

Thilawa Special Economic Zone (Zone A) Development

Environmental Monitoring Report (Operation Phase)



Myanmar Japan Thilawa Development Limited.

April 2018

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1. Executive Summary

The environmental inspection and compliance monitoring program will be implemented under the direction of Ministry of Natural Resources and Environmental Conservation with oversight by Thilawa SEZ Management Committee.

The monitoring record from October 2017 to March 2018 according to the Environment Monitoring Plan is submitted in conformity with the provision of Chapter 9.1, Table 9.1-2 and 9.2, Table 9.2-2 Content of the EIA Report of Thilawa SEZ Development Project (Zone A).

2. Summary of Monitoring Activities

a) Progress made to date on the implementation of the EMP against the submitted implementation schedule;

We already submitted EMP for TSEZ Zone-A as following table.

Report No.	Description	Phase	Submission
1	Environmental Monitoring Report	Phase-1 Operation Phase	April, 2016
2	Environmental Monitoring Report	Phase-1 Operation Phase	October, 2016
3	Environmental Monitoring Report	Phase-1 & 2 Operation Phase	April, 2017
4	Environmental Monitoring Report	Phase-1 & 2 Operation Phase	October, 2017

Report (No.5) is submitted this day attached with Operation Phase implementation schedule. Subsequent Operation Phase reports will be submitted on Bi-Annually.

Difficulties encountered in implementing of the EMP and recommendations for remedying those difficulties and steps proposed to prevent or avoid similar future difficulties;

Required clear guideline for the reference and target standard of water (such as surface water, wastewater, ground water etc.) in order to report TSEZ discharging impact.

 Number and type of non-compliance with the EMP and proposed remedial measures and timelines for completion of remediation;

No.	Parameter	Type of Non-Compliance	Remedial Measures	Remarks
1	Suspended Solids	Exceed target value	Discussed with environmental consultant and expert for the	Refer to the attached report of water and
2	Total Coliform	Exceed target value	monitoring points sources to analysis the effect and impact	water and wastewater or and service report in a mendix.

No.	Parameter	Type of Non-Compliance	Remedial Measures	Remarks
3	Mercury	Exceed target (June-2017 to August 2017)	Investigating in progress	After finalizing the investigation report, will attach in the environmental monitoring report.

d) Accidents or incidents relating to the occupational and community health and safety, and the environment:

There was nine cases of minor accidents and no major accident happened during monitoring period at Thilawa SEZ common area. Each tenant's accidents will report directly to Environmental Section, One Stop Service Center, Thilawa SEZ Management Committee.

There was one environmental related issue that is exceeding the mercury in the discharging water from the TSEZ Zone-A. Investigation process is implementing and will attached the detail investigation report in next environmental monitoring report after finalizing the investigation report.

e) Monitoring data on environmental parameters and conditions as committed in the EMP or otherwise required.

Please refer to the attached Environmental Monitoring Form.

3. Monitoring Result

water amount

Environmental Monitoring plan report for Operation Phase implemented according to the following table, reference on Table 4.2-2, Chapter 4, EIA report. Monitoring Plan (Operation Phase)

Category	Item	Location	Frequency	Remark
Air Quality	NO ₂ , SO ₂ , CO, TSP, PM ₁₀	Representative point inside TSEZ Zone A area	1 week each in dry and wet season (First 3 years after operation stage)	February 2018, Air quality monitoring report (Bi-Annually)
Water Quality	Water temperature, pH, SS, DO, BOD, COD, T-coliform T-N, T-P, Color and odor, HS, HCN, Oil and grease, Formaldehyde, Phenols, Cresols Free Chlorine, Zinc, Chromium, Arsenic, Copper, Mercury, Cadmium, Barium, Selenium, Lead and Nickel	Discharging points and reference points (6 points) which including outflow of retention pond to the river (1 point) Well in the Monastery (1 point)	Bi-monthly for water, temperature, pH, SS, DO, BOD, COD, T-Coliform, T-N, T-P, Color and odor Bi-annually for all parameters	October 2017 and February 2018, Water and waste water quality monitoring report (Bi- Monthly) December 2018, Water and wastewater quality monitoring report (Bi- Annually)
Waste	Status of non-hazardous waste management Status of hazardous waste management	Each tenant	Twice/ year (Submission of environmental reports by tenants	General waste disposal record (Waste generated from common area of TSEZ and Admin complex)
Noise and Vibration	Noise level at the monastery and residences to check effect of buffer zone for sound proofing to	Each tenant	One time in each dry and wet season (First 3 years after operation stage)	July 2017, Noise and vibration Monitoring Report (Bi-Annually)
Ground Subsidence	Ground elevation Consumption of ground water amount	Representative site (1 point)	Weekly	Refer to Environmental Monitoring form

Offensive Odor	Status offensive odor control by tenants	Each tenant	Twice/ year (Submission of environmental report by tenants)	Refer to Environmental Monitoring form
Bottom Sediment	Combined with water quality monitoring	Same as water quality monitoring	Same as water quality monitoring	Refer to Environmental Monitoring Form
Hydrological situation	Combined with ground subsidence monitoring	Same as ground subsidence monitoring	Same as ground subsidence monitoring	Refer to Environmental Monitoring Form
Risk for infectious disease such as AIDS/HIV	Status of measures of infectious disease	Each tenant	Twice/year (Submission of environmental report by tenants)	D.C.
Working conditions (including occupational safety)	Prehension of condition of occupational safety and health Prehension of infectious disease	Work site	Twice/year (Submission of environmental report by tenants)	Refer to Environmental Monitoring form
Accident	Existence of accident	Work site	As occasion arise	·*)

^{*}Remark: Each locator will report their monitoring result directly to Environmental Section, One Stop Service Center, Thilawa SEZ Management Committee.





Thilawa Special Economic Zone (Zone A) Development Project (Operation Phase)

Environment Monitoring Form



Environment Monitoring Form

The latest results of the below monitoring items shall be submitted to Authorities on once at Pre-construction phase and on quarterly basis at Construction Phase, and on bi-annually base at Operation Phase. The items, standards to be applied, measurement points, and frequency for each monitoring parameter are established based on the EIA Report for Thilawa Special Economic Zone Development Project (Zone A). Should there be any changes to the original plan, such change shall be reviewed and evaluated by environmental expert.

- (1) General
- 1) Phase of the Project
- Please mark the current phase.

□ Pre-Construction Phase

☐ Construction Phase

☑ Operation Phase

2) Obtainment of Environmental Permits (Not Applicable)

Name of permits	Expected issuance date	Actual issuance date	Concerned authority	Remarks (Conditions, etc.)
Confirming report of Environmental Impact Assessment		3rd December 2013	Thilawa SEZ Management Committee	
Notification of the comments of Ministry of Natural Resources and Environmental Conservation regarding with the Standard Change of Wastewater Quality of Industrial Zone, Internal Regulations of Thilawa SEZ Zone-A and Zone-B	5 th January 2018	10 th January 2018	Thilawa SEZ Management Committee	As Attachment





3) Response/Actions to Comments and Guidance from Government Authorities and the Public (Not Applicable)

		, ,,	
Monitoring Item	Monitoring Results during Report Period	Duration of Report Period	Frequency
Number and contents of formal comments made by the public		Same timing of	
Number and contents of responses from Government agencies		submission of	Upon receipt of comments/complaints
Number and contents of responses from Government agencies		Monitoring Report	

(2) Monitoring Results

1) Ambient/ Air Quality - February 2018

NO2, SO2, CO, TSP, PM10

Location	Item	Unit	Measured Value (Mean)	Measured Value (Min~Max.)	Country's Standard	Target value to be applied	*Referred International Standard	Frequency	Method	Note (Reason of excess of the standard)
	NO ₂	ppm	0.046	0.026 - 0.067		< 0.06	Japan		HAZSCANNER, EPAS	
Centralized	SO ₂	ppm	0.004	0.000 - 0.031		< 0.04	Japan	1 week each in dry and wet season	HAZSCANNER, EPAS	
Sewage treatment	СО	ppm	0.085	0.000 - 0.449	Refer to NEQG	< 10	Japan		HAZSCANNER, EPAS	
plant area	TSP	mg/m³	0.114	0.405 - 0.011		< 0.33	Thailand		HAZSCANNE1R, EPAS	
	PM10	mg/m³	0.042	0.147 - 0.004		< 0.12	Thailand		HAZSCANNER, EPAS	

^{*}Remark: Referred to the Japan and Thailand Standard (EIA Report, Table 6.4-1) and Air Quality Monitoring Report (February 2018)

Complains from Residents

The there any complaints from residents regarding air quality in this monitoring period?

Yes,
No

please describe the contents of complains and its countermeasures to fill in below the table.



Contents of Complaints from Residents	Countermeasures
One of the villager complaints about the dust emission in front of his home due to the construction agitator when it was passed through the road.	**************************************

2)(a) Water Quality - October 2017

Measuring Point: Effluent of Wastewater (Thilawa SEZ discharging point which need to be monitored according to EIA are SW-1, SW-5 and SW-6. SW-2, SW-3 and SW-4 natural creek water which are combine all the wastewater from the Local industrial water and domestic water from existing living environment are attach as reference points only. GW-1 is also as reference point for monitoring of existing tube well located in the Monastery compound.)

- Are there any effluents to water body in this monitoring period? ☑ Yes, □ No

If yes, please attach "Analysis Record" and fill in the items not to comply with Refereed International Standard.

Location	Item	Unit	Measured Value	Country's Standard*6	Target value to be applied	*1Referred International Standard	Frequency	Method	Note (Reason of excess of the standard)
SW-1	pН	_	8.9	6-9	5.0-9.0			Instrument Analysis Method	
	SS*2	ppm	114	50	Max.30			APHA 2540D Method	
	DO	ppm	6.8	8	9	>=4		Instrument Analysis Method	
	COD(Cr)	ppm	11.6	250	Max.70		Once in two	APHA 5220D Method	
	BOD	ppm	12.91	50	Max.20		months	APHA-5210B Method	
	T-N	ppm	2	-	Max.80			HACH Method 10072	
CALLAMAC	T-P	ppm	0.27	2	5			APHA 4500-PE	=



Location	Item	Unit	Measured Value	Country's Standard*6	Target value to be applied	*1Referred International Standard	Frequency	Method	Note (Reason of excess of the standard)
	Color	Co.Pt	9.67	-	-			APHA 2120C	
	Odor	Co.Pt	1	-	9			APHA 2150B	
	Total coliforms*4	MPN/100ml	24000	400	Max.400	7.5×10 ³		APHA 9221B	
SW-5	pН		8.8	6-9	5.0-9.0			Instrument Analysis Method	
	SS ²	ppm	414	50	Max.30			APHA 2540D Method	
	DO	ppm	5.4	-		>=4		Instrument Analysis Method	
	COD(Cr)	ppm	8.1	250	Max.70			APHA 5220D Method	
	BOD	ppm	4.82	50	Max.20		Once in two	APHA-5210B Method	
	T-N	ppm	6.0	_	Max.80		months	HACH Method 10072	
	T-P	ppm	0.352	2	=			APHA 4500-PE	
	Color	Co.Pt	7.96	2	-			APHA 2120C	
	Odor	Co.Pt	1	*				APHA 2150B	
	Total coliforms*4	MPN/100ml	> 160,000	400	Max.400	7.5×10³		APHA 9221B	
SW-6	pН	-	6.8	6-9	5.0-9.0	>=4		Instrument Analysis Method	
	SS	ppm	4	50	Max.30			APHA 2540D Method	
	DO	ppm	7.3	(5)	=			Instrument Analysis Method	
	COD(Cr)	ppm	5.7	250	Max.70		Once in two	APHA 5220D Method	
	BOD	ppm	2.62	50	Max.20		months	APHA-5210B Method	
	T-N	ppm	4.0	121	Max.80		11	HACH Method 10072	
JAPa	T-P	ppm	< 0.05	2	:-			APHA 4500-PE	
S JAPAN ZE	Color	Co.Pt	0.00	-	-	7.5×10³		APHA 2120C	



Location	Item	Unit	Measured Value	Country's Standard*6	Target value to be applied	*1Referred International Standard	Frequency	Method	Note (Reasor of excess of the standard)
	Odor	Co.Pt	1.4		-			APHA 2150B	
	Total coliforms	MPN/100ml	< 1.8	400	Max.400			APHA 9221B	
SW-2	pН	-	7.4	6-9	5.0-9.0			Instrument Analysis Method	
(Reference	SS*3	ppm	36	50	Max.30			APHA 2540D Method	
Point)	DO	ppm	3.7			>=4		Instrument Analysis Method	
	COD(Cr)	ppm	12.4	250	Max.70	4.5		APHA 5220D Method	
	BOD	ppm	3.51	50	Max.20		Once in two	APHA-5210B Method	
	T-N	ppm	0.7	-	Max.80		months	HACH Method 10072	
	T-P	ppm	0.122	2	2			APHA 4500-PE	
	Color	Co.Pt	21.28	_	-			APHA 2120C	
	Odor	Co.Pt	1	_	2			APHA 2150B	
	Total coliforms*5	MPN/100ml	> 160,000	400	Max.400			APHA 9221B	
SW-3	pН	-	7.4	6-9	5.0-9.0			Instrument Analysis Method	
(Reference	SS ⁻³	ppm	110	50	Max.30	>=4		APHA 2540D Method	
Point)	DO	ppm	6.9	-	2			Instrument Analysis Method	
	COD(Cr)	ppm	9.7	250	Max.70			APHA 5220D Method	
	BOD	ppm	3.68	50	Max.20		Once in two	APHA-5210B Method	
	T-N	ppm	2.6		Max.80		months .	HACH Method 10072	
	T-P	ppm	0.218	2	27			APHA 4500-PE	
	Color	Co.Pt	11.41	-	-			APHA 2120C	
3	Odor	Co.Pt	1	-	2			APHA 2150B	



Location	Item	Unit	Measured Value	Country's Standard*6	Target value to be applied	*1Referred International Standard	Frequency	Method	Note (Reason of excess of the standard)
	Total coliforms*5	MPN/100ml	160,000	400	Max.400			APHA 9221B	
SW-4	pН	-	7.2	6-9	5.0-9.0			Instrument Analysis Method	
(Reference	SS*3	ppm	92	50	Max.30			APHA 2540D Method	
Point)	DO	ppm	6.9		-	>=4		Instrument Analysis Method	
	COD(Cr)	ppm	9.6	250	Max.70	#E		APHA 5220D Method	
	BOD	ppm	5.28	50	Max.20		Once in two	APHA-5210B Method	
	T-N	ppm	1.2	_	Max.80		months	HACH Method 10072	
	T-P	ppm	0.182	2	-			APHA 4500-PE	
	Color	Co.Pt	9.36	-	-			APHA 2120C	
	Odor	Co.Pt	1	-	-			APHA 2150B	
	Total coliforms*5	MPN/100ml	160,000	400	Max.400			APHA 9221B	
GW-1	рΉ	-	7.9			5.5~9.0		Instrument Analysis Method	
(Reference	SS	ppm	6			50		APHA 2540D Method	
Point)	DO	ppm	5.9		None	>=4		Instrument Analysis Method	
	COD(Cr)	ppm	5.5	None (Available	(Available	60		APHA 5220D Method	
	BOD	ppm	8.5	Guideline	Guideline	15	Once in two	APHA-5210B Method	
	T-N	ppm	2.0	value	Value	0.1	months	HACH Method 10072	
	T-P	ppm	0.075	determined by	determined by	0.04		APHA 4500-PE	
	Color	Co.Pt	0.44	MONREC)	MOI)			APHA 2120C	
-	Odor	Co.Pt	1					APHA 2150B	
R JAPAN A	Total coliforms	MPN/100ml	23			7.5×10³		APHA 9221B	



*1Remark: Referred to the Vietnam Standard (EIA Report), Reference to the Water Quality Monitoring Report, October 2017.

¹²Remark: In SW-1 and SW-5, suspended solids are higher than the target value due to the expected reason- i) surface water run-off from bare land in Zone A and ii) influence by water from the downstream of the retention pond (SW-1) and retention canal (SW-5) due to flow back by tide fluctuation.

⁴³Remark: For reference monitoring points (SW-2, SW-3 and SW-4), the result of suspended solids is higher than the target value due to two expected reason: i) delivered from upstream area such as natural origin and wastewater from the local industrial zone which outside of Thilawa SEZ and ii) delivered from downstream area by tidal effect.

⁴Remark: In SW-1 and SW-5, Total coliform are higher than the target value due to the expected reason- i) the potential expected reason might natural bacteria existed in all area of Zone A because there are various kinds of vegetation and creature such as birds, and small animals in and along the retention canals and retention ponds and ii) the second suspect might be influence by water from the downstream of retention pond (SW-1) and retention canal (SW-5) due to flow back by tidal fluctuation.

⁵Remark: For reference monitoring points (SW-2, SW-3 and SW-4), the result of total coliforms is higher than the standard due to two expected reason: i) runoff of animal waste from the undeveloped area and delivered from local industrial zone and illegal dumping site from outside of Thilawa SEZ in the upstream area, and ii) delivered from downstream area by tidal effect.

⁶Remarks: There is no current country standard but Ministry of Natural Recourses and Environmental Conservation submitted the National Emission Quality Guidelines (NEQG) for environmental guidelines. The guidelines filled as the country standards in the environmental monitoring form.





2)(b) Water Quality - December 2017

Measuring Point: Effluent of Wastewater

- Are there any effluents to water body in this monitoring period?

Yes,
No

If yes, please attach "Analysis Record" and fill in the items not to comply with Refereed International Standard.

Location	Item	Unit	Measured Value	Country's Standard	Target value to be applied	*1Referred International Standard	Frequency	Method	Note (Reason of excess of the standard)
SW-1	Temperature	°C	33.6	< 3 (increase)	Max 40			Instrument Analysis Method	
	pН	-	8.2	6-9	5.0-9.0			Instrument Analysis Method	
	SS*2	mg/l	226	50	Mas 30			APHA 2540D Method	
	DO	mg/l	6.17	-		>=4		Instrument Analysis Method	
	BOD	mg/l	8.76	50	Max 20			APHA-5210B Method	
	COD(Cr)	mg/l	9	250	Max 704*			APHA 5220D Method	
	Total Coliform*4	MPN/100ml	92000	400	Max 400	7.5×10³		APHA-9221B Method	
	T-N	mg/l	4.9	-	Max 80		Twice in one	HACH Method 10072	
	T-P	mg/l	< 0.05	2	-		year	APHA 4500-P E Method	
	Color	Co.Pt	10.74		Max 150			APHA-2120C Method	
	Odor	Co Pt	1	191	-			APHA-2150B Method	
	HS*12	mg/l	0.248	1	Max 1			HACH 8131 Method	
	Oil and Grease	mg/l	< 3.1	10	Max 5			APHA-5520B Method	
	Formaldehyde	mg/l	0.05	=	Max 1			USEPA Method 420.1 Method	
	Phenols	mg/l	< 0.002	0.5	Max 1			APHA 3120B	
	Free Chlorine	mg/l	0.1	0.2	Max 1			HACH 8131	
APAN TA	Zinc	mg/l	0.01	2	Max 5			APHA-3120B Method	



Location	Item	Unit	Measured Value	Country's Standard	Target value to be applied	*1Referred International Standard	Frequency	Method	Note (Reason of excess of the standard)
SW-1	Chromium	mg/1	0.018	0.5	Max 0.5			APHA-3120B Method	
	Arsenic	mg/1	0.014	0.1	Max 0.25			APHA-3120B Method	
	Copper	mg/l	≤ 0.002	0.5	Max 1			APHA-3120B Method	
	Mercury	mg/I	≤ 0.002	0.01	Max 0.005			APHA-3120B Method	
	Cadmium	mg/l	≤ 0.001	0.1	Max 0.03		Twice in one	APHA-3120B Method	
	Barium	mg/l	0.052	-	Max 1		year	APHA-3120B Method	
	Selenium	mg/l	≤ 0.01	0.1	Max 0.02			APHA-3120B Method	
	Lead	mg/l	≤ 0.002	0.1	Max 0.2			APHA-3120B Method	
	Nickel	mg/l	0.03	0.5	Max 0.2			HACH 8027 Method	
	Cyanide	mg/l	0.03	1	Max 1			APHA 4500 CL G Method	
SW-5	Temperature	°C	32.1	< 3 (increase)	Max 40			Instrument Analysis Method	
	pН	-	8	6-9	5.0-9.0			Instrument Analysis Method	
	SS*2	mg/l	26	50	Mas 30			APHA 2540D Method	
	DO	mg/l	4.37	in.	5	>=4		Instrument Analysis Method	
	BOD	mg/l	7.58	50	Max 20			APHA-5210B Method	
	COD(Cr)	mg/l	11.6	250	Max 704*		Twice in one	APHA 5220D Method	
	Total Coliform*4	MPN/100ml	> 160,000	400	Max 400	7.5×10³	year	APHA-9221B Method	
	T-N	mg/l	1.1		Max 80			HACH Method 10072	
	T-P	mg/l	0.073	2	-			APHA 4500-P E Method	
	Color	Co.Pt	13.62	15	Max 150			APHA-2120C Method	
1	Odor	Co Pt	1	-	-			APHA-2150B Method	



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Location	Item	Unit	Measured Value	Country's Standard	Target value to be applied	*1Referred International Standard	Frequency	Method	Note (Reason of excess of the standard)
SW-5	HS	mg/l	0.046	1	Max 1			HACH 8131 Method	
	Oil and Grease	mg/l	< 3.1	10	Max 5			APHA-5520B Method	
	Formaldehyde	mg/l	0.017	E.	Max 1			USEPA Method 420.1 Method	
	Phenols	mg/l	< 0.002	0.5	Max 1			APHA 3120B	
	Free Chlorine	mg/l	< 0.1	0.2	Max 1			HACH 8131	
	Zinc	mg/l	≤ 0.002	2	Max 5			APHA-3120B Method	
	Chromium	mg/l	≤ 0.002	0.5	Max 0.5			APHA-3120B Method	-
	Arsenic	mg/l	0.012	0.1	Max 0.25		Twice in one	APHA-3120B Method	
	Copper	mg/l	≤ 0.002	0.5	Max 1		year	APHA-3120B Method	
	Mercury	mg/l	≤ 0.002	0.01	Max 0.005		42.	APHA-3120B Method	
	Cadmium	mg/l	≤ 0.001	0.1	Max 0.03			APHA-3120B Method	
	Barium	mg/l	0.032	-	Max 1			APHA-3120B Method	
	Selenium	mg/l	≤ 0.01	0.1	Max 0.02			APHA-3120B Method	
	Lead	mg/l	0.018	0.1	Max 0.2			APHA-3120B Method	
	Nickel	mg/l	0.004	0.5	Max 0.2			HACH 8027 Method	
	Cyanide	mg/l	0.002	1	Max 1			APHA 4500 CL G Method	
SW-6	Temperature	°C	28.8	< 3 (increase)	Max 40			Instrument Analysis Method	
	pН	-	7.2	6-9	5.0-9.0			Instrument Analysis Method	
	SS	mg/l	2	50	Mas 30		Twice in one	APHA 2540D Method	
DAL	DO	mg/l	7.33	-	1-	>=4	year	Instrument Analysis Method	
PANTALE	BOD	mg/l	2.17	50	Max 20			APHA-5210B Method	



Location	Item	Unit	Measured Value	Country's Standard	Target value to be applied	*¹Referred International Standard	Frequency	Method	Note (Reason of excess of the standard)
SW-6	COD(Cr)	mg/1	4.9	250	Max 704*			APHA 5220D Method	
	Total Coliform	MPN/100ml	< 1.8	400	Max 400	7.5×10³		APHA-9221B Method	
	T-N	mg/l	11.1	*	Max 80			HACH Method 10072	
	T-P	mg/l	< 0.05	2	2			APHA 4500-P E Method	
	Color	Co.Pt	6.81	-	Max 150			APHA-2120C Method	
	Odor	-	1	2	2			APHA-2150B Method	
	HS	mg/l	< 0.005	1	Max 1			HACH 8131 Method	
	Oil and Grease	mg/l	< 3.1	10	Max 5			APHA-5520B Method	
	Formaldehyde	mg/l	0.024		Max 1			USEPA Method 420.1 Method	
	Phenols	mg/l	< 0.002	0.5	Max 1		Twice in one	APHA 3120B	
	Free Chlorine	mg/l	0.1	0.2	Max 1		year	HACH 8131	
	Zinc	mg/l	≤ 0.002	2	Max 5		34	APHA-3120B Method	
	Chromium	mg/l	≤ 0.002	0.5	Max 0.5			APHA-3120B Method	
	Arsenic	mg/l	≤ 0.01	0.1	Max 0.25			APHA-3120B Method	
	Copper	mg/l	≤ 0.002	0.5	Max 1			APHA-3120B Method	
	Mercury	mg/l	≤ 0.002	0.01	Max 0.005			APHA-3120B Method	
	Cadmium	mg/l	≤ 0,001	0.1	Max 0.03			APHA-3120B Method	
	Barium	mg/l	0.008	=	Max 1			APHA-3120B Method	
	Selenium	mg/l	≤ 0.01	0.1	Max 0.02			'APHA-3120B Method	
	Lead	mg/l	≤ 0,002	0.1	Max 0.2			APHA-3120B Method	
- RNA	Nickel	mg/l	0.01	0.5	Max 0.2			HACH 8027 Method	



Location	Item	Unit	Measured Value	Country's Standard	Target value to be applied	*1Referred International Standard	Frequency	Method	Note (Reason of excess of the standard)
SW-6	Cyanide	mg/l	< 0.002	1	Max 1			APHA 4500 CL G Method	
SW-2	Temperature	°C	28.0	< 3 (increase)	Max 40			Instrument Analysis Method	
(Reference	pН	-	7.3	6-9	5.0-9.0			Instrument Analysis Method	
Point)	SS*3	mg/l	160	50	Mas 30			APHA 2540D Method	
	DO	mg/l	4.44	-	-	>=4		Instrument Analysis Method	
	BOD	mg/l	6.01	50	Max 20			APHA-5210B Method	
	COD(Cr)	mg/l	30.5	250	Max 70+*			APHA 5220D Method	
	Total Coliform	MPN/100ml	49	400	Max 400	7.5×10³		APHA-9221B Method	
	T-N	mg/l	1.8	140	Max 80			HACH Method 10072	
	T-P	mg/l	0.137	2	5			APHA 4500-P E Method	
	Color	Co.Pt	30.03	-	Max 150		Twice in one	APHA-2120C Method	-
	Odor	-	1		-		year	APHA-2150B Method	
	HS	mg/l	0.19	1	Max 1			HACH 8131 Method	
	Oil and Grease	mg/l	< 3.1	10	Max 5			APHA-5520B Method	
	Formaldehyde	mg/l	0.071	-	Max 1			USEPA Method 420.1 Method	
	Phenols	mg/l	0.002	0.5	Max 1			APHA 3120B	
	Free Chlorine	mg/l	0.1	0.2	Max 1			HACH 8131	
	Zinc	mg/l	≤ 0.002	2	Max 5			APHA-3120B Method	
	Chromium	mg/l	0.01	0.5	Max 0.5			APHA-3120B Method	
JAPAN	Arsenic	mg/l	0.016	0.1	Max 0.25			APHA-3120B Method	
JAPAN TATE	Copper	mg/l	≤ 0.002	0.5	Max 1			APHA-3120B Method	



Location	Item	Unit	Measured Value	Country's Standard	Target value to be applied	*1Referred International Standard	Frequency	Method	Note (Reason of excess of the standard)
SW-2	Mercury	mg/1	≤ 0.002	0.01	Max 0.005			APHA-3120B Method	
(Reference	Cadmium	mg/l	≤ 0.001	0.1	Max 0.03			APHA-3120B Method	
Point)	Barium	mg/l	0.056	*	Max 1		Twice in one	APHA-3120B Method	
	Selenium	mg/l	≤ 0.01	0.1	Max 0.02		year	APHA-3120B Method	
	Lead	mg/l	≤ 0.002	0.1	Max 0.2			APHA-3120B Method	
	Nickel	mg/l	0.016	0.5	Max 0.2			HACH 8027 Method	
	Cyanide	mg/l	0.01	1	Max 1			APHA 4500 CL G Method	
SW-3	Temperature	°C	25.5	< 3 (increase)	Max 40			Instrument Analysis Method	
(Reference	pH	-	7.1	6-9	5.0-9.0			Instrument Analysis Method	
Point)	SS*3	mg/l	332	50	Mas 30			APHA 2540D Method	
	DO	mg/l	7.79	~	-			Instrument Analysis Method	
	BOD	mg/l	7.29	50	Max 20	>=4		APHA-5210B Method	
	COD(Cr)	mg/l	5.9	250	Max 704*			APHA 5220D Method	
	Total Coliform*5	MPN/100ml	160,000	400	Max 400		Twice in one	APHA-9221B Method	
	T-N	mg/l	3.8	-	Max 80	7.5×10³	year	HACH Method 10072	
	T-P	mg/l	< 0.05	2	-			APHA 4500-P E Method	
	Color	Co.Pt	15.96	2	Max 150			APHA-2120C Method	
	Odor	-	1	-				APHA-2150B Method	
	HS	mg/l	0.346	1	Max 1			HACH 8131 Method	
	Oil and Grease	mg/l	< 3.1	10	Max 5			APHA-5520B Method	
	Formaldehyde	mg/l	0.098	-	Max 1	3		USEPA Method 420.1 Method	



Location	Item	Unit	Measured Value	Country's Standard	Target value to be applied	*1Referred International Standard	Frequency	Method	Note (Reason of excess of the standard)
	Phenols	mg/l	< 0.002	0.5	Max 1			APHA 3120B	
	Free Chlorine	mg/l	0.3	0.2	Max 1			HACH 8131	
	Zinc	mg/l	0.026	2	Max 5			APHA-3120B Method	
	Chromium	mg/l	0.032	0.5	Max 0.5			APHA-3120B Method	
	Arsenic	mg/l	0.02	0.1	Max 0.25			APHA-3120B Method	
SW-3	Copper	mg/l	≤ 0.002	0.5	Max 1		Twice in one	APHA-3120B Method	
(Reference	Mercury	mg/l	≤ 0.002	0.01	Max 0.005		year	APHA-3120B Method	
Point)	Cadmium	mg/l	≤ 0,001	0.1	Max 0.03			APHA-3120B Method	
	Barium	mg/l	0.056	8	Max 1			APHA-3120B Method	
	Selenium	mg/l	≤ 0.01	0.1	Max 0.02			APHA-3120B Method	
	Lead	mg/l	≤ 0.002	0.1	Max 0.2			APHA-3120B Method	
	Nickel	mg/l	0.048	0.5	Max 0.2			HACH 8027 Method	
	Cyanide	mg/l	0.021	1	Max 1			APHA 4500 CL G Method	
SW-4	Temperature	°C	25.9	< 3 (increase)	Max 40			Instrument Analysis Method	
(Reference	pН	-	7.4	6-9	5.0-9.0			Instrument Analysis Method	
Point)	SS*3	mg/l	284	50	Mas 30		Twice in one	APHA 2540D Method	
	DO	mg/l	6.58	-	-	>=4	year	Instrument Analysis Method	
	BOD	mg/l	6.07	50	Max 20			APHA-5210B Method	
	COD(Cr)	mg/l	5.8	250	Max 70+*			APHA 5220D Method	
PAN	Total Coliform*5	MPN/100ml	160,000	400	Max 400	7.5×10³		APHA-9221B Method	
PAN THILLY	T-N	mg/l	3.1	-	Max 80			HACH Method 10072	



Location	Item	Unit	Measured Value	Country's Standard	Target value to be applied	*1Referred International Standard	Frequency	Method	Note (Reason of excess of the standard)
	T-P	mg/1	< 0.05	2	₹:			APHA 4500-P E Method	
	Color	Co.Pt	16.73	2	Max 150			APHA-2120C Method	
	Odor	-	1	=	=			APHA-2150B Method	
	HS	mg/l	0.383	1	Max 1			HACH 8131 Method	
	Oil and Grease	mg/l	< 3.1	10	Max 5			APHA-5520B Method	
	Formaldehyde	mg/l	0.089	2	Max 1			USEPA Method 420.1 Method	
SW-4	Phenols	mg/l	< 0.002	0.5	Max 1			APHA 3120B	
(Reference	Free Chlorine	mg/1	< 0.1	0.2	Max 1		Twice in one	HACH 8131	
Point)	Zinc	mg/l	0.018	2	Max 5		year	APHA-3120B Method	
	Chromium	mg/l	0.028	0.5	Max 0.5			APHA-3120B Method	
	Arsenic	mg/l	0.018	0.1	Max 0.25			APHA-3120B Method	
	Copper	mg/l	≤ 0.002	0.5	Max 1			APHA-3120B Method	
	Mercury	mg/1	≤ 0.002	0.01	Max 0.005			APHA-3120B Method	
	Cadmium	mg/l	≤ 0.001	0.1	Max 0.03			APHA-3120B Method	
	Barium	mg/l	0.05		Max 1			APHA-3120B Method	
	Selenium	mg/l	≤ 0.01	0.1	Max 0.02			APHA-3120B Method	
	Lead	mg/l	≤ 0.002	0.1	Max 0.2			APHA-3120B Method	
	Nickel	mg/1	0.038	0.5	Max 0.2	,		HACH 8027 Method	
	Cyanide	mg/l	0.012	1	Max 1			APHA 4500 CL G Method	
GW-1	Temperature	°C	34.2	None	Max 40			Instrument Analysis Method	
Neference	pН	-	7.8	(Available	5.0-9.0			Instrument Analysis Method	



Location	Item	Unit	Measured Value	Country's Standard	Target value to be applied	*1Referred International Standard	Frequency	Method	Note (Reason of excess of the standard)
Point)	SS	mg/l	4	Guideline	Mas 30			APHA 2540D Method	
	DO	mg/l	5.48	value		>=4	Twice in one	Instrument Analysis Method	
	BOD	mg/l	2.01	determined by	Max 20		year	APHA-5210B Method	
	COD(Cr)	mg/l	< 0.7	MONREC)	Max 704*			APHA 5220D Method	
	Total Coliform*6	MPN/100ml	2100		Max 400	7.5×10³		APHA-9221B Method	
	T-N	mg/l	1.6		Max 80			HACH Method 10072	
	T-P	mg/l	0.089		-			APHA 4500-P E Method	
	Color	Co.Pt	5.43		Max 150			APHA-2120C Method	
	Odor	-	1		*			APHA-2150B Method	
	HS	mg/l	0.007		Max 1			HACH 8131 Method	
	Oil and Grease	mg/l	< 3.1		Max 5			APHA-5520B Method	
	Formaldehyde	mg/l	< 0.003		Max 1			USEPA Method 420.1 Method	-
	Phenols	mg/l	0.004		Max 1			APHA 3120B	
	Free Chlorine	mg/l	0.1		Max 1			HACH 8131	
	Zinc	mg/l	≤ 0.002		Max 5			APHA-3120B Method	
	Chromium	mg/l	≤ 0.002		Max 0.5			APHA-3120B Method	
	Arsenic	mg/l	≤ 0.01		Max 0.25			APHA-3120B Method	
	Copper	mg/l	≤ 0.002		Max 1			APHA-3120B Method	
	Mercury	mg/l	≤ 0.002		Max 0.005			APHA-3120B Method	
THI	Cadmium	mg/l	≤ 0.001		Max 0.03		Twice in one	APHA-3120B Method	
TANA DO	Barium	mg/l	0.078		Max 1		year	APHA-3120B Method	



Location	Item	Unit	Measured Value	Country's Standard	Target value to be applied	*1Referred International Standard	Frequency	Method	Note (Reason of excess of the standard)
GW-1	Selenium	mg/1	≤ 0.01		Max 0.02			APHA-3120B Method	
(Reference	Lead	mg/l	≤ 0.002		Max 0.2			APHA-3120B Method	
Point)	Nickel	mg/l	≤ 0.002		Max 0.2			HACH 8027 Method	-
	Cyanide	mg/l	< 0.002		Max 1			APHA 4500 CL G Method	

^{*1}Remark: Referred to the Vietnam Standard (EIA Report), Reference to the Water Quality Monitoring Report, December 2017.

¹³Remark: For reference monitoring points (SW-2, SW-3 and SW-4), the result of suspended solids is higher than the target value due to two expected reason: i) delivered from upstream area such as natural origin and wastewater from the other industrial area outside of Thilawa SEZ and ii) influence by water from downstream of monitoring points due to flow back by tidal fluctuation.

⁴Remark: In SW-1 and SW-5, Total coliform are higher than the target value due to the expected reason- i) the potential expected reason might natural bacteria existed in all area of Zone A because there are various kinds of vegetation and creature such as birds and small animals in and along the retention canals and retention pond and ii) the second suspect might be influence by water from the downstream of retention pond (SW-1) and retention canal (SW-5) due to flow back by tidal fluctuation.

