

# Environmental Impact Assessment

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Document Stage: Updated  
Number: 51077-003  
August 2023

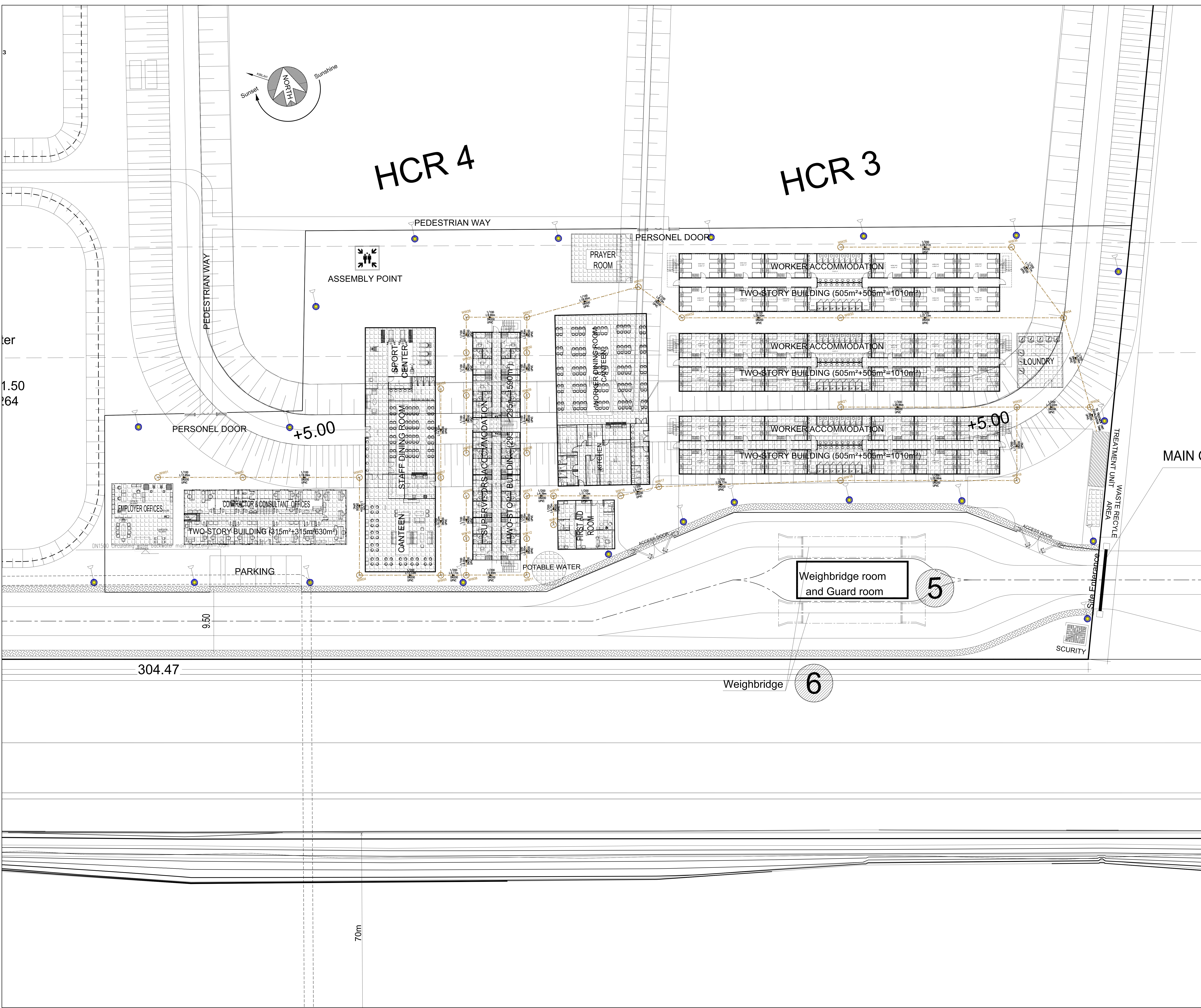
## Maldives: Greater Malé Waste-to-Energy Project – Waste to Energy Plant (Part L)

### Appendices

Prepared by the Ministry of Environment, Climate Change and Technology for the Ministry of Finance and the Asian Development Bank. This is an updated version of the draft originally posted in July 2020 available on <https://www.adb.org/projects/documents/mld-51077-003-eia-2>.

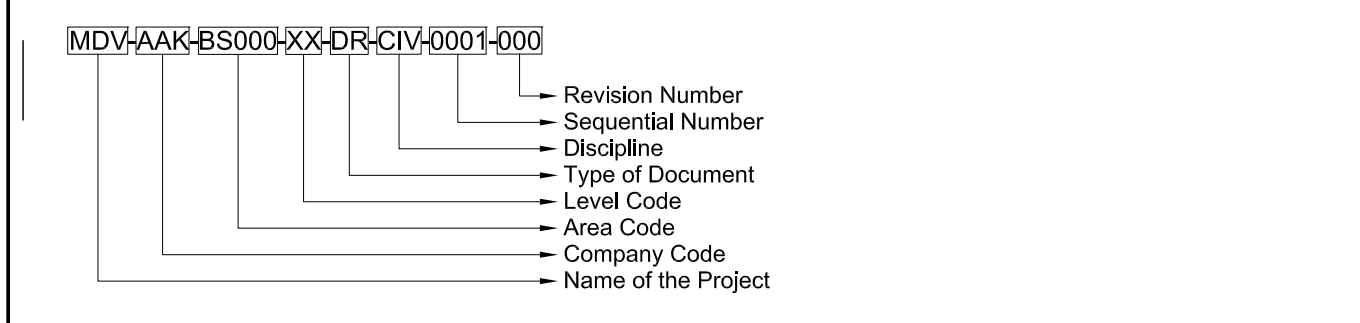
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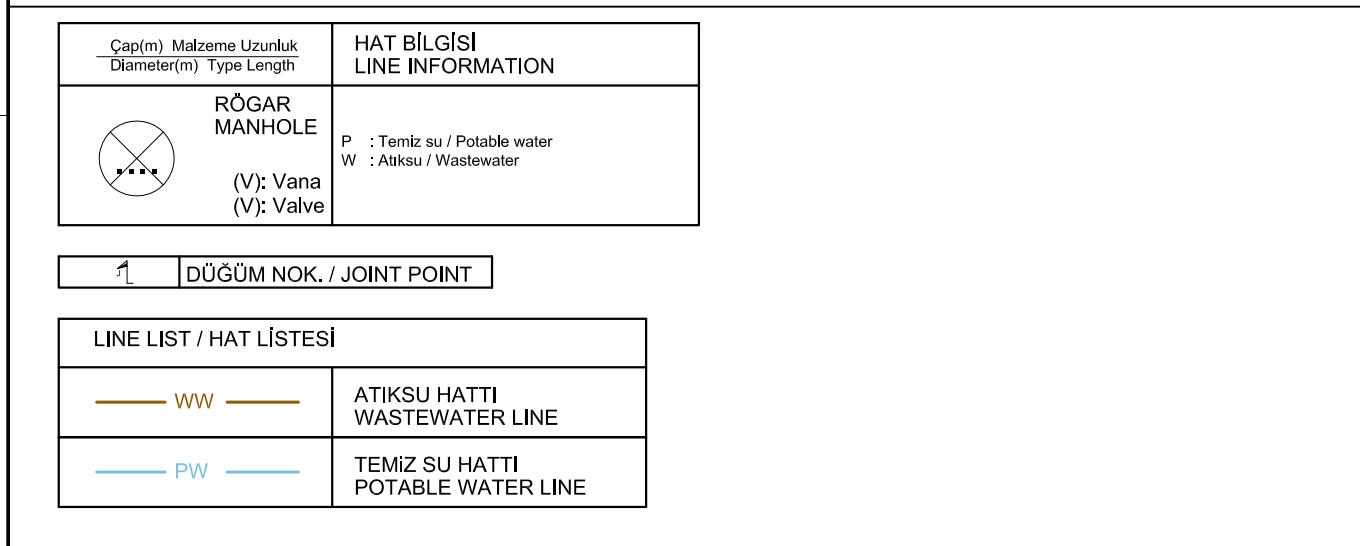


**GENEL NOTLAR / GENERAL NOTES**

- TÖM ÖLÇÜLER mm VE KOTLAR m OLARAK VERİLMİŞTİR. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS IN METERS.
- ÖLÇÜ VE BOYUTLAR YERİNDE KONTROL EDİLEREK UYULANACAKTIR. SIZE AND DIMENSIONS ARE APPLIED AFTER CHECKING.
- ÖLÇÜLERİNDE DEĞİŞİKLİK YAPILMASI GEREKTİĞİNDE PROJENİN MÜHENDİSİNİN ONAYI ALINACAKTIR. APPROVAL OF THE PROJECT ENGINEER IS REQUIRED IN CASE OF DIMENSION CHANGE.



**LEJANT / LEGEND**



**KISALTMALAR / ABBREVIATIONS**

- B.L. : Taban kotu / Bottom level
- G.L. : Zemin kotu / Ground level
- HDPE : Yüksek yoğunluklu Polietilen / High Density Polyethylene
- PE : Polietilen / Polyethylene

