	2.8	1.5	8.7	1.5	4.2	3.0	7.3	9.2	11.1	21.8	5.7	4.3
HIGHEST	8.0	7.4	96.0	14.6	39.4	19.2	30.0	61.4	36.8	75.6	10.6	21.2

LEGEND: Trace -- Rainfall amount less than 0.1 mm

Certified correct:


MARIBEL "Hasannah" G. ENRIQUEZ
 Chief Meteorological Officer
 PAGASA Zamboanga Synoptic Station

"tracking the sky... helping the country"



REPUBLIC OF THE PHILIPPINES
Department of Science and Technology
Philippine Atmospheric, Geophysical and
Astronomical Services Administration (PAGASA)
 Science Garden, Agham Road, Diliman, Quezon City 1100

CLIMATOLOGICAL EXTREMES

STATION: ZAMBOANGA CITY
YEAR: AS OF 2010

MONTH	TEMPERATURE (°C)				GREATEST DAILY RAINFALL (MM)		HIGHEST WIND (MPS)		
	HIGH	DATE	LOW	DATE	AMOUNT	DATE	SPD	DIR	DATE
JAN	35.5	01-23-2002	15.8	01-22-1965	128.0	01-23-1916	22	NE	01-30-1982
FEB	35.5	02-28-2010	15.6	02-27-1905	156.5	02-26-1928	16	SSE	02-01-1968
MAR	36.0	03-26-2002	17.5	03-10-1911	79.6	03-21-2010	17	NNE	03-05-1972
APR	36.9	04-22-1987	16.7	04-07-1967	106.0	04-30-2004	14	W	04-22-1990
MAY	36.1	05-24-1987	20.7	05-11-1954	88.9	05-13-1990	20	NE	05-09-1978
JUNE	36.0	06-05-2010	20.4	06-02-1904	123.5	06-20-2008	21	W	06-23-1984
JULY	35.2	07-07-1988	20.0	07-18-1958	140.4	07-09-1940	20	WSW	07-21-1989
AUG	35.7	08-31-1992	19.0	08-12-1917	136.6	08-29-1952	23	ENE	08-17-1988
SEP	35.8	09-02-2004	19.9	09-07-1911	193.2	09-29-1990	22	W	09-13-1986
OCT	36.0	10-01-1999	18.4	10-05-1955	199.1	10-09-2001	23	WSW	10-06-1984
NOV	35.5	11-11-1988	18.5	11-11-1910	163.3	11-27-1955	22	W	11-07-1988
DEC	35.2	12-13-2004	16.7	12-28-1950	161.0	12-02-1910	18	NE	12-22-1992
ANNUAL	36.9	04-22-1987	15.6	02-27-1905	199.1	10-09-2001	23	ENE	08-17-1988
Period of Record	1903 - 2010				1902 - 2010		1950 - 2010		

Certified Correct:

MARIBEL "Hasanah" G. ENRIQUEZ
 Chief Meteorological Officer
 PAGASA Zamboanga Synoptic Station
 Zamboanga City

"tracking the sky... helping the country"

14. BOARD RESOLUTION NO. 190 S. 2017