*5Remark: For reference monitoring points (SW-3 and SW-4), the result of total coliform is higher than the target value due to two expected reason: i) natural bacteria existed in discharged creek because there are various kinds of vegetation and creature such as birds, and small animals in and along the discharged creek and ii) wastewater from the local industrial zone outside of Thilawa SEZ.

*6Remark: In GW-1, Total coliform are higher than the target value due to the expected reason- i) the poor maintenance of well which can increase the risk of bacteria and other harmful organisms ii) the well was not operated regularly and didn't use for local people long time.



^{*2}Remark: In SW-1, suspended solids are higher than the target value due to the expected reason- i) surface water run-off from bare land in Zone A and ii) influence by water from the downstream of retention pond (SW-1) due to flow back by tidal fluctuation.



2)(c) Water Quality - February 2018

Measuring Point: Effluent of Wastewater

- Are there any effluents to water body in this monitoring period?

Yes,

No

If yes, please attach "Analysis Record" and fill in the items not to comply with Refereed International Standard.

Location	Item	Unit	Measured Value	Country's Standard	Target value to be applied	*1Referred International Standard	Frequency	Method	Note (Reason of excess of the standard)
SW-1	pH*7	-	9.3	6-9	5.0-9.0			Instrument Analysis Method	
	SS ²	ppm	38	50	Max.30			APHA 2540D Method	
	DO	ppm	6.07	100	-	>=4		Instrument Analysis Method	
	COD(Cr)	ppm	17.3	250	Max.70			APHA 5220D Method	
	BOD	ppm	4.1	50	Max.20		Once in two	APHA-5210B Method	
	T-N	ppm	7.4		Max.80		months	HACH Method 10072	
	T-P	ppm	0.133	2	-			APHA 4500-P E Method	
	Color	Co.Pt	6.81	-	-	7.5×10³		APHA 2120C Method	
	Odor	Co.Pt	1	(*)	-			APHA 2150B Method	
	Total coliforms	MPN/100ml	23	400	Max.400			APHA 9221B Method	
SW-5	pН	-	7.9	6-9	5.0-9.0			Instrument Analysis Method	
	SS*2	ppm	50	50	Max.30	>=4		APHA 2540D Method	
	DO	ppm	5.52	14	-			Instrument Analysis Method	
	COD(Cr)	ppm	36.3	250	Max.70		Once in two	APHA 5220D Method	
	BOD	ppm	5.25	50	Max.20		months	APHA-5210B Method	
	T-N	ppm	6.4	85	Max.80			HACH Method 10072	
APAN T	T-P	ppm	0.345	2		7.5×10³		APHA 4500-P E Method	



Location	Item	Unit	Measured Value	Country's Standard	Target value to be applied	*1Referred International Standard	Frequency	Method	Note (Reason of excess of the standard)
	Color	Co.Pt	51.21	-	-			APHA 2120C Method	
	Odor	Co.Pt	1	2	-			APHA 2150B Method	
	Total coliforms*4	MPN/100ml	> 160,000	400	Max.400			APHA 9221B Method	
SW-6	pH	-	6.3	6-9	5.0-9.0			Instrument Analysis Method	
	SS	ppm	2	50	Max.30			APHA 2540D Method	
	DO	ppm	4.72	-	-			Instrument Analysis Method	
	COD(Cr)	ppm	19.4	250	Max.70			APHA 5220D Method	
	BOD	ppm	0.41	50	Max.20	>=4	Once in two	APHA-5210B Method	
	T-N	ppm	12.2	-	Max.80		months	HACH Method 10072	
	T-P	ppm	0.121	2				APHA 4500-P E Method	
	Color	Co.Pt	0	-	-			APHA 2120C Method	
	Odor	Co.Pt	1.4	-	-			APHA 2150B Method	
	Total coliforms	MPN/100ml	< 1.8	400	Max.400	7.5×10³		APHA 9221B Method	
SW-2	pН	-	8	6-9	5.0-9.0			Instrument Analysis Method	
(Reference	SS*3	ppm	30	50	Max.30			APHA 2540D Method	
Point)	DO	ppm	6.52	-	-	>=4		Instrument Analysis Method	
	COD(Cr)	ppm	24.7	250	Max.70	>=4	Once in two	APHA 5220D Method	
	BOD	ppm	3.13	50	Max.20		months	APHA-5210B Method	
	T-N	ppm	4.7	-	Max.80			HACH Method 10072	
-0	T-P	ppm	0.181	2	-			APHA 4500-P E Method	
PAN THE	Color	Co.Pt	35.63	*	:=0			APHA 2120C Method	



Location	Item	Unit	Measured Value	Country's Standard	Target value to be applied	*1Referred International Standard	Frequency	Method	Note (Reason of excess of the standard)
	Odor	Co.Pt	2		. = 0			APHA 2150B Method	
	Total coliforms*5	MPN/100ml	24,000	400	Max.400			APHA 9221B Method	
SW-3	рН	-	7.4	6-9	5.0-9.0			Instrument Analysis Method	
(Reference	SS	ppm	26	50	Max.30			APHA 2540D Method	
Point)	DO	ppm	5.4		-	>=4		Instrument Analysis Method	
	COD(Cr)	ppm	12.5	250	Max.70			APHA 5220D Method	
	BOD	ppm	2.86	50	Max.20		Once in two	APHA-5210B Method	
	T-N	ppm	5.3	-	Max.80		months	HACH Method 10072	
	T-P	ppm	0.4	2	*			APHA 4500-P E Method	
	Color	Co.Pt	10		-			APHA 2120C Method	
	Odor	Co.Pt	1	(4)	-			APHA 2150B Method	
	Total coliforms*5	MPN/100ml	35,000	400	Max.400			APHA 9221B Method	
SW-4	pH	-	7.8	6-9	5.0-9.0			Instrument Analysis Method	
(Reference	SS	ppm	8	50	Max.30			APHA 2540D Method	
Point)	DO	ppm	5.94	-	-			Instrument Analysis Method	
	COD(Cr)	ppm	27.1	250	Max.70	>=4		APHA 5220D Method	
	BOD	ppm	3.72	50	Max.20		Once in two	APHA-5210B Method	
	T-N	ppm	4	UE:	Max.80		months	HACH Method 10072	
	T-P	ppm	< 0.05	2	_			APHA 4500-P E Method	
	Color	Co.Pt	12.74	-	-			APHA 2120C Method	
APAN THIE	Odor	Co.Pt	1	-	-			APHA 2150B Method	



Location	Item	Unit	Measured Value	Country's Standard	Target value to be applied	*1Referred International Standard	Frequency	Method	Note (Reason of excess of the standard)
	Total coliforms*5	MPN/100ml	160,000	400	Max.400			APHA 9221B Method	
GW-1	pН	-	8.2			5.5~9.0		Instrument Analysis Method	
(Reference	SS	ppm	2			50		APHA 2540D Method	
Point)	DO	ppm	4.88		None	>=4		Instrument Analysis Method	
	COD(Cr)	ppm	2.9	None (Available	(Available	60		APHA 5220D Method	
	BOD	ppm	2.56	Guideline	Guideline	15	Once in two	APHA-5210B Method	
	T-N	ppm	0.4	value	Value	-	months	HACH Method 10072	
	T-P	ppm	0.079	determined by	determined by	-		APHA 4500-P E Method	
	Color	Co.Pt	0	MONREC)	MOI)	-		APHA 2120C Method	
	Odor	Co.Pt	1			E		APHA 2150B Method	
	Total coliforms*6	MPN/100ml	54,000			7.5×10 ³		APHA 9221B Method	

^{1*}Remark: Referred to the Vietnam Standard (EIA Report), Reference to the Water Quality Monitoring Report, February 2018.

⁶³Remark: For reference monitoring points (SW-2, SW-3 and SW-4), the result of suspended solids is higher than the standard due to two expected reason: i) delivered from upstream area such as natural origin and wastewater from the local industrial zone which outside of Thilawa SEZ and ii) delivered from downstream area by tidal effect.

*Remark: In SW-5, Total coliform are higher than the standard due to the expected reason- the potential expected reason might natural bacteria existed in all area of Zone A because there are various kinds of vegetation and creature such as birds, and small animals in and along the retention canals and retention ponds.

**SRemark: For reference monitoring points (SW-2, SW-3 and SW-4), the result of total coliforms is higher than the standard due to two expected reason: i) runoff of animal waste from the undeveloped area and delivered from local industrial zone and illegal dumping site from outside of Thilawa SEZ in the upstream area and ii) delivered from downstream by tidal effect.

²Remark: In SW-1 and SW-5, suspended solids are higher than the standard due to the expected reason- i) surface water run-off from bare land in Zone A and ii) influence by water from the downstream due to flow back by tidal fluctuation.



*6Remark: In GW-1, Total coliform are higher than the target value due to the expected reason-i) the poor maintenance of well which can increase the risk of bacteria and other harmful organisms ii) the well was not operated regularly and didn't use for local people long time

*7Remark: In SW-1, pH is higher than the target value due to the expected reason-i) might be rainwater polluted with concrete washout water discharge from construction sites of Zone A, (ii) might be domestic wastewater discharge that contains detergents and soap-based products.

3) Soil Contamination (only operation phase)

Situations environmental report from tenants

- Are there any serious issues regarding soil contamination in this monitoring period?

□ Yes, ☑No

If yes, please describe the contents of complains and its countermeasures to fill in below the table.

Contents of Issues on Soil Contamination	Countermeasures				

4) Noise

Remarks: According to EIA report, Chapter 4- Table 4-2.2, monitoring plan is one time each in dry and wet season (First 3 years after operation stage). In the environmental monitoring report (Phase-1, operation phase) No.1, one time noise and vibration monitoring survey is finished as a record and there is no excess the standard in all of survey points. There is not much operation stage industry in current and monitoring will start after consult with environmental expert.

Noise Level (Along the Thilawa Development Road)

Location	Item	Unit	Measured Value (Mean)	Measured Value (Min~Max)	Country's Standard	Target value to be applied	*Referred International Standard	Frequency	Method	Note (Reason of excess of the standard)
	Leq (day)	dB(A)	64	70-55		75		One time each	C 11 1	
NV-1	Leq(eve)	dB(A)	66	53-70	N/A	70		in dry and wet season	Sound Level Meter	

Remark: Referred to the Target Noise Standard (Thilawa SEZ Zone-A EIA Report).



Noise Level (Living Environment)

Location	Item	Unit	Measured Value (Mean)	Measured Value (Min~Max)	Country's Standard	*Target value to be applied	Referred International Standard	Frequency	Method	Note (Reason of excess of the standard)
	Leq (day)	dB(A)	43	38-46		70				
NV-2	Leq(eve)	dB(A)	41	40-42	N/A	65			Sound Level	
	Leq(night)	dB(A)	37	31-39		60		One time each	Meter	
	Leq(day)	dB(A)	45	39-51		70		in dry and	VacCitics Hone Cartoster a	
NV-3	Leq(eve)	dB(A)	48	45-49	N/A	65		wet season	Sound level	
	Leq(night)	dB(A)	45	38-49		60			Meter	

^{*}Remark: Referred to the Target Noise Standard (Thilawa SEZ Zone-A EIA Report).

Complains from Residents

- Are there any complains from residents regarding noise in this monitoring period? □ Yes, ☑ No
If yes, please describe the contents of complains and its countermeasures to fill in below the table.

Contents of Complains from Residents	Countermeasures				

5) Solid Waste (Disposal from admin complex compound)

Measuring Point: Construction Site (Construction Phase), Storage for Sludge (Operation Phase)

- Are there any wastes of sludge in this monitoring period? ☑ Yes, □ No

If yes, please report the amount of sludge and fill in the results of solid waste management Activities.

No.	Date	Description	No. of Kgs	Remarks
1	October 2017	General Waste Disposal	1080	Golden Dowa Eco-system Myanmar Co.,Ltd
174/2	November 2017	General Waste Disposal	2180	Golden Dowa Eco-system Myanmar Co.,Ltd



No.	Date	Description	No. of Kgs	Remarks
3	December 2017	General Waste Disposal	1260	Golden Dowa Eco-system Myanmar Co.,Ltd
4	January 2018	General Waste Disposal	1400	Golden Dowa Eco-system Myanmar Co.,Ltd
5	February 2018	General Waste Disposal	1720	Golden Dowa Eco-system Myanmar Co.,Ltd
6	March 2018	General Waste Disposal	2020	Golden Dowa Eco-system Myanmar Co.,Ltd

Remark: Attached general waste disposal record (Admin Complex Compound) in appendix.

Remark: Admin complex compound waste disposal reported in the Operation phase, Environmental Monitoring Report because the waste from common area of Thilawa SEZ is storing in the admin complex trash storage. Each locator will submit according to ECPP approval for the waste disposal record directly to the Environmental Section, One Stop Service Center, Thilawa SEZ Management Committee.

6) (a) Ground Subsidence and Hydrology- October 2017

D(14/1-)	Water Consumption		Ground Level		Tuo nuo mare	Note
Duration (Week)	Quantity	Unit	Quantity	Unit	Frequency	Note
2-Oct-2017	-	m3/week	+ 7.136	m		
9-Oct-2017	-	m3/week	+ 7.136	m		
16-Oct-2017	-	m3/week	+ 7.136	m	Once a week	
23-Oct-2017	S46	m3/week	+ 7.136	m		
30-Oct-2017	-	m3/week	+ 7.136	m		

^{*} Remarks: Attached ground subsidence monitoring status (Operation Phase) in appendix. There is no ground water consumption in Zone-A industrial area and will monitor and descript the water consumption quantity if using the tube well.



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(b) Ground Subsidence and Hydrology- November 2017

D(14/1-)	Water Consumption		Ground Level		F	Note
Duration (Week)	Quantity	Unit	Quantity	Unit	Frequency	Note
6-Nov-2017	-	m3/week	+ 7.136	m		
13-Nov-2017	2	m3/week	+ 7.136	m		
20-Nov-2017	-	m3/week	+ 7.135	m	Once a week	
27-Nov-2017	-	m3/week	+ 7.135	m		

^{*} Remarks: Attached ground subsidence monitoring status (Operation Phase) in appendix.

(c) Ground Subsidence and Hydrology- December 2017

Describes (March)	Water Consumption		Ground Level		F	Note
Duration (Week)	Quantity	Unit	Quantity	Unit	Frequency	Note
4-Dec-2017	-	m3/week	+ 7.135	m		1
11-Dec-2017	-	m3/week	+ 7.135	m		
18-Dec-2017	-	m3/week	+ 7.134	m	Once a week	
26-Dec-2017	-	m3/week	+ 7.134	m		

^{*} Remarks: Attached ground subsidence monitoring status (Operation Phase) in appendix.

(d) Ground Subsidence and Hydrology- January 2018

Duration (Week)	Water Consumption		Ground Level		F	Note
	Quantity	Unit	Quantity	Unit	Frequency	Note
2-Jan-2018		m3/week	+ 7.134	m		
8-Jan-2018	-	m3/week	+ 7.133	m		
15-Jan-2018	(e	m3/week	+ 7.133	m	Once a week	
22-Jan-2018	-	m3/week	+ 7.132	m		
29-Jan-2018	-	m3/week	+ 7.132	m		

(e) Ground Subsidence and Hydrology-February 2018

D	Water Consumption		Ground Level			3. 7 .
Duration (Week)	Quantity	Unit	Quantity	Unit	Frequency	Note
5-Feb-2018	9	m3/week	+ 7.132	m	Once a week	
13-Feb-2018	=	m3/week	+ 7.132	m		
19-Feb-2018	-	m3/week	+ 7.132	m		
26-Feb-2018	=	m3/week	+ 7.132	m		

^{*} Remarks: Attached ground subsidence monitoring status (Operation Phase) in appendix.

(f) Ground Subsidence and Hydrology-March 2018

Demation (Marcala)	Water Consumption		Ground Level		T	Notes
Duration (Week)	Quantity	Unit	Quantity	Unit	Frequency	Note
5-Mar-2018	2	m3/week	+ 7.132	m		
12-Mar-2018	-	m3/week	+ 7.132	m	Once a week	
19-Mar-2018	-	m3/week	+ 7.132	m		
26-Mar-2018	-	m3/week	+ 7.130	m		

 $^{^{}st}$ Remarks: Attached ground subsidence monitoring status (Operation Phase) in appendix.

7) Offensive Odor (only operation phase) Not Applicable at Construction Phase Report Complaints from Residents

- Are there any complains from residents regarding offensive odor in this monitoring period? □ Yes, □ No

If yes, please describe the contents of complains and its countermeasures to fill in below the table.

Contents of Complaints from Residents	Countermeasures

Situations environmental report from tenants Not Applicable at Construction Phase Report

- Are there any serious issues regarding offensive odor in this monitoring period? □ Yes, ☑No

If yes, please describe the contents of complains and its countermeasures to fill in below the table.

Contents of Issues on Soil Contamination	Countermeasures

8) Infectious disease, Working Environment, Accident

Information from contractor (construction phase) or tenants (operation phase)

- Are there any incidents regarding Infectious disease, Working Environment, Accident in this monitoring period?

Yes,
No

Yes,
No

Contents of Incidents	Countermeasures				
The accident case was happened in 20th October 2017 at in front of plot B-2. A car from plot A-1 was over speeding and drove into canal of Thilawa SEZ property.	MjTD take the action as follow: - Remind to car driver to drive carefully in future and explained the traffic rule to comply				
The accident case was happened in 27th November 2017 at in front of plot D-18. A motorbike rider didn't notice a bump with careless driving and slipped and fall down by himself. He got his head minor injured although he wearing helmet.	MjTD take the action as follow: - Remind the motorbike rider to drive carefully in future and to control the motorbike speed for preventing the incident case				
The accident case was happened in 2 nd December 2017 at in-front of WPP. A truck from plot-A-1 site were hit to the other concrete mixer car from plot D-6+7 site and there is nobody got injury.	MjTD take the action as follow: - Negotiate between two parties - Remind to driver to comply the traffic rule and carefully drive in future				
The accident case was occurred in 9th December 2017 at in front of plot D-6+7. A car and motorbike were hit when the car driver right. Nobody got the injury.	* *				



Contents of Incidents	Countermeasures		
The accident case was happened in 26th December 2017 at in front of plot A-20. The three persons drove the bike with high speed and one of person was drunk alcohol. One person falling from the bike and got minor injured.	MjTD take the action as follow: - Remind to reduce speed and follow the traffic rule		
The accident case was occurred in 28th December 2017 at plot C-8. The truck was moving backward and hit the small car and the small car got a little damaged.	MjTD take the action as follow: - Remind to drive carefully and the damaged was negotiated with car insurance company		
The accident case was happened in 18th January 2018 at in front of plot C-4. The car was turned left without showing signal and the motor bike hit from the behind. Motorbike person got the minor injured and damaged the both of car and motorbike.	MjTD take the action as follow: Remind to comply traffic rule to both of car and motor bike driver and carefully drive in future		
The accident was occurred in 14th March 2018 at in front of plot B-20. The case is fire case on the light-truck. The driver was carrying the interior decoration glass behind the truck for construction and paper are all together near the glass. The fire started immediately from the paper which is near the decoration glass.	MjTD take the action as follow: - Support to fire fighting and removed all papers from the light truck		
The accident was occurred in 31st March 2018 at the junction in front of WPP. Motorbike person turned left at the junction of WPP and hit the car. No one got injury but motorbike and car were damaged.	MjTD take the action as follow: - Negotiation between two parties - Motor bike person also take the responsible for compensation of the damaged - Remind to reduce the speed and to follow up the traffic rule		

Note: If emergency incidents are occurred, the information shall be reported to the relevant organizations and authorities immediately.

The above accidents have been reported to One Stop Service Center (OSSC) and Thilawa SEZ Management Committee (TSMC).



End of Document



Thilawa Special Economic Zone (Zone A) Development Project (Operation Phase)

Appendix

Water and Waste Water Monitoring Report
October, 2017



WATER QUALITY MONITORING REPORT FOR DEVELOPMENT OF INDUSTRIAL AREA IN THILAWA SEZ ZONE A (OPERATION STAGE)

(Bi-Monthly Monitoring)

October 2017 Myanmar Koei International Ltd.



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CHAPTER 1: INTRODUCTION

1.1 General

Thilawa Special Economic Zone (SEZ) is located in southern district of Yangon region and about 23 km southeast of Yangon city. As the developer of Thilawa SEZ, Myanmar Japan Thilawa Development Ltd. (MJTD) has a responsibility to carry out regular monitoring in the industrial area of Zone A in accordance with the approved Environmental Impact Assessment (EIA) report and Environmental Management Plan (EMP). MJTD has implemented monitoring various environmental items with the specified time frame to know the environmental conditions in and around the area. As for the monitoring of the water quality, total seven sampling points are set for water quality survey, named SW-1, SW-2, SW-3, SW-4, SW-5, SW-6, and GW-1 have been monitored in Thilawa SEZ and its surrounding area in timely manner. Among the seven locations, SW-1 and SW-5 are main discharging points of Thilawa SEZ and SW-6 is discharging from centralized Sewage Treatment Plant (STP) which is required to monitor by Environmental Monitoring Plan (EMoP) in EIA report of Thilawa SEZ Zone A. The remaining points SW-2, SW-3 and SW-4 are sampled as a reference monitoring for comparison with discharging points and baseline of discharged creek. Moreover, GW-1 is monitored as a reference of existing tube well which located in the monastery compound. Location of sampling points for water quality monitoring is shown in Figure 1.1-1.



Figure 1.1- 1 Location of Sampling Points of Water Quality Monitoring



CHAPTER 2: WATER QUALITY MONITORING

2.1 Monitoring Items

Sampling points and parameters for water quality monitoring are determined so as to cover the environmental monitoring plan of the EIA report.

Water quality sampling was carried out at seven locations. Among the seven locations, water flow measurement was carried out at five locations (SW-1, SW-2, SW-5 and SW-6) where can be measured by Current Meter. Monitoring items and sampling points are summarized in Table 2.1-1.

Table 2.1-1 Monitoring Items for Water Quality

No.	Parameters	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	GW-1	Remarks
1	pН	0	0	0	0	0	0	0	On-site measurement
2	Water temperature	0	0	0	0	0	0	0	On-site measurement
3	DO	0	0	0	0	0	0	0	On-site measurement
4	BOD (5)	0	0	0	0	0	0	0	Laboratory analysis
5	COD (Cr)	0	0	0	0	0	0	0	Laboratory analysis
6	Total nitrogen	0	0	0	0	0	0	0	Laboratory analysis
7	Suspended solids	0	0	0	0	0	0	0	Laboratory analysis
8	Total coliform	0	0	0	0	0	0	0	Laboratory analysis
9	Total phosphorous	0	0	0	0	0	0	0	Laboratory analysis
10	Color	0	0	0	0	0	0	0	Laboratory analysis
11	Odor	0	0	0	0	0	0	0	Laboratory analysis
12	Escherichia Coli (Self-monitoring)	0	0	0	0	0	0	0	Laboratory analysis
13	Flow Rate	0	0	-	-	0	0	-	On-site measurement

Source: Myanmar Koei International Ltd.

2.2 Description of Sampling Points

The outline of sampling points is mentioned in Table 2.2-1. The photos of conducting field survey at each sampling points are mentioned in Appendix-1.

Table 2.2-1 Outline of Sampling Points

No.	Station	Detailed Information
		Coordinate- N-16° 40' 13.5", E- 96° 16' 39.8"
1	SW-1	Location - Outlet of Retention Pond
		Survey Item – Surface water sampling and water flow rate measurement.
		Coordinate- N-16° 40' 20.70", E- 96° 17' 18.70"
2	SW-2	Location - Upstream of Shwe Pyauk Creek
		Survey Item - Surface water sampling and water flow rate measurement.
		Coordinate- N-16° 40' 5.50", E- 96° 16' 41.60"
3	SW-3	Location - Upstream of Shwe Pyauk Creek, after mixing point of Thilawa SEZ Zone A and Zone B.
		Survey Item – Surface water sampling.
		Coordinate- N-16° 39' 41.52", E- 96° 16' 26.53"
4	SW-4	Location - Downstream of Shwe Pyauk Creek
		Survey Item – Surface water sampling.
		Coordinate- N-16° 40' 10.7", E- 96° 16' 22.6"
5	SW-5	Location - Outlet of Retention Canal
		Survey Item – Surface water sampling and water flow rate measurement.
		Coordinate- N-16° 40' 26.8", E- 96° 16' 30.7"
6	SW-6	Location - Outlet from STP to Retention Pond
		Survey Item – Surface water sampling and water flow rate measurement.
		Coordinate- N-16° 40' 25.10", E- 96° 16' 31.70"
7	GW-1	Location - In Moegyoe Swan Monastery
		Survey Item – Ground Water Sampling

Source: Myanmar Koei International Ltd.

SW-1

SW-1 was collected at the discharge point of retention pond which is located in the east of Moegyoe Swan monastery. This drainage is flowing from north to south and then connected to the Shwe Pyauk creek through earth drain. The water quality of this monitoring point has been influenced by the water from downstream due to flow back by tidal fluctuation. In addition, it seems that a part of wastewater from monastery has reached to the culvert in the SEZ area and discharging to the retention pond.

SW-2 (Reference Point)

SW-2 was collected at the upstream of Shwe Pyauk creek. This sampling point is located at the southeast of Zone A area and at the south of Dagon-Thilawa road. The surrounding area are Zone B in the southwest, local industrial zone in the east and paddy field in the west respectively.

SW-3 (Reference Point)

SW-3 was collected at the upstream of Shwe Pyauk creek after mixing point of Zone A and Zone B, which is flowing from east to west and then entering into the Yangon River. The distance is about 1.2 km downstream of SW-2. This sampling point is located at south of Zone A area and Dagon-Thilawa road. The surrounding area are Zone B in the south, local industrial zone in the east and paddy field in the south and west respectively.

SW-4 (Reference Point)

SW-4 was collected at the downstream of Shwe Pyauk creek, after mixing of discharge water from local industrial zone, construction site of Zone B and Zone A, which is flowing from east to west and then entering into the Yangon River. The distance is about 800 m downstream of SW-3. This sampling point is located at southwest of Zone A area and at the south of Dagon-Thilawa road. The surrounding area are Zone B and local industrial zone in the east and paddy field in the south and west respectively.

SW-5

SW-5 was collected at retention canal near main gate of Thilawa SEZ. Most of the water collected in this canal is rain water and domestic wastewater from surrounding. This canal is also connected to the Shwe Pyauk creek. The water quality of this monitoring point may have been influenced by the water from downstream due to flow back by tidal fluctuation.

SW-6

SW-6 was collected at drain outlet of centralized STP which is located in the north of Moegyoe Swan monastery compound and retention pond (SW-1). Then the treated water is flowing to the retention pond.

GW-1 (Reference of Existing Tube Well)

GW-1 was collected from tube well as ground water sample. It is located in the compound of Moegyoe Swan monastery. The surrounding area are Zone A in the west, retention pond in the east and Dagon-Thilawa road in the south respectively.



2.3 Monitoring Method

All water samples were collected with cleaned sampling bottle and analyzed by the following standard method as shown in Table 2.3-1. All samples were kept in iced boxes keeping at 2-4° C and were transported to the laboratory. Among the parameters; water temperature, pH and DO were measured by the on-site instrument "Horiba, U-52" and water flow rate was also conducted by using the on-site instrument "Tamaya Digital Current Meter".

Table 2.3-1 Analytic Method for Water Quality

No.	Parameter	Method
1	Water Temperature	Instrument Analysis Method (Horiba, U-52, Multi Water Quality Checker)
2	рН	Instrument Analysis Method (Horiba, U-52, Multi Water Quality Checker)
3	Dissolved oxygen (DO)	Instrument Analysis Method (Horiba, U-52, Multi Water Quality Checker)
4	BOD (5)	APHA 5210 B (5 days BOD Test)
5	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)
6	Total nitrogen (T-N)	HACH Method 10072(TNT Persulfate Digestion Method)
7	Suspended solids (SS)	APHA 2540D (Dry at 103-105'C Method)
8	Total coliform	APHA 9221B (Standard Total Coliform Fermentation Technique)
9	Total phosphorous (T-P)	APHA 4500-P E (Ascorbic Acid Method)
10	Color	APHA 2120C (Spectrophotometric Method)
11	Odor	APHA 2150 B (Threshold Odor Test)
12	Escherichia Coli	APHA 9221 F (Escherichia Coli Procedure Using Fluorogenic Substrate)
13	Flow Rate	Detection of Electromagnetic Elements (Real-time measurement by UC-200V Digital Current Meters)

Source: Myanmar Koei International Ltd.

2.4 Monitoring Period

Water quality and water flow rate monitoring were conducted on 24th October 2017 and sampling time is shown in Table 2.4-1 to avoid tidal effect. The tide record for Yangon River, Myanmar on 24th October 2017 is shown in Table 2.4-2.

Table 2.4-1 Sampling Time of Each Station

No.	Station	Sampling Time
1	SW-1	24/10/2017 14:39
2	SW-2	24/10/2017 09:03
3	SW-3	24/10/2017 11:05
4	SW-4	24/10/2017 11:50
5	SW-5	24/10/2017 15:04
6	SW-6	24/10/2017 14:13
7	GW-1	24/10/2017 15:35

Source: Myanmar Koei International Ltd.



Table 2.4-2 Tide Record for Yangon River, Myanmar

Date	Time	Height	Tide Conditions
	01:48	1.02	Low Tide
24/10/2017	06:35	5.87	High Tide
	14:22	0.93	Low Tide
	18:57	5.45	High Tide

Source: Myanmar Port Authority, Tide Table for the Yangon River and Elephant Point, 2017.

2.5 Monitoring Results

Results of water quality monitoring are summarized in Table 2.5-1. Analytical results of the laboratory are described in Appendix-2. The results were compared with the target value of effluent water quality discharging to water body stipulated in the EIA report.

2.5.1 Results of Water Quality at the Outlet of Sewage Treatment Plant of industrial Area of Thilawa SEZ and at the Point before discharging to Creek

As the comparison with the target value, the results of suspended solid (SS), total coliform were exceeded than the target values. As for the result of SS, the result at the outlet of the centralized STP (SW-6) complied with the target value. It implied that effluents from each locator were treated well by the STP. On the other hand, results at the monitoring points of retention pond (SW-1) and retention canal (SW-5) before discharging to creek, exceeded the target value due to the expected reasons; i) surface water run-off from bare land in Zone A and ii) influence by water from the downstream of retention pond (SW-1) and retention canal (SW-5) due to flow back by tidal fluctuation.

As for the result of total coliform of surface water, the result at the outlet of the centralized STP (SW-6) also complied with the target value. It may prove that effluents from each locator was treated well by the STP. On the other hand, results at the monitoring points of retention pond (SW-1) and retention canal (SW-5) exceeded the target value due to the expected reasons; i) the potential expected reason might natural bacteria existed in all area of Zone A because there are various kinds of vegetation and creature such as birds, and small animals in and along the retention canals and retention ponds and ii) the second suspect might be influence by water from the downstream of retention pond (SW-1) and retention canal (SW-5) due to flow back by tidal fluctuation.

Since the composition of the total coliform include bacteria from natural origin, and even after Total Coliform do not affect human health directly, self-monitoring for E. Coli analysis was carried out to identify health impact by coliform bacteria. As for the result of E.Coli of surface water, all of results were under the reference value. Therefore, although the target value of total coliform was exceeded at monitoring point of retention pond (SW-1) and retention canal (SW-5), but it is considered that there is no significant impact on human health.

In the first place, the monitoring points of retention pond (SW-1) and retention canal (SW-5) should be changed to a little upstream where are possible to avoid flow back by tidal fluctuation in order to evaluate the impact on water quality from the industrial area of Zone A to public water body.

On the bases of the above examinations, the following actions shall be taken to control SS and total coliform;

- To continue the self-monitoring for E. Coli level to identify health impact by coliform bacteria (While result of Total coliform are exceeded the target value)

Perhaps, the possibility that water in the retention pond might include overflowed water from some construction sites with insufficient treatment of coliform should not be excluded from the possible cause.

Table 2.5-1 Results of Water Quality Monitoring at Main Discharging Gates and Discharged from Centralized STP

No.	Parameters	Unit	SW-1	SW-5	SW-6	Target Value (Reference Value for Self-Monitoring)
1	Temperature	°C	31.3	30.6	30.3	Max. 40.0
2	рН	-	8.9	8.8	6.8	5.0~9.0
3	Suspended solid (SS)	mg/L	114	414	4	Max. 30
4	Dissolved oxygen (DO)	mg/L	6.8	5.4	7.3	-
5	BOD (5)	mg/L	12.91	4.82	2.62	Max. 20.00
6	COD (Cr)	mg/L	11.6	8.1	5.7	Max. 70.0
7	Total coliform	MPN/ 100ml	24,000	>160,000	<1.8	Max. 400
8	Total nitrogen (T-N)	mg/L	2.0	6.0	4.0	80.0
9	Total phosphorous (T-P)	mg/L	0.27	0.352	< 0.05	
10	Color	TCU (True Color Unit)	9.67	7.96	0.00	-
11	Odor	TON (Threshold Odor Number)	1	1	1.4	-
12	Escherichia Coli	MPN/100ml	4.0	< 1.8	< 1.8	(1,000)* (CFU/100ml)
13	Flow Rate	m³/s	0.025	0.024	0.021	-

Note: Red color means exceeded value than target value.

According to the quality standard for water baths in Japan, (Ministry of Environment, 1997), in case of E.Coli result is exceeding 1,000 CFU/100 ml, since it is assumed unsafety, it is considered unsuitable for water baths.

Source: Myanmar Koei International Ltd.

2.5.2 Results of Reference Monitoring for Comparison with Discharging Points and Baseline of Discharged Creek

Results of water quality monitoring are summarized in Table 2.5-2. The results were compared with the target value of effluent water quality discharging to water body stipulated in the EIA report.

As the comparison with the target value, the results of SS and total coliform were exceeded than the target value. As for the result of SS, results at the surface water monitoring points (SW-2, SW-3 and SW-4) exceeded the target value due to two expected reasons; i) delivered from upstream area such as natural origin and wastewater from local industrial zone which outside of Thilawa SEZ, and ii) delivered from surrounding area by tidal effect.

As for the result of total coliform of surface water, results at the other surface water monitoring points (SW-2, SW-3 and SW-4) exceeded the target value due to two expected reasons; i) runoff of animal waste from the undeveloped area and delivered from local industrial zone and illegal dumping site from organization, the Thilawa SEZ in the upstream area, and ii) delivered from surrounding area by tidal effect. In addition, the result of E.Coli of surface water, all of results were under the reference value. Therefore, although the largest I

^{*}Note: Based on the water utilization at discharged creek, water quality C of quality standard for water baths in Japan, (Ministry of Environment, 1997) is set as a reference value for self-monitoring of E. coli for surface water monitoring. However, due to limitation of capacity for analytical laboratory in Myanmar, the method to analyze the "Colony Forming Unit (CFU)" is not available in Myanmar. Therefore, the results of "Most Probable Number (MPN)" are assumed similar to CFU values and compared with reference values. Once the method to analyze the CFU will be available in Myanmar, the analytical method will be changed.

value of total coliform was exceeded at monitoring point of SW-2, SW-3 and SW-4, but it is considered that there is no significant impact on human health.

As for the result of total coliform in ground water, result at GW-1 (ground water in Moegyoe Swan monastery) is not exceeded the target value.

Table 2.5-2 Result of Water Quality Monitoring for Reference Monitoring Points for Comparison with Discharging Points and Baseline of Discharged Creek

No.	Parameters	Unit	SW-2	SW-3	SW-4	GW-1	Target Value (Reference Value for Self-Monitoring)
1	Temperature	°C	29.5	29.9	29.6	34.3	Max. 40.0
2	рН	2	7.4	7.4	7.2	7.9	5.0~9.0
3	Suspended solid (SS)	mg/L	36	110	92	6	Max. 30
4	Dissolved oxygen (DO)	mg/L	3.7	6.9	6.9	5.9	-
5	BOD (5)	mg/L	3.51	3.68	5.28	8.50	Max. 20.00
6	COD (Cr)	mg/L	12.4	9.7	9.6	5.5	Max. 70.0
7	Total coliform	MPN/ 100ml	>160,000	160,000	160,000	23	Max. 400
8	Total nitrogen (T-N)	mg/L	0.7	2.6	1.2	2.0	80.0
9	Total phosphorous (T-P)	mg/L	0.122	0.218	0.182	0.075	-
10	Color	TCU (True Color Unit)	21.28	11.41	9.36	0.44	(8)
11	Odor	TON (Threshold Odor Number)	1	1	1	1	-
10		MPN/100 ml* (SW)	< 1.8	1.8	< 1.8		(1,000)* (CFU/100ml)
12	Escherichia Coli	MPN/100 mi** (GW)				< 1.8	(100)** (MPN/100ml)
13	Flow Rate	m ³ /s	0.66	-	-	-	-

Note: Red colors means exceeded value than target value.