Revision No.	Description	Date	Signature
00	For Approval	12.08.2022	

REPUBLIC OF MALDIVES  
MINISTRY OF ENVIRONMENT, CLIMATE CHANGE and TECHNOLOGY

DBO CONTRACTOR:  
**urbaser** **RAMBOLL**

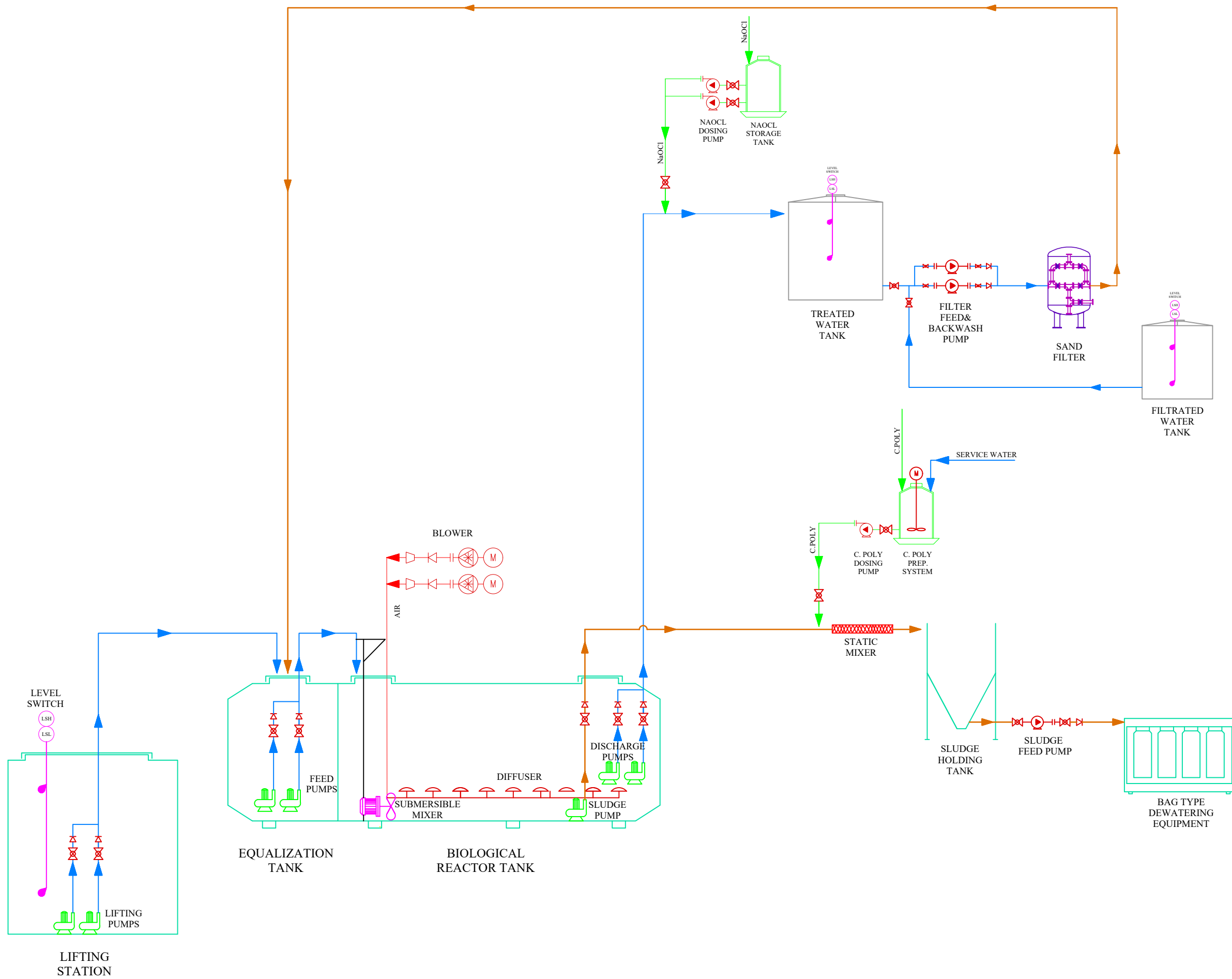
EMPLOYER REPRESENTATIVE: **FICHTNER** Review & Approval:

EPC CONTRACTOR: **ALKE** **ALKATAS** DESIGNER: **TUNA**  
ALKE-ALKATAS JV

Project Title: Design, Build and Operate of a Waste to Energy Facility at Thilafushi  
Contract No: (AGR)438-WPMC/PRIV/2021/71

Document Name:	SITE ORGANIZATION WASTEWATER LINE PLAN			
Status:	FOR APPROVAL			
Design:	Company:	Name:	Date:	SCALE: 1:200
Prepared by:	TUNA	STA / EOS	12.08.2022	FORMAT
Checked by:	AAJV	CKT / UEZ	12.08.2022	
	URB/RAM	JMA / RLEE	12.08.2022	
Released by:	A0			

DRAWING NUMBER				
MDIV	AAJK	SIOF010	XIX	DIR



DRAWING NO	TITLE					
	↑ REFERENCE DRAWING ↑					
2	26.10.22 PRELIMINARY - ONLY FOR INFORMATION BA GC BS					
1	02.08.22 PRELIMINARY - ONLY FOR INFORMATION BA GC BS					
0	07.01.22 PRELIMINARY - ONLY FOR INFORMATION BA GC BS					
REV. NO	DATE	↑ REVISIONS	↑	DRW	CNTR	APPR

CLIENT ALKE CONSTRUCTION

**MITTEM**  
 ENVIRONMENTAL TECHNOLOGIES ENGINEERING  
 MACHINERY CONSTRUCTION COMPANY

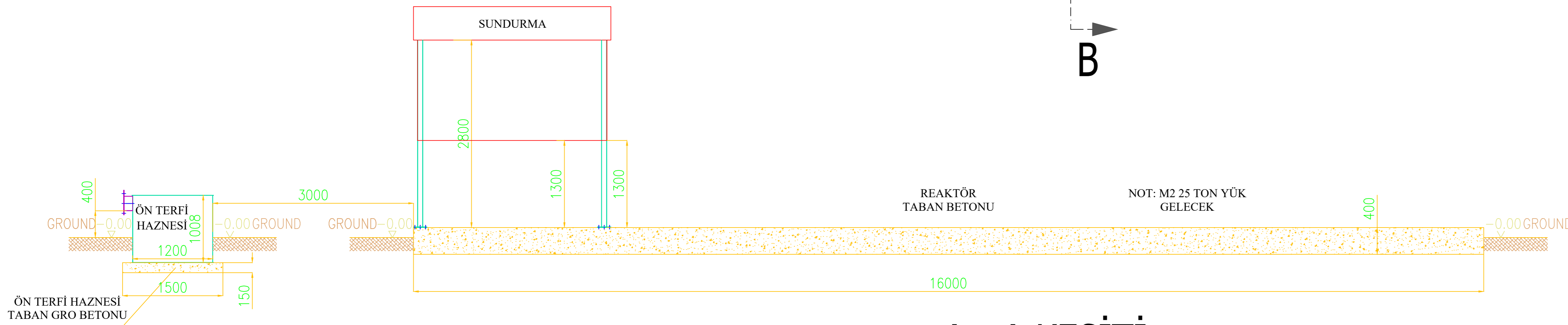
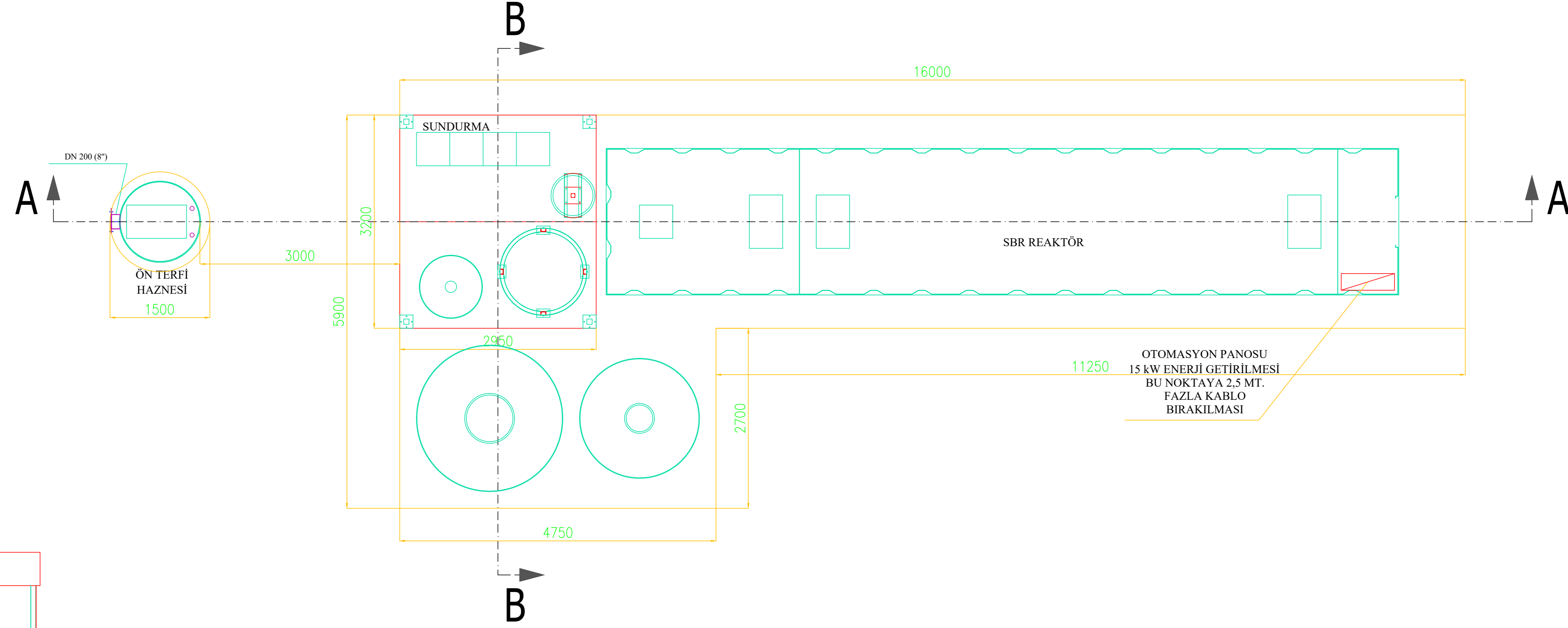
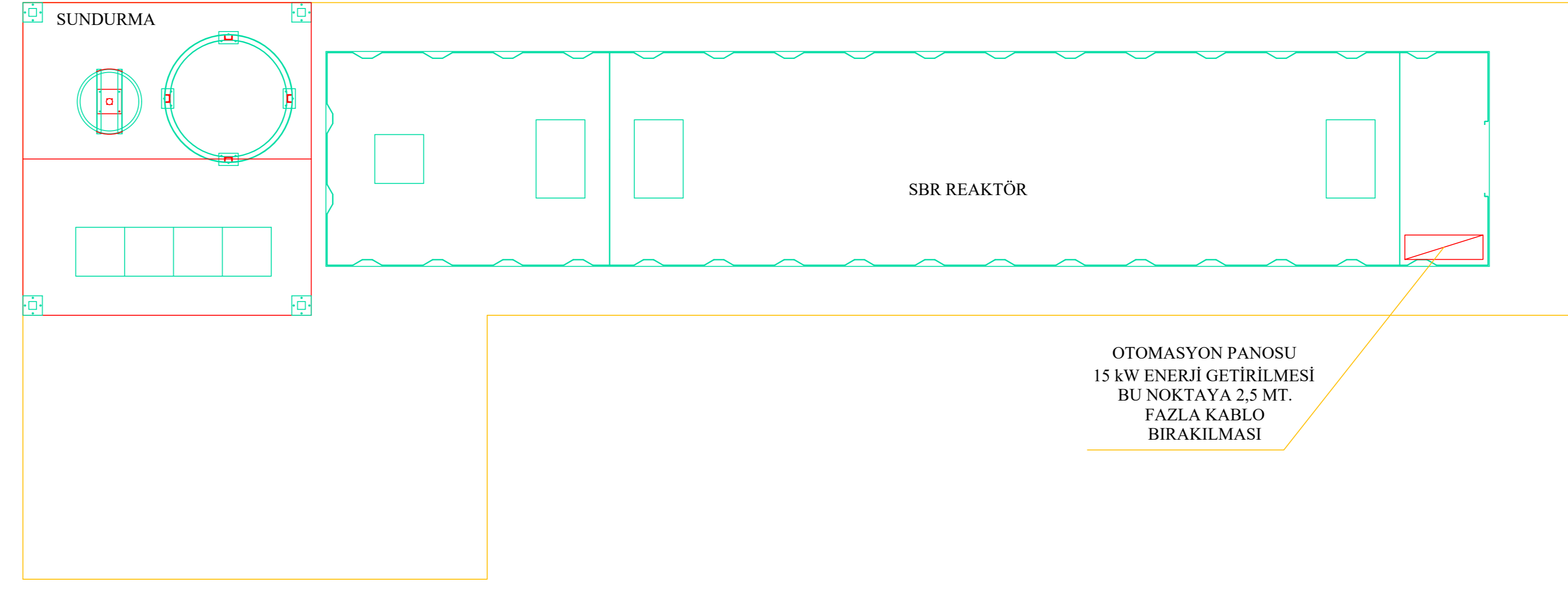
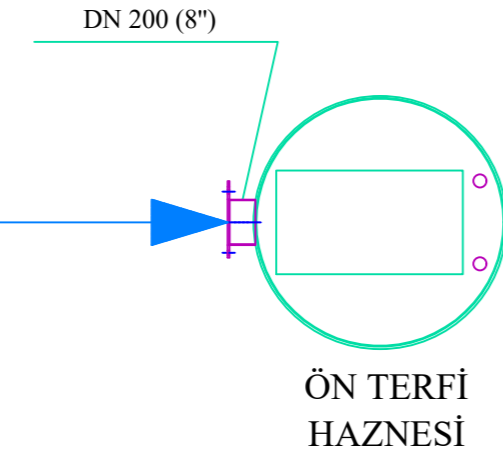
E-MAIL : [mittem@mittem.com](mailto:mittem@mittem.com)  
<http://www.mitem.com>  
 TEL : +91 (214) 379 08 04  
 FAX : +91 (214) 379 08 05

PROJECT  
 250 PE CAPACITY SBR PACKAGE TYPE  
 TREATMENT PLANT

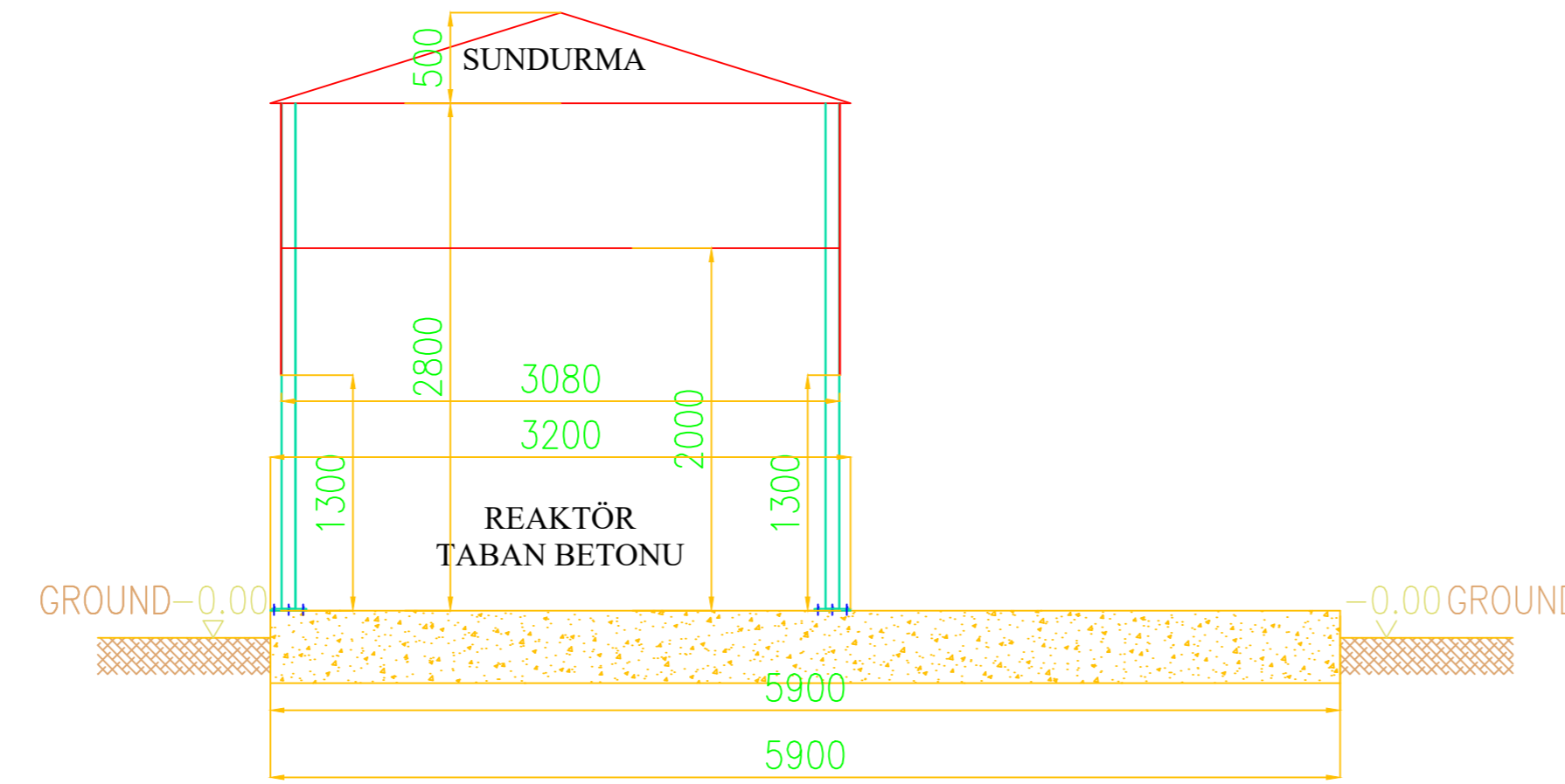
TITLE  
 FLOW DIAGRAM

DO NOT SCALE ASK IN DOUBT	THREE ANGLE PROJECTION	
SCALE 1 / 100 (A3)	DRW BA	CONTROL GC
OFFER NO 224747R8BA	DRAWING NO 224747R2/G/103	REV 2

ATIKSU  
GİRİŞİ



A - A KESİTİ



B - B KESİTİ

SPECIFIED DIMENSIONS ARE  
MILIMETER  
PLAN VIEW

REV. NO	TARİH	↑	REVIZYONLAR	↑	YPN.	KNT.	ONAY
2	27.10.22		ON CALISMA - YALNIZCA BILGI ICIN		BS	BS	GC
1	29.08.22		ON CALISMA - YALNIZCA BILGI ICIN		BS	BS	GC
0	06.08.22		ON CALISMA - YALNIZCA BILGI ICIN		BS	BS	GC

MÜŞTERİ ALKE  
CONSTRUCTION



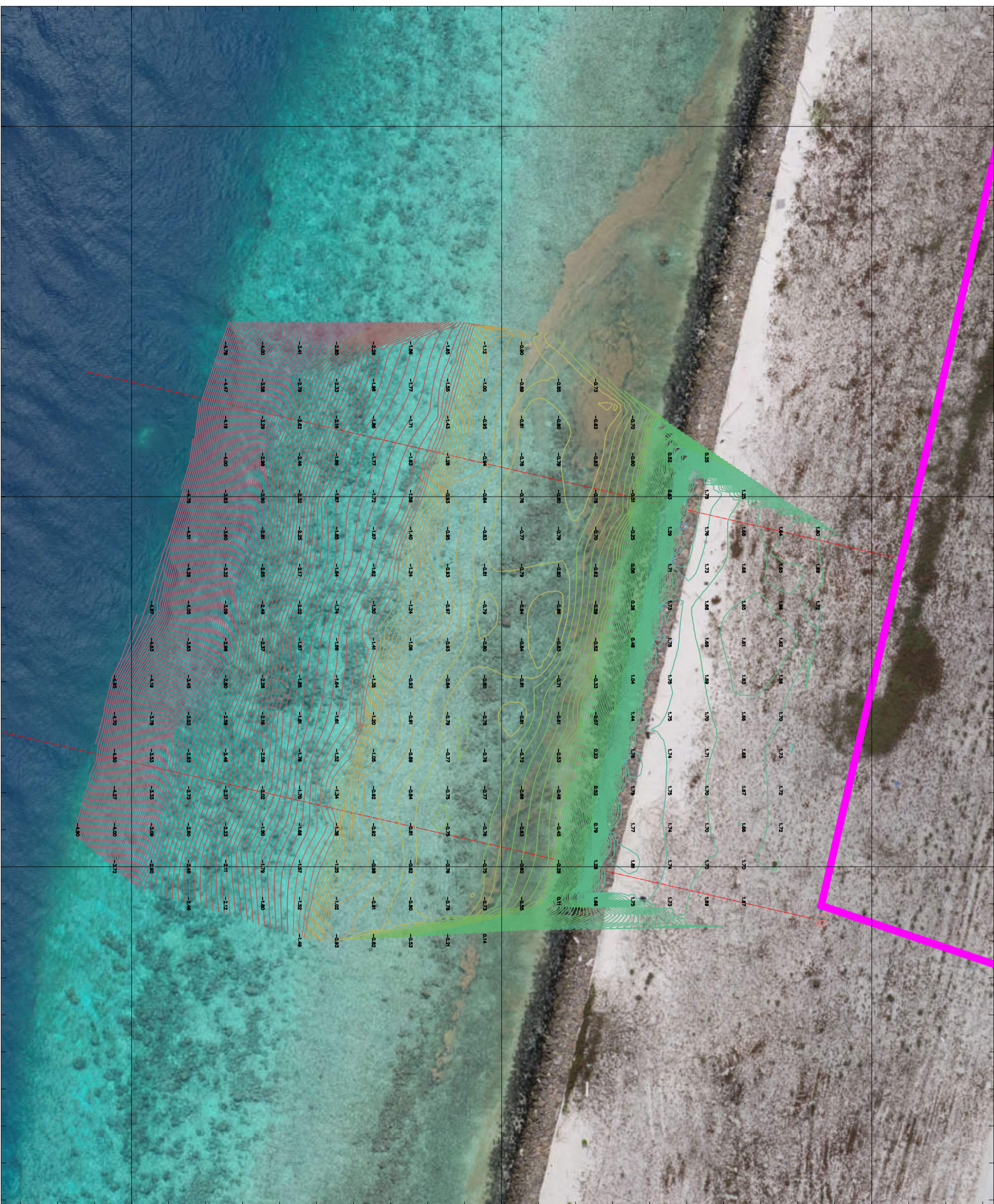
**MİTTEM**  
CEVRE TEKNOLOJİLERİ MUHENDİSLİK  
MAKİNA İNŞAAT SANAYİ VE TİCARET  
LTD.ŞTİ.  
E-MAIL : [mittem@mittem.com.tr](mailto:mittem@mittem.com.tr)  
<http://www.mitem.com.tr>  
TEL : +90 (216) 459 40 43-44  
FAKS : +90 (216) 459 40 45

PROJE  
250 PE SBR  
ATIKSU ARITMA TESİSİ

BASLIK  
MİMARİ GENEL YERLEŞİM &  
MİMARİ KESİTLER A-A, B-B,

OLCMEYİN,  
GEREKİRSE SORUN UC ACI  
PROJEKSİYONU

OLCEK	CIZEN	KONTROL
1 / 100 (A3)	BS	BS
TEKLİF NO	CIZIM NO	REV.
224747BA	224747/G/101/105	2



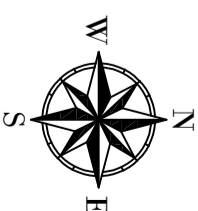
**LEGEND**

- BOUNDARY LINE
- OUT FALL PATH

PSM COORDINATES

PSM 0095  
 Northing : 462476.291m  
 Easting : 326321.544m  
 MSL Height : +1.433m

PSM 0091  
 Northing : 462492.867m  
 Easting : 326016.292m  
 MSL Height : +1.589m



NOTE : ALL UNITS ARE IN METERS  
 WGS84 UTM ZONE 43 COORDINATES SYSTEM

**PROJECT TITLE**

Topographic Survey for Waste to Energy Facility  
 Land in K. Thilathushi

**CLIENT NAME AND ADDRESS**

ALKE ALKATAS JOINT VENTURE

Surveyed by: Iyaz and Ahmed

Survey Date

31st December 2022

Reg. Surveyor : Ahmed Iyaz / BP-02506

Checked by :

Scale : 1 : 500

Sheet Name :  
 Contour MAP - OUTFALL

Drawn by: BeachRock

Sheet

Date : December 2022

1 / 1

Dwg no:



**Response to the (Additional information 2) Information Lacking in the 1st Addendum to the EIA for the Proposed Greater Male Waste-to-Energy Project (Installation of STP for the Construction Period) at K.Thilafushi**

1. Sea water quality assessments results of M8, M9 and M10 need to be provided. Please include all parameters specified in the approved ToR..