According to the quality standard for water baths in Japan, (Ministry of Environment, 1997), in case of E.Coli result is exceeding 1,000 CFU/100 ml, since it is assumed unsafety, it is considered unsuitable for water baths.

Source: Myanmar Koei International Ltd.



^{*}Note: Based on the water utilization at discharged creek, water quality C of the quality standard for water baths in Japan, (Ministry of Environment, 1997) is set as a reference value of self-monitoring for surface water monitoring. However, due to limitation of capacity for analytical laboratory in Myanmar, the method to analyze the "Colony Forming Unit (CFU)" is not available in Myanmar. Therefore, the results of "Most Probable Number (MPN)" are assumed similar to CFU values and compared with reference values. Once the method to analyze the CFU will be available in Myanmar, the analytical method will be changed.

^{**}Note: Based on the water utilization at monitoring point for ground water, B1(Irrigation water) of National Technical Regulation on Surface Water Quality in Vietnam (No. QCVN 08: 2008/BTNMT) is set as a reference value of self-monitoring for ground water monitoring.

CHAPTER 3: CONCLUSION AND RECOMMENDATIONS

As for the result of SS and total coliform the results at the outlet of the centralized STP (SW-6) complied with the target value of both of them. It may prove that effluent from each locator was treated well by the STP. On the other hand, parameters of SS and total coliform at retention pond (SW-1) and parameters of SS, total coliform at retention canal (SW-5) were exceeded the target values in this period for main discharging points of Thilawa SEZ Zone A. However, as mentioned in Section 2.5.1, in the first place, the monitoring points of retention pond (SW-1) and retention canal (SW-5) should be changed to a little upstream where are possible to avoid flow back by tidal fluctuation in order to evaluate the impact on water quality from the industrial area of Zone A to public water body. In addition, according to the result of self-monitoring of E. coli at retention pond (SW-1) and retention canal (SW-5), results were under the reference value. Therefore, although the target value of total coliform was exceeded at monitoring point SW-1 and SW-5, but it is considered that there is no significant impact on human health.

As for parameters of SS and total coliform in surface water were exceeded the target values at reference monitoring points. As mentioned in Section 2.5.2, the result of self-monitoring of E. coli at SW-2, SW-3, SW-4 and GW-1 were under the reference value. Therefore, although the target value of total coliform was exceeded at reference monitoring point, but it is considered that there is no significant impact on human health. The expected reasons for exceeding the target values of Total coliform are by natural origin (natural bacteria existed). However, it cannot reach to the conclusion of what is the reason to be exceeded the target values, thus the continuous monitoring and yearly trend analysis will be necessary based on the wet and dry season data.

As for future subject for main discharging points of Thilawa SEZ Zone A, the following action may be taken to achieve the target levels and appropriate water quality monitoring:

- To monitor Escherichia coli (E. coli) level to identify health impact by coliform bacteria; and
- To examine the possibility of the overflow water from construction sites.
- To examine the possibility of the domestic wastewater from construction sites.

End of the Document



APPENDIX-1 FIELD SURVEY PHOTOS



FOR DISCHARGING POINTS OF THILAWA SEZ ZONE A





Surface water sampling and onsite measurement at SW-1





Surface water sampling and onsite measurement at SW-5







Surface water sampling and onsite measurement at SW-6

FOR REFERENCE MONITORING POINTS FOR COMPARISON WITH DISCHARGING POINTS AND BASELINE OF DISCHARGED CREEK





Surface water sampling and onsite measurement at SW-2







Surface water sampling and onsite measurement at SW-3





Surface water sampling and onsite measurement at SW-4







Ground water sampling and onsite measurement at GW-1



APPENDIX-2 LABORATORY RESULTS



FOR DISCHARGING POINTS AND AFTER CENTRALIZED STP



GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD. Lot No. £1, ThilawaS£2 Zone A, Yangon Region, the Union of Myanmar Tel: 01-2309051/ 09 796935149

Report No.: GEM-LAB-201711057

Revision No. : 1

Report Date: 9 November, 2017

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

Sample Name

: MKI-SW-1-1024

Sampling Date: 24 October, 2017

Sample No.

: W-1710153

Sampling By : Customer

Waste Profile No.

Sample Received Date: 24 October, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	SS	APHA 2540D (Dry at 103-105'C Method)	mg/l	114.00	_
2	BOD (5)	APHA 5210 B (5 Days BOD Test)	mg/I	12.91	0.00
3	COD (Cr)	APHA 52200 (Close Reflux Colorimetric Method)	mg/l	11.6	0.7
4	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	2.0	0.0
5	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	0.27	0.05
6	Total Coliform	APHA 9221B (Standard Total Coliform Fermentation Technique)	MPN/100ml	24000	1.8
7	Color	APHA 2120C (Spectrophotometric Method)	TCU	9.67	0.00
8	Odor	APHA 2150 B (Threshold Odor Test)	TON	1	-
			4		

LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and

Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor

Approved By :

Tomoya Suzuki





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD.

Lot No. E1 , ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tel:01-2309051/ 09 796935149

Report No. : GEM-LAB-201711058

Revision No.: 1

Report Date: 9 November, 2017

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

Sample Name

: MKI-SW-5-1024

Sampling Date: 24 October, 2017

Waste Profile No.

: W-1710154

Sampling By : Customer

Sample Received Date: 24 October, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	SS	APHA 2540D (Dry at 103-105'C Method)	mg/l	414.00	
2	BOD (5)	APHA 5210 B (5 Days BOD Test)	mg/l	4.82	0.00
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/l	8.1	0.7
4	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	6.0	0.0
5	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	0.352	0.05
6	Total Coliform	APHA 92218 (Standard Total Coliform Fermentation Technique)	MPN/100ml	> 160000	1.8
7	Color	APHA 2120C (Spectrophotometric Method)	TCU	7.96	0.00
8	Odor	APHA 2150 B (Threshold Odor Test)	TON	1	
		- Fai			

Remark

: LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By:

Ni Ni Aye Lwin

Assistant supervisor

Approved By :

Tomoya Suzuki





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD.

Lot No. E1. ThilawaSEZ Zone A. Yangon Region, the Union of Myanmar Tel 01-2309051/09 796935149

Report No.: GEM-LAB-201711059

Revision No. : 1

Report Date: 9 November, 2017

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

Sample Name

: MKI-SW-6-1024

Sampling Date : 24 October, 2017

Sample No.

: W-1710155

Sampling By : Customer

Waste Profile No.

Sample Received Date: 24 October, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	SS	APHA 2540D (Dry at 103-105'C Method)	mg/l	4.00	-
2	BOD (5)	APHA 5210 B (5 Days BOD Test)	mg/l	2.62	0.00
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/I	5.7	0.7
4	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	4.0	0.0
5	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	< 0.05	0.05
6	Total Coliform	APHA 92218 (Standard Total Coliform Fermentation Technique)	MPN/100ml	< 1.8	1.8
7	Color	APHA 2120C (Spectrophotometric Method)	TCU	0.00	0.00
8	Odor	APHA 2150 B (Threshold Odor Test)	TON	1.4	-

Remark

: LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environme Wastewater, 22nd edition Federation (WEF), Standard Methods for the Examination of Water and

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor

Tomoya Suzuki



FOR REFERENCE MONITORING POINTS FOR COMPARISON WITH DISCHARGING POINTS AND BASELINE OF DISCHARGED CREEK



GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD Lot No. E1 , ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tel:01-2309051/ 09 796935149

Report No.: GEM-LAB-201711060

Revision No.: 1

Report Date: 9 November, 2017 Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

: MKI-5W-2-1024

Sampling Date ; 24 October, 2017

Sample Name Sample No.

: W-1710156

Sampling By : Customer

Waste Profile No.

Sample Received Date: 24 October, 2017

Parameter	Method	Unit	Result	LOQ
SS	APHA 2540D (Dry at 103-105'C Method)	mg/l	36.00	_
BOD (5)	APHA 5210 B (5 Days BOD Test)	mg/l	3.51	0.00
COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/l	12.4	0.7
Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	0.7	0.0
Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/I	0.122	0.05
Total Coliform	APHA 92218 (Standard Total Coliform Fermentation Technique)	MPN/100ml	> 160000	1.8
Color	APHA 2120C (Spectrophotometric Method)	TCU	21.28	0.00
Odor	APHA 2150 B (Threshold Odor Test)	TON	1	_
Oil and Grease	APHA 5520B (Partition-Gravimetric Method)	mg/l	3.40	3.1
Chromium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.002	0.002
= 11				
	SS BOD (5) COD (Cr) Total Nitrogen Total Phosphorous Total Coliform Color Odor Oil and Grease	APHA 2540D (Dry at 103-105'C Method) BOD (5) APHA 5210 B (5 Days BOD Test) COD (Cr) APHA 5220D (Close Reflux Colorimetric Method) Total Nitrogen HACH Method 10072 (TNT Persulfate Digestion Method) Total Phosphorous APHA 4500-P E (Ascorbic Acid Method) Total Coliform APHA 92218 (Standard Total Coliform Fermentation Technique) Color APHA 2120C (Spectrophotometric Method) Odor APHA 2150 B (Threshold Odor Test) Oil and Grease APHA 5520B (Partition-Gravimetric Method)	APHA 2540D (Dry at 103-105'C Method) mg/l BOD (5) APHA 5210 B (5 Days BOD Test) mg/l COD (Cr) APHA 5220D (Close Reflux Colorimetric Method) mg/l Total Nitrogen HACH Method 10072 (TNT Persulfate Digestion Method) mg/l Total Phosphorous APHA 4500-P E (Ascorbic Acid Method) mg/l Total Coliform APHA 92218 (Standard Total Coliform Fermentation Technique) MPN/100ml Color APHA 2120C (Spectrophotometric Method) TCU Odor APHA 2150 B (Threshold Odor Test) TON Oil and Grease APHA 5520B (Partition-Gravimetric Method) mg/l	SS APHA 2540D (Dry at 103-105'C Method) mg/l 36.00 BOD (5) APHA 5210 B (5 Days BOD Test) mg/l 3.51 COD (Cr) APHA 5220D (Close Reflux Colorimetric Method) mg/l 12.4 Total Nitrogen HACH Method 10072 (TNT Persulfate Digestion Method) mg/l 0.7 Total Phosphorous APHA 4500-P E (Ascorbic Acid Method) mg/l 0.122 Total Coliform APHA 92218 (Standard Total Coliform Fermentation Technique) MPN/100ml > 160000 Color APHA 2120C (Spectrophotometric Method) TCU 21.28 Odor APHA 2150 B (Threshold Odor Test) TON 1 Oil and Grease APHA 5520B (Partition-Gravimetric Method) mg/l 3.40

Remark

: LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin Assistant supervisor

Tomoya Suzuki





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD. Lot No. E1 .ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tel.01-2309051/ 09 796935149

Report No.: GEM-LAB-201711061

Revision No.: 1

Report Date: 9 November, 2017

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

Sample Name

: MKI-SW-3-1024

Sampling Date : 24 October, 2017

Sample No.

: W-1710157

Sampling By : Customer

Waste Profile No.

Sample Received Date: 24 October, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	SS	APHA 2540D (Dry at 103-105'C Method)	mg/l	110.00	
2	BOD (5)	APHA 5210 B (5 Days BOD Test)	mg/l	3.68	0.00
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/l	9.7	0.7
4	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	2.6	0.0
5	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	0.218	0.05
6	Total Coliform	APHA 92218 (Standard Total Coliform Fermentation Technique)	MPN/100ml	160000	1.8
7	Color	APHA 2120C (Spectrophotometric Method)	TCU	11.41	0.00
8	Odor	APHA 2150 B (Threshold Odor Test)	TON	1	-
9	Oil and Grease	APHA 5520B (Partition-Gravimetric Method)	mg/l	< 3.1	3.1
10	Chromium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	0.004	0.002

: LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and and the Water Environm Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor

Approved By :

Tomoya Suzuki





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD. Lot No. E1 ,ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tel 01-2309051/ 09-796935149

Report No. : GEM-LAB-201711062

Revision No. : I

Report Date: 9 November, 2017

Application No. : 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

Sample Name

: MKI-SW-4-1024

Sampling Date: 24 October, 2017

: W-1710158 Sample No.

Sampling By : Customer

Sample Received Date: 24 October, 2017 Waste Profile No. 8 6

No.	Parameter	Method	Unit	Result	LOQ
1	SS	APHA 2540D (Dry at 103-105'C Method)	mg/l	92.00	-
2	BOD (5)	APHA 5210 B (5 Days BOD Test)	mg/f	5.28	0.00
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/1	9.6	0.7
4	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	1.2	0.0
5	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	0.182	0.05
6	Total Coliform	APHA 92218 (Standard Total Coliform Fermentation Technique)	MPN/100mi	160000	1.8
7	Color	APHA 2120C (Spectrophotometric Method)	TCU	9.36	0.00
8	Odor	APHA 2150 B (Threshold Odor Test)	TON	1	_
9	Oil and Grease	APHA 5520B (Partition-Gravimetric Method)	mg/l	< 3.1	3.1
10	Chromium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.002	0.002

Remark

: LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor

Approved By :

Tomoya Suzuki





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD. Lot No. E1 ,ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tel 01-2309051/09 796935149

Report No.: GEM-LAB-201711066

Revision No. : 1

Report Date: 9 November, 2017

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

: MKI-GW-1-1024

Sampling Date: 24 October, 2017

Sample Name Sample No.

: W-1710162

Sampling By : Customer

Waste Profile No.

Sample Received Date: 24 October, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	SS	APHA 2540D (Dry at 103-105'C Method)	mg/l	6.00	-
2	BOD (5)	APHA 5210 8 (5 Days BOD Test)	mg/l	8.50	0.00
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/l	5.5	0.7
4	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	2.0	0.0
5	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	0.075	0.05
6	Total Coliform	APHA 92218 (Standard Total Coliform Fermentation Technique)	MPN/100mil	23	1.8
7	Calor	APHA 2120C (Spectrophotometric Method)	TCU	0.44	0.00
8	Odor	APHA 2150 B (Threshold Odor Test)	TON	1	
			1		
	- 111				

Remark

LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor

Tomoya Suzuki



APPENDIX-3 LABORATORY RESULT OF ESCHERICHIA COLI (SELF-MONITORING)



FOR DISCHARGING POINTS AND AFTER CENTRALIZED STP



GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD. Lot No. E1 ,ThilawaSE2 Zone A. Yangon Region, the Union of Myanmar Tel 01-2309051: 09 796935149.

Report No. : GEM-LAB-201711019

Revision No. : 1

Report Date: 8 November, 2017

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

Sample Name : MKI-SW-1-1024

Waste Profile No. : -

Sampling Date: 24 October, 2017

Sample No. : W-1710164

Sampling By : Customer

Sample Received Date: 24 October, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	MPN/100ml	4.0	1.8
					-

Remark : LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD Lot No. E1, ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tel:01-2309051:09:796935149

Report No.: GEM-LAB-201711020

Revision No. : 1

Report Date: 8 November, 2017

Application No.: 0049-C001

Analysis Report

Client Name

; Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

. .

Sample Description
Sample Name

: MKI-SW-5-1024

Sampling Date: 24 October, 2017

Sample No.

: W-1710165

Sampling By : Customer

Waste Profile No. :

Sample Received Date: 24 October, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	MPN/100ml	< 1.8	1.8
				_	

Remark

: LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor

LAB

Approved By

Tomoya Suzuki





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD. Lot No. E1 ,ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Te1:01-2309051: 09:796935149

Report No.: GEM-LAB-201711021

Revision No. : 1

Report Date: 8 November, 2017 Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

Sample Name

MKI-SW-6-1024

Sampling Date : 24 October, 2017

Sample No. : W-1710166

Sampling By : Customer

Waste Profile No. : -

Sample Received Date : 24 October, 2017

No.	Parameter	Method	Unit	Result	LOQ	
1	Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	MPN/100ml	< 1.8	1.8	
	·			-		

Remark : LOQ - Limit of Quantitation

APHA – American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor



FOR REFERENCE MONITORING POINTS FOR COMPARISON WITH DISCHARGING POINTS AND BASELINE OF DISCHARGED CREEK



GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD Lot No. E1, ThilawasE2 Zone A, Yangon Region, the Union of Myanmar Tel:01-2309051/ 09 796935149

Report No. : GEM-LAB-201711022

Revision No. : 1

Report Date: 8 November, 2017 Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

-

Sample Description

Sample Name : MKI-SW-2-1024

Sampling Date: 24 October, 2017

Sample No.

: W-1710167

Sampling By : Customer

Waste Profile No. :

Sample Received Date: 24 October, 2017

No.	Parameter	Method	Unit	Result	LOQ	
1	Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	MPN/100ml	< 1.8	1.8	

Remark

; LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor

Approved By:

Tomova Suzuki





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD. Lot No. E1 ,ThilawaSEZ Zone A, Yangon Region, the Union of Myani Tel (11-23()9051) (09.796935149)

Report No.: GEM-LAB-201711023

Revision No. : 1

Report Date: 8 November, 2017 Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

Sample Name : MKI-SW-3-1024

Sampling Date: 24 October, 2017

Sample No. : W-1710168

Sampling By : Customer

Waste Profile No. : -

Sample Received Date: 24 October, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	MPN/100ml	1.8	1.8

Remark : LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD. Lot No. E1 ,ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tel: 01-2309051: 09-796935149

Report No. ; GEM-LAB-201711024

Revision No. : 1

Report Date: 8 November, 2017

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

: MKI-SW-4-1024

Sampling Date: 24 October, 2017

Sample Name Sample No.

: W-1710169

Sampling By : Customer

Waste Profile No.

Sample Received Date : 24 October, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	MPN/100ml	< 1.8	1.8

Remark : LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD.

Lot No. E1 ,Th-lawaSE2 Zone A, Yangon Region, the Union of Myanmar Tel: 01-2309051 09 796935149

Report No.: GEM-LAB-201711028

Revision No. : 1

Report Date: 8 November, 2017

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

Sample Name

: MKI-GW-1-1024

Sampling Date : 24 October, 2017

Sample No.

: W-1710173

Sampling By : Customer

Waste Profile No. : -

Sample Received Date : 24 October, 2017

No.	Parameter	Method	Unit	Result	LOQ	
1	Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate			1.8	
	= = = =					

Remark : LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor

Tomoya Suzuki





Thilawa Special Economic Zone (Zone A) Development Project (Operation Phase)

Appendix

Water and Waste Water Monitoring Report

December, 2017



WATER QUALITY MONITORING REPORT FOR DEVELOPMENT OF INDUSTRIAL AREA IN THILAWA SEZ ZONE A (OPERATION STAGE)

(Bi-Annually Monitoring)

December 2017 Myanmar Koei International Ltd.



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CHAPTER 1: INTRODUCTION

1.1 General

Thilawa Special Economic Zone (SEZ) is located in southern district of Yangon region and about 23 km southeast of Yangon city. As the developer of Thilawa SEZ, Myanmar Japan Thilawa Development Ltd. (MJTD) has a responsibility to carry out regular monitoring in the industrial area of Zone A in accordance with the approved Environmental Impact Assessment (EIA) report and Environmental Management Plan (EMP). MJTD has implemented monitoring various environmental items with the specified time frame to know the environmental conditions in and around the area. As for the monitoring of the water quality, total seven sampling points are set for water quality survey, named SW-1, SW-2, SW-3, SW-4, SW-5, SW-6, and GW-1 have been monitored in Thilawa SEZ and its surrounding area in timely manner. Among the seven locations, SW-1, SW-5 are main discharging points of Thilawa SEZ and SW-6 is discharging from centralized Sewage Treatment Plant (STP) which is required to monitor by Environmental Monitoring Plan (EMoP) in EIA report of Thilawa SEZ Zone A. The remaining points SW-2, SW-3 and SW-4 are sampled as a reference monitoring for comparison with discharging points and baseline of discharged creek. Moreover, GW-1 is monitored as a reference of existing tube well which located in the monastery compound. Location of sampling points for water quality monitoring is shown in Figure 1.1-1.



Figure 1.1-1 Location of Sampling Points of Water Quality Monitoring



CHAPTER 2: WATER QUALITY MONITORING

2.1 Monitoring Items

Sampling points and parameters for water quality monitoring are determined so as to cover the environmental monitoring plan of the EIA report.

Water quality sampling was carried out at seven locations. Among the seven locations, water flow measurement was carried out at five locations (SW-1, SW-2, SW-5 and SW-6) where can be measured by Current Meter. Monitoring items and sampling points are summarized in Table 2.1-1.

Table 2.1-1 Monitoring Items for Water Quality

No.	Parameters	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	GW-1	Remarks
1	pH	0	0	0	0	0	0	0	On-site measurement
2	Water temperature	0	0	0	0	0	0	0	On-site measurement
3	DO	0	0	0	0	0	0	0	On-site measurement
4	BOD (5)	0	0	0	0	0	0	0	Laboratory analysis
5	COD (Cr)	0	0	0	0	0	0	0	Laboratory analysis
6	Total nitrogen	0	0	0	0	0	0	0	Laboratory analysis
7	Suspended solids	0	0	0	0	0	0	0	Laboratory analysis
8	Total coliform	0	0	0	0	0	0	0	Laboratory analysis
9	Total phosphorous	0	0	0	0	0	0	0	Laboratory analysis
10	Color	0	0	0	0	0	0	0	Laboratory analysis
11	Odor	0	0	0	0	0	0	0	Laboratory analysis
12	Oil and Grease	0	0	0	0	0	0	0	Laboratory analysis
13	Mercury	0	0	0	0	0	0	0	Laboratory analysis
14	Zinc	0	0	0	0	0	0	0	Laboratory analysis
15	Arsenic	0	0	0	0	0	0	0	Laboratory analysis
16	Chromium	0	0	0	0	0	0	0	Laboratory analysis
17	Cadmium	0	0	0	0	0	0	0	Laboratory analysis
18	Selenium	0	0	0	0	0	0	0	Laboratory analysis
19	Lead	0	0	0	0	0	0	0	Laboratory analysis
20	Copper	0	0	0	0	0	0	0	Laboratory analysis
21	Barium	0	0	0	0	0	0	0	Laboratory analysis
22	Nickel	0	0	0	0	0	0	0	Laboratory analysis
23	Cyanide	0	0	0	0	0	0	0	Laboratory analysis
24	Free Chlorine	0	0	0	0	0	0	0	Laboratory analysis
25	Sulphide	0	0	0	0	0	0	0	Laboratory analysis
26	Formaldehyde	0	0	0	0	0	0	0	Laboratory analysis
27	Phenol	0	0	0	0	0	0	0	Laboratory analysis
28	Escherichia Coli (Self- monitoring)	0	0	0	0	0	0	0	Laboratory analysis
29	Flow Rate	0	0	-	_	0	0	_	On-site measurement

Source: Myanmar Koei International Ltd.



2.2 Description of Sampling Points

The outline of sampling points is mentioned in Table 2.2-1. The photos of conducting field survey at each sampling points are mentioned in Appendix-1.

Table 2.2-1 Outline of Sampling Points

No.	Station	Detailed Information
1	SW-1	Coordinate- N-16° 40' 13.5", E- 96° 16' 39.8"
		Location - Outlet of Retention Pond
		Survey Item – Surface water sampling and water flow rate measurement.
2	SW-2	Coordinate- N-16° 40' 20.70", E- 96° 17' 18.70"
		Location - Upstream of Shwe Pyauk Creek
		Survey Item – Surface water sampling and water flow rate measurement.
3	SW-3	Coordinate- N-16° 40' 5.50", E- 96° 16' 41.60"
		Location - Upstream of Shwe Pyauk Creek, after mixing point of Thilawa SEZ Zone A and Zone B
		Survey Item – Surface water sampling.
4	SW-4	Coordinate- N-16° 39' 41.52", E- 96° 16' 26.53"
		Location - Downstream of Shwe Pyauk Creek
		Survey Item – Surface water sampling.
5	SW-5	Coordinate- N-16° 40' 10.7", E- 96° 16' 22.6"
		Location - Outlet of Retention Canal
		Survey Item – Surface water sampling and water flow rate measurement.
6	SW-6	Coordinate- N-16° 40' 26.8", E- 96° 16' 30.7"
		Location - Outlet from STP to Retention Pond
		Survey Item – Surface water sampling and water flow rate measurement.
7	GW-1	Coordinate- N-16° 40' 25.10", E- 96° 16' 31.70"
		Location - In Moegyoe Swan Monastery
		Survey Item – Ground Water Sampling

Source: Myanmar Koei International Ltd.

SW-1

SW-1 was collected at the discharge point of retention pond which is located in the east of Moegyoe Swan monastery. This drainage is flowing from north to south and then connected to the Shwe Pyauk creek through earth drain. The water quality of this monitoring point has been influenced by the water from downstream due to flow back by tidal fluctuation. In addition, it seems that a part of wastewater from monastery has reached to the culvert in the SEZ area and discharging to the retention pond.

SW-2 (Reference Point)

SW-2 was collected at the upstream of Shwe Pyauk creek. This sampling point is located at the northeast of Zone B area and at the south of Dagon-Thilawa road. The surrounding area are Zone A in the northwest, local industrial zone in the east and paddy field in the west respectively.

SW-3 (Reference Point)

SW-3 was collected at the Shwe Pyauk creek, after mixing point of Zone A and Zone B, which is flowing from east to west and then entering into the Yangon river. The distance is about 1.2 km downstream of SW-2. This sampling point is located at south of Zone A area and Dagon-Thilawa road. The surrounding area are Zone B in the south, local industrial zone in the east and paddy field in the south and west respectively.

SW-4 (Reference Point)

SW-4 was collected at the downstream of Shwe Pyauk creek, after mixing of discharged water from local industrial zone, construction site of Zone B and Zone A, which is flowing from east to west and then entering into the Yangon river. The distance is about 800 m downstream of SW-3. This sampling point is located at southwest of Zone A area and at the south of Dagon-Thilawa road. The surrounding area are Zone B and local industrial zone in the east and paddy field in the south and west respectively.

SW-5

SW-5 was collected at retention canal near main gate of Thilawa SEZ. Most of the water collected in this canal is rain water and domestic wastewater from surrounding. This canal is also connected to the Shwe Pyauk creek. The water quality of this monitoring point may have been influenced by the water from downstream due to flow back by tidal fluctuation.

SW-6

SW-6 was collected at drain outlet of centralized STP which is located in the north of Moegyoe Swan monastery compound and retention pond (SW-1). Then the treated water is flowing to the retention pond.

GW-1 (Reference of Existing Tube Well)

GW-1 was collected from tube well as ground water sample. It is located in the compound of Moegyoe Swan monastery. The surrounding area are Zone A in the west, retention pond in the east and Dagon-Thilawa road in the south respectively.



2.3 Monitoring Method

All water samples were collected with cleaned sampling bottle and analyzed by the following standard method as shown in Table 2.3-1. All samples were kept in iced boxes keeping at 2-4° C and were transported to the laboratory. Among the parameters; water temperature, pH and DO were measured by the on-site instrument "Horiba, U-52" and water flow rate was also conducted by using the on-site instrument "Tamaya Digital Current Meter".

Table 2.3-1 Analytic Method for Water Quality

No.	Parameter	Method
1	Temperature	Instrument Analysis Method (Horiba, U-52, Multi Water Quality Checker)
2	pН	Instrument Analysis Method (Horiba, U-52, Multi Water Quality Checker)
3	Suspended solids (SS)	APHA 2540D (Dry at 103-105'C Method)
4	Dissolved oxygen (DO)	Instrument Analysis Method (Horiba, U-52, Multi Water Quality Checker)
5	BOD (5)	APHA 5210 B (5 days BOD Test)
6	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)
7	Total coliform	APHA 9221B (Standard Total Coliform Fermentation Technique)
8	Total nitrogen (T-N)	HACH Method 10072(TNT Persulfate Digestion Method)
9	Total phosphorous (T-P)	APHA 4500-P E (Ascorbic Acid Method)
10	Color	APHA 2120C (Spectrophotometric Method)
11	Odor	APHA 2150 B (Threshold Odor Test)
12	Oil and Grease	APHA 5520B (Partition-Gravimetric Method)
13	Mercury	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)
14	Zinc	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)
15	Arsenic	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)
16	Chromium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)
17	Cadmium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)
18	Selenium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)
19	Lead	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)
20	Copper	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)
21	Barium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)
22	Nickel	HACH 8027 (Pyridine – Pyrazoline Method)
23	Cyanide	APHA 4500 CL G (DPD Colorimetric Method)
24	Free Chlorine	HACH 8131 (USEPA Methylene Blue Method)
25	Sulphide	HACH 8110 (MBTH Method)
26	Formaldehyde	USEPA Method 420.1 (Phenolics (Spectrophotometric, Manual 4AAP With Distillation))
27	Phenol	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)
28	Escherichia Coli	APHA 9221 F (Escherichia Coli Procedure Using Fluorogenic Substrate)
29	Flow Rate	Detection of Electromagnetic Elements (Real-time measurement by UC-200V Digital Current Meters)

Source: Myanmar Koei International Ltd.



2.4 Monitoring Period

Water quality and water flow rate monitoring were conducted on 5th December 2017 and sampling time is shown in Table 2.4-1 to avoid tidal effect. The tide record for Yangon river, Myanmar on 5th December 2017 is shown in Table 2.4-2.

Table 2.4-1 Sampling Time of Each Station

No.	Station	Sampling Time
1	SW-1	5/12/2017 14:49
2	SW-2	5/12/2017 11:31
3	SW-3	5/12/2017 09:09
4	SW-4	5/12/2017 10:27
5	SW-5	5/12/2017 15:20
6	SW-6	5/12/2017 14:26
7	GW-1	5/12/2017 15:50

Source: Myanmar Koei International Ltd.

Table 2.4-2 Tide Record for Yangon River, Myanmar

Date	Time	Height	Tide Conditions
	00:28	0.46	Low Tide
	05:00	6.19	High Tide
5/12/2017	13:16	0.38	Low Tide
	17:28	5.75	High Tide

Source: Myanmar Port Authority, Tide Table for the Yangon River and Elephant Point, 2017.

2.5 Monitoring Results

Results of water quality monitoring are summarized in Table 2.5-1. Analytical results of the laboratory are described in Appendix-2. The results were compared with the target value of effluent water quality discharging to water body stipulated in the EIA report.

2.5.1 Results of Water Quality at the Outlet of Sewage Treatment Plant of industrial Area of Thilawa SEZ and at the Point before discharging to Creek

As the comparison with the target value, the results of suspended solid (SS) and total coliform were exceeded than the target value. As for the result of SS, the result at the outlet of the centralized STP (SW-6) and retention canal (SW-5) complied with the target value. It implied that effluents from each locator were treated well by the STP. On the other hand, results at the monitoring points of retention pond (SW-1) and reference point (SW-2), (SW-3), (SW-4), exceeded the target value due to the expected reasons; i) surface water run-off from bare land in Zone A and ii) influence by water from the downstream of retention pond (SW-1) due to flow back by tidal fluctuation.

As for the result of total coliform of surface water, the result at the outlet of the centralized STP (SW-6) also complied with the target value. It may prove that effluents from each locator were treated well by the STP. On the other hand, results at the monitoring points of retention pond (SW-1) and retention canal (SW-5) exceeded the target value due to the expected reasons; i) the potential expected reason might natural bacteria existed in all area of Zone A because there are various kinds of vegetation and creature successive birds, and small animals in and along the retention canals and retention ponds and ii) the second respect

might be influence by water from the downstream of retention pond (SW-1) and retention canal (SW-5) due to flow back by tidal fluctuation.

Since the composition of the total coliform include bacteria from natural origin, and even after Total Coliform do not affect human health directly, self-monitoring for E. Coli analysis was carried out to identify health impact by coliform bacteria. As for the result of E. Coli of surface water, all of results were under the reference value. Therefore, although the target value of total coliform was exceeded at monitoring point of retention pond (SW-1) and retention canal (SW-5), but it is considered that there is no significant impact on human health.

In the first place, the monitoring points of retention pond (SW-1) retention canal (SW-5) should be changed to a little upstream where are possible to avoid flow back by tidal fluctuation in order to evaluate the impact on water quality from the industrial area of Zone A to public water body.

On the bases of the above examinations, the following actions shall be taken to control SS and total coliform;

- To continue the self-monitoring for Escherichia coli (E. Coli) level to identify health impact by coliform bacteria (While result of Total Coliform are exceeded the target value)

Perhaps, the possibility that water flowing through the retention canals might include overflowed water from some construction sites with insufficient treatment of coliform should not be excluded from the possible cause.



Table 2.5-1 Results of Water Quality Monitoring at Main Discharging Gates and Discharged from Centralized STP

No.	Parameters	Unit	SW-1	SW-5	SW-6	Target Value (Reference Value for Self- Monitoring)
1	Temperature	°C	33.6	32.1	28.8	Max. 40.0
2	pH	26	8.2	8.0	7.2	5.0~9.0
3	Suspended solid (SS)	mg/L	226	26	2	Max. 30
4	Dissolved oxygen (DO)	mg/L	6.17	4.37	7.33	-
5	BOD (5)	mg/L	8.76	7.58	2.17	Max. 20.00
6	COD (Cr)	mg/L	9.0	11.6	4.9	Max. 70.0
7	Total coliform	MPN/ 100ml	92,000	> 160,000	< 1.8	Max. 400
8	Total nitrogen (T-N)	mg/L	4.9	1.1	11.1	80.0
9	Total phosphorous (T-P)	mg/L	< 0.05	0.073	< 0.05	-
10	Color	TCU (True Color Unit)	10.74	13.62	6.81	150
11	Odor	TON (Threshold Odor Number)	1	1	1	2 7 3
12	Oil and Grease	mg/L	< 3.1	< 3.1	< 3.1	Max. 5
13	Mercury	mg/L	≤0.002	≤0.002	≤0.002	Max. 0.005
14	Zinc	mg/L	0.01	≤0.002	≤0.002	Max. 5.000
15	Arsenic	mg/L	0.014	0.012	≤0.01	Max. 0.25
16	Chromium	mg/L	0.018	≤0.002	≤0.002	Max. 0.500
17	Cadmium	mg/L	≤0.001	≤0.001	≤0.001	Max. 0.030
18	Selenium	mg/L	≤0.01	≤0.01	≤0.01	Max. 0.02
19	Lead	mg/L	≤0.002	0.018	≤0.002	Max. 0.200
20	Copper	mg/L	≤0.002	≤0.002	≤0.002	Max. 1.000
21	Barium	mg/L	0.052	0.032	0.008	Max. 1.000
22	Nickel	mg/L	0.03	0.004	0.01	Max. 0.200
23	Cyanide	mg/L	0.030	0.002	< 0.002	Max. 0.200
24	Free Chlorine	mg/L	0.1	< 0.1	0.1	Max. 1.0
25	Sulphide	mg/L	0.248	0.046	< 0.005	Max. 1.000
26	Formaldehyde	mg/L	0.050	0.017	0.024	Max. 1.000
27	Phenol	mg/L	< 0.002	< 0.002	< 0.002	Max. 1.000
28	Escherichia Coli	MPN/100ml (SW)	5.5	3.6	< 1.8	(1000)* (CFU/100ml)
29	Flow Rate	m³/s	0.097	0.006	0.012	-

Note: Red color means the exceeded value than target value.

According to the quality standard for water baths in Japan, (Ministry of Environment, 1997), in case of E.Coli result is exceeding 1,000 CFU/100 ml, since it is assumed unsafety, it is considered unsuitable for water baths.

Source: Myanmar Koei International Ltd.

^{*}Note: Based on the water utilization at discharged creek, water quality C of quality standard for water baths in Japan, (Ministry of Environment, 1997) is set as a reference value for self-monitoring of E. coli for surface water monitoring. However, due to limitation of capacity for analytical laboratory in Myanmar, the method to analyze the "Colony Forming Unit (CFU)" is not available in Myanmar. Therefore, the results of "Most Probable Number (MPN)" are assumed similar to CFU values and compared with reference values. Once the method to analyze the CFU will be available in Myanmar, the analytical method will be changed.

2.5.2 Results of Reference Monitoring for Comparison with Discharging Points and Baseline of Discharged Creek

Results of water quality survey are summarized in Table 2.5-2. The results were compared with the target value of effluent water quality discharging to water body stipulated in the EIA report.

As the comparison with the target value, the results of SS and total coliform were exceeded than the target value. As for the result of SS, results at the surface water monitoring points (SW-2, SW-3 and SW-4) exceeded the target value due to two expected reasons; i) delivered from upstream area such as natural origin and wastewater from local industrial zone which outside of Thilawa SEZ, and ii) influence by water from the downstream of monitoring points due to flow back by tidal fluctuation.