**Response:** As mentioned in the EIA Addendum report seawater and ground water are taken from the ongoing monitoring report that has been produced under requirement of the original EIA report therefore mentioned M8 M9 and M10 are closely located and for the monitoring only one location is taken but many other areas around Thilafushi are monitored under this EIA report. Also some of the parameters are monitored measurement insitu and provided in the addendum report as well. Following are the latest December 2022 results of seawater for all the locations.

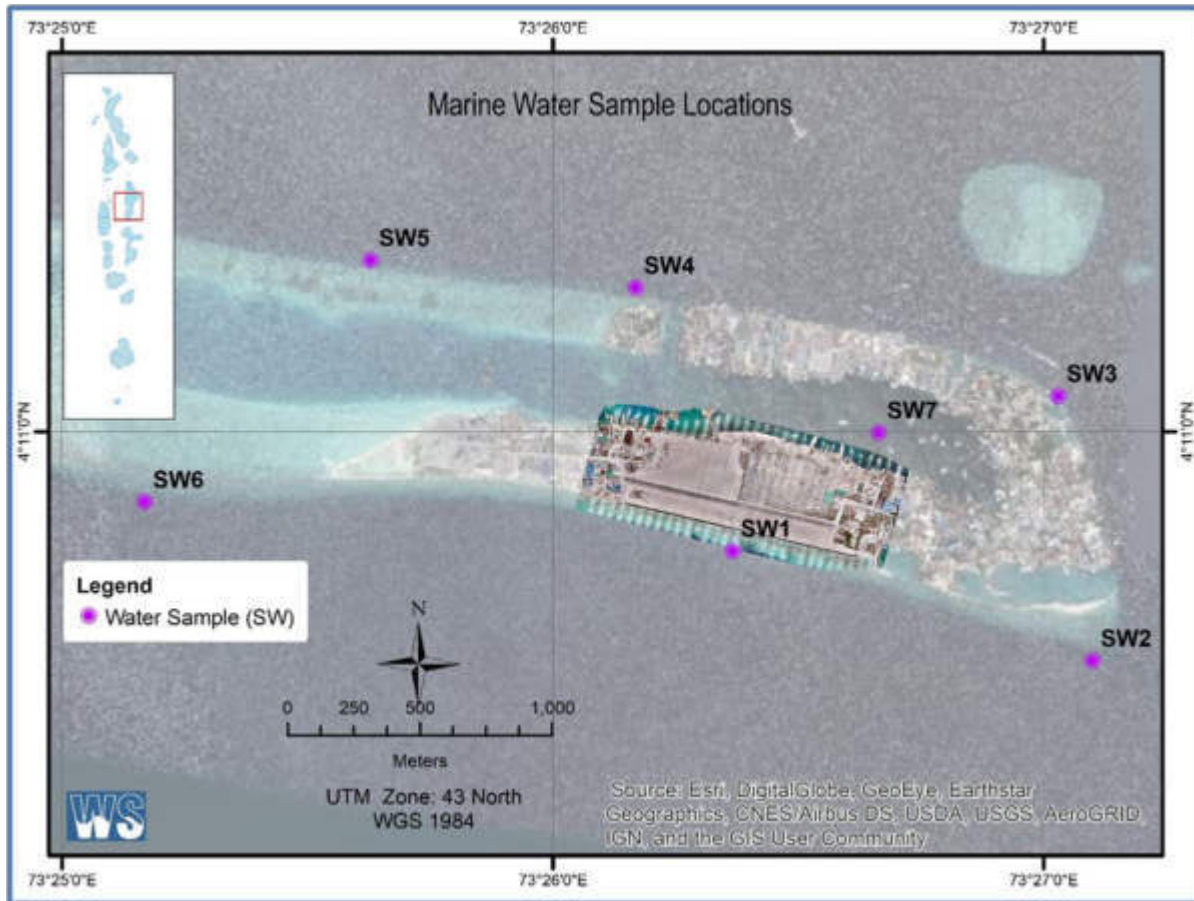


Figure 2. Seawater monitoring locations as per the EIA approved, SW 1 is the location M8 and M9 while SW 6 is the closest to M10.

**Table 1: Field recordings of sea water quality parameters recorder on December 2022**

Parameter	SW1	SW2	SW3	SW4	SW5	SW6	SW7
pH	8.56	8.52	8.51	8.49	8.41	8.55	8.30

EC ( $\mu\text{s}/\text{cm}$ )	44.9	44.8	44.9	45.3	44.6	44.7	45.4
DO (mg/l)	7.24	7.03	7.14	7.01	7.03	7.02	7.1
Temperature $^{\circ}\text{C}$	29.4	28.7	28.9	29.6	29.6	29.3	30.1





# TEST REPORT



Report No: (7422)332-0111

Dec 13, 2022

Page 1 of 2

Attn: Servet Burak Ozdemir

**Customer:** Alke – Alkataş Joint Venture (Pvt) Ltd  
**Address :** H.H. Moomiyaage, 5A, Asaree Hingun 20265, K. Male', Maldives  
**Date of Sample Received:** Nov 30, 2022  
**Date of Testing Started:** Nov 30, 2022  
**Date of Testing Completed:** Dec 13, 2022  
**Sample Description:** **Sample Received as:**  
A water samples contained in sealed glass & plastic bottles  
**Sample Identified by the Client as:**  
SW-01  
1.5L Plastic Bottle, 1L Glass Bottle & 0.5L Plastic Bottle  
**Sample Drawn By BVCPS** NO

## Photo of the Submitted Samples



Report Number  
(7422)332-0111



Report Number  
(7422)332-0111



Report Number  
(7422)332-0111

## **Bureau Veritas Consumer Products Services Lanka (Pvt) Ltd.**

No. 570, Galle Road, Kumbura, Morutwa, Sri Lanka  
Tel: (9411) 2550113-115 (dedicated lines), Fax: (9411)  
112622198 & 199  
Email: [bvps.lanka@bv.com](mailto:bvps.lanka@bv.com)

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/lanka/about-us/bvcs-bureau-veritas-consumer-products-services-lanka-priv-ltd> and is intended for your exclusive use. Any copying or reproduction of this report in or for any other person is strictly prohibited without our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on single acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 90 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of the report, the tests conducted and the correctness of the report contents.

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# TEST REPORT



Report No: (7422)332-0111

Dec 13, 2022

Page 2 of 2

## TEST RESULTS

No.	Parameters	Results	LOQ	Unit	Test Method
1	Free Ammonia (as NH <sub>3</sub> )*	ND	0.02	mg/L	SLS 614 Appendix A: 2013
2	Biological Oxygen Demand (BOD <sub>5</sub> ) @ 20°C	2	-	mg/L	APHA 23rd ed: 2017 : 5210D
3	Total Suspended Solids (TSS)	4	-	mg/L	APHA 23rd ed: 2017 : 2540D
4	Salinity*	35	-	‰	By salinity refractometer
5	Nitrate (as NO <sub>3</sub> -)*	0.3	-	mg/L	APHA 23rd ed: 2017: 4500 -NO <sub>3</sub> - B
6	Oil & Grease	ND	2.0	mg/L	APHA 23rd ed: 2017 :5520B
7	Arsenic (as As)	ND	0.001	mg/L	CPSD-AN-00581: 2019 V15 by ICP-MS
8	Copper (as Cu)	ND	0.001	mg/L	
9	Nickel (as Ni)	ND	0.001	mg/L	
10	Cadmium (as Cd)	ND	0.0001	mg/L	
11	Total Chromium (as Cr)	ND	0.001	mg/L	
12	Lead (as Pb)	ND	0.001	mg/L	
13	Mercury (as Hg)	ND	0.00005	mg/L	
14	Zinc (as Zn)	ND	0.001	mg/L	

\*Test not covered ISO 17025: 2017 by Sri Lanka Accreditation Board for conformity assessment.

### NOTE:

APHA: American Public Health Association, ND: Not Detected,

LOQ: Limit of Quantification, ‰ : Parts per thousand,

mg/l: milligrams per liter, ICP-MS: Inductively Coupled Plasma Mass Spectrometry.

### Contact information for this report (Technical and General Inquiries and Feedback)

GENERAL INQUIRIES:		
JAYAMEE DISSANAYAKE	TEL: +94 768 229 495	E-MAIL: envlab.lanka@bureauveritas.com
TECHNICAL INQUIRIES:		
RUWANI AMARASINGHE	TEL: +94 768 229 457	E-MAIL: ruwanl.amarasinghe@bureauveritas.com
FEED BACK:		
KUMUDINI RATHNAYAKE – ASST. QA MANAGER	TEL: +94 768 229 455	E-MAIL: kumudinie.rathnayake@bureauveritas.com

REVIEWED BY: SHASHI MANOJ

BUREAU VERITAS CONSUMER PRODUCTS SERVICES LANKA (PVT) LTD.  
AUTHORIZED SIGNATORY

APPROVED BY:   
RUWANI AMARASINGHE  
ASSISTANT MANAGER –  
FOOD & MICROBIOLOGY LABORATORY

END OF THE REPORT

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# TEST REPORT



Report No: (7422)334-0390

Dec 13, 2022

Page 1 of 2

Attn: Servet Burak Ozdemir

**Customer:** Alke – Alkatas Joint Venture (Pvt) Ltd  
**Address :** H.H. Moomiyaage, 5A, Asarce Hingun 20265, K. Male', Maldives  
**Date of Sample Received:** Nov 30, 2022  
**Date of Testing Started:** Nov 30, 2022  
**Date of Testing Completed:** Dec 13, 2022  
**Sample Description:** **Sample Received as:** A water samples contained in sealed glass & plastic bottles  
**Sample Identified by the Client as:** SW-02  
1.5L Plastic Bottle, 1L Glass Bottle & 0.5L Plastic Bottle  
**Sample Drawn By BVCPS:** NO

## Photo of the Submitted Samples



## **Bureau Veritas Consumer Products Services Lanka (Pvt) Ltd.**

No. 570, Galle Road, Katubedda, Morotawa, Sri Lanka  
Tel: (9411) 2350111-115 (dedicated lines), Fax: (9411) 112622198 & 199  
Email: [lvps.lanka@bureauveritas.com](mailto:lvps.lanka@bureauveritas.com)

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# TEST REPORT



Report No: (7422)334-0390

Dec 13, 2022

Page 2 of 2

## TEST RESULTS

No.	Parameters	Results	LOQ	Unit	Test Method
1	Free Ammonia (as NH <sub>3</sub> )*	ND	0.02	mg/L	SLS 614 Appendix A: 2013
2	Biological Oxygen Demand (BOD <sub>5</sub> ) @ 20°C	2	-	mg/L	APHA 23rd ed: 2017 : 5210D
3	Total Suspended Solids (TSS)	3	-	mg/L	APHA 23rd ed: 2017 : 2540D
4	Salinity*	35	-	‰	By salinity refractometer
5	Nitrate (as NO <sub>3</sub> -)*	0.5	-	mg/L	APHA 23rd ed: 2017: 4500 -NO <sub>3</sub> - B
6	Oil & Grease	ND	2.0	mg/L	APHA 23rd ed: 2017 :5520B
7	Arsenic (as As)	ND	0.001	mg/L	CPSD-AN-00581: 2019 V15 by ICP-MS
8	Copper (as Cu)	ND	0.001	mg/L	
9	Nickel (as Ni)	ND	0.001	mg/L	
10	Cadmium (as Cd)	ND	0.0001	mg/L	
11	Total Chromium (as Cr)	ND	0.001	mg/L	
12	Lead (as Pb)	ND	0.001	mg/L	
13	Mercury (as Hg)	ND	0.00005	mg/L	
14	Zinc (as Zn)	ND	0.001	mg/L	

\*Test not covered ISO 17025: 2017 by Sri Lanka Accreditation Board for conformity assessment.

### NOTE:

APHA: American Public Health Association, ND: Not Detected,

LOQ: Limit of Quantification, ‰ : Parts per thousand,

mg/l: milligrams per liter, ICP-MS: Inductively Coupled Plasma Mass Spectrometry.

### Contact information for this report (Technical and General Inquiries and Feedback)

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FEED BACK:		
KUMUDINI RATHNAYAKE – ASST. QA MANAGER	TEL: +94 768 229 455	E-MAIL: kumudinie.rathnayake@bureauveritas.com

REVIEWED BY: SHASHI MANOJ

BUREAU VERITAS CONSUMER PRODUCTS SERVICES LANKA (PVT) LTD.  
AUTHORIZED SIGNATORY

APPROVED BY: \_\_\_\_\_  
RUWANI AMARASINGHE  
ASSISTANT MANAGER –  
FOOD & MICROBIOLOGY LABORATORY

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# TEST REPORT



Report No: (7422)334-0387

Dec 14, 2022

Page 1 of 2

Attn: Servet Burak Ozdemir

**Customer:** Alke – Alkataş Joint Venture (Pvt) Ltd  
**Address :** H.H. Moomiyaage, 5A, Asaree Hingun 20265, K. Male', Maldives  
**Date of Sample Received:** Nov 30, 2022  
**Date of Testing Started:** Nov 30, 2022  
**Date of Testing Completed:** Dec 14, 2022  
**Sample Description:** **Sample Received as:**  
A water samples contained in sealed glass & plastic bottles  
**Sample Identified by the Client as:**  
SW-03  
1.5L Plastic Bottle, 1L Glass Bottle & 0.5L Plastic Bottle  
**Sample Drawn By BVCPS** NO

## Photo of the Submitted Samples



## **Bureau Veritas Consumer Products Services Lanka (Pvt) Ltd.**

No. 570, Galle Road, Kumbura, Moriya, Sri Lanka  
Tel: (9411) 2550113-115 (dedicated lines), Fax: (9411)  
112622198 & 199  
Email: [bvps.lanka@bureauveritas.com](mailto:bvps.lanka@bureauveritas.com)

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# TEST REPORT



Report No: (7422)334-0387

Dec 14, 2022

Page 2 of 2

## TEST RESULTS

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2	Biological Oxygen Demand (BOD <sub>5</sub> ) @ 20°C	2	-	mg/L	APHA 23rd ed: 2017 : 5210D
3	Total Suspended Solids (TSS)	6	-	mg/L	APHA 23rd ed: 2017 : 2540D
4	Salinity*	36	-	‰	Salinity-Refractometer
5	Nitrate (as NO <sub>3</sub> -)*	0.3	-	mg/L	APHA 23rd ed: 2017: 4500 -NO <sub>3</sub> - E
6	Oil & Grease	ND	2.0	mg/L	APHA 23rd ed: 2017 :5520B
7	Arsenic (as As)	ND	0.001	mg/L	CPSD-AN-00581: 2019 V15 by ICP-MS
8	Copper (as Cu)	ND	0.001	mg/L	
9	Nickel (as Ni)	ND	0.001	mg/L	
10	Cadmium (as Cd)	ND	0.0001	mg/L	
11	Total Chromium (as Cr)	ND	0.001	mg/L	
12	Lead (as Pb)	ND	0.001	mg/L	
13	Mercury (as Hg)	ND	0.00005	mg/L	
14	Zinc (as Zn)	ND	0.001	mg/L	

\*Test not covered ISO 17025: 2017 by Sri Lanka Accreditation Board for conformity assessment.

### NOTE:

APHA: American Public Health Association, ND: Not Detected,

LOQ: Limit of Quantification, µm: micrometer,

mg/l: milligrams per liter, ‰: Parts per thousand.

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FEED BACK:		
KUMUDINI RATHNAYAKE – ASST. QA MANAGER	TEL: +94 768 229 455	E-MAIL: kumudinie.rathnayake@bureauveritas.com

REVIEWED BY: SHASHI MANOJ

BUREAU VERITAS CONSUMER PRODUCTS SERVICES LANKA (PVT) LTD.  
AUTHORIZED SIGNATORY

APPROVED BY: \_\_\_\_\_  
RUWANI AMARASINGHE  
ASSISTANT MANAGER –  
FOOD & MICROBIOLOGY LABORATORY

END OF THE REPORT

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# TEST REPORT



Report No: (7422)334-0394

Dec 13, 2022

Page 1 of 2

Attn: Servet Burak Ozdemir

**Customer:** Alke – Alkatas Joint Venture (Pvt) Ltd  
**Address :** H.H. Moomiyaage, 5A, Asarce Hingun 20265, K. Male', Maldives  
**Date of Sample Received:** Nov 30, 2022  
**Date of Testing Started:** Nov 30, 2022  
**Date of Testing Completed:** Dec 13, 2022  
**Sample Description:** **Sample Received as:**  
A water samples contained in sealed glass & plastic bottles  
**Sample Identified by the Client as:**  
SW-04  
1.5L Plastic Bottle, 1L Glass Bottle & 0.5L Plastic Bottle  
**Sample Drawn By BVCPS** NO

## Photo of the Submitted Samples



## **Bureau Veritas Consumer Products Services Lanka (Pvt) Ltd.**

No. 570, Galle Road, Katubedda, Moratuwa, Sri Lanka  
Tel: (9411) 2350111-115 (indicated lines), Fax: (9411)  
112622198 & 199  
Email: [bvps.lanka@bureauveritas.com](mailto:bvps.lanka@bureauveritas.com)

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# TEST REPORT



Report No: (7422)334-0394

Dec 13, 2022

Page 2 of 2

## TEST RESULTS

No.	Parameters	Results	LOQ	Unit	Test Method
1	Free Ammonia (as NH <sub>3</sub> )*	ND	0.02	mg/L	SLS 614 Appendix A: 2013
2	Biological Oxygen Demand (BOD <sub>5</sub> ) @ 20°C	1	-	mg/L	APHA 23rd ed: 2017 : 5210D
3	Total Suspended Solids (TSS)	6	-	mg/L	APHA 23rd ed: 2017 : 2540D
4	Salinity*	36	-	‰	By salinity refractometer
5	Nitrate (as NO <sub>3</sub> -)*	0.3	-	mg/L	APHA 23rd ed: 2017: 4500 -NO <sub>3</sub> - B
6	Oil & Grease	ND	2.0	mg/L	APHA 23rd ed: 2017 :5520B
7	Arsenic (as As)	ND	0.001	mg/L	CPSD-AN-00581: 2019 V15by ICP-MS
8	Copper (as Cu)	ND	0.001	mg/L	
9	Nickel (as Ni)	ND	0.001	mg/L	
10	Cadmium (as Cd)	ND	0.0001	mg/L	
11	Total Chromium (as Cr)	ND	0.001	mg/L	
12	Lead (as Pb)	ND	0.001	mg/L	
13	Mercury (as Hg)	ND	0.00005	mg/L	
14	Zinc (as Zn)	ND	0.001	mg/L	

\*Test not covered ISO 17025: 2017 by Sri Lanka Accreditation Board for conformity assessment.

### NOTE:

APHA: American Public Health Association, ND: Not Detected,

LOQ: Limit of Quantification, ‰ : Parts per thousand,

mg/l: milligrams per liter, ICP-MS- Inductively Coupled Plasma Mass Spectrometry.

### Contact information for this report (Technical and General Inquiries and Feedback)

GENERAL INQUIRIES:		
JAYAMEE DISSANAYAKE	TEL: +94 768 229 495	E-MAIL: envlab.lanka@bureauveritas.com
TECHNICAL INQUIRIES:		
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FEED BACK:		
KUMUDINI RATHNAYAKE – ASST. QA MANAGER	TEL: +94 768 229 455	E-MAIL: kumudinie.rathnayake@bureauveritas.com

REVIEWED BY: SHASHI MANOJ

BUREAU VERITAS CONSUMER PRODUCTS SERVICES LANKA (PVT) LTD.  
AUTHORIZED SIGNATORY

APPROVED BY:   
RUWANI AMARASINGHE  
ASSISTANT MANAGER –  
FOOD & MICROBIOLOGY LABORATORY

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# TEST REPORT



Report No: (7422)334-0383

Dec 13, 2022

Page 1 of 2

Attn: Servet Burak Ozdemir

**Customer:** Alke – Alkataş Joint Venture (Pvt) Ltd  
**Address :** H.H. Moomiyaage, 5A, Asarce Hingun 20265, K. Male', Maldives  
**Date of Sample Received:** Nov 30, 2022  
**Date of Testing Started:** Nov 30, 2022  
**Date of Testing Completed:** Dec 13, 2022  
**Sample Description:** **Sample Received as:**  
A water samples contained in sealed glass & plastic bottles  
**Sample Identified by the Client as:**  
SW-05  
1.5L Plastic Bottle, 1L Glass Bottle & 0.5L Plastic Bottle  
**Sample Drawn By BVCPS:** NO

## Photo of the Submitted Samples



## **Bureau Veritas Consumer Products Services Lanka (Pvt) Ltd.**

No. 570, Galle Road, Katubedda, Morotawa, Sri Lanka  
Tel: (9411) 2350111-115 (dedicated lines), Fax: (9411)  
112622198 & 199  
Email: [lvps.lanka@bureauveritas.com](mailto:lvps.lanka@bureauveritas.com)

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# TEST REPORT



Report No: (7422)334-0383

Dec 13, 2022

Page 2 of 2

## TEST RESULTS

No.	Parameters	Results	LOQ	Unit	Test Method
1	Free Ammonia (as NH <sub>3</sub> )*	ND	0.02	mg/L	SLS 614 Appendix A: 2013
2	Biological Oxygen Demand (BOD <sub>5</sub> ) @ 20°C	2	-	mg/L	APHA 23rd ed: 2017 : 5210D
3	Total Suspended Solids (TSS)	3	-	mg/L	APHA 23rd ed: 2017 : 2540D
4	Salinity*	35	-	‰	By salinity refractometer
5	Nitrate (as NO <sub>3</sub> -)*	0.3	-	mg/L	APHA 23rd ed: 2017: 4500 -NO <sub>3</sub> - B
6	Oil & Grease	ND	2.0	mg/L	APHA 23rd ed: 2017 :5520B
7	Arsenic (as As)	ND	0.001	mg/L	CPSD-AN-00581: 2019 V15 by ICP-MS
8	Copper (as Cu)	ND	0.001	mg/L	
9	Nickel (as Ni)	ND	0.001	mg/L	
10	Cadmium (as Cd)	ND	0.0001	mg/L	
11	Total Chromium (as Cr)	ND	0.001	mg/L	
12	Lead (as Pb)	ND	0.001	mg/L	
13	Mercury (as Hg)	ND	0.00005	mg/L	
14	Zinc (as Zn)	ND	0.001	mg/L	

\*Test not covered ISO 17025: 2017 by Sri Lanka Accreditation Board for conformity assessment.