As for the result of total coliform of surface water, results at the other surface water monitoring points (SW-3, SW-4) exceeded the target value due to two expected reasons; i) natural bacteria existed in discharged creek because there are various kinds of vegetation and creature such as birds, and small animals in and along the discharged creek and ii) wastewater from the local industrial zone outside of Thilawa SEZ. The result of total coliform at the reference of existing tube well (GW-1) also exceeded the target value. It may be possible due to expected reasons i) the poor maintenance of well which can increase the risk of bacteria and other harmful organisms ii) the well was not operated regularly and didn't use for local people long time. In addition, the result of E. Coli of surface water, all of results were under the reference value. Therefore, although the target value of total coliform was exceeded at monitoring point of SW-3 and SW-4, but it is considered that there is no significant impact on human health.

As for the result of total coliform in ground water, result at GW-1 (ground water in Moegyoe Swan monastery) exceeded the target value. However, the result of E.Coli at GW-1 was under the reference value. Therefore, although the target value of total coliform was exceeded at monitoring point of GW-1, but it is considered that there is no significant impact on human health.



Table 2.5-2 Result of Water Quality Survey for Reference Monitoring Points for Comparison with Discharging Points and Baseline of Discharged Creek

No.	Parameters	Unit	SW-2	SW-3	SW-4	GW-1	Target Value (Reference Value for Self- Monitoring)
1	Temperature	°C	28.0	25.5	25.9	34.2	Max. 40.0
2	pH	4	7.3	7.1	7.4	7.8	5.0~9.0
3	Suspended solid (SS)	mg/L	160	332	284	4	Max. 30
4	Dissolved oxygen (DO)	mg/L	4.44	7.79	6.58	5.48	ħ
5	BOD (5)	mg/L	6.01	7.29	6.07	2.01	Max. 20.00
6	COD (Cr)	mg/L	30.5	5.9	5.8	< 0.7	Max. 70.0
7	Total coliform	MPN/ 100ml	49	160,000	160,000	2,100	Max. 400
8	Total nitrogen (T-N)	mg/L	1.8	3.8	3.1	1.6	80.0
9	Total phosphorous (T-P)	mg/L	0.137	< 0.05	< 0.05	0.089	2
10	Color	TCU (True Color Unit)	30.03	15.96	16.73	5.43	-
11	Odor	TON (Threshold Odor Number)	1	1	1	1	-
12	Oil and Grease	mg/L	< 3.1	< 3.1	< 3.1	< 3.1	Max. 5.00
13	Mercury	mg/L	≤ 0.002	≤0.002	≤0.002	≤0.002	Max. 0.005
14	Zinc	mg/L	≤ 0.002	0.026	0.018	≤0.002	Max. 5.000
15	Arsenic	mg/L	0.016	0.020	0.018	≤0.01	Max. 0.250
16	Chromium	mg/L	0.010	0.032	0.028	≤0.002	Max. 0.500
17	Cadmium	mg/L	≤ 0.001	≤0.001	≤0.001	≤0.001	Max. 0.030
18	Selenium	mg/L	≤0.01	≤0.01	≤0.01	≤0.01	Max. 0.02
19	Lead	mg/L	≤ 0.002	≤0.002	≤0.002	≤0.002	Max. 0.200
20	Copper	mg/L	≤ 0.002	≤0.002	≤0.002	≤0.002	Max. 1.000
21	Barium	mg/L	0.056	0.056	0.05	0.078	Max. 1.000
22	Nickel	mg/L	0.016	0.048	0.038	≤0.002	Max. 0.200
23	Cyanide	mg/L	0.010	0.021	0.012	< 0.002	Max. 0.200
24	Free Chlorine	mg/L	0.1	0.3	< 0.1	0.1	Max. 1.0
25	Sulphide	mg/L	0.190	0.346	0.383	0.007	Max. 1.000
26	Formaldehyde	mg/L	0.071	0.098	0.089	< 0.003	Max. 1.000
27	Phenol	mg/L	0.002	< 0.002	< 0.002	0.004	Max. 1,000
28	Escherichia Coli	MPN/100ml* (SW)	< 1.8	1.8	< 1.8		(1000)* CFU/100ml
20	Escherichia Coll	MPN/100ml** (GW)				2.0	(100)** (MPN/100ml)
29	Flow Rate	m ³ /s	0.027	-		7	

Note: Red color means the exceeded results than target value.

^{*}Note: Based on the water utilization at discharged creek, water quality C of quality standard for water baths in Japan, (Ministry of Environment, 1997) is set as a reference value of self-monitoring for surface water monitoring. However, due to limitation of capacity for analytical laboratory in Myanmar, the method to analyze the "Colony Forming Unit (CFU)" is not available in Myanmar. Therefore, the results of "Most Probable Number (MPN)" are assumed similar to CFU values and compared with reference values. Once the method to analyze the CFU will be available in Myanmar, the analytical method will be available.

According to the quality standard for water baths in Japan, (Ministry of Environment, 1997), in case of E.Coli result is exceeding 1,000 CFU/100 ml, since it is assumed unsafety, it is considered unsuitable for water baths.

**Note: Based on the water utilization at monitoring point for ground water, B1(Irrigation water) of National Technical Regulation on Surface Water Quality in Vietnam (No. QCVN 08: 2008/BTNMT) is set as a reference value of self-monitoring for ground water monitoring.

Source: Myanmar Koei International Ltd.

CHAPTER 3: CONCLUSION AND RECOMMENDATIONS

As for the result of SS, total coliform, the results at the outlet of the centralized STP (SW-6) complied with the target value of both of them. It may prove that effluent from each locator was treated well by STP. On the other hand, parameters of SS at retention pond (SW-1) and monitoring point (SW-2, SW-3 and SW-4), total coliform at retention pond (SW-1) and retention canal (SW-5) were exceeded the target values in this period for main discharging gates of Thilawa SEZ Zone A. However, as mentioned in Section 2.5.1, in the first place, the monitoring points of retention pond (SW-1) and retention canal (SW-5) should be changed to a little upstream where are possible to avoid flow back by tidal fluctuation in order to evaluate the impact on water quality of SS and total coliform from the industrial area of Zone A to public water body. In addition, according to the result of self-monitoring of E. Coli at retention pond (SW-1) and retention canal (SW-5), results were under the reference value. Therefore, although the target value of total coliform was exceeded at monitoring point SW-1 and SW-5, but it is considered that there is no significant impact on human health.

As for parameters of SS, total coliform in surface water were exceeded the target values at reference monitoring points. As for the parameter of total coliform in ground water was exceeded the target value at reference tube well in monastery. As mentioned in Section 2.5.2, the result of self-monitoring of E. Coli at SW-2, SW-3, SW-4 and GW-1 were under the reference value. Therefore, although the target value of total coliform was exceeded at reference monitoring point, but it is considered that there is no significant impact on human health. The expected reasons for exceeding the target values of Total coliform are by natural origin (natural bacteria existed). As for parameters of total coliform exceeded the target values at reference of existing tube well (GW-1), expected reasons are poor maintenance of well, not operated regularly, not used by local people. It will be recommended to test the tube well for total coliform every year. However, it cannot reach to the conclusion of what is the reason to be exceeded the target values, thus the continuous monitoring and yearly trend analysis will be necessary based on the wet and dry season data.

As for future subject for main discharging points of Thilawa SEZ Zone A, the following action may be taken to achieve the target levels of SS/total coliform and appropriate water quality monitoring:

- To monitor Escherichia coli (E. Coli) level to identify health impact by coliform bacteria; and
- To examine the possibility of the overflow water from construction sites.
- To examine the possibility of the domestic wastewater from construction sites.

End of the Document



APPENDIX-1 FIELD SURVEY PHOTOS



FOR DISCHARGING POINTS OF THILAWA SEZ ZONE A





Surface water sampling and onsite measurement at SW-1





Surface water sampling and onsite measurement at SW-5





Surface water sampling and onsite measurement at SW-6

FOR REFERENCE MONITORING POINTS FOR COMPARISON WITH DISCHARGING POINTS AND BASELINE OF DISCHARGED CREEK



Surface water sampling and onsite measurement at SW-2



Surface water sampling and onsite measurement at SW-3





Surface water sampling and onsite measurement at SW-4



Ground water sampling and onsite measurement at GW-1



APPENDIX-2 LABORATORY RESULTS



FOR DISCHARGING POINTS AND AFTER CENTRALIZED STP

DOWA

GOLDEN DOWA ECO-SYSTEM MYANMAR CO , LTD Lot No. E1 , ThilawaSEZ Zone A, Yangon Region, the Union of Myan Tel 01-2309051 '09 7969351-29

Report No. : GEM-LAB-201712103

Revision No. : 1

Report Date : 21 December, 2017 Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koel International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

Sample Name : MKI-SW-1-1205

Sampling Date : 5 December, 2017

Sample No. : W-1712033

Sampling By : Customer

Waste Profile No. : -

Sample Received Date : 5 December, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	SS	APHA 2540D (Dry at 103-105'C Method)	mg/l	226.00	-
2	80D (5)	APHA 5210 B (5 Days BOD Test)	mg/l	8.76	0.00
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/l	9.0	0.7
4	Oil and Grease	APHA 5520B (Partition-Gravimetric Method)	mg/I	< 3.1	3.1
5	Total Coliform	APHA 9221B (Standard Total Coliform Fermentation Technique)	MPN/100ml	92000	1.8
6	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	4.9	0.0
7	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	< 0.05	0.05
8	Calor	APHA 2120C (Spectrophotometric Method)	TCU	10.74	0.00
9	Odor	APHA 2150 B (Threshold Odor Test)	TON	1	
10	Mercury	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.002	0.002
11	Zinc	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	0.01	0.002
12	Arsenic	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	0.014	0.01
13	Chromium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	0.018	0.002
14	Cadmium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.001	0.001
15	Selenium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	s 0.01	0.01
16	Lead	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	≤ 0.002	0.002
17	Copper	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	≤ 0.002	0.002
18	Barium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	0.052	0.001
19	Nickel	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	0.03	0.002
20	Cyanide	HACH 8027 (Pyridine -Pyrazalone Method	mg/I	0.030	0.002
21	Free Chlorine	APHA 4500 CL G (DPD Colorimetric Method)	mg/l	0.1	0.1
22	Sulphide	HACH 8131 (USEPA Methylene Blue Method)	mg/l	0.248	0.005
23	Formaldehyde	HACH 8110 (MBTH Method)	mg/l	0.050	0.003
24	Phenol	USEPA Method 420.1 (Phenosics (Spectrophotometric, Manual 4AAP With Distillation))	mg/I	< 0.002	0.002

Remark : LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Ni Ni Aye Lwin Assistant supervisor

Tomoya Suzuki





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD. Lot No. E1 ,ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tel 01-230/0053 | 09 796/0351-49

Report No. : GEM-LAB-201712104

Revision No. : 1

Report Date : 21 December, 2017 Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

MKI-SW-5-1205

W-1712034

Sampling Date: 5 December, 2017

Sample No. Waste Profile No. : -

Sampling By : Customer Sample Received Date : 5 December, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	SS	APHA 25400 (Dry at 103-105'C Method)	rng/l	26.00	-
2	BOD (5)	APHA 5210 B (5 Days BOD Test)	mg/l	7.58	0.00
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/l	11.6	0.7
4	Oil and Grease	APHA 5520B (Partition-Gravimetric Method)	mg/l	< 3.1	3.1
5	Total Coliform	APHA 92218 (Standard Total Coliform Fermentation Technique)	MPN/100ml	> 160000	1.8
6	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	1.1	0.0
7	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	0.073	0.05
8	Color	APHA 2120C (Spectrophotometric Method)	TCU	13.62	0.00
9	Odor	APHA 2150 B (Threshold Odor Test)	TON	1	-
10	Mercury	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	± 0.002	0.002
11	Zinc	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/\	≤ 0.002	0.002
12	Arsenic	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.012	0.01
13	Chromium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.002	0.002
14	Cadmium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	s 0.001	0.001
15	Selenium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	s 0.01	0.01
16	Lead	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.018	0.002
17	Copper	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.002	0.002
18	Barium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.032	0.001
19	Nickel	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.004	0.002
20	Cyanide	HACH 8027 (Pyridine -Pyrazalone Method	mg/l	0.002	0.002
21	Free Chlorine	APHA 4500 CL G (DPD Colorimetric Method)	mg/l	< 0.1	0.1
22	Sulphide	HACH 8131 (USEPA Methylene Blue Method)	mg/l	0.046	0.005
23	Formaldehyde	HACH 8110 (MBTH Method)	mg/l	0.017	0.003
24	Phenol	USEPA Method 420.1 (Phenolics (Spectrophotometric, Manual 4AAP with Distillation))	mg/l	< 0.002	0.002

LOQ - Limit of Quantitation

APHA - American Public Health & Environment Federation (WEF), merican Water Works Association (AWWA), and the Water Examination of Water and Wastewater, 22nd edition

Ni Ni Aye Lwin

Assistant supervisor





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD. Lot No. £1 ,ThilawaSEZ Zone A. Yangon Region, the Union of Myanmar Tel 01-2309051-09-796935149

Report No. : GEM-LAB-201712105

Revision No. : 1

Report Date : 21 December, 2017 Application No. : 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description Sample Name Sample No.

MKI-SW-6-1205

: W-1712035

Sampling Date : 5 December, 2017

Sampling By : Customer

Waste Profile No. : -

Sample Received Date : 5 December, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	SS	APHA 2540D (Dry at 103-105'C Method)	mg/l	2.00	
2	BOD (5)	APHA 5210 B (5 Days BOD Test)	mg/l	2.17	0.00
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/l	4.9	0.7
4	Oil and Grease	APHA 5520B (Partition-Gravimetric Method)	mg/l	< 3.1	3.1
5	Total Coliform	APHA 9221B (Standard Total Coliform Fermentation Technique)	MPN/100ml	< 1.8	1.8
6	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/I	11.1	0.0
7	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	< 0.05	0.05
8	Color	APHA 2120C (Spectrophotometric Method)	TCU	6.81	0.00
9	Odor	APHA 2150 B (Threshold Odor Test)	TON	1	- 5
10	Mercury	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	≤ 0.002	0.002
11	Zinc	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	≤ 0.002	0.002
12	Arsenic	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	≤ 0.01	0.01
13	Chromium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	≤ 0.002	0.002
14	Cadmium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	≤ 0.001	0.001
15	Selenium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.01	0.01
16	Lead	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.002	0.002
17	Copper	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	≤ 0.002	0.002
18	Barium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.008	0.001
19	Nickel	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.01	0.002
20	Cyanide	HACH 8027 (Pyridine -Pyrazalone Method	mg/l	< 0.002	0.002
21	Free Chlorine	APHA 4500 CL G (DPD Colorimetric Method)	mg/I	0.1	0.1
22	Sulphide	HACH 8131 (USEPA Methylene Blue Method)	mg/l	< 0.005	0.005
23	Formaldehyde	HACH 8110 (MBTH Method)	mg/I	0.024	0.003
24	Phenol	USEPA Method 420.1 (Phenolics (Spectrophotometric, Manual 4AAP With Distillation))	mg/I	< 0.002	0.002

Remark : LOQ - Limit of Quantitation

LOQ - Limit or quantitation
APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wasterwater, 22nd edition

Assistant supervisor

Tomoya Suzuki



FOR REFERENCE MONITORING POINTS FOR COMPARISON WITH DISCHARGING POINTS AND BASELINE OF DISCHARGED CREEK



GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD Lot No. EL. ThilawaSEZ Zone A. Yangon Region, the Union of Myanmar Tcl 01-23090511-09 796935149

Report No. : GEM-LAB-201712108

Revision No. : 1

Report Date: 21 December, 2017

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

2 3

Sample Description
Sample Name

: MKI-SW-2-1205

Sampling Date : 5 December, 2017

Sample No. : W-1712039
Waste Profile No. : *

Sampling By : Customer

Sample Received Date : 5 December, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	SS	APHA 2540D (Dry at 103-105'C Method)	mg/I	160.00	-
2	BOD (5)	APHA 5210 B (5 Days BOD Test)	mg/I	5.01	0.00
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/I	30.5	0.7
4	Oil and Grease	APHA 5520B (Partition-Gravimetric Method)	mg/I	< 3.1	3.1
5	Total Coliform	APHA 9221B (Standard Total Coliform Fermentation Technique)	MPN/100ml	49	1.8
6	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/I	1.8	0.0
7	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	0.137	0.05
8	Color	APHA 2120C (Spectrophotometric Method)	TCU	30.03	0.00
9	Odor	APHA 2150 B (Threshold Odor Test)	TON	1	-
10	Mercury	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.002	0.002
11	Zinc	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.002	0.002
12	Arsenic	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.016	0.01
13	Chromium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	0.010	0.002
14	Cadmium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.001	0.001
15	Selenium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	≤ 0.01	0.01
16	Lead	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.002	0.002
17	Copper	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	s 0.002	0.002
18	Barium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.056	0.001
19	Nickel	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	0.016	0.002
20	Cyanide	HACH 8027 (Pyridine -Pyrazalone Method	mg/l	0.010	0.002
21	Free Chlorine	APHA 4500 CL G (DPD Colorimetric Method)	mg/I	0.1	0.1
22	Sulphide	HACH 8131 (USEPA Methylene Blue Method)	mg/I	0.190	0.005
23	Formaldehyde	HACH 8110 (MBTH Method)	mg/I	0.071	0.003
24	Phenol	USEPA Method 420.1 (Phenolics (Spectrophotometric, Manual 4AAP With Distillation))	mg/I	0.002	0.002

Remark

LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Na

AnalysediBy :

Ni Ni Aye Lwin Assistant supervisor

Assistant supervisor

Approved By :

Tomoya Suzuk





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD. Lot No. E1 ThilawaSE2 Zone A, Yangori Region, the Union of Myanmar Tel 01-2309051/ 09 796935149

Report No. : GEM-LAB-201712109

Revision No. ; 1

Report Date : 21 December, 2017 Application No. : 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

: MKI-SW-3-1205

Sampling Date : 5 December, 2017

Sample No.

: W-1712040

Sampling By : Customer

Waste Profile No. : -

Sample Received Date : 5 December, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	SS	APHA 2540D (Dry at 103-105'C Method)	mg/l	332.00	12.7
2	BOD (5)	APHA 5210 B (5 Days BOD Test)	mg/I	7.29	0.00
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/l	5.9	0.7
4	Oil and Grease	APHA 5520B (Partition-Gravimetric Method)	mg/l	< 3.1	3.1
5	Total Coliform	APHA 92218 (Standard Total Coliform Fermentation Technique)	MPN/100ml	160000	1.8
6	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	3.8	0.0
7	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/I	< 0.05	0.05
8	Color	APHA 2120C (Spectrophotometric Method)	TCU	15.96	0.00
9	Odor	APHA 2150 B (Threshold Odor Test)	TON	1	- 2
10	Mercury	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	s 0.002	0.002
11	Zinc	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.026	0.002
12	Arsenic	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.020	0.01
13	Chromium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.032	0.002
14	Cadmium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.001	0.001
15	Selenium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	s 0.01	0.01
16	Lead	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.002	0.002
17	Copper	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	s 0.002	0.002
18	Barium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.056	0.001
19	Nickel	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.048	0.002
20	Cyanide	HACH 8027 (Pyridine -Pyrazalone Method	mg/l	0.021	0.002
21	Free Chlorine	APHA 4500 CL G (DPD Colorimetric Method)	mg/l	0.3	0.1
22	Sulphide	HACH 8131 (USEPA Methylene Blue Method)	mg/l	0.346	0.005
23	Formaldehyde	HACH 8110 (MBTH Method)	mg/I	0.098	0.003
24	Phenol	USEPA Method 420.1 (Phenolics (Spectrophotometric, Manual 4AAP With Distillation))	mg/l	< 0.002	0.002

LOQ - Limit of Quantitation

APHA - American Public Health Environment Federation (WEF) in Water Works Association (AWWA), and the Water hination of Water and Wastewater, 22nd edition

Assistant supervisor



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GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD Lot No. E1 ,ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Te1:01-2309051 (9:796935149

Report No. : GEM-LAB-201712110

Revision No. : 1

Report Date: 21 December, 2017

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

: MK1-SW-4-1205 : W-1712041

Sampling Date : 5 December, 2017

Sample No.

Sampling By : Customer

Sample Received Date : 5 December, 2017 Waste Profile No.

No.	Parameter	Method	Unit	Result	LOQ
1	SS	APHA 25400 (Dry at 103-105'C Method)	mg/l	284.00	-
2	BOD (5)	APHA 5210 B (5 Days BOD Test)	mg/l	6.07	0.00
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/l	5.8	0.7
4	Oil and Grease	APHA 5520B (Partition-Gravimetric Method)	mg/l	< 3.1	3.1
5	Total Coliform	APHA 9221B (Standard Total Coliform Fermentation Technique)	MPN/100ml	160000	1.8
6	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	3.1	0.0
7	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	< 0.05	0.05
8	Color	APHA 2120C (Spectrophotometric Method)	TCU	16.73	0.00
9	Odor	APHA 2150 B (Threshold Odor Test)	TON	1	
10	Mercury	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	s 0.002	0.002
11	Zinc	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.018	0.002
12	Arsenic	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	0.018	0.01
13	Chromium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.028	0.002
14	Cadmium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.001	0.001
15	Selenium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	s 0.01	0.01
16	Lead	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	s 0.002	0.002
17	Copper	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.002	0.002
18	Barium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.05	0.001
19	Nickel	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/3	0.038	0.002
20	Cyanide	HACH 8027 (Pyridine -Pyrazalone Method	mg/l	0.012	0.002
21	Free Chlorine	APHA 4500 CL G (DPD Colorimetric Method)	mg/l	< 0.1	0.1
22	Sulphide	HACH 8131 (USEPA Methylene Blue Method)	mg/l	0.383	0.005
23	Formaldehyde	HACH 8110 (MBTH Method)	mg/l	0.089	0.003
24	Phenoi	USEPA Method 426.1 (Phenolics (Spectrophotometric, Manual 4AAP With Distillation))	mg/l	< 0.002	0.002

: LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American-Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin Assistant supervisor





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD. Lot No. EE , ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tel: 01-2309051-09-796935149

Report No. : GEM-LAB-201712106

Revision No. : 1

Report Date: 21 December, 2017 Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

Sample No.

: MKI-GW-1-1205

: W-1712036

Sampling Date : 5 December, 2017

Sampling By : Customer

Waste Profile No. : -

Sample Received Date : 5 December, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	SS	APHA 2540D (Dry at 103-105'C Method)	mg/l	4.00	-
2	BOD (5)	APHA 5210 B (5 Days BOD Test)	mg/f	2.01	0.00
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/I	< 0.7	0.7
4	Oil and Grease	APHA 5520B (Partition-Gravimetric Method)	mg/l	< 3.1	3.1
5	Total Coliform	APHA 92218 (Standard Total Coliform Fermentation Technique)	MPN/100ml	2100	1.8
6	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	1.6	0.0
7	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	0.089	0.05
8	Color	APHA 2120C (Spectrophotometric Method)	TCU	5.43	0.00
9	Odor	APHA 2150 B (Threshold Odor Test)	TON	1	
10	Mercury	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.002	0.002
11	Zinc	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	s 0.002	0.002
12	Arsenic	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	≤ 0.01	0.01
13	Chromium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	≤ 0.002	0.002
14	Cadmium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	s 0.001	0.001
15	Selenium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/I	s 0.01	0.01
16	Lead	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	s 0.002	0.002
17	Copper	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	s 0.002	0.002
18	Barium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.078	0.001
19	Nickel	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.002	0.002
20	Cyanide	HACH 8027 (Pyridine -Pyrazalone Method	mg/l	< 0.002	0.002
21	Free Chlorine	APHA 4500 CL G (DPD Colorimetric Method)	mg/l	0.1	0.1
22	Sulphide	HACH 8131 (USEPA Methylene Blue Method)	mg/l	0.007	0.005
23	Formaldehyde	HACH 8110 (MBTH Method)	mg/l	< 0.003	0.003
24	Phenol	USEPA Method 420.1 (Phenolics (Spectrophotometric, Manual 4AAP With Distillation))	mg/l	0.004	0.002

LOQ - Limit of Quantitation

APHA - American Public Health Environment Federation (WEF can Water Works Association (AWWA), and the Water mination of Water and Wastewater, 22nd edition

Assistant supervisor

Tomoya Suzuki



APPENDIX-3 LABORATORY RESULTS



FOR DISCHARGING POINTS AND AFTER CENTRALIZED STP



GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD. Lot No. E1 ,Thilawa5EZ Zone A, Yangon Region, the Union of Myanmar Tcl 01-2309051/ 09 796935149

Report No.: GEM-LAB-201712094

Revision No. : 1

Report Date: 21 December, 2017

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

: MKI-SW-1-1205 Sample Name

Sampling Date: 5 December, 2017

: W-1712043 Sample No.

Sampling By : Customer

Waste Profile No.

Sample Received Date: 5 December, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	MPN/100ml	5.5	1.8
	= ==				<u> </u>

Remark : LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By:

Assistant supervisor

Tomoya Suzuki





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD Lot No. E1, ThilawaSE2 Zone A, Yangon Region, the Union of Myanmar Tel D1-2309051 09 796935149

Report No.: GEM-LAB-201712095

Revision No. : 1

Report Date: 21 December, 2017

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

. 2

Sample Description

Sample Name

: MKI-SW-5-1205

Sampling Date ; 5 December, 2017

Sample No. : W-1712044

Sampling By : Customer

Waste Profile No. : -

Sample Received Date : 5 December, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	MPN/100ml	3.6	1.8

Remark

: LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor

LAB

Approved By:

Tomoya Suzuki





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD Lot No. E1 ,ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tel:01-2309051: 09 796935149

Report No. : GEM-LAB-201712096

Revision No.: 1

Report Date: 21 December, 2017

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

Sample Name

: MKI-SW-6-1205

Sampling Date : 5 December, 2017

Sample No.

; W-1712045

Sampling By : Customer

Waste Profile No. : -

Sample Received Date ; 5 December, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	MPN/100ml	< 1.8	1.8
	- 11				

Remark

: LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor

LAB

Approved By :

Tomoya Suzuki



FOR REFERENCE MONITORING POINTS FOR COMPARISON WITH DISCHARGING POINTS AND BASELINE OF DISCHARGED CREEK



GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD Lot No. E1, ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tet 01-2309051/ 09 796935149

Report No. : GEM-LAB-201712099

Revision No. : 1

Report Date : 21 December, 2017

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description Sample Name

: MKI-SW-2-1205

Sampling Date: 5 December, 2017

Sample No.

: W-1712048

Sampling By : Customer

Waste Profile No.

Sample Received Date : 5 December, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	MPN/100ml	< 1.8	1.8
	===				

Remark

: LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD. Lot No. E1 ,ThilawaSE2 Zone A, Yangon Region, the Union of Myanmar Tcl 01-2309051/ 09 796935149

Report No. ; GEM-LAB-201712100

Revision No. : 1

Report Date: 21 December, 2017

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

Sample Name : MKI-SW-3-1205

Sampling Date : 5 December, 2017

Sample No. : W-1712049

Sampling By : Customer

Sample Received Date: 5 December, 2017

Waste Profile No.

No.	Parameter	Method	Unit	Result	LOQ
1	Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	MPN/100mi	1.8	1.8

Remark

LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD Lot No. E1. Thilawasez Zone A, Yangon Region, the Union of Myanmar Tel 01-23090511 09 790-935149

Report No.: GEM-LAB-201712101

Revision No. : 1

Report Date: 21 December, 2017

Application No. : 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

9 -

Sample Description

Sample Name

: MKI-SW-4-1205

Sampling Date : 5 December, 2017

Sampling By : Customer

Sample No.
Waste Profile No.

: W-1712050

Sample Received Date : 5 December, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	MPN/100ml	< 1.8	1.8
-					

Remark

LOO - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor

LAD

Approved By:

Tomoya Suzuki





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD Lot No. E1, ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tcl. 01-2309051 (99.796935149)

Report No.: GEM-LAB-201712097

Revision No. : 1

Report Date : 21 December, 2017

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

Sample Name : MKI-GW-1-1205

Sampling Date : 5 December, 2017

Sample No. : W-1712046

Sampling By : Customer

Waste Profile No. : -

Sample Received Date : 5 December, 2017

No.	Parameter	Method	Unit	Result	LOQ
1	Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	MPN/100ml	2.0	1.8

Remark

: LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor

LAB

GEM

Approved By :

Tomova Suzuki





Thilawa Special Economic Zone (Zone A) Development Project (Operation Phase)

Appendix

Water and Waste Water Monitoring Report February, 2018



WATER QUALITY MONITORING REPORT FOR DEVELOPMENT OF INDUSTRIAL AREA IN THILAWA SEZ ZONE A (OPERATION STAGE)

(Bi-Monthly Monitoring)

February 2018 Myanmar Koei International Ltd.



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CHAPTER 1: INTRODUCTION

1.1 General

Thilawa Special Economic Zone (SEZ) is located in southern district of Yangon region and about 23 km southeast of Yangon city. As the developer of Thilawa SEZ, Myanmar Japan Thilawa Development Ltd. (MJTD) has a responsibility to carry out regular monitoring in the industrial area of Zone A in accordance with the approved Environmental Impact Assessment (EIA) report and Environmental Management Plan (EMP). MJTD has implemented monitoring various environmental items with the specified time frame to know the environmental conditions in and around the area. As for the monitoring of the water quality, total seven sampling points are set for water quality survey, named SW-1, SW-2, SW-3, SW-4, SW-5, SW-6, and GW-1 have been monitored in Thilawa SEZ and its surrounding area in timely manner. Among the seven locations, SW-1 and SW-5 are main discharging points of Thilawa SEZ and SW-6 is discharging from centralized Sewage Treatment Plant (STP) which is required to monitor by Environmental Monitoring Plan (EMoP) in EIA report of Thilawa SEZ Zone A. The remaining points SW-2, SW-3 and SW-4 are sampled as a reference monitoring for comparison with discharging points and baseline of discharged creek. Moreover, GW-1 is monitored as a reference of existing tube well which located in the monastery compound. Location of sampling points for water quality monitoring is shown in Figure 1.1-1.



Figure 1.1- 1 Location of Sampling Points of Water Quality Monitoring



CHAPTER 2: WATER QUALITY MONITORING

2.1 Monitoring Items

Sampling points and parameters for water quality monitoring are determined so as to cover the environmental monitoring plan of the EIA report.

Water quality sampling was carried out at seven locations. Among the seven locations, water flow measurement was carried out at five locations (SW-1, SW-2, SW-5 and SW-6) where can be measured by Current Meter. Monitoring items and sampling points are summarized in Table 2.1-1.

Table 2.1-1 Monitoring Items for Water Quality

No.	Parameters	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	GW-1	Remarks	
1	pН	0	0	0	0	0	0	0	On-site measurement	
2	Water temperature	0	0	0	0	0	0	0	On-site measurement	
3	DO	0	0	0	0	0	0	0	On-site measurement	
4	BOD (5)	0	0	0	0	0	0	0	Laboratory analysis	
5	COD (Cr)	0	0	0	0	0	0	0	Laboratory analysis	
6	Total nitrogen	0	0	0	0	0	0	0	Laboratory analysis	
7	Suspended solids	0	0	0	0	0	0	0	Laboratory analysis	
8	Total coliform	0	0	0	0	0	0	0	Laboratory analysis	
9	Total phosphorous	0	0	0	0	0	0	0	Laboratory analysis	
10	Color	0	0	0	0	0	0	0	Laboratory analysis	
11	Odor	0	0	0	0	0	0	0	Laboratory analysis	
12	Escherichia Coli (Self-monitoring)	0	0	0	0	0	0	0	Laboratory analysis	
13	Flow Rate	0	0		-	0	0	-	On-site measurement	

Source: Myanmar Koei International Ltd.

2.2 Description of Sampling Points

The outline of sampling points is mentioned in Table 2.2-1. The photos of conducting field survey at each sampling points are mentioned in Appendix-1.

Table 2.2-1 Outline of Sampling Points

SW-1	Coordinate- N-16° 40' 13.5", E- 96° 16' 39.8" Location - Outlet of Retention Pond Survey Item - Surface water sampling and water flow rate measurement. Coordinate- N-16° 40' 20.69", E- 96° 17' 18.04" Location - Upstream of Shwe Pyauk Creek Survey Item - Surface water sampling and water flow rate measurement.	
	Survey Item – Surface water sampling and water flow rate measurement. Coordinate- N-16° 40' 20.69", E- 96° 17' 18.04" Location - Upstream of Shwe Pyauk Creek	
SW-2	Coordinate- N-16° 40' 20.69", E- 96° 17' 18.04" Location - Upstream of Shwe Pyauk Creek	
SW-2	Coordinate- N-16° 40' 20.69", E- 96° 17' 18.04" Location - Upstream of Shwe Pyauk Creek	
SW-2	Location - Upstream of Shwe Pyauk Creek Survey Item - Surface water sampling and water flow rate measurement.	
	Survey Item – Surface water sampling and water flow rate measurement.	
	Coordinate- N-16° 40' 5.50", E- 96° 16' 41.60"	
SW-3	Location - Upstream of Shwe Pyauk Creek, after mixing point of Thilawa SEZ Zone A and Zone B.	
	Survey Item – Surface water sampling.	
2017/2000/00/00/00		Coordinate- N-16° 39' 42.87", E- 96° 16' 27.36"
SW-4	Location - Downstream of Shwe Pyauk Creek	
	Survey Item – Surface water sampling.	
	Coordinate- N-16° 40' 10.7", E- 96° 16' 22.6"	
SW-5	Location - Outlet of Retention Canal	
	Survey Item – Surface water sampling and water flow rate measurement.	
	Coordinate- N-16° 40' 27.13", E- 96° 16' 30.68"	
SW-6	Location - Outlet from STP to Retention Pond	
	Survey Item – Surface water sampling and water flow rate measurement.	
	Coordinate- N-16° 40' 25.10", E- 96° 16' 31.70"	
GW-1	Location - In Moegyoe Swan Monastery	
	Location - In Moegyoe Swan Monastery Survey Item - Ground Water Sampling ei International Ltd.	
	SW-5	

Source: Myanmar Koei International Ltd.

SW-1

SW-1 was collected at the discharge point of retention pond which is located in the east of Moegyoe Swan monastery. This drainage is flowing from north to south and then connected to the Shwe Pyauk creek through earth drain. The water quality of this monitoring point has been influenced by the water from downstream due to flow back by tidal fluctuation. In addition, it seems that a part of wastewater from monastery has reached to the culvert in the SEZ area and discharging to the retention pond.

SW-2 (Reference Point)

SW-2 was collected at the upstream of Shwe Pyauk creek. This sampling point is located at the southeast of Zone A area and at the south of Dagon-Thilawa road. The surrounding area are Zone B in the southwest, local industrial zone in the east and paddy field in the west respectively.

SW-3 (Reference Point)

SW-3 was collected at the upstream of Shwe Pyauk creek after mixing point of Zone A and Zone B, which is flowing from east to west and then entering into the Yangon River. The distance is about 1.2 km downstream of SW-2. This sampling point is located at south of Zone A area and Dagon-Thilawa road. The surrounding area are Zone B in the south, local industrial zone in the east and paddy field in the south and west respectively.

SW-4 (Reference Point)

SW-4 was collected at the downstream of Shwe Pyauk creek, after mixing of discharge water from local industrial zone, construction site of Zone B and Zone A, which is flowing from east to west and then entering into the Yangon River. The distance is about 820 m downstream of SW-3. This sampling point is located at southwest of Zone A area and at the south of Dagon-Thilawa road. The surrounding area are Zone B and local industrial zone in the east and paddy field in the south and west respectively.

SW-5

SW-5 was collected at retention canal near main gate of Thilawa SEZ. Most of the water collected in this canal is rain water and domestic wastewater from surrounding. This canal is also connected to the Shwe Pyauk creek. The water quality of this monitoring point may have been influenced by the water from downstream due to flow back by tidal fluctuation.

SW-6

SW-6 was collected at drain outlet of centralized STP which is located in the north of Moegyoe Swan monastery compound and retention pond (SW-1). Then the treated water is flowing to the retention pond.

GW-1 (Reference of Existing Tube Well)

GW-1 was collected from tube well as ground water sample. It is located in the compound of Moegyoe Swan monastery. The surrounding area are Zone A in the west, retention pond in the east and Dagon-Thilawa road in the south respectively.



2.3 Monitoring Method

All water samples were collected with cleaned sampling bottle and analyzed by the following standard method as shown in Table 2.3-1. All samples were kept in iced boxes keeping at 2-4° C and were transported to the laboratory. Among the parameters; water temperature, pH and DO were measured by the on-site instrument "Horiba, U-52" and water flow rate was also conducted by using the on-site instrument "Tamaya Digital Current Meter".

Table 2.3-1 Analytic Method for Water Quality

No.	Parameter	Method	
1	Water Temperature	Instrument Analysis Method (Horiba, U-52, Multi Water Quality Checker)	
2	pH	Instrument Analysis Method (Horiba, U-52, Multi Water Quality Checker)	
3 Dissolved oxygen (DO)		Instrument Analysis Method (Horiba, U-52, Multi Water Quality Checker)	
4 BOD (5) APHA 5210 B (5 days BOD Test)		APHA 5210 B (5 days BOD Test)	
5 COD (Cr)		APHA 5220D (Close Reflux Colorimetric Method)	
6	Total nitrogen (T-N)	HACH Method 10072(TNT Persulfate Digestion Method)	
7	Suspended solids (SS)	APHA 2540D (Dry at 103-105'C Method)	
8	Total coliform	APHA 9221B (Standard Total Coliform Fermentation Technique)	
9	Total phosphorous (T-P)	APHA 4500-P E (Ascorbic Acid Method)	
10	Color	APHA 2120C (Spectrophotometric Method)	
11	Odor	APHA 2150 B (Threshold Odor Test)	
12	Escherichia Coli	APHA 9221 F (Escherichia Coli Procedure Using Fluorogenic Substrate)	
Detection of Electromagnetic Elements		Detection of Electromagnetic Elements (Real-time measurement by UC-200V Digital Current Meters)	

Source: Myanmar Koei International Ltd.

2.4 Monitoring Period

Water quality and water flow rate monitoring were conducted on 5th February 2018 and sampling time is shown in Table 2.4-1 to avoid tidal effect. The tide record for Yangon River, Myanmar on 5th February 2018 is shown in Table 2.4-2.

Table 2.4-1 Sampling Time of Each Station

No.	Station	Sampling Time
1	SW-1	05/02/2018 13:28
2	SW-2	05/02/2018 11:06
3	SW-3	05/02/2018 09:21
4	SW-4	05/02/2018 09:55
5	SW-5	05/02/2018 13:06
6	SW-6	05/02/2018 14:04
7	GW-1	05/02/2018 14:55

Source: Myanmar Koei International Ltd.



Table 2.4-2 Tide Record for Yangon River, Myanmar

Date	Time	Height	Tide Conditions
05/02/2018	02:20	0.6	Low Tide
	07:50	5.5	High Tide
	14:40	0.6	Low Tide
	20:10	5.4	High Tide

Source: Myanmar Port Authority, Tide Table for the Yangon River and Elephant Point, 2018.

2.5 Monitoring Results

Results of water quality monitoring are summarized in Table 2.5-1. Analytical results of the laboratory are described in Appendix-2. The results were compared with the target value of effluent water quality discharging to water body stipulated in the EIA report.

2.5.1 Results of Water Quality at the Outlet of Sewage Treatment Plant of industrial Area of Thilawa SEZ and at the Point before discharging to Creek

As the comparison with the target value, the results of pH, suspended solid (SS), total coliform were exceeded than the target values.

As for the result of pH, the result at the outlet of the centralized STP (SW-6) complied with the target value. On the other hand, result at the monitoring points of retention pond (SW-1), exceeded the target value due to the expected reason; i) might be rainwater polluted with concrete washout water discharge from construction sites of Zone A, (ii) might be domestic wastewater discharge that contains detergents and soap-based products.

As for the result of SS, the result at the outlet of the centralized STP (SW-6) complied with the target value. It implied that effluents from each locator were treated well by the STP. On the other hand, results at the monitoring points of retention pond (SW-1) and retention canal (SW-5) before discharging to creek, exceeded the target value due to the expected reasons; i) surface water run-off from bare land in Zone A and ii) influence by water from the downstream due to flow back by tidal fluctuation.

As for the result of total coliform of surface water, the result at the outlet of the centralized STP (SW-6) complied with the target value. It may prove that effluents from each locator was treated well by the STP. The result at the retention pond (SW-1) also complied with the target value. On the other hand, results at the monitoring points retention canal (SW-5) exceeded the target value due to the expected reasons: the potential expected reason might natural bacteria existed in all area of Zone A because there are various kinds of vegetation and creature such as birds, and small animals in and along the retention canals and retention ponds.

Since the composition of the total coliform include bacteria from natural origin, and even after Total Coliform do not affect human health directly, self-monitoring for E. Coli analysis was carried out to identify health impact by coliform bacteria. As for the result of E.Coli of surface water, all of results were under the reference value. Therefore, although the target value of total coliform was exceeded at monitoring point of retention canal (SW-5), but it is considered that there is no significant impact on human health.

On the bases of the above examinations, the following actions shall be taken to monitor the impact on human health;

- To continue the self-monitoring for E. Coli level to identify health impact by coliform bacteria (While result of Total coliform are exceeded the target value)



Table 2.5-1 Results of Water Quality Monitoring at Main Discharging Gates and Discharged from Centralized STP

No.	Parameters	Unit	SW-1	SW-5	SW-6	Target Value (Reference Value for Self-Monitoring)
1	Temperature	°C	33.2	30.9	31.6	Max. 40.0
2	рН	-	9.3	7.9	6.3	5.0~9.0
3	Suspended solid (SS)	mg/L	38	50	2	Max. 30
4	Dissolved oxygen (DO)	mg/L	6.07	5.52	4.72	и
5	BOD (5)	mg/L	4.10	5.25	0.41	Max. 20.00
6	COD (Cr)	mg/L	17.3	36.3	19.4	Max. 70.0
7	Total coliform	MPN/ 100ml	23	> 160,000	< 1.8	Max. 400
8	Total nitrogen (T-N)	mg/L	7.4	6.4	12.2	80.0
9	Total phosphorous (T-P)	mg/L	0.133	0.345	0.121	2
10	Color	TCU (True Color Unit)	6.81	51.21	0.00	=
11	Odor	TON (Threshold Odor Number)	L	1	1.4	2
12	Escherichia Coli	MPN/100ml	2.0	47.0	< 1.8	(1,000)* (CFU/100ml)
13	Flow Rate	m³/s	0.099	0.004	0.003	-

Note: Red color means exceeded value than target value.

According to the quality standard for water baths in Japan, (Ministry of Environment, 1997), in case of E.Coli result is exceeding 1,000 CFU/100 ml, since it is assumed unsafety, it is considered unsuitable for water baths.

Source: Myanmar Koei International Ltd.

2.5.2 Results of Reference Monitoring for Comparison with Discharging Points and Baseline of Discharged Creek

Results of water quality monitoring are summarized in Table 2.5-2. The results were compared with the target value of effluent water quality discharging to water body stipulated in the EIA report.

As the comparison with the target value, the results of total coliform were exceeded than the target value. As for the result of total coliform of surface water, results at surface water monitoring points (SW-2, SW-3 and SW-4) exceeded the target value due to two expected reasons; i) runoff of animal waste from the undeveloped area and delivered from local industrial zone and illegal dumping site from outside of Thilawa SEZ in the upstream area, and ii) delivered from surrounding area by tidal effect. In addition, the result of E.Coli of surface water, all of results were under the reference value. Therefore, although the target value of total coliform was exceeded at monitoring point of SW-2, SW-3 and SW-4, but it is considered that there is no significant impact on human health.

As for the result of total coliform in ground water, result at GW-1 (ground water in Moegyoe Swith MADELL monastery) is also exceeded the target value. In addition, the result of E.Coli of ground water, all of results

^{*}Note: Based on the water utilization at discharged creek, water quality C of quality standard for water baths in Japan, (Ministry of Environment, 1997) is set as a reference value for self-monitoring of E. coli for surface water monitoring. However, due to limitation of capacity for analytical laboratory in Myanmar, the method to analyze the "Colony Forming Unit (CFU)" is not available in Myanmar. Therefore, the results of "Most Probable Number (MPN)" are assumed similar to CFU values and compared with reference values. Once the method to analyze the CFU will be available in Myanmar, the analytical method will be changed.

were under the reference value. Therefore, although the target value of total coliform was exceeded at monitoring point of GW-1, but it is considered that there is no significant impact on human health.

Table 2.5-2 Result of Water Quality Monitoring for Reference Monitoring Points for Comparison with Discharging Points and Baseline of Discharged Creek

No.	Parameters	Unit	SW-2	SW-3	SW-4	GW-1	Target Value (Reference Value for Self-Monitoring)
1	Temperature	*C	26.2	27.3	27.0	37.1	Max. 40.0
2	pН	-	8.0	7.4	7.8	8.2	5.0~9.0
3	Suspended solid (SS)	mg/L	30	26	8	2	Max. 30
4	Dissolved oxygen (DO)	mg/L	6.52	5.40	5.94	4.88	-
5	BOD (5)	mg/L	3.13	2.86	3.72	2.56	Max. 20.00
6	COD (Cr)	mg/L	24.7	12.5	27.1	2.9	Max. 70.0
7	Total coliform	MPN/ 100ml	24,000	35,000	160,000	54,000	Max. 400
8	Total nitrogen (T-N)	mg/L	4.7	5.3	4.0	0.4	80.0
9	Total phosphorous (T-P)	mg/L	0.181	0.400	< 0.050	0.079	-
0	Color	TCU (True Color Unit)	35.63	10.00	12.74	0.00	-
1	Odor	TON (Threshold Odor Number)	2	1	1	1	-
12	Escherichia Coli	MPN/100 ml* (SW)	11.0	4.0	6.8		(1,000)* (CFU/100ml)
2	Експепспіа Соп	MPN/100 ml** (GW)				14.0	(100)** (MPN/100ml)
3	Flow Rate	m³/s	0.010	-	-	×	-

Note: Red colors means exceeded value than target value.

According to the quality standard for water baths in Japan, (Ministry of Environment, 1997), in case of E.Coli result is exceeding 1,000 CFU/100 ml, since it is assumed unsafety, it is considered unsuitable for water baths.

Source: Myanmar Koei International Ltd.



^{*}Note: Based on the water utilization at discharged creek, water quality C of the quality standard for water baths in Japan, (Ministry of Environment, 1997) is set as a reference value of self-monitoring for surface water monitoring. However, due to limitation of capacity for analytical laboratory in Myanmar, the method to analyze the "Colony Forming Unit (CFU)" is not available in Myanmar. Therefore, the results of "Most Probable Number (MPN)" are assumed similar to CFU values and compared with reference values. Once the method to analyze the CFU will be available in Myanmar, the analytical method will be changed.

^{**}Note: Based on the water utilization at monitoring point for ground water, B1(Irrigation water) of National Technical Regulation on Surface Water Quality in Vietnam (No. QCVN 08: 2008/BTNMT) is set as a reference value of self-monitoring for ground water monitoring.

CHAPTER 3: CONCLUSION AND RECOMMENDATIONS

As for the result of pH, the result at the monitoring points of retention pond (SW-1), exceeded the target value due to the expected reason; i) might be rainwater polluted with concrete washout water discharge from construction sites of Zone A, (ii) might be domestic wastewater discharge that contains detergents and soap-based products.

As for the result of SS and total coliform the results at the outlet of the centralized STP (SW-6) complied with the target value of both of them. It may prove that effluent from each locator was treated well by the STP. On the other hand, parameters of SS at retention pond (SW-1) and parameters of SS, total coliform at retention canal (SW-5) were exceeded the target values in this period for main discharging points of Thilawa SEZ Zone A. In addition, according to the result of self-monitoring of E. coli at retention canal (SW-5), result was under the reference value. Therefore, although the target value of total coliform was exceeded at monitoring point SW-5, but it is considered that there is no significant impact on human health.

As for parameters of SS and total coliform in surface water were exceeded the target values at reference monitoring points. As mentioned in Section 2.5.2, the result of self-monitoring of E. coli at SW-2, SW-3 and SW-4 were under the reference value. Therefore, although the target value of total coliform was exceeded at reference monitoring point, but it is considered that there is no significant impact on human health. The expected reasons for exceeding the target values of Total coliform are by natural origin (natural bacteria existed). As for the result of total coliform in ground water, result at GW-1 (ground water in Moegyoe Swan monastery) exceeded the target value. However, the result of E.Coli at GW-1 was under the reference value. Therefore, although the target value of total coliform was exceeded at monitoring point of GW-1, but it is considered that there is no significant impact on human health. It will be recommended to test the tube well for total coliform every year. However, it cannot reach to the conclusion of what is the reason to be exceeded the target values, thus the continuous monitoring and yearly trend analysis will be necessary to carry out based on the rainy and dry season data.

As for future subject for main discharging points of Thilawa SEZ Zone A, the following action may be taken to carry out the appropriate water quality monitoring:

- To monitor Escherichia coli (E. coli) level to identify health impact by coliform bacteria; and
- To monitor the possibility of the overflow water from construction sites.
- To monitor the possibility of the domestic wastewater from construction sites.

End of the Document



APPENDIX-1 FIELD SURVEY PHOTOS



FOR DISCHARGING POINTS OF THILAWA SEZ ZONE A



Surface water sampling and onsite measurement at SW-1



Surface water sampling and onsite measurement at SW-5



Surface water sampling and onsite measurement at SW-6

FOR REFERENCE MONITORING POINTS FOR COMPARISON WITH DISCHARGING POINTS AND BASELINE OF DISCHARGED CREEK



Surface water sampling and onsite measurement at SW-2



Surface water sampling and onsite measurement at SW-3



Surface water sampling and onsite measurement at SW-4





Ground water sampling and onsite measurement at GW-1



APPENDIX-2 LABORATORY RESULTS



FOR DISCHARGING POINTS AND AFTER CENTRALIZED STP



GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD.

Lot No. E1 ,ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tcl: 01-2309051/ 09 796935149

Report No. : GEM-LAB-201802091

Revision No. : 1

Report Date: 20 February, 2018

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

2 5

Sample Description

: MKI-SW-1-0205

Sampling Date: 5 February, 2018

Sample Name Sample No.

: W-1802011

Sampling By : Customer

Waste Profile No. :

Sample Received Date ; 5 February, 2018

No.	Parameter	Method	Unit	Result	LOQ
1	SS	APHA 2540D (Dry at 103-105'C Method)	mg/l	38.00	-
2	BOD (5)	APHA 5210 B (5 Days BOD Test)	mg/l	4.10	0.00
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/I	17.3	0.7
4	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/I	7.4	0.0
5	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	0.133	0.05
6	Total Coliform	APHA 92218 (Standard Total Coliform Fermentation Technique)	MPN/100mi	23	1.8
7	Color	APHA 2120C (Spectrophotometric Method)	TCU	6.81	0.00
8	Odor	APHA 2150 B (Threshold Odor Test)	TON	1	-

Remark

: LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor

Z

ye Lwin

B

Approved By :

Tomoya Suzuki





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD. Lot No. E1 ,ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tel. 01-2309051/ 09 796935149

Report No. : GEM-LAB-201802092

Revision No. : 1

Report Date: 20 February, 2018

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

Sample Name

: MKI-SW-5-0205

Sampling Date : 5 February, 2018

Sample No. Waste Profile No. : W-1802012

Sampling By : Customer

Sample Received Date ; 5 February, 2018

No.	Parameter	Method	Unit	Result	LOQ
1	SS	APHA 2540D (Dry at 103-105'C Method)	mg/l	50.00	Ç:
2	BOD (5)	APHA 5210 B (5 Days BOD Test)	mg/l	5.25	0.00
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/l	36.3	0.7
4	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	6.4	0.0
5	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	0.345	0.05
6	Total Coliform	APHA 92218 (Standard Total Coliform Fermentation Technique)	MPN/100ml	> 160000	1.8
7	Color	APHA 2120C (Spectrophotometric Method)	TCU	51.21	0.00
8	Odor	APHA 2150 B (Threshold Odor Test)	TON	1	82
	1				

Remark

: LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni-Ni Aye Lwin Assistant supervisor

Tomoya Suzuki







GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD.

Lot No. E1 ,ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tel 01-2309051/09 796935149

Report No.: GEM-LAB-201802093

Revision No.: 1

Report Date: 20 February, 2018

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description Sample Name

: MKI-SW-6-0205

Sampling Date: 5 February, 2018

Sample No. : W-1802013 Sampling By : Customer

Waste Profile No.

Sample Received Date: 5 February, 2018

No.	Parameter	Method	Unit	Result	LOQ
1	SS	APHA 2540D (Dry at 103-105'C Method)	mg/i	2.00	-
2	BOD (5)	APHA 5210 B (5 Days BOD Test)	mg/l	0.41	0.00
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/l	19.4	0.7
4	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	12.2	0.0
5	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	0.121	0.05
6	Total Coliform	APHA 9221B (Standard Total Coliform Fermentation Technique)	MPN/100ml	< 1.8	1.8
7	Color	APHA 2120C (Spectrophotometric Method)	TCU	0.00	0.00
8	Odor	APHA 2150 B (Threshold Odor Test)	TON	1.4	

: LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor

Approved By :

Tomoya Suzuki Director



FOR REFERENCE MONITORING POINTS FOR COMPARISON WITH DISCHARGING POINTS AND BASELINE OF DISCHARGED CREEK



GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD. Lot No. E1 , ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar

Report No.: GEM-LAB-201802094

Revision No. : 1

Report Date: 20 February, 2018

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

Sample Name : MKI-SW-2-0205 Sampling Date : 5 February, 2018

Sample No.

: W-1802014

Sampling By : Customer

Waste Profile No.

Sample Received Date: 5 February, 2018

SS				LOQ
	APHA 2540D (Dry at 103-105'C Method)	mg/l	30.00	
BOD (5)	APHA 5210 B (5 Days BOD Test)	mg/l	3.13	0.00
COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/l	24.7	0.7
Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	4.7	0.0
Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	0.181	0.05
Total Coliform	APHA 9221B (Standard Total Coliform Fermentation Technique)	MPN/100ml	24000	1.8
Color	APHA 2120C (Spectrophotometric Method)	TCU	35.63	0.00
Odor	APHA 2150 B (Threshold Odor Test)	TON	2	
Oil and Grease	APHA 5520B (Partition-Gravimetric Method)	mg/l	< 3.1	3.1
Chromium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.002	0.002
	Fotal Nitrogen Fotal Phosphorous Fotal Coliform Color Odor Dil and Grease	Fotal Nitrogen HACH Method 10072 (TNT Persulfate Digestion Method) Fotal Phosphorous APHA 4500-P E (Ascorbic Acid Method) Fotal Coliform APHA 92218 (Standard Total Coliform Fermentation Technique) APHA 2120C (Spectrophotometric Method) APHA 2150 B (Threshold Odor Test) Dil and Grease APHA 5520B (Partition-Gravimetric Method)	Fotal Nitrogen HACH Method 10072 (TNT Persulfate Digestion Method) mg/l Fotal Phosphorous APHA 4500-P E (Ascorbic Acid Method) mg/l Fotal Coliform APHA 9221B (Standard Total Coliform Fermentation Technique) MPN/100ml Color APHA 2120C (Spectrophotometric Method) TCU Odor APHA 2150 B (Threshold Odor Test) TON Dil and Grease APHA 5520B (Partition-Gravimetric Method) mg/l	Fotal Nitrogen HACH Method 10072 (TNT Persulfate Digestion Method) mg/l 4.7 Fotal Phosphorous APHA 4500-P E (Ascorbic Acid Method) mg/l 0.181 Fotal Coliform APHA 92218 (Standard Total Coliform Fermentation Technique) MPN/100ml 24000 Color APHA 2120C (Spectrophotometric Method) TCU 35.63 Odor APHA 2150 B (Threshold Odor Test) TON 2 Dil and Grease APHA 5520B (Partition-Gravimetric Method) mg/l < 3.1

Remark

: LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF). Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By:

Ni Ni Aye Lwin

Assistant supervisor

Approved By :

Tomoya Suzuki





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD.

Lot No. E1 ,ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tel 01-2309051/199-796935149

Report No. : GEM-LAB-201802095

Revision No. : 1

Report Date: 20 February, 2018

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

: MKI-SW-3-0205

Sampling Date : 5 February, 2018

Sampling By : Customer

Sample Name Sample No.

: W-1802015

Sample Received Date: 5 February, 2018

Waste Profile No.

SS 2 BOD (5) COD (Cr) Total Nitroge Total Phosphi Total Coliform Color Odor	APHA 5210 APHA 5220 HACH Methe	D (Dry at 103-105'C Method) B (5 Days BOD Test) D (Close Reflux Colorimetric Method) od 10072 (TNT Persulfate Digestion Method) -P E (Ascorbic Acid Method)	mg/l mg/l mg/l mg/l	26.00 2.86 12.5 5.3	0.00
3 COD (Cr) 4 Total Nitroge 5 Total Phosph 6 Total Coliforn 7 Color	APHA 5220	D (Close Reflux Colorimetric Method) od 10072 (TNT Persulfate Digestion Method)	mg/l	12.5	0.7
4 Total Nitroge 5 Total Phosph 6 Total Coliforn 7 Color	en HACH Metho	od 10072 (TNT Persulfate Digestion Method)		40.0000000	2000
5 Total Phosphe 6 Total Coliforn 7 Color			mg/l	5.3	12.72
6 Total Coliforn 7 Color	orous APHA 4500	-P. F. (Assorbis Acid Method)			0.0
7 Color		T E (Macorole Meld Melliod)	mg/l	0.4	0.05
2	m APHA 92218	Standard Total Coliform Fermentation Technique)	MPN/100ml	35000	1.8
8 Odor	APHA 2120	C (Spectrophotometric Method)	TCU	10.00	0.00
	APHA 2150	B (Threshold Odor Test)	TON	1	-
9 Oil and Greas	se APHA 5520	B (Partition-Gravimetric Method)	mg/l	3.20	3.1
10 Chromium	APHA 3120	3 (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.002	0.002

Remark

LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin Assistant supervisor Approved By :





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD. Lot No. E1 ,ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tel: 01-2309051/09 796935149

Report No. : GEM-LAB-201802096

Revision No.: 1

Report Date: 20 February, 2018

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

: MKI-SW-4-0205

Sampling Date: 5 February, 2018

Sample Name Sample No.

: W-1802016

Sampling By : Customer

Waste Profile No.

Sample Received Date: 5 February, 2018

No.	Parameter	Method	Unit	Result	LOQ
1	SS	APHA 2540D (Dry at 103-105'C Method)	mg/l	8.00	_
2	BOD (5)	APHA 5210 B (5 Days BOD Test)	mg/l	3.72	0.00
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/l	27.1	0.7
4	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	4.0	0.0
5	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	< 0.05	0.05
6	Total Coliform	APHA 9221B (Standard Total Coliform Fermentation Technique)	MPN/100mi	160000	1.8
7	Color	APHA 2120C (Spectrophotometric Method)	TCU	12.74	0.00
8	Odor	APHA 2150 B (Threshold Odor Test)	TON	1	-
9	Oil and Grease	APHA 5520B (Partition-Gravimetric Method)	mg/I	< 3.1	3.1
10	Chromium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤ 0.002	0.002
	/				

LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor

Approved By :

Tomoya Suzuki





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD.

Lot No. E1 ,ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tel.01-23090517 09 796935149

Report No. : GEM-LAB-201802097

Revision No. : 1

Report Date: 20 February, 2018

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description Sample Name

: MKI-GW-1-0205

Sampling Date : 5 February, 2018

Sample No.

: W-1802017

Sampling By : Customer

Waste Profile No.

Sample Received Date : 5 February, 2018

No.	Parameter	Method	Unit	Result	LOQ
1	ss	APHA 2540D (Dry at 103-105'C Method)	mg/l	2.00	-
2	BOD (5)	APHA 5210 B (5 Days BOD Test)	mg/l	2.56	0.00
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/l	2.9	0.7
4	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	0.4	0.0
5	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	0.079	0.05
6	Total Coliform	APHA 9221B (Standard Total Coliform Fermentation Technique)	MPN/100ml	54000	1.8
7	Color	APHA 2120C (Spectrophotometric Method)	TCU	0.00	0.00
8	Odor	APHA 2150 B (Threshold Odor Test)	TON	1	-
				= = = 1	

Remark

: LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and

Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor

Approved By :



APPENDIX-3 LABORATORY RESULT OF ESCHERICHIA COLI (SELF-MONITORING)



FOR DISCHARGING POINTS AND AFTER CENTRALIZED STP



GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD Lot No. E1, ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tch01-2309051, 09 796935149

Report No.: GEM-LAB-201802082

Revision No.: 1

Report Date: 20 February, 2018

Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

: MKI-SW-1-0205

Sampling Date : 5 February, 2018

Sample Name Sample No.

: W-1802020

Sampling By : Customer

Waste Profile No.

Sample Received Date : 5 February, 2018

No.	Parameter	Method	Unit	Result	LOQ
1	Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	MPN/100ml	2.0	1.8
- }					
Ħ					

: LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD. Lot No. E1 ,ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tcl 01-2309051 09 796935149

Report No.: GEM-LAB-201802083

Revision No.: 1

Report Date: 20 February, 2018 Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

Sample Description

Sample Name

: MKI-SW-5-0205

Sampling Date : 5 February, 2018

Waste Profile No.

: W-1802021

Sampling By : Customer

Sample Received Date: 5 February, 2018

No.	Parameter	Method	Unit	Result	LOQ
1	Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	MPN/100ml	47.0	1.8

: LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor

Approved By :

Tomoya Suzuki





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD. Lot No. E1 ,ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tel 01-2309051/ 09 796935149

Report No. : GEM-LAB-201802084

Revision No. : 1

Report Date: 20 February, 2018 Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

: MJTD

Sample Description

: MKI-SW-6-0205

Sampling Date : 5 February, 2018

Sample Name Sample No.

: W-1802022

Sampling By : Customer

Waste Profile No. : -

Sample Received Date : 5 February, 2018

No.	Parameter	Method	Unit	Result	LOQ
1	Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	MPN/100ml	< 1.8	1.8

Remark : LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor



FOR REFERENCE MONITORING POINTS FOR COMPARISON WITH DISCHARGING POINTS AND BASELINE OF DISCHARGED CREEK



GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD Lot No. E1 ,ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tc1.01-2309051/09 796935149

Report No.: GEM-LAB-201802085

Revision No. : 1

Report Date: 20 February, 2018 Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

: MITD

Sample Description Sample Name

: MKI-SW-2-0205

Sampling Date : 5 February, 2018

Sample No. : W-1802023

Sampling By : Customer

Waste Profile No. : -

Sample Received Date : 5 February, 2018

No.	Parameter	Method	Unit	Result	LOQ
1	1 Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	MPN/100ml	11.0	1.8
		7/1			

Remark : LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Assistant supervisor





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD Lot No. E1 ,ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tel:01-23090\$1:09.796935149

Report No. : GEM-LAB-201802086

Revision No. : 1

Report Date: 20 February, 2018 Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

: MJTD

Sample Description

Sample Name

: MKI-SW-3-0205

Sampling Date: 5 February, 2018

Sample No.

: W-1802024

Sampling By : Customer

Waste Profile No. : -

Sample Received Date : 5 February, 2018

No.	Parameter	Method	Unit	Result	LOQ
1	Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	MPN/100ml	4.0	1.8
7					

Remark : LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD. Lot No. E1 ,ThilawaSEZ Zone A, Yangon Region, the Union of Myanmar Tel (01-2309051/ 09 796935149

Report No. : GEM-LAB-201802087

Revision No. : 1

Report Date: 20 February, 2018 Application No.: 0049-C001

Analysis Report

Client Name

Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

: MJTD

Sample Description

Sample Name ; MKI-SW-4-0205

Sampling Date : 5 February, 2018

Sample No. ; W-1802025

Sampling By : Customer

Waste Profile No. : -

Sample Received Date: 5 February, 2018

Parameter	Method	Unit	Result	LOQ
Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	MPN/100ml	6.8	1.8
	Escherichia Coli	Escherichia Coli APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate MPN/100ml	Escherichia Coli APHA 9223 F Escherichia Cali Procedure Using Fluorogenic Substrate MPN/100ml 6.8

Remark : LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin

Assistant supervisor

Approved By :





GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD Lot No. E1 ,ThilawasE2 Zone A, Yangon Region, the Union of Myanmar Tel 01-2309051: 09 796935149

Report No.: GEM-LAB-201802088

Revision No.: 1

Report Date: 20 February, 2018 Application No.: 0049-C001

Analysis Report

Client Name

: Myanmar Koei International LTD (MKI)

Address

: No.1A /28, Mya Thidar Housing, Ward 11, South Okkalapa.

Project Name

: MJTD

Sample Description
Sample Name

: MKI-GW-1-0205

Sampling Date: 5 February, 2018

Sample No.

: W-1802026

Sampling By : Customer

Waste Profile No. : -

Sample Received Date : 5 February, 2018

No.	Parameter	Method	Unit	Result	LOQ
1	1 Escherichia Coli	APHA 9221 F Escherichia Coli Procedure Using Fluorogenic Substrate	MPN/100ml	14.0	1.8
			-		
-					

Remark

: LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

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Thilawa Special Economic Zone (Zone A) Development Project (Operation Phase)

Appendix

Air Quality Monitoring Report February, 2018



AIR QUALITY MONITORING REPORT FOR DEVELOPMENT OF INDUSTRIAL AREA THILAWA SEZ ZONE A

(OPERATION STAGE)

(BI-ANNUALLY MONITORING)

February 2018 Myanmar Koei International Ltd.



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CHAPTER 1: OUTLINES AND SUMMARY OF MONITORING PLAN

1.1 General

Thilawa Special Economic Zone (TSEZ) is located in southern district of Yangon region and about 23 km southeast of Yangon city. As the developer of Thilawa SEZ, Myanmar Japan Thilawa Development Ltd. (MJTD) has a responsibility to carry out regular environmental monitoring in the industrial area of Zone A in accordance with the approved Environmental Impact Assessment (EIA) report with Environmental Management Plan (EMP). MJTD has implemented monitoring various environmental items with the specified time frame to know the environmental conditions in and around the area.

1.2 Outlines of Monitoring Plan

To assess the environmental condition under the operation of industrial area in and around Thilawa SEZ Zone A, Air quality had been monitored from 6th Feb 2018 – 13th Feb 2018 as follows;

Table 1.2-1 Outlines of Air Quality Monitoring Plan

Monitoring Date Monitoring Item		Parameters	Number of Point	Duration	Monitoring Methodology		
From 6 th Feb– 13 th Feb, 2018	Air Quality	CO, NO ₂ , TSP, PM ₁₀ , and SO ₂	1	7 Days	On site measurement by Haz-Scanner Environmental Perimeter Air Station (EPAS)		



CHAPTER 2: AIR QUALITY MONITORING

2.1 Monitoring Item

The parameters for air quality monitoring were CO, NO₂, TSP, PM₁₀, and SO₂.

2.2 Monitoring Location

The air quality measurement equipment, "Haz-Scanner Environmental Perimeter Air Station (EPAS) was set up inside the Thilawa SEZ Zone A which is 170 meters away from Gate-3, N: 16°40'34.80", E: 96°15'53.40", surrounded by the factories of Thilawa SEZ Zone A. Possible emission sources are dust emissions from construction activities and exhaust gas emissions from surrounded factories. The location of air quality monitoring is shown in the Figure 2.2-1.



Figure 2.2-1 Location of Air Quality Monitoring Point

2.3 Monitoring Period

Air quality monitoring was conducted seven consecutive days from 6th February – 13th February, 2018.



2.4 Monitoring Method

Monitoring of CO, NO₂, TSP, PM₁₀, and SO₂ were conducted by referring to the recommendation of the United States Environmental Protection Agency (U.S. EPA). The Haz-Scanner EPAS was used to collect ambient air pollutants. The EPAS measures automatically every one minute and directly read and recorded onsite for CO, NO₂, TSP, PM₁₀, and SO₂. Due to the limitation of the analytical equipment in Myanmar, TSP results was calculated as predicted value which is based on the results of PM₁₀. Therefore, the result of TSP was evaluated using the estimated TSP concentration values. The state of air quality monitoring is shown in Figure 2.4-1.



Figure 2.4-1 Status of Air Quality Monitoring Point

2.5 Monitoring Results

The daily average value of air quality monitoring results of CO, NO₂, TSP, PM₁₀, and SO₂ are described in Table 2.5-1. Comparing with the target value of CO, NO₂, TSP, PM₁₀, and SO₂ prescribed in EIA report for Thilawa SEZ development project Zone A, all of results are under the target value.

Regarding the calculation of predicted TSP concentration, the correlation value between PM₁₀ and TSP of ambient air quality guideline value in Thailand as below;

330 μ g/m³ (TSP standard value in Thailand) / 120 μ g/m³ (PM₁₀ standard value in Thailand) = 2.75 (Correlation value)



Table 2.5-1 Air Quality Monitoring Result (Daily Average)

	СО	NO ₂	TSP	PM ₁₀	SO ₂
Date	ppm	ppm	mg/m ³	mg/m ³	ppm
06~07 Feb, 2018	0.088 (0.101 mg/m ³)	0.047 (0.088 mg/m ³)	0.070	0.026	0.006 (0.016 mg/m ³)
07~08 Feb, 2018	0.079 (0.090 mg/m ³)	0.048 (0.091 mg/m ³)	0.120	0.044	0.005 (0.013 mg/m ³)
08~09 Feb, 2018	0.055 (0.063 mg/m ³)	0.051 (0.096 mg/m ³)	0.124	0.045	0.002 (0.004 mg/m ³)
09~10 Feb, 2018	0.056 (0.065 mg/m ³)	0.047 (0.088 mg/m ³)	0.157	0.057	0.003 (0.008 mg/m ³)
10~11 Feb, 2018	0.059 (0.068 mg/m ³)	0.044 (0.082 mg/m ³)	0.148	0.054	0.003 (0.008 mg/m ³)
11~12 Feb, 2018	0.105 (0.120 mg/m ³)	0.042 (0.080 mg/m ³)	0.107	0.039	0.003 (0.008 mg/m ³)
12~13 Feb, 2018	0.156 (0.179 mg/m³)	0.043 (0.082 mg/m³)	0.074	0.027	0.004 (0.009 mg/m ³)
7 Days Average Value	0.085 (0.098 mg/m³)	0.046 (0.087 mg/m³)	0.114	0.042	0.004 (0.010 mg/m ³)
Target Value	10.000 (11.45 mg/m ³)	< 0.06 (0.11 mg/m ³)	< 0.33	< 0.12	< 0.04 (0.11 mg/m ³)

Note: The target value of CO, NO₂ and SO₂ were converted to ppm units from mg/m³.



CHAPTER 3: CONCLUSION AND ISSUES TO BE SOLVED

The result of air quality for CO, NO₂, TSP, PM₁₀, and SO₂ in each day are not exceeded the target value, thus there are no significant impacts on the surrounding air quality.

In conclusion of this environmental monitoring, there are no specific air quality impacts to the surrounding area of industrial area of Thilawa SEZ Zone A during this monitoring period.