### NOTE:

APHA: American Public Health Association, ND: Not Detected,

LOQ: Limit of Quantification, ‰ : Parts per thousand,

mg/l: milligrams per liter, ICP-MS: Inductively Coupled Plasma Mass Spectrometry.

### Contact information for this report (Technical and General Inquiries and Feedback)

GENERAL INQUIRIES:		
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TECHNICAL INQUIRIES:		
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FEED BACK:		
KUMUDINI RATHNAYAKE – ASST. QA MANAGER	TEL: +94 768 229 455	E-MAIL: kumudinie.rathnayake@bureauveritas.com

REVIEWED BY: SHASHI MANOJ

BUREAU VERITAS CONSUMER PRODUCTS SERVICES LANKA (PVT) LTD.  
AUTHORIZED SIGNATORY

APPROVED BY:   
RUWANI AMARASINGHE  
ASSISTANT MANAGER –  
FOOD & MICROBIOLOGY LABORATORY

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# TEST REPORT



Report No: (7422)334-0398

Dec 14, 2022

Page 1 of 2

Attn: Servet Burak Ozdemir

**Customer:** Alke – Alkataş Joint Venture (Pvt) Ltd  
**Address :** H.H. Moomiyaage, 5A, Asaree Hingun 20265, K. Male', Maldives  
**Date of Sample Received:** Nov 30, 2022  
**Date of Testing Started:** Nov 30, 2022  
**Date of Testing Completed:** Dec 14, 2022  
**Sample Description:** **Sample Received as:** A water samples contained in sealed glass & plastic bottles  
**Sample Identified by the Client as:** SW-06  
 1.5L Plastic Bottle, 1L Glass Bottle & 0.5L Plastic Bottle  
**Sample Drawn By BVCPS:** NO

### Photo of the Submitted Samples



### **Bureau Veritas Consumer Products Services Lanka (Pvt) Ltd.**

No. 570, Galle Road, Kumbura, Moriya, Sri Lanka  
Tel: (9411) 250113-115 (dedicated lines), Fax: (9411) 112622198 & 199  
Email: [bvps.lanka@bureauveritas.com](mailto:bvps.lanka@bureauveritas.com)

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# TEST REPORT



Report No: (7422)334-0398

Dec 14, 2022

Page 2 of 2

## TEST RESULTS

No.	Parameters	Results	LOQ	Unit	Test Method
1	Free Ammonia (as NH <sub>3</sub> )*	ND	0.02	mg/L	SLS 614 Appendix A: 2013
2	Biological Oxygen Demand (BOD <sub>5</sub> ) @ 20°C	3	-	mg/L	APHA 23rd ed: 2017 : 5210D
3	Total Suspended Solids (TSS)	3	-	mg/L	APHA 23rd ed: 2017 : 2540D
4	Salinity*	33	-	‰	Salinity-Refractometer
5	Nitrate (as NO <sub>3</sub> -)*	0.4	-	mg/L	APHA 23rd ed: 2017: 4500 -NO <sub>3</sub> - E
6	Oil & Grease	ND	2.0	mg/L	APHA 23rd ed: 2017 :5520B
7	Arsenic (as As)	ND	0.001	mg/L	CPSD-AN-00581: 2019 V15 by ICP-MS
8	Copper (as Cu)	ND	0.001	mg/L	
9	Nickel (as Ni)	ND	0.001	mg/L	
10	Cadmium (as Cd)	ND	0.0001	mg/L	
11	Total Chromium (as Cr)	ND	0.001	mg/L	
12	Lead (as Pb)	ND	0.001	mg/L	
13	Mercury (as Hg)	ND	0.00005	mg/L	
14	Zinc (as Zn)	ND	0.001	mg/L	

\*Test not covered ISO 17025: 2017 by Sri Lanka Accreditation Board for conformity assessment.

### NOTE:

APHA: American Public Health Association, ND: Not Detected,

LOQ: Limit of Quantification, µm: micrometer,

mg/l: milligrams per liter, ‰: Parts per thousand.

### Contact information for this report (Technical and General Inquiries and Feedback)

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FEED BACK:		
KUMUDINI RATHNAYAKE – ASST. QA MANAGER	TEL: +94 768 229 455	E-MAIL: kumudinie.rathnayake@bureauveritas.com

REVIEWED BY: SHASHI MANOJ

BUREAU VERITAS CONSUMER PRODUCTS SERVICES LANKA (PVT) LTD.  
AUTHORIZED SIGNATORY

APPROVED BY:   
RUWANI AMARASINGHE  
ASSISTANT MANAGER –  
FOOD & MICROBIOLOGY LABORATORY

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# TEST REPORT



Report No: (7422)334-0401

Dec 14, 2022

Page 1 of 2

Attn: Servet Burak Ozdemir

**Customer:** Alke – Alkataş Joint Venture (Pvt) Ltd  
**Address :** H.H. Moomiyaage, 5A, Asaree Hingun 20265, K. Male', Maldives  
**Date of Sample Received:** Nov 30, 2022  
**Date of Testing Started:** Nov 30, 2022  
**Date of Testing Completed:** Dec 14, 2022  
**Sample Description:** **Sample Received as:**  
A water samples contained in sealed glass & plastic bottles  
**Sample Identified by the Client as:**  
SW-07  
1.5L Plastic Bottle, 1L Glass Bottle & 0.5L Plastic Bottle  
**Sample Drawn By BVCPS** NO

## Photo of the Submitted Samples



## **Bureau Veritas Consumer Products Services Lanka (Pvt) Ltd.**

No. 570, Galle Road, Kambedda, Morutwa, Sri Lanka  
Tel: (9411) 2550113-115 (dedicated lines), Fax: (9411)  
112622198 & 199  
Email: [bvps.lanka@bv.com](mailto:bvps.lanka@bv.com)

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# TEST REPORT



Report No: (7422)334-0401

Dec 14, 2022

Page 2 of 2

## TEST RESULTS

No.	Parameters	Results	LOQ	Unit	Test Method
1	Free Ammonia (as NH <sub>3</sub> )*	ND	0.02	mg/L	SLS 614 Appendix A: 2013
2	Biological Oxygen Demand (BOD <sub>5</sub> ) @ 20°C	2	-	mg/L	APHA 23rd ed: 2017 : 5210D
3	Total Suspended Solids (TSS)	8	-	mg/L	APHA 23rd ed: 2017 : 2540D
4	Salinity*	36	-	‰	Salinity-Refractometer
5	Nitrate (as NO <sub>3</sub> -)*	0.4	-	mg/L	APHA 23rd ed: 2017: 4500 -NO <sub>3</sub> - B
6	Oil & Grease	ND	2.0	mg/L	APHA 23rd ed: 2017 :5520B
7	Arsenic (as As)	ND	0.001	mg/L	CPSD-AN-00581: 2019 V15 by ICP-MS
8	Copper (as Cu)	ND	0.001	mg/L	
9	Nickel (as Ni)	ND	0.001	mg/L	
10	Cadmium (as Cd)	ND	0.0001	mg/L	
11	Total Chromium (as Cr)	ND	0.001	mg/L	
12	Lead (as Pb)	ND	0.001	mg/L	
13	Mercury (as Hg)	ND	0.00005	mg/L	
14	Zinc (as Zn)	ND	0.001	mg/L	

\*Test not covered ISO 17025: 2017 by Sri Lanka Accreditation Board for conformity assessment.

### NOTE:

APHA: American Public Health Association, ND: Not Detected,

LOQ: Limit of Quantification, µm: micrometer,

mg/l: milligrams per liter, ‰: Parts per thousand.

### Contact information for this report (Technical and General Inquiries and Feedback)

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FEED BACK:		
KUMUDINI RATHNAYAKE – ASST. QA MANAGER	TEL: +94 768 229 455	E-MAIL: kumudinie.rathnayake@bureauveritas.com

REVIEWED BY: SHASHI MANOJ

BUREAU VERITAS CONSUMER PRODUCTS SERVICES LANKA (PVT) LTD.  
AUTHORIZED SIGNATORY

APPROVED BY:   
RUWANI AMARASINGHE  
ASSISTANT MANAGER –  
FOOD & MICROBIOLOGY LABORATORY

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2. Temperature, Salinity, TDS and Fecal Coliform test results need to be provided for the groundwater quality assessments as per the approved ToR

**Response:** As mentioned in above response and the EIA report the groundwater analysis provided is collected as part of the ongoing monitoring programme. Some of the parameters that are mentioned are measured insitu

Table 2. Laboratory results summary for ground water monitoring at Thilafushi December 2022.