APPENDIX - HOURLY AIR RESULT



Date	Time	со	NO2	TSP	PM ₁₀	SO ₂	Wind Speed	Wind	Direction
Date	Time	ppm	ppm	mg/m ³	mg/m³	ppm	kph	Deg.	Direction
		Hourly	Hourly	Hourly	Hourly	Hourly	Hourly	Hourly	Hourly
06 Feb, 2018	10:00 ~ 10:59	0.015	0.057	0.020	0.007	0.000	1.33	40	NE
06 Feb, 2018	11:00 ~ 11:59	0.010	0.039	0.024	0.009	0.000	1.42	123	SE
06 Feb, 2018	12:00 ~ 12:59	0.009	0.041	0.017	0.006	0.001	1.65	201	SSW
06 Feb, 2018	13:00 ~ 13:59	0.057	0.042	0.039	0.014	0.000	2.23	248	W
06 Feb, 2018	14:00 ~ 14:59	0.102	0.045	0.087	0.032	0.001	2.20	202	SSW
06 Feb, 2018	15:00 ~ 15:59	0.109	0.051	0.170	0.062	0.000	2.38	204	SW
06 Feb, 2018	16:00 ~ 16:59	0.107	0.042	0.098	0.036	0.002	2.38	207	SW
06 Feb, 2018	17:00 ~ 17:59	0.131	0.049	0.040	0.014	0.002	2.73	242	WSW
06 Feb, 2018	18:00 ~ 18:59	0.262	0.048	0.074	0.027	0.011	1.85	221	SW
06 Feb, 2018	19:00 ~ 19:59	0.354	0.049	0.132	0.048	0.010	2.15	199	SSW
06 Feb, 2018	20:00 ~ 20:59	0.065	0.049	0.019	0.007	0.006	1.98	198	SSW
06 Feb, 2018	21:00 ~ 21:59	0.067	0.052	0.029	0.011	0.008	2.10	197	SSW
06 Feb, 2018	22:00 ~ 22:59	0.130	0.052	0.066	0.024	0.011	2.67	200	SSW
06 Feb, 2018	23:00 ~ 23:59	0.090	0.047	0.055	0.020	0.008	2.50	202	SSW
07 Feb, 2018	0:00 ~ 0:59	0.043	0.041	0.027	0.010	0.003	2.10	203	SW
07 Feb, 2018	1:00 ~ 1:59	0.050	0.044	0.041	0.015	0.006	1.45	201	SSW
07 Feb, 2018	2:00 ~ 2:59	0.060	0.051	0.048	0.018	0.017	1.42	203	SW
07 Feb, 2018	3:00 ~ 3:59	0.044	0.050	0.061	0.022	0.009	0.63	200	SSW
07 Feb, 2018	4:00 ~ 4:59	0.064	0.047	0.069	0.025	0.013	0.37	188	SSW
07 Feb, 2018	5:00 ~ 5:59	0.150	0.048	0.133	0.048	0.019	0.35	208	SW
07 Feb, 2018	6:00 ~ 6:59	0.127	0.043	0.176	0.064	0.012	0.65	226	WSW
07 Feb, 2018	7:00 ~ 7:59	0.042	0.052	0.106	0.039	0.005	0.55	174	S
07 Feb, 2018	8:00 ~ 8:59	0.026	0.040	0.091	0.033	0.002	1.52	215	SW
07 Feb, 2018	9:00 ~ 9:59	0.001	0.043	0.061	0.022	0.000	1.62	207	SW

Max	0.354 (0.406 mg/m ³)	0.057 (0.108 mg/m ³)	0.176	0.064	0.019 (0.049 mg/m^3)
Avg	0.088 (0.101 mg/m ³)	0.047 (0.088 mg/m³)	0.070	0.026	0.006 (0.016 mg/m ³)
Min	0.001 (0.001 mg/m ³)	0.039 (0.074 mg/m³)	0.017	0.006	0.000 (0.000 mg/m ³)



		СО	NO ₂	TSP	PM ₁₀	SO ₂	Wind Speed	Wind	Direction
Date	Time	ppm	ppm	mg/m³	mg/m³	ppm	kph	Deg.	Direction
		Hourly	Hourly	Hourly	Hourly	Hourly	Hourly	Hourly	Hourly
07 Feb, 2018	10:00 ~ 10:59	0.001	0.031	0.064	0.023	0.000	1.37	192	SSW
07 Feb, 2018	11:00 ~ 11:59	0.000	0.038	0.036	0.013	0.000	1.77	189	SSW
07 Feb, 2018	12:00 ~ 12:59	0.000	0.038	0.024	0.009	0.000	2.48	194	SSW
07 Feb, 2018	13:00 ~ 13:59	0.005	0.040	0.041	0.015	0.000	2.28	197	SSW
07 Feb, 2018	14:00 ~ 14:59	0.025	0.045	0.083	0.030	0.000	2.27	222	SW
07 Feb, 2018	15:00 ~ 15:59	0.103	0.048	0.068	0.025	0.000	2.85	238	WSW
07 Feb, 2018	16:00 ~ 16:59	0.161	0.053	0.062	0.023	0.000	2.85	236	WSW
07 Feb, 2018	17:00 ~ 17:59	0.149	0.062	0.080	0.029	0.000	2.25	234	WSW
07 Feb, 2018	18:00 ~ 18:59	0.140	0.047	0.020	0.007	0.008	2.00	206	SW
07 Feb, 2018	19:00 ~ 19:59	0.203	0.050	0.058	0.021	0.013	2.20	196	SSW
07 Feb, 2018	20:00 ~ 20:59	0.034	0.045	0.076	0.028	0.007	1.88	197	SSW
07 Feb, 2018	21:00 ~ 21:59	0.449	0.048	0.346	0.126	0.031	1.85	200	SSW
07 Feb, 2018	22:00 ~ 22:59	0.001	0.051	0.011	0.004	0.001	1.57	199	SSW
07 Feb, 2018	23:00 ~ 23:59	0.058	0.059	0.097	0.035	0.013	1.48	218	SW
08 Feb, 2018	0:00 ~ 0:59	0.048	0.047	0.146	0.053	0.005	1.40	240	WSW
08 Feb, 2018	1:00 ~ 1:59	0.036	0.051	0.170	0.062	0.004	0.65	251	W
08 Feb, 2018	2:00 ~ 2:59	0.106	0.049	0.202	0.073	0.008	0.53	206	SW
08 Feb, 2018	3:00 ~ 3:59	0.139	0.050	0.206	0.075	0.013	0.53	232	WSW
08 Feb, 2018	4:00 ~ 4:59	0.017	0.058	0.233	0.085	0.000	0.12	159	S
08 Feb, 2018	5:00 ~ 5:59	0.058	0.056	0.265	0.097	0.004	0.20	167	S
08 Feb, 2018	6:00 ~ 6:59	0.096	0.052	0.284	0.103	0.009	0.38	156	SSE
08 Feb, 2018	7:00 ~ 7:59	0.054	0.052	0.153	0.056	0.003	0.27	170	S
08 Feb, 2018	8:00 ~ 8:59	0.009	0.046	0.091	0.033	0.000	1.15	204	sw
08 Feb, 2018	9:00 ~ 9:59	0.000	0.043	0.061	0.022	0.000	1.83	225	SW

Max	0.449 (0.515 mg/m ³)	0.062 (0.116 mg/m ³)	0.346	0.126	0.031 (0.082 mg/m ³)
Avg	0.079 (0.090 mg/m³)	0.048 (0.091 mg/m ³)	0.120	0.044	0.005 (0.013 mg/m ³)
Min	0.000 (0.000 mg/m³)	0.031 (0.058 mg/m³)	0.011	0.004	0.000 (0.000 mg/m ³)



D		CO NO2 TSP	PM ₁₀	SO ₂	Wind Speed	Wind Direction					
Date	Time			ppm ppm	mg/m³	mg/m³	ppm Hourly	kph Hourly	Deg.	Direction	
			Hourly	Hourly	Hourly	Hourly			Hourly	Hourly	
08 Feb, 2018	10:00	~	10:59	0.003	0.028	0.061	0.022	0.000	1.53	208	SW
08 Feb, 2018	11:00	~	11:59	0.000	0.048	0.081	0.030	0.000	1.75	173	S
08 Feb, 2018	12:00	~	12:59	0.005	0.048	0.066	0.024	0.000	2.87	197	SSW
08 Feb, 2018	13:00	2	13:59	0.022	0.046	0.073	0.026	0.000	2.32	176	S
08 Feb, 2018	14:00	~	14:59	0.029	0.049	0.095	0.035	0.000	2.25	149	SSE
08 Feb, 2018	15:00	2	15:59	0.068	0.054	0.135	0.049	0.000	2.45	150	SSE
08 Feb, 2018	16:00	~	16:59	0.135	0.060	0.140	0.051	0.000	1.83	156	SSE
08 Feb, 2018	17:00	~	17:59	0.167	0.064	0.122	0.044	0.002	1.67	158	S
08 Feb, 2018	18:00	~	18:59	0.087	0.060	0.052	0.019	0.000	0.98	170	S
08 Feb, 2018	19:00	~	19:59	0.092	0.061	0.101	0.037	0.000	1.33	189	SSW
08 Feb, 2018	20:00	~	20:59	0.115	0.053	0.127	0.046	0.002	1.38	191	SSW
08 Feb, 2018	21:00	2	21:59	0.093	0.051	0.127	0.046	0.001	1.00	185	SSW
08 Feb, 2018	22:00	~	22:59	0.021	0.053	0.107	0.039	0.001	1.48	201	SSW
08 Feb, 2018	23:00	~	23:59	0.018	0.057	0.106	0.039	0.001	1.38	211	SW
09 Feb, 2018	0:00	~	0:59	0.068	0.061	0.137	0.050	0.000	1.58	213	SW
09 Feb, 2018	1:00	~	1:59	0.071	0.052	0.149	0.054	0.003	1.38	226	WSW
09 Feb, 2018	2:00	~	2:59	0.079	0.045	0.184	0.067	0.000	1.90	243	WSW
09 Feb, 2018	3:00	~	3:59	0.017	0.051	0.203	0.074	0.004	0.65	209	SW
09 Feb, 2018	4:00	~	4:59	0.033	0.046	0.184	0.067	0.004	0.22	193	SSW
09 Feb, 2018	5:00	~	5:59	0.036	0.046	0.194	0.070	0.012	0.27	194	SSW
09 Feb, 2018	6:00	~	6:59	0.101	0.047	0.219	0.080	0.005	0.30	185	SSW
09 Feb, 2018	7:00	~	7:59	0.034	0.051	0.132	0.048	0.001	0.72	205	SW
09 Feb, 2018	8:00	~	8:59	0.009	0.049	0.113	0.041	0.000	1.35	223	SW
09 Feb, 2018	9:00	~	9:59	0.023	0.043	0.065	0.024	0.004	1.58	231	WSW

Max	0.167 (0.192 mg/m ³)	0.064 (0.120 mg/m ³)	0.219	0.080	0.012 (0.032 mg/m ³)
Avg	0.055 (0.063 mg/m ³)	0.051 (0.096 mg/m ³)	0.124	0.045	0.002 (0.004 mg/m ³)
Min	0.000 (0.000 mg/m ³)	0.028 (0.053 mg/m³)	0.052	0.019	0.000 (0.000 mg/m ³)



Date		СО	NO ₂	TSP mg/m ³	m ³ mg/m ³	SO ₂ ppm Hourly	Wind Speed kph Hourly	Wind Direction	
	Time		ppm					Deg.	Direction
			Hourly	Hourly				Hourly	Hourly
09 Feb, 2018	10:00 ~ 10:59	0.000	0.037	0.041	0.015	0.000	1.42	239	WSW
09 Feb, 2018	11:00 ~ 11:59	0.001	0.031	0.029	0.010	0.000	1.60	217	SW
09 Feb, 2018	12:00 ~ 12:59	0.000	0.032	0.045	0.016	0.000	2.03	189	SSW
09 Feb, 2018	13:00 ~ 13:59	0.000	0.032	0.045	0.016	0.000	2.55	196	SSW
09 Feb, 2018	14:00 ~ 14:59	0.027	0.039	0.059	0.022	0.000	2.38	196	SSW
09 Feb, 2018	15:00 ~ 15:59	0.044	0.045	0.093	0.034	0.000	2.08	158	S
09 Feb, 2018	16:00 ~ 16:59	0.137	0.052	0.125	0.046	0.000	2.13	143	SSE
09 Feb, 2018	17:00 ~ 17:59	0.129	0.062	0.130	0.047	0.000	1.97	167	S
09 Feb, 2018	18:00 ~ 18:59	0.116	0.067	0.122	0.044	0.000	2.70	198	SSW
09 Feb, 2018	19:00 ~ 19:59	0.130	0.055	0.119	0.043	0.001	2.35	198	SSW
09 Feb, 2018	20:00 ~ 20:59	0.102	0.054	0.139	0.050	0.010	1.98	201	SSW
09 Feb, 2018	21:00 ~ 21:59	0.045	0.054	0.139	0.050	0.006	1.93	202	SSW
09 Feb, 2018	22:00 ~ 22:59	0.040	0.054	0.136	0.049	0.001	1.82	207	SW
09 Feb, 2018	23:00 ~ 23:59	0.062	0.051	0.188	0.068	0.002	2.23	209	SW
10 Feb, 2018	0:00 ~ 0:59	0.035	0.046	0.197	0.072	0.003	1.72	219	SW
10 Feb, 2018	1:00 ~ 1:59	0.056	0.045	0.191	0.070	0.004	1.35	241	WSW
10 Feb, 2018	2:00 ~ 2:59	0.025	0.049	0.202	0.073	0.005	0.83	257	W
10 Feb, 2018	3:00 ~ 3:59	0.031	0.050	0.189	0.069	0.004	0.20	282	WNW
10 Feb, 2018	4:00 ~ 4:59	0.102	0.050	0.263	0.096	0.013	0.20	274	WNW
10 Feb, 2018	5:00 ~ 5:59	0.071	0.049	0.405	0.147	0.001	0.33	310	NW
10 Feb, 2018	6:00 ~ 6:59	0.079	0.044	0.291	0.106	0.010	0.38	269	W
10 Feb, 2018	7:00 ~ 7:59	0.073	0.045	0.283	0.103	0.009	0.93	59	ENE
10 Feb, 2018	8:00 ~ 8:59	0.026	0.040	0.192	0.070	0.007	1.25	47	ENE
10 Feb, 2018	9:00 ~ 9:59	0.021	0.036	0.141	0.051	0.000	1.67	28	NE

Max	0.137 (0.157 mg/m ³)	0.067 (0.126 mg/m ³)	0.405	0.147	0.013 (0.034 mg/m ³)
Avg	0.056 (0.065 mg/m ³)	0.047 (0.088 mg/m³)	0.157	0.057	0.003 (0.008 mg/m ³)
Min	0.000 (0.000 mg/m ³)	0.031 (0.057 mg/m³)	0.029	0.010	0.000 (0.000 mg/m ³)



Date		со	NO ₂	TSP	PM ₁₀	SO ₂	Wind Speed	Wind	Direction
Date	Time	ppm	ppm	mg/m ³	mg/m ³	ppm	kph	Deg.	Direction
		Hourly	Hourly	Hourly	Hourly	Hourly	Hourly	Hourly	Hourly
10 Feb, 2018	10:00 ~ 10:59	0.011	0.034	0.066	0.024	0.000	1.60	33	NE
10 Feb, 2018	11:00 ~ 11:59	0.005	0.027	0.059	0.022	0.000	1.47	41	NE
10 Feb, 2018	12:00 ~ 12:59	0.000	0.030	0.081	0.030	0.000	1.32	59	ENE
10 Feb, 2018	13:00 ~ 13:59	0.014	0.042	0.233	0.085	0.000	2.38	189	SSW
10 Feb, 2018	14:00 ~ 14:59	0.046	0.042	0.111	0.040	0.000	3.25	203	SW
10 Feb, 2018	15:00 ~ 15:59	0.030	0.035	0.150	0.055	0.000	1.98	160	S
10 Feb, 2018	16:00 ~ 16:59	0.114	0.046	0.105	0.038	0.000	1.95	177	S
10 Feb, 2018	17:00 ~ 17:59	0.102	0.058	0.097	0.035	0.002	1.45	166	S
10 Feb, 2018	18:00 ~ 18:59	0.104	0.058	0.115	0.042	0.006	0.92	178	S
10 Feb, 2018	19:00 ~ 19:59	0.180	0.055	0.200	0.073	0.004	0.93	181	SSW
10 Feb, 2018	20:00 ~ 20:59	0.040	0.049	0.150	0.055	0.008	1.03	204	SW
10 Feb, 2018	21:00 ~ 21:59	0.077	0.050	0.169	0.062	0.001	1.02	207	SW
10 Feb, 2018	22:00 ~ 22:59	0.040	0.048	0.169	0.061	0.002	0.88	205	SW
10 Feb, 2018	23:00 ~ 23:59	0.048	0.050	0.134	0.049	0.003	0.90	207	SW
11 Feb, 2018	0:00 ~ 0:59	0.032	0.048	0.164	0.060	0.005	1.20	265	W
11 Feb, 2018	1:00 ~ 1:59	0.038	0.046	0.152	0.055	0.008	0.55	231	WSW
11 Feb, 2018	2:00 ~ 2:59	0.037	0.046	0.172	0.062	0.010	0.43	253	W
11 Feb, 2018	3:00 ~ 3:59	0.051	0.049	0.192	0.070	0.003	0.58	273	WNW
11 Feb, 2018	4:00 ~ 4:59	0.065	0.050	0.183	0.067	0.001	0.82	288	WNW
11 Feb, 2018	5:00 ~ 5:59	0.094	0.046	0.198	0.072	0.004	0.80	101	ESE
11 Feb, 2018	6:00 ~ 6:59	0.169	0.042	0.216	0.079	0.006	0.42	151	SSE
11 Feb, 2018	7:00 ~ 7:59	0.099	0.034	0.207	0.075	0.010	0.55	69	Е
11 Feb, 2018	8:00 ~ 8:59	0.018	0.029	0.136	0.049	0.001	1.43	56	ENE
11 Feb, 2018	9:00 ~ 9:59	0.013	0.031	0.081	0.030	0,001	1.62	50	ENE

Max	0.180 (0.206 mg/m ³)	0.058 (0.109 mg/m³)	0.233	0.085	0.010 (0.026 mg/m ³)
Avg	0.059 (0.068 mg/m ³)	0.044 (0.082 mg/m ³)	0.148	0.054	0.003 (0.008 mg/m ³)
Min	0.000 (0.000 mg/m ³)	0.027 (0.051 mg/m³)	0.059	0.022	0.000 (0.000 mg/m ³)



		СО	NO ₂	TSP	PM ₁₀	SO ₂	Wind Speed	Wind	Direction
Date	Time	ppm	ppm	mg/m³	mg/m³	ppm	kph	Deg.	Direction
		Hourly	Hourly	Hourly	Hourly	Hourly	Hourly	Hourly	Hourly
11 Feb, 2018	10:00 ~ 10:59	0.000	0.030	0.038	0.014	0.000	1.87	29	NE
11 Feb, 2018	11:00 ~ 11:59	0.003	0.030	0.032	0.012	0.000	2.23	123	SE
11 Feb, 2018	12:00 ~ 12:59	0.000	0.029	0.037	0.013	0.000	2.03	75	E
11 Feb, 2018	13:00 ~ 13:59	0.000	0.034	0.048	0.018	0.000	1.85	275	WNW
11 Feb, 2018	14:00 ~ 14:59	0.055	0.036	0.054	0.019	0.001	1.77	335	NNW
11 Feb, 2018	15:00 ~ 15:59	0.088	0.044	0.060	0.022	0.000	1.43	213	SW
11 Feb, 2018	16:00 ~ 16:59	0.155	0.048	0.092	0.033	0.000	1.50	254	W
11 Feb, 2018	17:00 ~ 17:59	0.244	0.052	0.113	0.041	0.000	1.58	211	SW
11 Feb, 2018	18:00 ~ 18:59	0.206	0.059	0.122	0.044	0.000	0.70	194	SSW
11 Feb, 2018	19:00 ~ 19:59	0.164	0.061	0.107	0.039	0.006	0.55	177	S
11 Feb, 2018	20:00 ~ 20:59	0.313	0.049	0.229	0.083	0.012	0.22	209	SW
11 Feb, 2018	21:00 ~ 21:59	0.343	0.045	0.299	0.109	0.013	0.22	215	SW
11 Feb, 2018	22:00 ~ 22:59	0.009	0.047	0.102	0.037	0.002	0.28	224	SW
11 Feb, 2018	23:00 ~ 23:59	0.033	0.050	0.033	0.012	0.001	0.22	256	W
12 Feb, 2018	0:00 ~ 0:59	0.058	0.054	0.020	0.007	0.001	0.20	192	SSW
12 Feb, 2018	1:00 ~ 1:59	0.032	0.047	0.045	0.016	0.002	0.60	228	WSW
12 Feb, 2018	2:00 ~ 2:59	0.064	0.044	0.122	0.045	0.001	0.42	251	W
12 Feb, 2018	3:00 ~ 3:59	0.121	0.042	0.185	0.067	0.003	0.42	221	SW
12 Feb, 2018	4:00 ~ 4:59	0.305	0.039	0.254	0.092	0.002	0.87	132	SE
12 Feb, 2018	5:00 ~ 5:59	0.088	0.026	0.185	0.067	0.004	0.70	26	NE
12 Feb, 2018	6:00 ~ 6:59	0.129	0.049	0.197	0.072	0.020	0.70	135	SSE
12 Feb, 2018	7:00 ~ 7:59	0.087	0.036	0.132	0.048	0.000	0.55	291	WNW
12 Feb, 2018	8:00 ~ 8:59	0.008	0.033	0.033	0.012	0.003	1.78	79	Е
12 Feb, 2018	9:00 ~ 9:59	0.006	0.036	0.028	0.010	0.000	2.78	21	NNE

Max	0.343 (0.393 mg/m ³)	0.061 (0.114 mg/m ³)	0.299	0.109	0.020 (0.052 mg/m ³)
Avg	0.105 (0.120 mg/m ³)	0.042 (0.080 mg/m ³)	0.107	0.039	0.003 (0.008 mg/m ³)
Min	0.000 (0.000 mg/m³)	0.026 (0.049 mg/m³)	0.020	0.007	0.000 (0.000 mg/m³)





			13 Feb, 2018	12 Feb, 2018		Date	Pote																						
			9:00	8:00	7:00	6:00	5:00	4:00	3:00	2:00	1:00	0:00	23:00	22:00	21:00	20:00	19:00	18:00	17:00	16:00	15:00	14:00	13:00	12:00	11:00	10:00			
Min	Avg	Max	1	2	ı	ı	2	1	1	1	5	Ş	ž	7	2	3	į	1	ı	t	?	1	1	1	ı	2		Типс	
			9:59	8:59	7:59	6:59	5:59	4:59	3:59	2:59	1:59	0:59	23:59	22:59	21:59	20:59	19:59	18:59	17:59	16:59	15:59	14:59	13:59	12:59	11:59	10:59			
0.003 (0.003 mg/m³)	0.156 (0.179 mg/m³)	0.427 (0.489 mg/m³)	0.044	0.027	0.034	0.150	0.064	0.025	0.072	0.107	0.256	0.401	0.066	0.115	0.398	0.427	0.319	0.401	0.317	0.190	0.121	0.142	0.036	0.010	0.017	0.003	Hourly	ppm	СО
0.029 (0.054 mg/m^3)	0.043 (0.082 mg/m³)	0.059 (0.110 mg/m³)	0.038	0.033	0.041	0.046	0.046	0.044	0.043	0.049	0.039	0.040	0.048	0.048	0.046	0.048	0.057	0.059	0.052	0.053	0.047	0.038	0.037	0.029	0.030	0.033	Hourly	ppm	NO ₂
0.012	0.074	0.210	0.028	0.065	0.101	0.087	0.073	0.081	0.074	0.087	0.071	0.099	0.029	0.024	0.210	0.174	0.079	0.144	0.084	0.099	0.051	0.012	0.014	0.022	0.030	0.037	Hourly	mg/m³	TSP
0.005	0.027	0.076	0.010	0.024	0.037	0.032	0.027	0.030	0.027	0.032	0.026	0.036	0.010	0.009	0.076	0.063	0.029	0.052	0.031	0.036	0.019	0.005	0.005	0.008	0.011	0.013	Hourly	mg/m ³	PM ₁₀
0.000 (0.000 mg/m ³)	0.004 (0.009 mg/m³)	0.011 (0.030 mg/m³)	0.001	0.007	0.006	0.011	0.007	0.009	0.008	0.001	0.000	0.001	0.002	0.001	0.007	0.009	0.010	0.001	0.001	0.000	0.000	0.002	0.001	0.001	0.000	0.000	Hourly	ppm	SO ₂
			3.40	3.22	2.30	1.77	1.33	1.08	0.87	1.47	1.48	0.60	0.13	0.22	0.33	0.52	0.45	0.43	1.17	1.42	1.45	1.57	2.53	2.87	2.80	2.63	Hourly	kph	Wind
			5	14	16	21	25	24	74	19	22	159	169	289	205	201	198	164	102	83	92	87	36	22	20	22	Hourly	Deg.	Wind
			NNE	NNE	NNE	NNE	NE	NE	E	NNE	NNE	s	s	WNW	WS	WSS	WSS	S	ESE	H	ESE	п	NE	NNE	NNE	NNE	Hourly	Direction	Wind Direction



Thilawa Special Economic Zone (Zone A) Development Project (Operation Phase)

Appendix

Noise and Vibration Monitoring Report February, 2018



NOISE AND VIBRATION MONITORING REPORT FOR DEVELOPMENT OF INDUSTRIAL AREA THILAWA SEZ ZONE A (OPERATION STAGE)

(BI-ANNUALLY MONITORING)

February 2018 Myanmar Koei International Ltd.



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CHAPTER 1: OUTLINES AND SUMMARY OF MONITORING PLAN

1.1 General

Thilawa Special Economic Zone (TSEZ) is located in southern district of Yangon region and about 23 km southeast of Yangon city. As the developer of Thilawa SEZ, Myanmar Japan Thilawa Development Ltd. (MJTD) has a responsibility to carry out regular environmental monitoring in the industrial area of Zone A in accordance with the approved Environmental Impact Assessment (EIA) report with Environmental Management Plan (EMP). MJTD has implemented monitoring various environmental items with the specified time frame to know the environmental conditions in and around the area.

1.2 Outlines of Monitoring Plan

To assess the environmental condition under the operation of industrial area in and around Thilawa SEZ Zone A, noise and vibration levels had been monitored from 6^{th} February 2018 – 9^{th} February 2018 as follows;

Table 1.2-1 Outlines of Noise and Vibration Level Monitoring

Monitoring Date	Monitoring Item	Parameters	Number of Points	Duration	Monitoring Methodology
From 6 th February – 7 th February, 2018	Noise Level	$L_{\text{Aeq}}(dB)$	1 (NV1)	24 hours	On-site measurement by "Rion NL-42 sound level meter"
From 8 th February – 9 th February, 2018	Noise Level	L _{Aeq} (dB)	1 (NV2)	24 hours	On-site measurement by "Rion NL-42 sound level meter"
From 7 th February – 8 th February, 2018	Noise Level	L _{Aeq} (dB)	1 (NV3)	24 hours	On-site measurement by "Rion NL-42 sound level meter"
From 6 th February – 7 th February, 2018	Vibration Level	L _{v10} (dB)	1 (NV1)	24 hours	On-site measurement by "Vibration Level Meter- VM-53A"
From 8 th February – 9 th February, 2018	Vibration Level	Lv10 (dB)	1 (NV2)	24 hours	On-site measurement by "Vibration Level Meter- VM-53A"
From 7 th February – 8 th February, 2018	Vibration Level	L _{v10} (dB)	1 (NV3)	24 hours	On-site measurement by "Vibration Level Meter- VM-53A"



CHAPTER 2: NOISE AND VIBRATION LEVEL MONITORING

2.1 Monitoring Item

The noise and vibration level monitoring items are shown in Table 2.1-1.

Table 2.1-1 Monitoring Parameters for Noise and Vibration Level

No.	Item	Parameter
1	Noise	A-weighted loudness equivalent (L_{Aeq})
2	Vibration	Vibration level, vertical, percentile (Lv10

2.2 Monitoring Location

Noise and vibration levels were measured in front of administrative building, Thilawa SEZ Zone A, monitoring point (NV-1); N: 16°40'11.50", E: 96°16'32.00" for traffic noise concerned, at the east of the Thilawa SEZ Zone A, at the north of the Thilawa SEZ Zone A, monitoring point (NV-2); N: 16°41'27.60", E: 96°15'45.50", and at the west of the Thilawa SEZ Zone A, monitoring point (NV-3); N: 16°40'46.20", E: 96°15'30.10", where is the nearest to the residential houses of Alwan sok village. The location of the noise and vibration monitoring points are shown in Figure 2.2-1.



Figure 2.2-1 Location of Noise and Vibration Level Monitoring Points



NV-1

NV-1 is located in front of administrative building, Thilawa SEZ and next to Dagon-Thilawa road which is paved with moderate to highly traffic volume during the day and night. Possible noise and vibration sources are operation activities from administration building of MJTD. In addition, passing of loader vehicles, dump trucks and road traffic also might be noise and vibration sources.

NV-2

NV-2 is located at the north of the Thilawa SEZ Zone A, surrounded by the residential houses of Alwan sok village between north to south-east and construction of factories in Thilawa SEZ Zone A between west to south respectively. Possible noise and vibration sources are operation and construction activities of surrounding tenants/locators of Thilawa SEZ Zone A area. In addition, daily human activities near by the residential house of Alwan sok village and road traffic might be noise and vibration sources.

NV-3

NV-3 is located at the west of the Thilawa SEZ Zone A, surrounded by the residential houses of Alwan sok village in north and northwest and garment factory in northeast, construction of factories in Thilawa SEZ Zone A in east respectively. Possible noise and vibration sources are Possible noise and vibration sources are operation and construction activities of surrounding tenants/locators of Thilawa SEZ Zone A area. In addition, daily human activities nearby Alwan sok village and road traffic might be noise and vibration sources. There is an access road situated northeast of NV-3.



2.3 Monitoring Method

Noise level was measured by "Rion NL-42 sound level meter" and automatically recorded every 10 minutes in a memory card. The vibration level meter was, VM-53A (Rion Co. Ltd., Japan), accompanied by a 3-axis accelerometer PV-83C (Rion Co. Ltd.) was placed on solid soil ground. Vertical vibration (Z axis), L_v, was measured every 10 minutes within the adaptable range of (10-70) dB at NV-1, (10-70) dB at NV-2, and (10-70) dB at NV-3 and recorded to a memory card.

The measurement period of noise and vibration was 24 hours for each monitoring point. The status of the noise and vibration level monitoring on NV-1, NV-2 and NV-3 are shown in Figure 2.3-1.

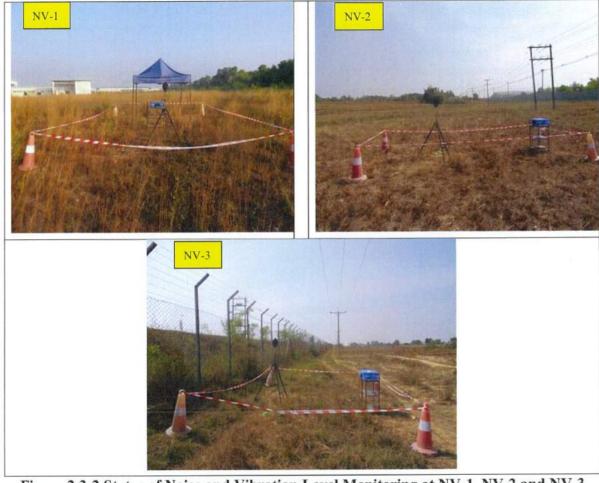


Figure 2.3-2 Status of Noise and Vibration Level Monitoring at NV-1, NV-2 and NV-3



2.4 Monitoring Results

Noise Monitoring Results

Noise monitoring results are separated daytime (6:00 AM to 10:00 PM), night time (10:00 PM to 6:00 AM) time frames for NV-1, daytime (7:00 AM to 7:00 PM), evening time (7:00 PM to 10:00 PM), and night time (10:00 PM to 7:00 AM) time frames respectively for NV-2 and NV-3. Noise measurement was carried out for one location on a 24-hour basis. The monitoring results are summarized in Table 2.4-1, Table 2.4-2, and Table 2.4-3 respectively. Hourly noise level monitoring results for NV-1, NV-2 and NV-3 are shown in Table 2.4-4, Table 2.4-5 and Table 2.4-6. During the detailed analysis of noise level for NV-1 on 24 hours, the results of noise level in day time (6:00 AM to 8:00 AM) and noise level in night time (4:00 AM to 6:00 AM) are higher than other times but all results were under the target values. According to the field survey records, the possible noise sources are pass by motorcycles and heavy vehicles, car horn, broadcasting songs by loudspeaker from near villages. Comparing with the target value of noise level in operation stage prescribed in EIA report for Thilawa SEZ development project Zone A, all results were under the target values at NV-1, NV-2 and NV-3.

Table 2.4-1 Results of Noise Levels (LAeq) Monitoring at NV-1

Date	(Traffic Noise Level) Equivalent Noise Level (L _{Acq} , dB)						
Date	Day Time (6:00 AM – 10:00 PM)	Night Time (10:00 PM - 6:00 AM)					
6th February - 7th February, 2018	64	66					
Target Value	75	70					

Note: Target value is applied to the noise standard along main road stipulated in the Noise Regulation Law (Japan) (Law No. 98 of 1968, Latest Amendment by Law No.91 of 2000).

Table 2.4-2 Results of Noise Levels (LAeq) Monitoring at NV-2

Date	(Commercial and Industrial Areas) Equivalent Noise Level (L _{Aeq} , dB)							
Date	Day Time (7:00 AM - 7:00 PM)	Evening Time (7:00 PM - 10:00 PM)	Night Time (10:00 PM – 7:00 AM)					
8th February – 9th February, 2018	43	41	37					
Target Value	70	65	60					

Note: Target value is applied to the noise level during the operation stage in the EIA Report for Thilawa SEZ Development Project (Industrial Area of Zone A).

Table 2.4-3 Results of Noise Levels (LAeq) Monitoring at NV-3

Date	(Commercial and Industrial Areas) Equivalent Noise Level (L _{Acq} , dB)							
Date	Day Time (7:00 AM - 7:00 PM)	Evening Time (7:00 PM - 10:00 PM)	Night Time (10:00 PM - 7:00 AM)					
7th February – 8th February, 2018	45	48	45					
Target Value	70	65	60					

Note: Target value is applied to the noise level during the operation stage in the EIA Report for Thilawa SEZ Development Project (Industrial Area of Zone A).



Table 2.4-4 Hourly Noise Level (LAeq) Monitoring Results at NV-1

Date	Time	(LAeq, dB)	(L _{Aeq} , dB) Each Category	(L _{Aeq} , dB) Target Value				
	6:00-7:00 69							
	7:00-8:00	70						
	8:00:9:00	65						
	9:00-10:00	56						
	10:00-11:00	55						
	11:00-12:00	56		75				
[12:00-13:00	55						
	13:00-14:00	58	64					
	14:00-15:00	58	04	/3				
	15:00-16:00	66						
	16:00-17:00	68						
6th February – 7th [17:00-18:00	64						
February, 2018	18:00-19:00	59						
**************************************	19:00-20:00	58						
	20:00-21:00	58						
	21:00-22:00	57						
	22:00-23:00	68						
	23:00-24:00	57						
	24:00-1:00	55						
	1:00-2:00	53						
	2:00-3:00	53	66	70				
	3:00-4:00	67						
	4:00-5:00	70						
	5:00-6:00	70						

Table 2.4-5 Hourly Noise Level (L_{Aeq}) Monitoring Results at NV-2

Date	Time	(LAeq, dB)	(L _{Aeq} , dB) Each Category	(L _{Aeq} , dB) Target Value	
Mark Control Con Walker	7:00-8:00	41			
8th February – 9th	8:00:9:00 43				
	9:00-10:00	43			
	10:00-11:00	40			
	11:00-12:00	40			
	12:00-13:00	38	43	70	
	13:00-14:00	45	43		
	14:00-15:00	46			
	15:00-16:00	44			
	16:00-17:00	46			
	17:00-18:00	44			
	18:00-19:00	43			
February, 2018	19:00-20:00	42			
•	20:00-21:00	42	41	65	
	21:00-22:00	40			
	22:00-23:00	38			
	23:00-24:00	37			
	24:00-1:00	37			
	1:00-2:00	36		0.505	
	2:00-3:00	36	37	60	
	3:00-4:00	31			
	4:00-5:00	32			
	5:00-6:00	38			
	6:00-7:00	39			



Table 2.4-6 Hourly Noise Level (LAeq) Monitoring Results at NV-3

Date	Time	(LAeq, dB)	(L _{Aeq} , dB) Each Category	(L _{Aeq} , dB) Target Value	
	7:00-8:00	47			
7th February – 8th	8:00:9:00	42			
	9:00-10:00	41			
	10:00-11:00	39			
	11:00-12:00	40		70	
	12:00-13:00	41	45		
	13:00-14:00	51	43		
	14:00-15:00	43			
	15:00-16:00	44			
	16:00-17:00	42			
	17:00-18:00	47			
	18:00-19:00	49			
February, 2018	19:00-20:00	49			
	20:00-21:00	48	48	65	
	21:00-22:00	45			
	22:00-23:00	49			
	23:00-24:00	47			
	24:00-1:00	41			
	1:00-2:00	41			
	2:00-3:00	38	45	60	
	3:00-4:00	41		1	
	4:00-5:00	42			
	5:00-6:00	43			
	6:00-7:00	46			



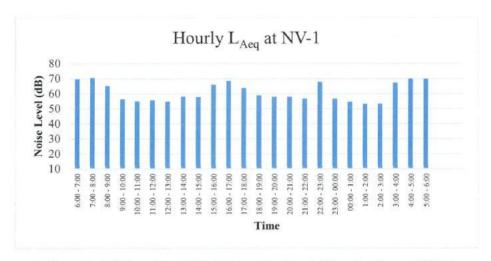


Figure 2.4-3 Results of Noise Levels (LAeq) Monitoring at NV-1

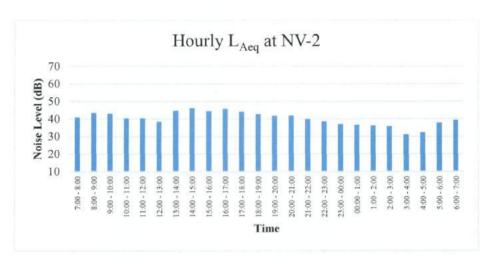


Figure 2.4-4 Results of Noise Levels (LAeq) Monitoring at NV-2

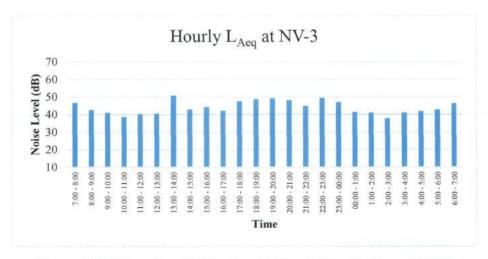


Figure 2.4-5 Results of Noise Levels (LAeq) Monitoring at NV-3



Vibration Monitoring Results

The results of vibration level are shown in Table 2.4-7, Table 2.4-8, and Table 2.4-9 respectively. Results of hourly vibration level monitoring for NV-1, NV-2 and NV-3 are summarized in Table 2.4-10, Table 2.4-11 and Table 2.4-12. By comparing with the target vibration level in operation stage in EIA report for Thilawa SEZ development project Zone A, all of results were under the target values.

Table 2.4-7 Results of Vibration Levels (Lv10) Monitoring at NV-1

	(Office, commercial facilities, and factories) Equivalent Vibration Level (L_{v10} , dB)				
Date	Day Time (7:00 AM - 7:00 PM)	Evening Time (7:00 PM – 10:00 PM)	Night Time (10:00 PM - 7:00 AM)		
6th February - 7th February, 2018	51	47	45		
Target Value	70	65	65		

Note: Target value is applied to the noise level during the operation stage in the EIA Report for Thilawa SEZ Development Project (Industrial Area of Zone A).

Table 2.4-8 Results of Vibration Levels (Lv10) Monitoring at NV-2

	(Office, commercial facilities, and factories) Equivalent Vibration Level (Lv10, dB)				
Date	Day Time (7:00 AM - 7:00 PM)	Evening Time (7:00 PM – 10:00 PM)	Night Time (10:00 PM - 7:00 AM)		
8th February - 9th February, 2018	30	22	18		
Target Value	70	65	65		

Note: Target value is applied to the noise level during the operation stage in the EIA Report for Thilawa SEZ Development Project (Industrial Area of Zone A).

Table 2.4-9 Results of Vibration Levels (Lv10) Monitoring at NV-3

	(Office, commercial facilities, and factories) Equivalent Vibration Level (L _{v10} , dB)				
Date	Day Time (7:00 AM - 7:00 PM)	Evening Time (7:00 PM - 10:00 PM)	Night Time (10:00 PM - 7:00 AM)		
7th February - 8th February, 2018	31	27	24		
Target Value	70	65	65		

Note: Target value is applied to the noise level during the operation stage in the EIA Report for Thilawa SEZ Development Project (Industrial Area of Zone A).



Table 2.4-10 Results of Hourly Vibration Levels (L_{v10}) Monitoring at NV-1

Date	Time	(Lv10, dB)	(Lv10, dB) Each Category	(Lv10, dB) Target Value		
	7:00-8:00	49				
	8:00:9:00	50				
	9:00-10:00	50				
	10:00-11:00	52				
	11:00-12:00	52		70		
	12:00-13:00	51				
	13:00-14:00	50	51			
6 th February – 7 th	14:00-15:00	51				
	15:00-16:00	52				
	16:00-17:00	52				
	17:00-18:00	52				
	18:00-19:00	49				
February, 2018	19:00-20:00	47				
	20:00-21:00	48	47	65		
	21:00-22:00	45				
	22:00-23:00	46				
	23:00-24:00	47				
	24:00-1:00	44				
	1:00-2:00	45				
	2:00-3:00	44	45	65		
	3:00-4:00	46				
	4:00-5:00	42				
İ	5:00-6:00	44				
	6:00-7:00	47	7			

Table 2.4-11 Results of Hourly Vibration Levels ($L_{\nu 10}$) Monitoring at NV-2

Date	Time	(L _{v10} , dB)	(Lv10, dB) Each Category	(L _{v10} , dB) Target Value		
	7:00-8:00	22		121 Carrier 19 19 19 19 19 19 19 19 19 19 19 19 19		
8 th February – 9 th February, 2018	8:00:9:00 27					
	9:00-10:00	33				
	10:00-11:00	36				
	11:00-12:00	33		70		
	12:00-13:00	26	30			
	13:00-14:00	27	30			
	14:00-15:00	27				
	15:00-16:00	29				
	16:00-17:00	29				
	17:00-18:00	29				
	18:00-19:00	24				
	19:00-20:00	23				
	20:00-21:00	20	22	65		
	21:00-22:00	22				
	22:00-23:00	22				
	23:00-24:00	18				
	24:00-1:00	18				
	1:00-2:00	18				
	2:00-3:00	17	18	65		
	3:00-4:00	16				
	4:00-5:00	17				
	5:00-6:00	17				
	6:00-7:00	20				



Table 2.4-12 Results of Hourly Vibration Levels (Lv10) Monitoring at NV-3

Date	Time	(Lv10, dB)	(Lv10, dB) Each Category	(L _{v10} , dB) Target Value	
	7:00-8:00	30			
7 th February – 8 th February, 2018	8:00:9:00 28				
	9:00-10:00	29			
	10:00-11:00	29			
	11:00-12:00	30			
	12:00-13:00	31	31	70	
	13:00-14:00	36	31		
	14:00-15:00	29			
	15:00-16:00	30			
	16:00-17:00	29			
	17:00-18:00	31			
	18:00-19:00	31	=1		
	19:00-20:00	29			
	20:00-21:00	28	27	65	
	21:00-22:00	25			
	22:00-23:00	23			
	23:00-24:00	22			
	24:00-1:00	23			
	1:00-2:00	25			
	2:00-3:00	22	24	65	
	3:00-4:00	23			
	4:00-5:00	21			
	5:00-6:00	22			
	6:00-7:00	30			

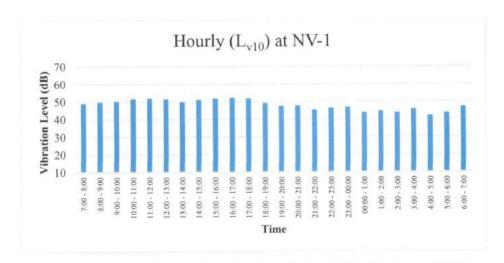


Figure 2.4-6 Results of Vibration Levels (Lv10) Monitoring at NV-1



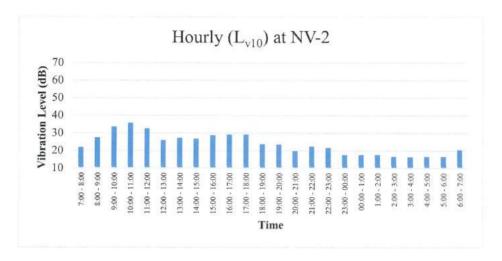


Figure 2.4-7 Results of Vibration Levels (L_{v10}) Monitoring at NV-2

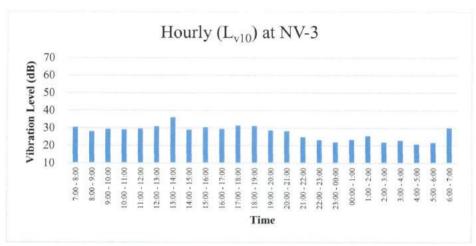


Figure 2.4-8 Results of Vibration Levels (Lv10) Monitoring at NV-3



CHAPTER 3: CONCLUSION AND RECOMMENDATION

By comparing with the target noise and vibration level in operation stage in EIA report for Thilawa SEZ development project Zone A, all results were under the target values at NV-1, NV-2, and NV-3. (Referred to section 2.4). As for the detailed analysis of NV-1 on 24 hours, few hours are slightly higher than other time but all results were under the target values. According to the field survey records, the possible noise sources are pass by motorcycles and heavy vehicles, car horn, broadcasting songs by loudspeaker from near villages.

In conclusion of this environmental monitoring, there are no specific noise and vibration impacts to the surrounding area of industrial area of Thilawa SEZ Zone A during this monitoring period.





Thilawa Special Economic Zone (Zone A) Development Project (Operation Phase)

Appendix

General Waste Disposal Record

(Admin Complex Compound- October 2017 to March 2018)





Waste Disposal Record

Location

: Admin Complex Compound (Trash Room)

Disposal Site

: Golden DOWA Eco-system Myanmar Co.,Ltd

Type of Waste

: Waste from common area of Thilawa SEZ and Admin complex compound

No	Year	Month	Date	Waste Disposal Time	Weight(Kg)	Total Weight/month
1	2016	March	14-Mar-16	1	320	320
2	2016	April	7-Apr-16	1	600	600
3	2016	June	29-Jun-16	1	1380	1380
4	2016	July	28-Jul-16	1	1000	1000
5	2016	August	31-Aug-16	1	1220	1220
6	2016	October	3-Oct-16	1	1160	2780
7	2016	October	25-Oct-16	1	1620	00000000000000000000000000000000000000
8	2016	November	30-Nov-16	1	1120	1120
9	2017	January	5-Jan-17	1	1060	1060
10	2017	February	9-Feb-17	1	680	1440
11	2017	February	10-Feb-17	1	760	1440
12	2017	March	16-Mar-17	1	960	1680
13	2017	March	17-Mar-17	1	720	
14	2017	April	10-Apr-17	1	960	960
15	2017	May	25-May-17	1	1000	1940
16	2017	May	26-May-17	1	940	1540
17	2017	June	28-Jun-17	1	1140	1800
18	2017	June	28-Jun-17	1	660	1800
19	2017	July	25-Jul-17	1	1180	1180
20	2017	August	25-Aug-17	1	1640	2020
21	2017	August	29-Aug-17	1	380	VALUE
22	2017	September	20-Sep-17	1	1180	1180
23	2017	October	10-Oct-17	1	1080	1080
24	2017	November	1-Nov-17	1	1140	2180
25	2017	November	29-Nov-17	1	1040	2100
26	2017	December	12-Dec-17	1	1260	1260
27	2018	January	9-Jan-18	1	820	1400
28	2018	January	16-Jan-18	1	580	1400
29	2018	February	7-Feb-18	1	960	1720
30	2018	February	23-Feb-18	1	760	1720
31	2018	March	20-Mar-18	1	1160	2020
32	2018	March	21-Mar-18	1	860	2020
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Waste Hazardous		ardous	Quantity(Unit)			Remark
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		n en	12Nn	oglog (
Waste servi	ice com	(Name&Si) A	(Day Month, Ye)	
	44.40	40.2	Designed by GOLDEN W	OWA ECO-SYSTEM	MYANMAR	CO., LTD.

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Waste servi	ice company	1916	OWA-BCO-SYSTEM MYA		D.

	Manif	est	E-Sli	ip	*Waste service company to Waste Generator
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Company Name	, MJT	T	GEN	7	GEMI.
Tel					Style of packing
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Waste DE	Iazardous	Qua	ntity(Unit)		Remark
٠, _	Others	1160 2	9		.**
Customer code	00	01	Waste Profi	le code	Acol
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Waste service o		&Sign) Designed by GOLDEN V	NOWA ECO-SYSTE	(Day Month,	a SS



		Manif	est	C-	Slip	*Transportation company to Waste Generator
Date of is	suance	(Day Month, Y	9 Jan 2019	8		(Name&Sign)
Numbe issuan		9999	7 1801 00	74	Issuer	1 2
Contrac	tors	V	Vaste generator	Transpor	rtation company	Waste service company
Company	Name		r Jopan Philoma word Ltd.	60	m	GEM
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		ůМ	anifes	st		E-Sl	ip	*Waste service company to Waste Generator
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Tel				1100				
		Kind				Name		Style of packing
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Waste		s		Qua	ntity(Unit)		Remark	
*		h8	01	9				
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10000	1.00	Kind	N	ame	1 1.	Style of packing
	Non	-Hazardous	General	Waste		
Waste	Haz	ardous	Quanti	ity(Unit)		Remark
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\$ 1 1 1 1 N	code	(Name&S)	PIC(Name&Sign	Waste Profile co	ry Month, Year)	
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		Manife	est		C-Sli	p .	*Transportation company to Waste Generator
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Number		990	19 1802	016			
Contract			aste generator		Transportati	on company	y Waste service company
Company l	Name	Myonn	a Jevelop	ment	CHETC	1	GEM
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Waste	□Haz	ardous	C.ICI CIO	Quantity			Remark
		ers	76	sole	9		
Customer	code	00	001		Waste Profi	le code	AGOI
T	race	T		me&Sign)			Date of Completion
Transporta	tion con		&Sign)		Ha. 8K.889K	(Day Month,	Year)
Waste serv	vice con		&Sign)	1		(9) y M8333	MIT

THE RESERVE	See Long	MATE.			0.0	11	*Transportation company to Waste Generator
			lanif		C-S	lip	
Date of is	suance	(Day l	Month, Y	ear) UVAL 5018			(Name&Sign)
Numbe issuar		C	190	13 1809 011	17	Issuer	
Contrac	ctors		V	Vaste generator	Transporta	tion company	Waste service company
Company	Name	200		proced ffg.	GEI	N	GEM
Tel							
	_	Kind			Name		Style of packing
	□Not	ı-Haza	rdous	(-croid	lingle.		
Waste	□Haz	zardou	s	Qua	ntity(Unit)		Remark
	Oth	ers		1760 kg			
Customer	code	1	$\gamma \alpha$	1	Waste Profi	le code	FUUI
Tr	race			PIC(Name&Sig	gn)		Date of Completion
Transportat	ion con	npany	(Name&	7	1. 17. K.	(Day Month, Yo	ear)
Waste serv	ice com		(Name&	Jair		(Day Month, Ye	ar)
Ĭ				Designed by GOLDEN W	OWA ECO-SYSTEM	M MYANMAR	CO., LTD.

(

H-RAPA		Manifest		C-Slip)	*Transportation company to Waste Generator
Date of is	ssuance	Day Month, Year)	2/10			(Name&Sign)
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Contrac	ctors	Waste gene		Transportation		
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	Ki ⊠Non-H		Name			Style of packing
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Waste	□Hazard	ous	Quantity(L			
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	UOtners		860 kg			
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aste service		0				1763



Thilawa Special Economic Zone (Zone A) Development Project (Operation Phase)

Appendix

Ground Subsidence Monitoring Status
(Location- Admin Complex Compound)
October 2017 to March 2018



Ground Subsidence Monitoring Status (Operation Phase)

Location

Admin Complex Compound

Coordinate Points

E=209545.508

N=1844669.443

Joinnate		and the state of t	11-1044003,443		
Month	Date	Predefined	Weekly Reading	Subsidence	Remark
Wienen	Dute	Level (m)-ASL	Level (m)-ASL	(m)	Kemark
	15-Jul-16	+7.137	+7.137	0.000	
Jul	22-Jul-16	+7.137	+7.136	-0.001	
	29-Jul-16	+7.137	+7.136	-0.001	
	5-Aug-16	+7.137	+7.136	-0.001	
۸ [12-Aug-16	+7.137	+7.136	-0.001	
Aug	19-Aug-16	+7.137	+7.136	-0.001	
	26-Aug-16	+7.137	+7.136	-0.001	
	2-Sep-16	+7.137	+7.136	-0.001	
	9-Sep-16	+7.137	+7.136	-0.001	
Sept	16-Sep-16	+7.137	+7.136	-0.001	
	23-Sep-16	+7.137	+7.136	-0.001	
	30-Sep-16	+7.137	+7.136	-0.001	
	7-Oct-16	+7.137	+7.136	-0.001	
O-t	14-Oct-16	+7.137	+7.136	-0.001	
Oct	21-Oct-16	+7.137	+7.136	-0.001	
	28-Oct-16	+7.137	+7.136	-0.001	
	4-Nov-16	+7.137	+7.136	-0.001	
. [11-Nov-16	+7.137	+7.136	-0.001	
Nov	18-Nov-16	+7.137	+7.136	-0.001	
	25-Nov-16	+7.137	+7.138	+0.001	
	2-Dec-16	+7.137	+7.136	-0.001	
	9-Dec-16	+7.137	+7.136	-0.001	
Dec	16-Dec-16	+7.137	+7.135	-0.002	
	23-Dec-16	+7.137	+7.133	-0.004	
	30-Dec-16	+7.137	+7.133	-0.004	
	6-Jan-17	+7.137	+7.134	-0.003	
. [13-Jan-17	+7.137	+7.134	-0.003	
Jan	20-Jan-17	+7.137	+7.134	-0.003	
	27-Jan-17	+7.137	+7.134	-0.003	
	3-Feb-17	+7.137	+7.134	-0.003	
	10-Feb-17	+7.137	+7.134	-0.003	
Feb	17-Feb-17	+7.137	+7.134	-0.003	
Ī	24-Feb-17	+7.137	+7.134	-0.003	
	3-Mar-17	+7.137	+7.134	-0.003	
	10-Mar-17	+7.137	+7.134	-0.003	
Mar	17-Mar-17	+7.137	+7.128	-0.009	After earthquake
	24-Mar-17	+7.137	+7.128	-0.009	and a second contract of the second s
F	31-Mar-17	+7.137	+7.128	-0.009	
	7-Apr-17	+7.137	+7.128	-0.009	
Apr	21-Apr-17	+7.137	+7.126	-0.011	
	28-Apr-17	+7.137	+7.126	-0.011	
	5-May-17	+7.137	+7.126	-0.011	AMA DI
F	12-May-17	+7.137	+7.129	-0.008	(3)
May	19-May-17	+7.137	+7.131	-0.006	(§ MJT
- H	26-May-17	+7.137	+7.135	-0.002	3

Month	Date	Predefined	Weekly Reading	Subsidence	Remark
		Level (m)-ASL	Level (m)-ASL	(m)	Kemark
	9-Jun-17	+7.137	+7.135	-0.002	
Jun	16-Jun-17	+7.137	+7.134	-0.003	
Juli	23-Jun-17	+7.137	+7.134	-0.003	
	30-Jun-17	+7.137	+7.136	-0.001	
	7-Jul-17	+7.137	+7.136	-0.001	
July	14-Jul-17	+7.137	+7.136	-0.001	
July	21-Jul-17	+7.137	+7.138	+0.001	
	28-Jul-17	+7.137	+7.136	-0.001	
	3-Aug-17	+7.137	+7.136	-0.001	
Aug	10-Aug-17	+7.137	+7.137	+0.000	
Aug	17-Aug-17	+7.137	+7.136	-0.001	
	24-Aug-17	+7.137	+7.137	+0.000	
	1-Sep-17	+7.137	+7.136	-0.001	
	8-Sep-17	+7.137	+7.136	-0.001	
Sept	15-Sep-17	+7.137	+7.136	-0.001	
	22-Sep-17	+7.137	+7.136	-0.001	
	29-Sep-17	+7.137	+7.136	-0.001	
	2-Oct-17	+7.137	+7.136	-0.001	
[9-Oct-17	+7.137	+7.136	-0.001	
Oct	16-Oct-17	+7.137	+7.136	-0.001	
	23-Oct-17	+7.137	+7.136	-0.001	
	30-Oct-17	+7.137	+7.136	-0.001	
	6-Nov-17	+7.137	+7.136	-0.001	
Nov	13-Nov-17	+7.137	+7.136	-0.001	
NOV	20-Nov-17	+7.137	+7.135	-0.002	
Ī	27-Nov-17	+7.137	+7.135	-0.002	
	4-Dec-17	+7.137	+7.135	-0.002	
D	11-Dec-17	+7.137	+7.135	-0.002	
Dec	18-Dec-17	+7.137	+7.134	-0.003	
	26-Dec-17	+7.137	+7.134	-0.003	
	2-Jan-18	+7.137	+7.134	-0.003	
[8-Jan-18	+7.137	+7.133	-0.004	
Jan	15-Jan-18	+7.137	+7.133	-0.004	
	22-Jan-18	+7.137	+7.132	-0.005	
	29-Jan-18	+7.137	+7.132	-0.005	
	5-Feb-18	+7.137	+7.132	-0.005	
Fob	13-Feb-18	+7.137	+7.132	-0.005	
Feb	19-Feb-18	+7.137	+7.132	-0.005	
Ī	26-Feb-18	+7.137	+7.132	-0.005	
	5-Mar-18	+7.137	+7.132	-0.005	
	12-Mar-18	+7.137	+7.132	-0.005	
Mar	19-Mar-18	+7.137	+7.132	-0.005	
	26-Mar-18	+7.137	+7.130	-0.007	





Thilawa Special Economic Zone (Zone A) Development Project (Operation Phase)

Appendix

Sewage Treatment Plant Monitoring Record October 2017 to March 2018



Monitoring Parameters Result for STP(Phase-1)

				The State of the S														Monito	oring Par	rameters		or STP(PI	nase-1)																-	
Part	ate	pH	ORP	DO	EC	TDS	Turbidi	ty COD	Tem	вр Вор	T-Coll	T-N	T-P	04G	55	Cyanide	Chromium	n Arsenic	Mercury	Cadmium	1		Color	Odor	Zinc	Copper	Barlum	Nickel	Sulphide	Free Chlorine	Formal- dehyde	Silver	Iron	Ammonia	Hexavalent Chromium (Cr6	+) Fluoride	Total Chlorine	Total Cyanide	Total Heav	ivy
Part					Daily P	-		May 20		100	Mar 48			1	ALC: AND		1	1		-	1		1000																	I
Second Process Seco				mg/L	µs/cm	- Contractor				And in case of the last of the							_		_		_					_	_	The second second	_						45-030-030-030-0	_		ppm	ppm	ı
State Stat	-17 -17	10	292,6	2,96	535	267	24,3	164	29,8	19		EN SUITE					20,000	N SOLON	100000	SEC.			10 100	195000	D. CO	COUNSE		LUI EUG	Chines			157 2		13,200,000	TO LIVE STATE OF	#1V82550	Was to	C COOL	TO SERVICE STATE OF THE PARTY O	
State Stat	-17	A M	329.5	4.03	509	255	25.7	266	30,1	9						(AS) VIII VIII	0001000							CONTRACT.		100000	MEGILION.		CONTRACTOR OF THE PARTY OF THE	DIVISION				OF STREET	Resident August	o market ye		100000000000000000000000000000000000000		ā
	t-17																																							B
The content will be content	1-17		437	461	495	243	167	67	20.6										TO HOLD																					Ē
Part	ot-17	5.96	385	3.53	502 323		8.9 57.9	92	29.9	2	> 16000	0 7	0.754	8	98	0.032	≤0.002	≤0.01	≤0.002	≤0.001	≤0.01	\$0.002	7.26	1.4	0.022	≤0.002	0.018	0.026	0.056	1.1										
State Stat	ot-17	6,13 6.16	338.1	3,26 4,7	386 473	193	11.5 62.2	140	29,6 29,8	8																														A
No.	at-17				to the																							No.												
Column	ct-17	6.06	385,4	4.24	430	231	65,3 21.5	48 34	29.7	12.05	>18000	0 4	0.665	3.45	50																									
Column C	ct-17	6.24		4,45	501 796	250 395	52.2 28.6	196 106	29.6																															
	ct-17		Telegraph (PORTON DE LA CONTRACTOR	2011/201	SECTION SECTION	1000000	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(ISANA)		THE NAME OF THE OWNER,			all statement					ā
1	ct-17	6,77	170,1 340,3	5,5 4,75	473 671	237 336	66,8 38,3	96 34	29,6 29,7	2 7	>160000	0 9	0,703	4.2	20																									
1	ct-17	6.42 6.38	336.4 392.3	3.5	444 460	267	28.9	88 88	29.79	7																														
State Stat	at-17	0,01	3/8,9	3,01	II SHEET AND		23,2	150,5	29,9					10000	-					10000	TED TORS												10000		Santa S					
1	ot-17	6,6 4,49	334.1 387.6	3,34 4,39	525 521	263 260	21.3 7.8	Not run 84	29,7	3 5.4	23	8	0,192	5,82	22						N. Contraction																		5 20.00	
1	v-17	6.12	340 359.6	3.65 4.58	726 987	362 566	54,1		29.8	2			on Covering	H-CONTROL	The same of		ula (ols	0.000	Section 1	10000000	NEW SCHOOL			SUPPLIES.	Balling	AURTHUS	Miles Inches					1000000		045.0900			OCCUPANT OF THE PARTY OF THE PA	1011000000	EXPENSE.	
Street Property of the content of	v-17	-6,35	425,1 374.3	4.59	756	247 378	11,9		29.60	2		A PARTIE						T SOUTH ASSESSMENT								Barrier Co.				espectas			100 TO 10							Á
1	r-17	6.04	386,1 442,8	4.08 5.61		620 279	9,3	166	29.5 29.8	26.6	FEC. 15	10.3	0.651	44	4	0.024	0.017	<0.01	50.000	50.001	<0.01	\$0.002	10.05	R	D.Des	0.011	0.005	0.019	0.05	0.1	D 224									
Section Sect	~17 ~17	6.47 6.7	292.3 302.1	3.55	479	360 239	14.6	37 16	29,8 29,4						Sille at	10.72							W.WH		3,000	4,41	2.4042	2.9.10	9,91	W.I	4,241				Part vers					Í
Part	v-17	8.74	284.2 317,7	3.27 4.99	612 482	241	8.8	NAME OF TAXABLE PARTY.	30,06	0.71			-		100000000				10.000 PM					20000000			BANKSON.	UE CONSUL	NAME OF TAXABLE	200000000	OPPOSED TO	22.04	N. S. P.	0310031	ECONOMICO.	200000	SEPERIES.			
State Stat	v-17	6.5	336,5	5.83	928 715	356 356	64.1		29.75	S. S. C. Tank												2000													No. of the last					
State Stat	v-17	6.67	357.6 214.2	6.75 5.16	767 660	384	2.1	28	29.59	7.11	- C (500)	8,1	0.441	4.55	22																									
1	v-17	4.68	253.3	5.53	894 798	447	19,3	146	30,23	10						NAME OF TAXABLE PARTY.	-		1000000	- 27/62		The state of the s										0000000								
State Stat	v-17	6.45	319.6 362.2	3.41	765 864	383 432	8.2 9.2	87	29.95 29.89	9																REDIENCE LINES													200000	E
1	v-17	6.53	424.8	5.12	598	340	27.4	74	29.64	2 22.1	11990	19,5	1,4		80																									
1	v-17	6,6	277,2 372.2	4.09 4	610	319	11.2	24,6	30,08								100											no Ve												
	V-17	6.7	312.8	3.21	1730	364 368	43.6		30.26																															
1	v-17	6,64	268 305,1	5,73 5,14	679 673	340 298	14,5	42 29	29,97	7.2	(0.00)	9	0.228	<3.1	16																									
1	>17	6.64	380.2	5,66 3,48	634 866	434	9	21 76	29.88	3 (1)																														
Second S	>17	6.65	224.6	4.02	975	488	15.6		29.64													7																		H
1	0-17	6,92	258.6	4,97	1059	529	18.3	39	29,46 79,82	20	2 (1990)	22.2	1.94		50	0,008	≤0.002	≾0.01	≤0,002	≤0.001	\$0.01	\$0.002	26.65	2	0,014	≤0.002	0.03	0,006	0.055	<0,1	0.057	≤0,002	1,84	<0.015	<0.05	2,078	0,1			-
1	o-17 o-17	6,64 6,81	219.4 347.7	4.78 3.21	1204 488	448 244	16.8	39 61	29.66																															
1	60-17 80-17	6.8	296.9	4.36	620 774	310	15.8	52	29.93																												10000			
27	io-17	7.34 7.14	231.5 279.3	3,81 4,36	791 1068	395 533	12.5	55	30,05	5																														A
1	c-17 c-17	12	314.8	orary stoped 3,54	for tank cle 1014	aning (13,12 498	2017 to 25 6.6	12,2017)	29.57			DA DANGE					(Philippi			Rest Section			KARING NA		100		The second		a CV and			Ren e			No sellines					-
1	10-17	7.09	285,7	3.42	1043 868	433	11,1																																	E
1	10-17	7 6.84	301,5 320,6	3.4		212	10.4		28.86													Name of Street																		
Section Sect	0-17	7.21	339,9 287.8	3.58	991	495	5,3		28,83 28,61																															E
Column C	o-17	7.15	165.2 198.8	5.13 5.4	770 796	386 362	28.4 19.9		28.96 28.76							BOOK SERVICE			PER SER									RESERVED TO			MANUAL PROPERTY.								Hall State	
Col. 696 Col. 13	0-1/ 0-17	6.9	297.8 297.7	3.71 4.69	826 515	313	46.1	19	29.07		> (40000	9.7	1.10	- 11	16		1000	The second second																						
Col.		7,58	290,9	7.36 5.13	728 465	384 233	15,3	47	27.64		- 100000				10																									
1	ic-17	7.08	242.5 182.4	4.13 4.76	563 682	281 342	14.1 31.7		29.02	ACC PLEASED					(Carlos																								ESCHOOL SECTION	
1.03 30.27 4.48 1.02 50.2 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03	1-18 1-18	6.24	298.6 330.1	3.63	731	369	4.7	Not run	28.85			24 550000																SHIELD												
148 63 2097 44 802 149 10 2089								31	29,04		a landa							100000		ROSSIN S	20		DAY WA	DESCRIPTION OF		MILEUS.	PUNCTUR	ENDVIOL		1000			100000		ROW BLOS	4 2000		-		
1.10	1-18	6.5	329.7	5.02	852	428	16		28.89								-				2000			Singen		6000								TOTAL STATE						
1-13 6.52 28.4 4.38 678 339 25.6 44 20.22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1-18 1-18	7.04	360.1 326.7	4.4 5.52	502 660	253 330	8,6 15.1	19	29,3 29,63																															A
6.6 235.3 5.03 5.00 298 9.5 Not tun 26.92 **** Max 2000	n_18			Battery St	hut down			81			(10000)	13,4	1,59	3,27	48																									
6.6 235.3 5.03 5.00 298 9.5 Not tu 26.02	n-18	7.09	326.6 320.1	4.36	740	349	14.2	44	29,62			D SAME		BIDE			100 miles	Minus			STATISTICS.		NAME OF	100000			02200	100000				0000			TO SEE	RASSES.		THE STATE OF		Á
- my mg/l, jukem ppm ppm ppm ppm ppm ppm ppm ppm ppm p	n=18	6,6	235,3	5,03	590	298 Max 2,000	9,5	Max 400	26,92 Max 35	C Max 201		Max 80	Maxit	Max 40	Max 200	Max 0.1	Mina O.S	Max 9.1	Max 0.005	Max 0.02	Mex 0.02	Mexica	150	150	Max 2		Max 1	Max 0.2	Max 1	Maxit	Max 1	Maxia	Max2.5	Maxeo				Maxi	Max 10	
1-18	n-18	6,54	mv 173,1	mg/L ju	µs/cm 1925	977	FNU 10,6	ppm				CO CONTRACTOR	The second second		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	Co-Pt	Co-Pt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm		ppm		ppm	ppm	f
10-18	n-18	7,10	287.1 366.4	5.65 4.05	650	578 325	16,1	24	29.04	13.66	>160000	9.7	9.13	5.45	50																						0.1			
1-18 7.07 197.4 4.01 197.2 498 18.5 31 28.95 28.94 >160000 8.9 2.07 3.2 14 17.90 18.5 3.1 28.95 28.94 >160000 8.9 2.07 3.2 14 17.90 18.0 28.0	n-18	67	200.2	26		DATE OF A	173 mills	22.5		STATE OF THE PARTY	S DEED S					100000		O State				SALESTA			W S				12000								Ulas III			
1-18 7.07 197.4 4.01 197.2 498 18.5 31 28.95 28.94 >160000 8.9 2.07 3.2 14 17.90 18.5 3.1 28.95 28.94 >160000 8.9 2.07 3.2 14 17.90 18.0 28.0	n-18	6.98 7.06	339,5 342	3,58	706 713	354 356	40.9	19	28,77									THE STATE OF THE S				THE PARTY								The same			1						1	
10-18 6.75 303.8 4.44 695 348 9.3 28.9 10-18 10-	in-18	7,07 7.06	197,4 333,1					31 52	28,95 29.1	28.94	>160000	8.9	2.07	3.2	14																						<0.1		15	7
	n-18	6.75	371.1 363.6	4,81	1739 695	890 348	26,5 9,3		28,94		100.00			1000	San Cal	100000							STEEPING			20000										Manager and			18	N
10-18	in-18	6.87	300,7	4.21	1050	581	14.4	68	28.87	0					Contract of						And in the little				2	No.	Melaja Melaja	it alone		Market Co.					- Value		THE STATE OF		13	-