Parameters	Results								LoQ	Unit	Test Method
	GW 1	GW 2	GW 3	GW 4	GW 5	GW6	GW7	GW8			
Physical Appearance	Clear with particles	Clear with particles	Pale yellow with particles	Pale yellow with particles		Clear with particles	Clear with particles	Clear with particles	-	-	Visual
BOD	3	3	3			6	3	4	-	mg/l	HACH Method 8043
Nitrate*	0.3	3.9	4.6			0.3	1	0.1	-	mg/l	HACH Method 8171
COD*									0.05	mg/l	HACH Method 8000
DO	8.87	8.92	9.07	8.2		8.6	9.02	8.81	-	mg/l	In-house Test method (Adapted from HACH BOD LDO® Probe (Model LBOD10101) manual)
Chloride	99	21100	3750			188	14	49			In-house Test method (Adapted from M926 Chloride analyzer Operation Manual)
Sulphate	<10(LoQ 10mg/L)	3050	225			95	16	41			HACH Method 8051
Phosphate	0.15	0.10	0.32			0.15	0.23	0.06			HACH Method 8048
Turbidity*	0.4	0.2	0.3	0.1		0.5	2.8	0.5	-	NTU	APHA 23rd ed: 2017: 2130 B
pH at 25°C*	7.3	7.2	8.5	7.6		7.6	7.5	7.6	-	mg/l	APHA 23rd ed: 2017 :4500H+

Parameters	Results								LoQ	Unit	Test Method
	GW 1	GW 2	GW 3	GW 4	GW 5	GW6	GW7	GW8			
Total Coliform	>24 20 (01/ 12/2 022 15:0 0	3(0 1/12 /202 2 15:0 0)	>24 20 (01/ 12/2 022 15:0 0)			>242 0 (01/1 2/20 22 15:0 0)	>242 0 (01/1 2/20 22 15:0 0)	>242 0 (01/1 2/20 22 15:0 0)			Colilert®-18/Quanti-Tray®2000
Iron (as Fe) *	ND	ND	ND	ND		ND	0.02	ND	-	mg/l	CPSD-AN-0581:2019-V15by ICP-MS
Manganese (as Mn)	ND	ND	ND	ND		0.018	ND	ND	-	mg/l	CPSD-AN-0581:2019-V15by ICP-MS
Arsenic (as As)	ND	ND	ND	ND		ND	ND	ND	0.001	mg/l	CPSD-AN-0581:2019-V15by ICP-MS
Total Suspended Solids*	ND	ND	ND	ND		6	38	13	-	mg/l	APHA 23rd ed: 2017: 2540 C
Electrical Conductivity at 25°C*	481	58000	10800	5700		1206	571	582	-	mS/cm	APHA 23rd ed: 2017: 2510 B
Cadmium (as Cd)*	ND	ND	ND	ND		ND	ND	ND	0.0001	mg/l	CPSD-AN-00581:2019-V15by ICP-MS
Lead (as Pb)"	ND	ND	ND	ND		ND	ND	ND	0.001	mg/l	CPSD-AN-00581:2019-V15by ICP-MS
Mercury (as Hg)	ND	ND	ND	ND		ND	ND	ND		mg/l	CPSD-AN-00581:2019-V15by ICP-MS
Oil and Grease	ND	ND	ND	ND		ND	ND	ND		mg/l	APHA 23rd ed: 2017: 5520 B
<b>Polynuclear Aromatic Hydrocarbons*</b>											
Naphthalene	ND	ND	ND	ND		ND	ND	ND	1	µg/l	CPSD -AN-00576
Acenaphthylene	ND	ND	ND	ND		ND	ND	ND	1	µg/l	CPSD -AN-00576
Acenaphthene	ND	ND	ND	ND		ND	ND	ND	1	µg/l	CPSD -AN-00576
Fluorene	ND	ND	ND	ND		ND	ND	ND	1	µg/l	CPSD -AN-00576
Phenanthrene	ND	ND	ND	ND		ND	ND	ND	1	µg/l	CPSD -AN-00576
Anthracene	ND	ND	ND	ND		ND	ND	ND	1	µg/l	CPSD-AN-00576
Fluoranthene	ND	ND	ND	ND		ND	ND	ND	1	µg/l	CPSD -AN-00576
Pyrene	ND	ND	ND	ND		ND	ND	ND	1	µg/l	CPSD -AN-00576
Benzo[a]anthracene	ND	ND	ND	ND		ND	ND	ND	1	µg/l	CPSD -AN-00576
Chrysene	ND	ND	ND	ND		ND	ND	ND	1	µg/l	CPSD -AN-00576
Benzo[a]pyrene	ND	ND	ND	ND		ND	ND	ND	1	µg/l	CPSD -AN-00576
Benzo[e]pyrene	ND	ND	ND	ND		ND	ND	ND	1	µg/l	CPSD -AN-00576
Indeno[1,2,3-cd]pyrene	ND	ND	ND	ND		ND	ND	ND	1	µg/l	CPSD -AN-00576
Dibenzo[a,h]anthracene	ND	ND	ND	ND		ND	ND	ND	1	µg/l	CPSD -AN-00576
Benzo[g,h,i]perylene	ND	ND	ND	ND		ND	ND	ND	1	µg/l	CPSD -AN-00576



Parameters	Results								LoQ	Unit	Test Method
	GW 1	GW 2	GW 3	GW 4	GW 5	GW6	GW7	GW8			
Benzo[b]fluoranthene	ND	ND	ND	ND		ND	ND	ND	1	µg/l	CPSD -AN-00576
Benzo[j]fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	1	µg/l	CPSD -AN-00576
Benzo[k]fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	1	µg/l	CPSD -AN-00576

**Table 3: Field recordings of Ground water quality parameters recorder December 2022**

Parameter	GW1	GW2	GW3	GW4	GW5	GW6	GW7	GW8
pH	8.49	7.69	8.70	8.15		8	8.19	8.20
EC (µs/cm)	470	44500	10550	1514		1303	534	551
DO (mg/l)	8.87	8.92	9.07	8.2		8.6	9.02	8.81
Temperature °C	27.5	29.9	29.3	28.4		29.9	30.8	31.0

WATER QUALITY TEST REPORT  
Report No. 0088388

Report No: 07102001  
Test Method: T1 on the: 00883888  
Sample Received Date: 07/07/2017  
Date of Analysis: 07/12/2017 - 07/12/2017

Customer Information  
No. 1000/100, 4th Floor, Parkside 5, JALAN SENGAT, SINGAPORE 110508

Sample Description	0101	0207	0201	TEST METHOD	UNIT
Sample Type	Filtered Water	Filtered Water	Filtered Water		
Sample No.	0220/010	0220/010	0220/010		
Detection Date	07/11/2017 10:07	07/11/2017 10:08	07/11/2017 10:08		
PARAMETER	ANALYSIS RESULT				
Physical Appearance	Clear & Colourless	Clear & Colourless	Clear & Colourless		
Turbidity	0.0	0.0	0.0	Online Turbidity (log) at 1000 ± 0.05 nm <math>N_{TSP}</math> in water	High
pH	7.7	7.5	7.7	750-9043010	High
Temperature	25	25	Temperature (Range)	MSD-0305010	High
Phosphate <sup>3-</sup>	0.10	0.20	0.09	MSD-0305010	High
Dissolved Oxygen (DO)	8.50	8.02	8.47	Dissolved Oxygen (DO) in filtered water at 20 ± 0.05 °C (MSD-0305010)	High
Dissolved Oxygen (DO) (S)	0	0	0	MSD-0305010	High
Water Conductivity	142.0 (at 25.00°C) (S/cm)	142.0 (at 25.00°C) (S/cm)	142.0 (at 25.00°C) (S/cm)	Online Water Conductivity	07/07/2017

Range: High. All parameters are within WHO guideline.

Checked By

  
Wai A. Siah  
Assistant Quality Manager

Approved By

  
Michael Egan  
Assistant General Manager, Quality

Notes:

Sampling Authority: Sample Collection done by MSDC Laboratory.  
This report shall not be considered as valid unless it is approved by MSDC.  
This report is valid for 12 months from the date of issue.  
All analyses conducted by the laboratory are subject to the limits of the test method.  
Parameters analysed by MSDC under ISO/IEC 17025:2017

WATER QUALITY TEST REPORT  
Report No. 0088388

Report No: 07102001  
Test Method: T1 on the: 00883888  
Sample Received Date: 07/14/2017  
Date of Analysis: 07/12/2017 - 07/12/2017

Customer Information  
No. 1000/100, 4th Floor, Parkside 5, JALAN SENGAT, SINGAPORE 110508

Sample Description	0101	0207	0201	TEST METHOD	UNIT
Sample Type	Filtered Water	Filtered Water	Filtered Water		
Sample No.	0220/010	0220/010	0220/010		
Detection Date	07/11/2017 10:07	07/11/2017 10:08	07/11/2017 10:08		
PARAMETER	ANALYSIS RESULT				
Physical Appearance	Clear & Colourless	Clear & Colourless	Clear & Colourless		
Turbidity	0.0	0.0	0.0	Online Turbidity (log) at 1000 ± 0.05 nm <math>N_{TSP}</math> in water	High
pH	7.6	7.6	7.7	750-9043010	High
Temperature	22	22	21	MSD-0305010	High
Phosphate <sup>3-</sup>	0.11	0.11	0.09	MSD-0305010	High
Dissolved Oxygen (DO)	8.36	8.07	8.81	Dissolved Oxygen (DO) in filtered water at 20 ± 0.05 °C (MSD-0305010)	High
Dissolved Oxygen (DO) (S)	0	0	0	MSD-0305010	High
Water Conductivity	142.0 (at 25.00°C) (S/cm)	142.0 (at 25.00°C) (S/cm)	142.0 (at 25.00°C) (S/cm)	Online Water Conductivity	07/07/2017

Range: High. All parameters are within WHO guideline.

Checked By

  
Wai A. Siah  
Assistant Quality Manager

Approved By

  
Michael Egan  
Assistant General Manager, Quality

Notes:

Sampling Authority: Sample Collection done by MSDC Laboratory.  
This report shall not be considered as valid unless it is approved by MSDC.  
This report is valid for 12 months from the date of issue.  
All analyses conducted by the laboratory are subject to the limits of the test method.  
Parameters analysed by MSDC under ISO/IEC 17025:2017

3. Need to provide how the issues/concerns highlighted by HDC will be addressed by the proponent.

**Response:** As for the HDC request to share the detail designs and methodology statement. The proponent has already submit the details methodology statement with HDCAs per the request.



**Response to the (Additional information 3) Information Lacking in the 1st Addendum to the EIA for the Proposed Greater Male Waste-to-Energy Project (Installation of STP for the Construction Period) at K.Thilafushi**

1. Fecal Coliform test results need to be provided for the groundwater quality assessments as per the approved ToR.

**Response:** Ground water quality assessment from the premises near the STP area of the site has been performed which includes the Fecal Coliform as well please find the laboratory report below.

**WATER QUALITY TEST REPORT**  
 Report No: 500194656

**Customer Information:**  
 Alke Alkatas Joint Venture Pvt Ltd  
 C02782022

Report date: **23/01/2023**  
 Test Requisition Form No: **900196581**  
 Sample(s) Recieved Date: **19/01/2023**  
 Date of Analysis: **19/01/2023 - 20/01/2023**

Sample Description ~	Thilafushi		
Sample Type ~	Ground Water		
Sample No	83235719		
Sampled Date ~	17/01/2023 03:00		
PARAMETER	ANALYSIS RESULT	TEST METHOD	UNIT
Physical Appearance	Cloudy with particles		
Conductivity *	468	Method 2510 B. (adapted from Standard methods for the examination of water and waste water, 23rd edition)	µS/cm
pH *	8.0	Method 4500-H+ B. (adapted from Standard methods for the examination of water and waste water, 23rd edition)	-
Salinity	0.23	Method 2520 B. (adapted from Standard methods for the examination of water and waste water, 23rd edition)	‰
Temperature	23.7	Electrometry	°C
Total Dissolved Solids	234	Electrometry	mg/L
Turbidity *	63.3	HACH Nephelometric Method (adapted from HACH 2100N Turbidimeter User Manual)	NTU
Nitrate *	4.2	HACH Method 8171	mg/L
Nitrogen Ammonia	0.05	HACH Method 8038	mg/L
Sulphide	<5 (LoQ 5 µg/L )	HACH Method 8131	µg/L
Phosphate *	0.12	HACH Method 8048	mg/L

**Keys:** µS/cm : Micro Seimen per Centimeter, ‰ : Parts Per Thousand, °C : Degree Celcius, mg/L : Milligram Per Liter, NTU : Nephelometric Turbidity Unit, µg/L : Microgram Per Liter, MPN/100ml : Most Probable Number

**Checked by**



Aminath Sofa  
 Laboratory Executive

**Approved by**



Nihaz A. Zahir  
 Assistant Quality Manager

**Notes:**

Sampling Authority: Sampling was not done by MWSC Laboratory.  
 This report shall not be reproduced except in full, without written approval of MWSC.  
 This test report is ONLY FOR THE SAMPLES TESTED.  
 ~ Information provided by the customer. This information may affect the validity of the test results.  
 \*Parameters accredited by Eiac under ISO/IEC 17025:2017

**WATER QUALITY TEST REPORT**  
 Report No: 500194656

**Customer Information:**  
 Alke Alkatas Joint Venture Pvt Ltd  
 C02782022

Report date: **23/01/2023**  
 Test Requisition Form No: **900196581**  
 Sample(s) Recieved Date: **19/01/2023**  
 Date of Analysis: **19/01/2023 - 20/01/2023**

Sample Description ~	Thilafushi	TEST METHOD	UNIT
Sample Type ~	Ground Water		
Sample No	83235719		
Sampled Date ~	17/01/2023 03:00		
PARAMETER	ANALYSIS RESULT		
Physical Appearance	Cloudy with particles		
Dissolved Oxygen (DO)	7.28	In-house Test method (Adapted from HACH BOD LDO® Probe (Model LBOD10101) manual)	mg/L
Total Petroleum Hydrocarbon (TPH)	0.46	UV Fluorescence	mg/L
Faecal Coliforms	727 (19/01/2023 15:00)	Colilert®-18/Quanti-Tray®2000	MPN/100ml

**Keys:**  $\mu\text{S/cm}$  : Micro Seimen per Centimeter, ‰ : Parts Per Thousand, °C : Degree Celcius, **mg/L** : Milligram Per Liter, **NTU** : Nephelometric Turbidity Unit,  $\mu\text{g/L}$  : Microgram Per Liter, **MPN/100ml** : Most Probable Number

Checked by



Aminath Sofa  
 Laboratory Executive

Approved by



Nihaz A. Zahir  
 Assistant Quality Manager

**Notes:**

Sampling Authority: Sampling was not done by MWSC Laboratory.  
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 \*Parameters accredited by EIAC under ISO/IEC 17025:2017

\*\*\*\*\* END OF REPORT \*\*\*\*\*



Reference No. 485-TE/PRIV/2023/233

Date: 12 April 2023

Ahmed Athif

Clam Engineering

Male', Maldives

**DESIGN APPROVAL – SEWAGE TREATMENT PLANT (THILAFUSHI WASTE TO ENERGY PROJECT)**

Reference is made to your application dated (March 6, 2023)

After taking into account the design and responses to our comments, the submitted STP design has been approved. Please also note that you will be required to submit the monthly wastewater test results to URA.

Sincerely,



Aminath Mohamed  
Director



**APPENDIX 25**  
**GRIEVANCE REDRESS MECHANISM**  
**For**  
**Greater Male Waste to Energy Project**  
**(Adapted by project on 22 July 2022)**

**A. Introduction**

521. The Grievance Redress Mechanism (GRM) will allow for concerns and grievances about the project's social and environmental performance raised by individuals or groups from among project-affected communities to be received and to facilitate resolution of those concerns and grievances. The GRM notwithstanding, an aggrieved person can file any complaint directly through the country's judicial or legal system separately, which can be in parallel to or independent from any complaint filed through the project's GRM.

522. The Grievances which can be addressed shall include but is not limited to:

- a. Noise pollution due to vehicular traffic, machinery etc.;
- b. Air pollution due to construction activities;
- c. Contamination of waterbodies/sea due to disposal of any type of waste such as solid waste from workers camps, construction and demolition waste, oil spills etc.;
- d. Damage to coral, biodiversity and any cultural or physical resources outside the project area;
- e. Misbehavior of labor with the local community including gender-based violence (GBV), sexual exploitation and abuse (SEA);
- f. Improper construction site management, improper storage or disposal of waste / debris material, inadequate safety practices, damage to cultural or public properties and issues between the labor force and the local community; etc.

**B. Grievance Resolution Process**

523. The Grievance Redress Mechanism (GRM) includes 2 tiers. Every effort shall be given to find an amicable solution before higher tiers could be engaged. The project GRM will not supersede any legal government grievance procedures.

**First Tier (Thilafushi DBO Contractor)**

An individual or an interest group can contact the Thilafushi DBO Contractor for grievances. Grievances will be handled by the Grievance Redress Committee (GRC) under the Thilafushi DBO Contractor. The GRC will be composed of the Contractor's Project Manager, Contractor's Resident Engineer, Contractor's Environmental / H&S Officer, and one representative from Supervision Consultant

- (i) At the project location there will be an Information Board listing the names and contact telephones/emails/office address as well as complaint box. Complaints may be filed through email, telephone, or mail/letter. Complaint Form may be used for Tier 1 if needed. Complaints received at various locations (PMU office, contractors office, project site, etc.) and via various modes (email, phone, in person, letters, etc.) will be registered by the receiving office and same will be communicated via email to



PMU within 24 hours of receipt. Social and Environmental Safeguards Specialist (SESS) will register all the complaints centrally at the PMU and ensure that they are resolved effectively and timely. And SESS will report to the PM/PD regarding the grievances regularly.

- Email: [InfoMaldivesWtE@urbaser.com](mailto:InfoMaldivesWtE@urbaser.com)
- Telephone Number: +9609114101 (local)/+34 91 412 20 00/+34 91 412 29 07 (foreign)
- Office Address: Aage, Sixth Floor, Boduthakurufaanu Magu, Henveiru, 20003, Male' City, Maldives.

- (ii) If the complaint is resolved within 10 days, Thilafushi DBO Contractor must communicate the decision to the aggrieved party in writing.
- (iii) If a complaint requires more time to address, this requirement must be communicated to the aggrieved party in writing and the aggrieved party must consent and sign-off the request for the extension to take effect.
- (iv) If no satisfactory solution is reached through the Tier I process, the aggrieved party may notify the Ministry of Environment, in writing of the intention to move to Tier II.

### **Second Tier (PMU/Ministry of Environment)**

An individual or an interest group can contact PMU/ Ministry of Environment for grievances. Grievances will be handled by the Grievance Redress Committee (GRC) under the PMU/Ministry of Environment. The GRC will be composed of the Project Manager/Director of PMU, ESS Specialist of PMU, Civil Engineer of PMU and IEC Specialist of PMU.

- (i) At the project location there will be an Information Board listing the names and contact telephones/emails/office address. Complaints may be filed through email, telephone, or mail/letter:
  - Email: [zone3wte@environment.gov.mv](mailto:zone3wte@environment.gov.mv)
  - Telephone Number: +9603019233
  - Office Address: Ministry of Environment, Green Building, Handhuvaree Hingun, 20392, Male' City, Maldives
- (ii) If the grievance cannot be resolved informally by contacting Thilafushi DBO Contractor, the aggrieved party can file the complaint on the Tier 2 by sending an email to **zone3wte@environment.gov.mv**, or through other means available as indicated above.
- (iii) If the complaint is resolved within 15 days Ministry of Environment must communicate the decision to the aggrieved party in writing.
- (iv) If a complaint requires more time to address, this requirement must be communicated to the aggrieved party in writing and the aggrieved party must consent and sign-off the request for the extension to take effect. An extension can be made to an additional 15 days.
- (v) Complaint Form. A copy of the form should be provided to the aggrieved party as evidence of receipt. The complaint form is attached to this document and available from the website of Ministry of Environment.

## Judiciary

An individual or an interest group has the option of going to established judiciary system of the Maldives.

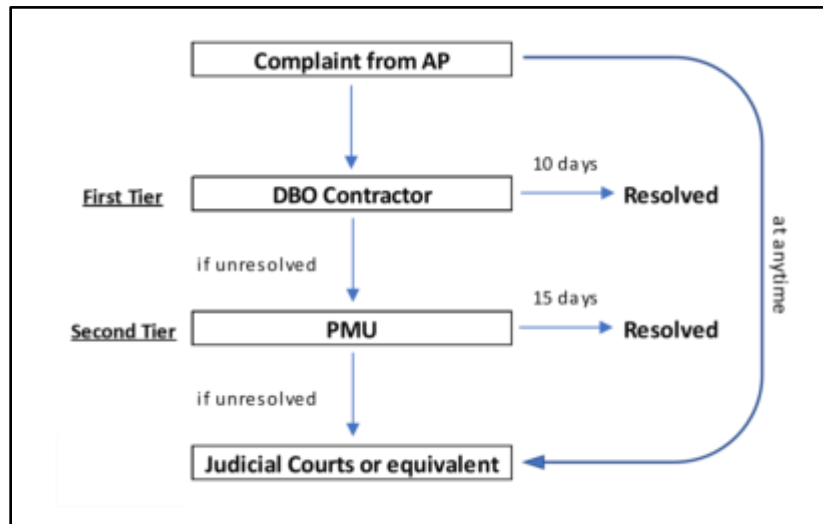
- (i) The legal system is accessible to all aggrieved persons.
- (ii) Assistance from the Ministry of Environment would be available only for vulnerable person as per this grievance mechanism.
- (iii) In cases where vulnerable person(s) are unable to access the legal system, the Attorney General's office will provide legal support to the vulnerable person(s).
- (iv) The verdict of the Courts will be final.
- (v) A vulnerable person(s) for the purpose of this project is a person who is poor, physically or mentally disabled/handicapped, destitute, and disadvantaged for ethnic or social reasons, an orphan, a widow, a person above sixty-five years of age, or a woman heading a household.

The GRM notwithstanding, an aggrieved person shall have access to the country's legal system at any stage through the Maldives judicial or appropriate administrative system. This can run parallel to accessing the GRM and is not dependent on the negative outcome of the GRM.

The flow diagram of resolving complaints under the GRC is shown in below.

**Figure 1: Grievance Redress flow diagram**

### Grievance Redress Mechanism Diagram



## C. ADB Accountability Mechanism

524. In the event that the established GRM is not in a position to resolve the issue the Affected Persons (AP) can also direct contact (in writing) the ADB Project Officer at ADB headquarters. The complaint can be submitted in any of the official languages of ADB's Developing Member Countries. This may be done at any time by sending the written complaint to the following address:

Project Officer – Greater Malé Waste to Energy Project  
South Asia Urban Development and Water Division  
South Asia Regional Department  
Asian Development Bank  
6 ADB Avenue, Mandaluyong City 1550  
Metro Manila, Philippines

525. The ***grieved party*** can also use the ADB Accountability Mechanism (AM) through directly contacting (in writing) the Complaint Receiving Officer (CRO) at ADB. The complaint can be submitted in any of the official languages of ADB's DMCs. The ADB Accountability Mechanism information will be included in the Project Information Document to be distributed to the affected communities in Thilafushi, Vilimale, Gulhifalhu and Male, as part of the project GRM.