| 6-9 | mv | mg/L | us/cm | ppm | FNU | ppm | °C | ppm | MPN/100ml | ppm | ppm | ppm
 | ppm | ppm | ppm | ppm | ppm
 | ppm | ppm | ppm | Co-Pt | co-Pt ppr
 | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm
 | ppm | ppm | ppm | ppm | ppm
 | ppm | |
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	379.1	3,87	636 647
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| 6.6 | 327.8 | 3.75 | 647 | 331 | 18.9 | 52 | 28.09 | | | SUI GOTT | A STREET | | | | | | | | | - | and the same of th | | THE RESERVE | THE RESERVE | The second second | No. of Concession, | Marin Control | Company of the last | URSELECTION OF THE PERSON OF T | ACCOUNT NAME OF | To be desired to | SECOND VICE | A STATE OF THE PARTY OF THE PAR | The Real Property lies | CONTRACTOR OF THE PARTY OF THE | NAME OF TAXABLE | |
| 6.98 | 354,9 | 4.18
3.78 | 650 | 324 | 11,1 | | 28.55 | and the same | | 100000000000000000000000000000000000000 | |
 | | | | - | Rio No Inc.
 | | Contract of the Contract of th | | | | | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
 | | Name and Add | SECTION SECTION | Control of the last | 100000000000000000000000000000000000000 | | SACRONICE DI
 | | S SCANNERS OF | | BALL CONTRACTOR | -
 | |
| 7.01 | 295,4 | 3.78 | 519 | 310 | 23 | HERMITE RV | 28.74 | | SECTION . | Total Control | | Name and
 | | | | | | | | |
 | | - | | |
 | | 100000000000000000000000000000000000000 | | THE RESIDENCE OF THE PERSON NAMED IN | | | DATE OF THE PARTY | |
 | | The Residence | | |
 | ASS |
6,95	311.4	4,28 4,8	584 1050	342	13	38	28.6 28.91 29.09			-	-
 | | | | 100000000000000000000000000000000000000 | Control of the last of the las |
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 | | | | A Commence | | |
 | | | De Miles | CIS BOOK |
 | |
| 8.7 | 302.5 | 4.8 | 1050 | 524
466 | 10,5
16,4 | 58
44 | 20,91 | 13,38 | >160000 | 24.1 | 2.33 | 3.6
 | 12 | 0.004 | ≤0.002 | ≤0.01 | ≤0.002
 | ≤0,001 | ≤0.01 | ≤0.002 | 38,77 | 1,4 0,01
 | 6 ≤0,002 | 0.014 | 0.002 | 0.037 | <0,1 | 0,133 | ≤0.002 | 0.602
 | 3,37 | < 0.05 | 0,796 | 0.1 |
 | | |
| 8 6.93
8 6.89 | 374,3 | 5,27
4,89 | 938
1181 | 590 | 6.1 | 24 | 28.98 | 13,30 | -10000 | 270 | 2.00 | 0,0
 | | | 110500 | Section 1 | authoritie
 | | | | |
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 | | | | | Here I et al.
 | Section 1 | | | | | | | | | | | |
| 8 6.89 | 322.6
315 | 4.94 | 959 | 923 | 423 | 42 | 28.95 | | | | |
 | | STATE OF THE PARTY. | | |
 | SOUTH THE | OF THE RES | | |
 | | | | | | | |
 | | | | | The state of the s | The same
 | 4 |
| | 318,4 | 5.08 | 958
999
1004 | 528 | 22.2 | STATE OF THE PARTY OF | 20.72 | No. of Concession, | SPREEDINGS | NAME OF TAXABLE PARTY. | THE REAL PROPERTY. | MARKET TO STATE OF
 | A REPORT OF | | NAME OF STREET | CONTRACTOR OF THE PERSON NAMED IN |
 | 200 | | | | THE REAL PROPERTY.
 | TO REMITTED AN | | m but a second | Company of the last | | The state of | | East Market
 | | SHOW SHAPE | | | TOTAL PROPERTY.
 | 2 Supplies | 40 |
| -18 7 | 327,7 | 5.08
3.65 | 1004 | 501 | 28,3 | CALL PROPERTY. | 28.98 | | | | 1500 1000 | THE PERSON
 | | | | SERVICE SERVICE | | | | | | | | |
 | | | THE RESERVE | |
 | | | | | 000000000000000000000000000000000000000 | (C)(C)(C)(C) | 74 - 423 |
 | | | | |
 | E | 2 |
| -18 6.81 | 319.1 | 4.21 | 571 | 286 | 22.3 | Mark Control | 28,98
28,95 | *SETTING | OZES DE | Section 1 | |
 | | | | |
 | | | | |
 | A SECTION OF | THE PERSON | | | | | | CONTRACTOR OF THE PARTY.
 | P. C. | Sept. Manager | | | District of the last of the la |
 | |
| -18 7.09 | 319.1
315.1 | 3.97 | 890 | 441 | 18.4 | 27 | 28,84 | | | | |
 | | | | | 1111/11/11
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 | | | | | | | |
 | | | | 0.1 |
 | | |
| -18 7,46 | 303.4 | 5,15 | 1260 | 632 | 25,6 | 54 | 29,34 | 24.8 | >160000 | 11,2 | 1.14 | 4.2
 | 38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
 | | | | |
 | | | 1 | 10000 | | | |
 | | | 1 | 0,1 |
 | | |
| 5-18 7.65 | 333.7 | 4.58 | 1244
728
837
920 | 620
364 | 31.7
19.3 | 41 | 29.3 | | DESCRIPTION OF STREET | | | | | | | | | | | | | | | | | | | | and the same of | COLUMN TO STATE OF THE PARTY OF | of the same of | ALC: NO | Assessment of the last | | The Part of the Pa | | |
| 2-18 7.23 | 333.5 | 3.99 | 728 | 364 | 19.3 | 31 | 29.11 | NOTATION. | | | | | | | - | - | The state of the state of | THE REAL PROPERTY. | Contract of the last | the state of the s | - | THE PERSON NAMED IN | THE RESERVE | | 37.503630 | 1 | ACCUPATION. | Control State | No. of Concession, Name of Street, or other Designation, Name of Street, or other Designation, Name of Street, | THE RESIDENCE | STATE OF THE PARTY | The second | DESCRIPTION OF THE PERSON NAMED IN | Call Control of the | DECEMBER 1 | Marine Services | 4 |
| 18 7.13 | 324,2
328.7 | 4.44 | 837 | 420 | 27,9
28,1 | | 29,17
29,2 | 20000 | | | |
 | | | | | 2000
 | | | The state of the | | | | |
 | The second second | | | | | | |
 | | | No. of Concession, Name of Street, or other Designation, or other | | |
 | 恶 |
| -18 7.2 | 328.7 | 4,62 | 920 | 393 | 28,1 | - 50 | 29.2 | | | | | THE REAL PROPERTY.
 | | - | | | Name and Address of
 | - | | ORGEN R | | | | | | | | | |
 | | | A CONTRACTOR | 8-0-00 | | | |
 | 100 100 | | | 1 |
 | | |
| o-18 6.95 | 302,5 | 5.2 | 948 | 462 | 18.1 | 50
44 | 29.09
28.71 | - | | | |
 | | 2 | 1000000 | Cald Services | 300000000000000000000000000000000000000
 | The same of | No. of Contract of | million and the | | | | No.
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 | | | | |
 | |
| -18 7.13
-18 7.05 | 318.7 | 5.16
5,52 | 867 | 433
421 | 14.3 | 57 | 29.14 | 46.3 | >160000 | 18.7 | 1.74 | 3,64
 | 18 | THE PARTY OF | | 2000 | 0.00
 | The same of | | | |
 | | | | | | | | September 1
 | | | | 0,1 | | | | | | | | |
 | | 48 |
| -18 7,05
-18 7,19 | 225
296.8 | 5.22 | 829 | 418 | 16.5 | 42 | 29.22 | 40.0 | - 10000 | | - |
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 | | A STATE OF | | | | | |
 | | | \$11 BL 511 | |
 | To the same | A |
| 18 7.42 | 322.3 | 5.08 | 837 | 466 | 18.3 | 65 | 29.28 | The state of | | | |
 | | | | All and the second |
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 | | | The same | OF THE PARTY | | | |
 | | Street Street | - | - | No. of Concession, Name of Street, or other Designation, Name of Street, or other Designation, Name of Street, Original Property and Name of Stree | -
 | |
-18 7.14	337	3,71	1189	595	17.9	CONTRACTOR OF THE PARTY OF THE	29.83		CO OLIVE		Media in	DESCRIPTION OF THE PERSON OF T	The state of the s						CONTRACTOR OF												SEAS MES				E CONTRACTOR OF THE PARTY OF TH		A
-18 7,6	302.1	5.04	(Q1	486	16.6	A STATE OF THE STA	29.73		STATE HARDS	STATE OF THE PARTY NAMED IN		mezala nic	STATE OF THE PARTY.	Paral Santa	(Application)		ALL THE BOOK	353300	BEST OF	THE RESERVE OF THE PERSON NAMED IN	STREET, STREET, STREET,	ECO HIE		I SECTION AND ADDRESS OF THE PERSON AND ADDR	NAME OF THE OWNER, OWNER, OWNER, OWNER,	THE REAL PROPERTY.							STATE OF THE PARTY	100000000000000000000000000000000000000	A CHARLES	ALCOHOL:	
-18 7.26	319.2	5.09	522 536 747 438 428 418 825	532	18.2	72	29.2			ACCOUNT OF THE PARTY OF																											
 | | | | | STREET, N
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 | | the same of the same | | |
 | | |
| -18 7.21 | 317.4 | 4.32
4.66
5.19
5.23
5.21
4.71 | 536 | 441 | 10.9 | 58 | 29.34 | 25000 | | | |
 | PATRICIA DE | | | A DEACH |
 | | | | |
 | | | | - | | CONTRACTOR OF STREET | |
 | | STATE OF THE OWNER, OF | | <0.1 | Silver and the same of the sam |
 | |
| b-18 7,15 | 297.2
295.7
288.6 | 4,66 | 747 | 373 | 13.4 | 43 | 29.4 | 34.86 | >160000 | 17.6 | 1,32 | 4.2
 | 16 | | | - | 1
 | | - | THE RESERVE TO THE PERSON NAMED IN | Section 1997 | Contract Vision
 | The second second | Name and Address of | 1 | STATE STATE OF | THE REAL PROPERTY. | The second | THE PERSON NAMED IN | STATE OF THE PERSON NAMED IN
 | Chickenson | THE PARTY SERVICES | THE RESERVE TO | 100 | PERSONAL PROPERTY.
 | TO MINE | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| r-18 7,14 | 295.7 | 5.19 | 438 | 219
223 | 9,3
9.3 | The second | 29,66 | HESSES. | | The state of the s | Section 1 | | San | | | 200 | | | | | | | | To the same of the same of | | Colour State | SHEET SHEET | NAME OF TAXABLE PARTY. | NAME OF TAXABLE PARTY. | | SOUTH STATES | | e el cumo como | BEAUTION OF THE PARTY OF THE PA | COMME | | Æ |
| r-18 7.15 | 288.6 | 5.23 | 428 | 223 | 9.3 | DOMESTIC . | 29.2 | The state of | - | | | | | | | | | | | | | | | III Washington | A STATE OF THE PARTY OF THE PAR | Chicago. | STATE OF THE PARTY OF | AND DESCRIPTION OF THE PERSON | | ESTABLES | National Confession | | | | Submer Ser | | 4 |
| -18 7.16 | 293,8 | 5.21 | 418 | 218 | 9.3
10,7 | STATE OF THE STATE | 27.56
29,31 | | | - I - I - I - I - I - I - I - I - I - I | | | | Contract Co. | BEAT TO SHOW | 100 to 10 | ALCO STREET | | | | | District the same | SERVICE CONTRACTOR | A STREET, STREET, | NAME OF TAXABLE PARTY. | Parameter (a) | CONTRACTOR OF STREET | | STATE OF STREET | THE RESERVE | 42133000 | Residence of | | | | | 4 |
| r-18 7,09 | 231,2 | 4.71 | 825 | 413 | 10,7 | 149 | | 1000000 | - | THE RESERVE | | SEDEN
 | - | - | - | 400 | 100 100 200
 | III (S) (S) (S) | | | | | | |
 | | | | The second | | Carlotte Co. | |
 | No. of the last | | | 100 |
 | | |
| -18 4.63 | 367.4 | 4.66 | 900 | 449
420 | 29
10,3 | 60 | 29.33 | | | - | | -
 | | | | | | | |
 | | | | |
 | | No. of Contract of | | | | | |
 | | | | |
 | | Æ |
| r-18 6.82
r-18 7.17 | 312.5
298.3
401 | 4.52 | 853
794
819 | 432 | 9,4 | 85 | 29,28 | 34,41 | >160000 | 20 | 1,73 | 6,6
 | 8 | < 0.002 | ≤0.002 | ≤0,01 | ≤0.002
 | ≤0,001 | \$0.01 | s0,002 | 24.51 | 1 ≤0.0
 | 2 ≤0.002 | 0.022 | 0,002 | 0.04 | 0.1 | 0,102 | ≤0,002 | 0,068
 | 19.5 | < 0.05 | 3,751 | 0.2 | | | | | | | | |
 | THE REAL PROPERTY. | |
| 18 5.37 | 280,3
AD1 | 5.31
6.34 | 810 | 410 | 5.9 | 55 | 29,29 | 44141 | - 100000 | - | |
 | | | | |
 | STATE OF THE PERSON NAMED IN | | | |
 | | A STATE OF | | | | N. Carrier | |
 | | | De la constitución de la constit | | | No.
 | |
-18 6,97	180.5	5.5	800	403	17.6	45	29.85	Cathana an	DESCRIPTION OF THE PARTY OF THE			Printer and
 | | | | |
 | | | | | |
 | | | P. 1010110 | (0.00) | | |
 | | E Control of the last | | |
 | |
| r-18 6.6 | 294.3 | 4.25 | 1054 | 534 | 12.6 | (1502Y-12) | 30,06 | DESCRIPTION OF | - Committee | | SMEETS NOW |
 | \$55755\$E | | | | A CONTRACTOR
 | The second | | | |
 | 55 E 600 UIO | No. of Lot | | January 1992 | | | - | 100
 | | | | |
 | | |
| ar-18 7.08 | 294.3
231.3 | 4,78 | 1054 | 447 | 10.5 | | 29,97 | | | | | STATE OF THE PARTY OF
 | | | | HB33557 | | | |
 | 100 | | | |
 | | | | | | | |
 | | | | | District of the last of the la |
 | |
| r-18 7.09 | 262,3 | 4.41 | 1301
631 | 650 | 12.8 | 40 | 29,98 | | | | |
 | | | The state of | | Marine Co.
 | | | | | | | | | | | | |
 | - | - | - | | - | - | |
 | | | | - |
 | - | |
| r-18 7:08 | 268.4 | 5.14 | 631 | 304 | 7.5 | 40 | 29,66
29,99 | | | | |
 | | | | | PER CONTRACTOR
 | | | - | | | | |
 | | | - | | | | |
 | | | The second | 0.1 |
 | CIP SEC. | |
| r-18 6,76 | 283.6 | 5.03 | 1236
1051
501 | 592 | 32.7 | 47 | 29,99 | 9.3 | >160000 | 23.1 | 2,11 | 3.2
 | 16 | | - | - | | | |
 | and the same | | | - |
 | | | | | | ar and the same | |
 | | | | Charles . | District Control
 | | | | | | | | | | | | |
| r-18 7.16 | 112.3
282.4 | 3
4.75 | 1051 | 525
250 | 57 | 56 | 29,66 | | - | | |
 | | | | |
 | | | | |
 | Sec. 10. | | | The second | | - Art 1 | |
 | | Sept. | The state of the s | | |
 | |
| r-18 6.92 | 282.4 | 4.75 | 501 | 250 | 10.2 | 44 | 30.06 | - | | - | | The state of the s | NAME OF TAXABLE | A SHAREST PARTY OF THE PARTY OF | Description. | H 100 100 100 100 100 100 100 100 100 10 | 100000000000000000000000000000000000000 | SECTION S | 20000000 | | Section of the | THE RESERVE | STATE DISTRIBUTION | NAME OF TAXABLE PARTY. | A CAMPAGE AND A | SECTION S. | STORES. | | distribution of | | | 23.05 | | | SHAPPER S | Rap to | Æ |
| r-18 7.05 | 270.5 | 4.47
4.52 | 1200
1240 | 603
582 | 15.9
12.9 | 150000000 | 30.18 | | | | THE RESERVE | 101111111111111111111111111111111111111 | 5500 000 | STITLE OF | Contract of the Contract of th | Charles of the last | Delicate District | THE REAL PROPERTY. | | | 10000 | STATE OF THE PARTY OF | NA MARKET | III TORRESTORE | THE RESERVE | THE RESERVE | | STATE OF THE PARTY | | | | 美国政治宣传自由 | | | | 215500000000000000000000000000000000000 | A |
| r-18 6,69 | 279.3 | | 1089 | 534 | 123 | 24 | 30,06 | | | | | THE RESERVE
 | 0.0000000000000000000000000000000000000 | Charles State | ALC: N | | | | | | | | | |
 | 700000000000000000000000000000000000000 | | | |
 | | | | (9.5 | Carrier Contract | | |
 | | | | 35 114 18 |
 | | 4 |
| r-18 6.82
r-18 5.86 | 286,5 | 5,31
4.97 | 1089 | 413 | 44.1 | 51 | 29.99 | | | | 1000 |
 | | | | The state of the s | TOTAL PARTY | THE PARTY NAMED IN
 | | | | | 100000000000000000000000000000000000000 |
 | | | | | A STATE OF | SECULO |
 | and the second | | | | 3 -014
 | A |
| r-18 6.9 | 322.5
298
288,3 | 3.7 | 826
760
892 | 380 | 30.6 | 49 | 30.08 | 20.25 | >160000 | 11.4 | 0.817 | 4
 | 28 | | | Mary Control | | | |
 | | | | |
 | | | | | | | 100 |
 | | | SCH LEGA | 0.1 | E PARTY OF
 | | A | | | | | | | | | | |
| r-18 6,92 | 288.3 | 4.42 | 892 | 394 | 30.6
29 | 34 | 30.08 | 27.00 | 1 | | |
 | | | | |
 | | | | | A STATE OF THE PARTY
 | | | | | The Lates of | | | Figure
 | | | | | 1
 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| r-18 6.69 | 275.4 | 4.75 | 911 | 406 | 12.8 | 32 | 30.17 | The state of the s | 10000000 | | | | | STUNDAN | 5.00 | | | THE STREET | | | | | 100 | | | | | | 2 (10) | | | The state of the s | - | Annual Control of the | Contradiction of the | Name and Address of the Owner, where the Owner, which the Owner, where the Owner, which the | Æ |
| | 275.4
280.7 | 4.87 | 923
782 | 462
395 | 21.8 | | 29
30.29 | | | | and the same of the same of |
 | | All Control of the Control | | |
 | SPACE STATE | 10000 | 122000 | |
 | | III DESCRIPTION | | | | | | S. Contract
 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
 | | Æ |
| er-18 6.8 | 323.7 | 4.6 | 782 | 395 | 40.8
14.2 | THE STATE OF | 30.29 | | Spiller School | | | 0 | THE CONTROL OF | | HE CALLS | | | STATE OF THE PARTY | CEC. 1008 | | | CONTRACTOR OF THE PARTY OF THE | | Our State of | No. of Concession, Name of Street, or other Publisher, or other Publisher, Name of Street, or other Pu | | | | | | | | | | NAME OF TAXABLE PARTY. | Kellumetes | a |
| rr-18 6.34 | 278.6 | 4.2 | 612 | 417 | 14.2 | 52 | 30.03 | | | No. | | | - | - | - | - | The state of the s | - | NAME OF TAXABLE PARTY. | - | - | A COUNTY OF THE PARTY OF THE PA | The second second | - | 10000000 | Control of the last | | DOMESTIC OF | - | | District Co. | | CONTRACTOR OF THE PARTY OF THE | CHARLES OF STREET | STATE OF THE PARTY. | No. of Concession, Name of Street, or other party of the Concession, Name of Street, or other pa | 4 |
| ar-18 6.34
ar-18 6.51 | | 1.44 | 785 | 392 | 6.3 | | 28.34 | State State Service | Section 1 | | Sec. 5 |
 | STATE OF THE PARTY. | | | Section Co. |
 | | | | |
 | - | | | | | 0 | |
 | | The second | | 0.1 | No. of London
 | ALC: UNIT | 5 |
| ir-18 6.34
ir-18 6.51
ir-18 6.65 | 338.7 | | | 340 | 12.1 | 32 | 29.53
29.01 | 18.34 | >160000 | 18,5 | 1.49 | 3,64
 | 24 | 0200 | | |
 | - | | | - |
 | | | | 100000000000000000000000000000000000000 | | The second | 1 10 5 5 | -
 | 1 | THE PROPERTY. | Service Control | 1000 | | | | | | | | |
 | 1 | 4 |
| ar-18 6.51
ar-18 6.65 | 338.7
298.2 | 4.75 | 6/8 | 2.10 | | | | | | | |
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 | | | and the second second | |
 | The second second second | and the second | A CONTRACTOR OF THE PARTY OF TH | - | - | - | | |
 | | | | | 11 1
 | .cr# |
| ar-18 6.34
ar-18 6.51
ar-18 6.65
ar-18 6.87
ar-18 6.98 | 338.7
298.2 | 4.75 | 763 | 340
408 | 11.4 | 32 | 29,01 | | | | - | -
 | - | | | - |
 | | | | 1000 |
 | | The second second | The second | The second second | 100000000000000000000000000000000000000 | 1000 | 711-1-12-12-12 | THE RESERVE
 | 150000000000000000000000000000000000000 | | The second | | SALES SERVICE AND ADDRESS OF THE PARTY OF TH | // 4//
 | v |
| ar-18 6.51
ar-18 6.65 | 338.7
298.2
287.4 | | 679
763
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1050 | 408
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525 | 11.4
16.7
25.5 | 32 24 | 29,01
29,43
30,12 | | - Carl | | - | | | | | marking the same | The State of the S | Human (view | | | A SHAPE OF | - Victoria de la composición dela composición de la composición dela composición de la composición dela composición de la composición de l | CO SECURIO | | | | OCCUPANT OF | THOSE OF | WON PH | The second | | | THE PARTY | THE STREET | 2 2 2 2 2 2 2 | 1 | ۶ |

Monitoring Parameters Result for STP(Phase-1)

	C/1/2 (550)	THE STATE	and the same of				NAME OF TAXABLE PARTY.	-	Company and a	The same	Description of the last of the	100E 1270	Dente de	The same of	10 to 0 to		Monit	toring Pa	rameter	s Result	for STP(Phase-1)		*	TARREST STATE													
ite p	H ORP	DO	EC	TDS	Turbidity	COD	Temp	вор	T-Coll	T-N	т-Р	O&G	55	Cyanide	Chromium	Arsenic	Mercury	Cadmium	Selenium	Lead	Color	Odor	Zinc	Copper	Barium	Nickel	Sulphide	Free	Formal-	Silver	Iron	Ammonia	Hexavalent	Fluoride	Total Chiorine	Total Cyanide	Total Heavy	УР
			Daily P	arameters						Weekly P			and the last						-								Parameters	Chiorine	_ denyde				1 curomium cre-				Metals	
5.0	- mv	mg/L	µs/cm	Max 2,000	FNU	ppm			Max 480 MNP/100m3	Max 8		Max 8	WINDS NO.	100 P/Debel 2010 000	100 H/300		100000000000000000000000000000000000000		7500			_			Max 1	- Contractor						Maxa,6		Max20	The state of the s	(2-15 mg		N
1-17					De al line		udsu	ppm	The state of the s	pym	Parit	Ppin	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	Townson or	130000	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	-
	66 366.2	6,01	464	233	2.3	< 0.7	29.83																															
t-17 t-17 t-17							Service Control		Marie San												British Co.	STATE OF THE PARTY			TO STATE OF							No.						
1-17					Total date															No to the				2000														
1-17 1-17 5.1	13 601,2	5,94	494	247	1.8	0.8	29.72		F. 20 (1) (1)																								Eliza Victor					1
ct-17 5.8 ct-17 6.1	13 601.2 87 364.7 18 332.9 79 451.7 52 335.3	5,94 5.56 5.45 5.79 5,19	494 549 526 545 507	275 263 273 254	1,8 8,2 22,5 2	2.6 4.5	30.22 29.67 29.64	1.02	<1.8	4	0.204	<3.1	16	0.009	≤0.002	£0.01	≤0.002	S0.001	≤0.01	≤0.002	2.05	1	0.1	≤0.002	0.022	0.003	0.012	0.2	0.022									
ot-17 6.1 ot-17 5.1 ot-17 6.5	79 451,7 52 335,3	5,79	545 507	273 254	22.5	7,8	29.64																9.5															1
st-17 st-17	PARTY CONTRACTOR				5 STATE OF THE REAL PROPERTY.		A TOTAL CONTRACTOR	Participation of		Desire Committee	ACCUMANTAL SECTION	AND COME			Market II		A (STATE OF STATE OF			ESTATION OF THE PARTY OF T		10000	100000000000000000000000000000000000000	1000			22.30			US COLUMN				I DOMESTIC	100000000000000000000000000000000000000		1000000	
t-17 6.3 t-17 6.3	24 382,3 38 282.5	5,34 4,71	513 501	256 250	1,9	4.7 5.4	29.69 29.84	1.98	<1.8	0	0.281	<3.1	14									2 300														Revenue of		4
±1-17	,9 492,6 86 307				12.9	CONTRACTOR OF THE PARTY OF			- 1/2					- Country of				Design Co.		CALL TO SERVICE	ALCO .	ALCOHOL:	(CO.)	1000			Series I		Manager Street	200					100000		-	
:t-17 6,8 :t-17	6 307	6.29	505	253	26,8	3.1 5,8	29.25		all to the last	No.			and the same of			THE COURSE			278378308																			#
d-17	84 354.4	6,59	479	240	2.7	3	29.91								Design to					022000	01500				real last		Man Vi											-
t-17 6,6 t-17 7, t-17 6,5	64 354.4 .1 360 54 389.4	6,59 6,58 4,89	453 490 421 490	240 228 247 265 225	2.7 10 9.6 2.9 7.8	3,8	29.8	2	<1.8	6	0.13	9.1	6																									+
t-17 6.7	369,8 72 339.6	6,08 5,38	421 490	265 225	2.9 7.8	3,3	29,59 29,48 29,87		The same of the sa																				0	OLD OF								#
t-17					200000	TO THE REAL PROPERTY.	Service .	BUSUN						100000			STOKE S			024		100000		BEE				20000	(E-100000	STEEL ST	SECTION .	OST DESIGNATION OF THE PARTY OF	AMELINE AND			2005		
#-17 6.6 #-17 6.5 #-17 6.5	63 357.6 5 358.1	6,05 5,81 5,8	560 569 720	280	3	Not run 23.8	29.47	3,63	<1.8	11	0.103	<3.1		Service .			Control of		G No.			2000						-	-		Sales and		REAL PROPERTY.					-
r-17 6.5	.5 358.1 57 367.6 78 428.2	5.8	720 923	280 284 361 461	2.8 2 1.7	9,8	29,71 29,63 29,89	3,05	77.74		0.100																PONNICA											#
-17 5.6	99 412	6,03	933 889	466 450	12 4.4 5.9		29.38 29.48	A SAME			enting in	100							-	Residential			No.		No.				TAND BE	1 1 1 1	Name of							1
-17 6.6 -17 6.6 -17 6.2	7 401.2	5.78	920	460	5.9	8.1	29.38	6281653		HID GUESS			BURNEY.	0000	6-10-10										No.	102000	E TOTAL										BALL STATE	1
-17 6.2	5 445,4	6.04	1021	460 510	2.8	2.2	29.22 28.81 29.34	0.1	<1.8	7,4	0.074	<3,1	6	0.003	0,006	≤0,01	≤0.002	≤0,001	≤0.01	≤0.002	2.34	1.4	0.025	0.008	0.015	0,035	<0.005	0.2	0,025							Co-Upacioni		+
r-17 6,6 r-17 6,2 r-17 6,5 r-17 6,6 r-17 6,6 v-17 6,8	4 495.7 277 401.2 54 356.5 25 445.4 59 367.7 67 393.8 84 357.8	5,86 6,04 4,96 5,56 5,26	913 1021 943 916 869	472 458 434	4.9 2.8 2 2.4 1,8	3.7	28.81 29.34 29.43 29.34							100									271.00															
v-17 6.7	77 340,5 23 337,9 59 335,4	5,43	814	439 407 386 377 384 384 376	8.2	1,1	29.63 29.51 19	H1611300							Albania San					SERVICE STATE			SECTOR	40,0700	1000000		1000000											+
/-17 6.9 /-17 6.5	9 335.4	4.85 6.54	772 752	377	8.2 3.4 2.1 4.1 2.1 2.1		19								0.65			STATISTICS.									No. 1 March		ECONOMICS ECONOM	Colored S					Michael Control			H
/-17 6.4 /-17 6.6 /-17 7.7	48 386,6 57 357,6 74 272,2 36 389,8	4,41 6,75 6,78	767 767 751 788	384	2.1	3,1	29.1 29.59	2.04	<1.8	7	0.074	<3.1	8																									T
-17 6.3	6 389.8	6,18	788	394	1.8	4.6	29.59 29.48 29.62	P. P. CHE											Ten -																			+
17 6.4 17 6.7	18 303,5 71 373.6	5.02 5.76	949 951	475 476	2.1		29.83 29.91		TO COMPANY																											SECTION SECTION	STATE OF THE PERSON NAMED IN	#
-17 6.6 -17 6.5 -17 6.8 -17 6.9 -17 6.7	32 337.6 52 384.3 88 473.4 97 318.2 76 334.8	6.9 6.44 6.12 6.77 6.6	939 999 991 1025 1023	470 500	3.1 2.3	3.1	30,01 29,54																															1
-17 6.8 -17 6.9 -17 6.7	8 473,4 77 318.2	6.12	1025	492 517 512	4.7 5.2 4.1	1.3 2.7 5,5	29,79 29,22 29,3	0	<1,8	31	0.075	<3.1	8																			e due to						1
417 6,4	7 352,2	4.32	1023 846 1023	447	8.6	5.5	29.3 29.99 29.44	No. of Lot								OR SHARE		Barrier .	STATE OF THE PARTY		-																	4
	36 309 35 321.5	5,43 6,3	1023	512 519 389 491	3.2	0.7	29.29							Marie Sales														La Cart							7/2/30/30/55			#
v-17 6.9 v-17 6.5 v-17 6.8 v-17 6.8	95 321,5 59 337 34 354,6	6.3 7.01 6.32 6.2 6.81	1037 973 932 868 853	389 491	3.1 5.9 4,3	0.7 0.9 3,4	29,89 30,08 29.5	0	<1.8		0,103	<3.1	8								TENERS OF THE STATE OF THE STAT																	+
-17 6.8	385.1	6,81	868 853	433	6.9 26.4	5 9.8	29,08								- W SI																							1
-17 6.6 -17 6.9	2 313.9	5,78 6,95	981 1054 1153	434 458	2.1		28.96 26.74							NOT LONG					CONTROL OF						BOALSON				11022									
-17 4.3 -17 6.6 -17 6.9	38 426.5 37 338.8	5.8 6.82 5,3	1054	527 578	2,3 6,7	<0.7 10,6	28.6 28.86	1.13	<1,8	9,3	0,102	<3.1	12	0.004	≤0.002	≤0,01	50,002	≤0,001	≤0.01	\$0.002	5.01	4	SQ.002	≤0,002	0,06	≤0,002	<0.005	0.1	0.008	≤0.002	0,43	4,06	<0.05	4.386	0.4			
>17 4.3 >17 6.6 >17 6.9 >17 6.6 >17 6.6 >17 6.6	354,7 7 343,6	6,39	1094	548 359	2.4	1.8 1.7 1.3	28,84 29.14																															+
-17 7.0 -17 7.1	88 426.5 77 338.8 94 354.7 797 343.6 91 343.3 11 323.5 13 33.6 13 394.2 14 219 15 186.2 Tem 2 343.5 1 262.7 6 284.2	8,54	974	434 458 527 578 548 359 522 487	3,4	1.3	28.82 28.92		100000			ESSIME	EU AU DON	A 100 TO 100					COLUMN TO SERVICE STATE OF THE PARTY OF THE	22.00			Section 2012	DESCRIPTION OF		ERSAUSION	D-12-85.5			All S		AND STREET	CONTRACTOR OF THE PARTY OF THE		CHARLES OF THE PARTY OF			
-17 7.2	3 364.2	6,39	942	531	2.9	2.9	29.16 28.27 27.25		Ecus																NAME OF TAXABLE												all/allevanor	+
0-17 7.2 0-17 7.5 0-17 7.4	3 185,2	6,93	821	411	2.9 4 8	2.6	27,25 28,84							The state of																								+
>17 >17 7.2	343.5	6,24	824	413	4.2	2017)	28.13									A PROPERTY AND ADDRESS OF				Samuel and a			EATTO DESCRIPTION														The second second	+
>-17 7.2 >-17 7.2 >-17 7.1 >-17 7.0 >-17 7.0	5 284,2	5.2	828	418	6,5 3,7		29.18 27.3																											MALL STATES			THE STATE OF THE S	4
>17 7.1	5 307.2	5.9 5.57	828 826	415	3.8	N. Carlo	26.17																								PER STATE							Ŧ
-17 6.4	5 307.2 9 322.7 2 340.9 5 328.3 7 364.8 5 339.8 5 470.3	6,1	806	414	2.9 2.8 2.9	N. Control	26.76 25.61 25										A																					#
-17 6.9	328.3 364.8	6.19 7.45 7.6	802	396 414	9.3	COURSE	26.59	100000	NAME OF TAXABLE PARTY.				D. Ten Establish	COLUMN TO A STATE OF	Medical and		OF THE STATE OF	NAME OF TAXABLE PARTY.	1/2/00/00/00	Television Add	91150 UV		CONTROL STORY			2000	AND HOLD	-	construction	HELIA OF STREET		12.00.000000000000000000000000000000000		and the parties of the		Charles and the Control of the Contr		1
-17 7.5 -17 6.8	5 339.8	6,61	788	416 384	9.2 14		25.66 27.14			Windson !											A									217.5	Name of Street	ALYESTON .	ACTUAL DESCRIPTION	TO SHARE SEE	THE RESERVE		September 1	#
-17 6.8	3 406.8 7 532.7	5.85 7,09 7,18	710 691 561 727	355 346 281	5.2 5.4 59,2 5.6	5.6 14.2	27.32 27.75	3,18	<1.8	7.8	0,092	<3.1	2								La Company										Vicinia (N							1
37 7.2			561 727		59,2 5.6	18,9 5.6	29.13 27.96																													200000		+
17 6.9	323.1 7 313.6 3 317.5	7,37	732	364 366 368	11.9 4.2		27.78 27.87 27.78					Marie Com																	ON FIRM									4
18 7.30 18 7.30	7 313.6 3 317.5 5 301.9 9 291.2	7.2 6.65	736 738	369	4.2 5.3 4.3 4.7	Not run	27.78 27.21 26,8																															#
					5.1	IB NO HER THE	26,8 28,64	china materia	0.55.000	Salar Barrier	NIDE SALE	SCHOOL S	NAME OF TAXABLE PARTY.				200000000																A PERSON				Market Street	#
18 7.4	295.3 2 360.6 3 285.5	7.06 6.19	749	395 387	4.1 5.3	5.1	28.55 27.12 28.19	No. of Street, or other Persons	COLDINATION OF	estapos.				and the same					1000000					0.000000	TO STORY		1000											1
16 6.8 18 6.96	285.5 9 388.8	7,5	786 685	388 727	4.3 343	23	28 21				2007000			-			Tax Co.	-			2012		11/2/2014						ial Zais	10000				400000000000000000000000000000000000000				#
18 6.96 -18 6.94	9 388.8 6 404.6 4 337,5	6,86 6,41	7.41 752	370 377	3 6,8	4.1 6,5	28.76 28.77	4.5	<1.8	10.2	0,091	<3.1	6															and the same										#
						7.1	27.92																															+
18 5.79	2 317.4 2 389.5 9 310.7 7 267.3	6.52 6.8	7.53 746	380 372	6.5		28.24 27.75	Charles of the Control of the Contro		AND THE REAL PROPERTY.									200000		STORES .		100000			Series.				1000		(B)(B)(B)		F19-1/19-10				#
-18 6.97	267,3	A CONTRACTOR OF THE PARTY OF TH		Max 2,000		Not run Max 125	27,39 Max-35	Max 30	Max 400	Max 80	Max 2	Mas 10	May 50	Marat	Max 0.3	Max 0.1	Max 0.001	Max 0.03	Margar	Marca	Max 150	Marian	Maria	March	March	Margari	Mark	Mont	Mari	Mari (Mayze	Marte	Page 1	Plants.	Arres a			1
10 70	my 6 259,2	7,59	µs/cm 752	99m 378	FNU 5.4	ppm Not run	*C 26.99	ppm	MNP/100ml	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	-	THE ACT OF THE	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm ppm	ppm	ppm	ppm	ppm ppm	ppm ppm	ppm	ppm	1
-18 7.36	6 259,2 1 311.5 4 415.9	7.01	803 870	402 435	5,4 119 6,4	8.8	27.74 27.83	2.01	<1.8	12.2	0.255	<3,1	12				14/000	0=000				100000													27			1
-18 7.01 -18 7.01	2 335,2	5.99	758	379	8.4	8.7 10	27.54						Ellen						TELL				883												ALL WAS			1
-18 7.04 -18 7.00	THE PERSON NAMED IN	6.5	861 624	436	5 2.1	6.4	27,64 27,42		100000		NAME OF		Microson .								100000		200 E 0 E		-													1
-18 7.04 -18 7.04 -18 7.05		6.71	200	312 345	3.1 25.1	1,0	21.02	3.26	71.0	10	0.434	(2)					1000																				/	1
-18 7.04 -18 7.02 -18 7.03 -18 7.03 -18 7.03 -18 7.04	3 436,5 9 403	6,96 7,76	717	350		0,0	27,67 27,81	3,36	<1.8	10	0,121	<3,1	1																						0,2		1/12	My
-18 7,04 -18 7,02 -18 7,03 -18 7,03 -18 7,03 -18 6,98 -18 7,03	3 436.5 9 403 8 336.7 2 337.7	6,96 7,76 6,08	717 770	359 385	3,6	6,8 5,6	27.81																				The second secon											-
-18 7,04 -18 7,07 -18 7,07 -18 7,07 -18 7,07 -18 7,07 -18 6,96 -18 6,96 -18 6,96 -18 6,96 -18 6,96 -18 6,96	3 436.5 9 403 8 336,7 2 337.7 6 415,5 8 478	6,96 7,76 6,08 6,38 5,55	1050	385	3.6 3 12.7	5,6 8,5	27.91	200				GENERAL ST							US NO		20025		de March	and the same				10.62.00	100000	200	Rentmeter.	23500	E CANCE	S TO VALUE			1/3/	1
18 7,04 18 7,05 18 7,05 18 7,05 18 7,05 18 7,05 18 6,96 18 6,96 18 6,96 18 6,86 18 6,86 18 6,86	3 436.5 9 403 8 336,7 2 337,7 6 415,5	7.14	717 770 760 1050 1107 1123 990 727	385 380 525 554 562	3,6 3	5,6 8,5 5,1 8,9	27.81 27.91 28.27 28.27 27.87 27.46																														WAR JAPAN Z	-

				1 - 2	1 35 to 2 000		May 195	May 16	May-10	May 400	Max 80	Max 2	Max 10	Max 50	Max 0.1	Max 0.5	Max 9.1	Max 0.005	Max 0.03	Max 0.02	Max 0.1	Max 150	Max 150	Max 2	Max 0.5	Max t	Max 0.2	Max 1	Max 1	Max 1	Max0.5	Max3.6	Max 16	Max0,1	Max20	Max0;2	Maxit	Max10	MACOA
Standard	4-3	mv	mad	uslem	nink 2,5000	FNU	pom	*C	ppm	MNP/100ml	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	-	manufacture of the last	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppin
Feb 1-Feb-18	7.02	352.4	6.24	716	358	8.3	14.5	27.57		Carlo				to the second		CONTRACTOR OF THE PARTY OF THE		Market N	A VI -	A TOP OF	-	-																-	and the second
Feb 2-Feb-18		352.4 328.7	6.24 5.65	720	358	8.3 5.2	14.5	27.82											-	Marine Company		-	-	area de la companya del la companya de la companya	7 10 10 10 10 10 10 10 10 10 10 10 10 10	THE REAL PROPERTY.	-	No. of Concession,	COLUMN TOWNS	-	Complement.	Charles West	CONTRACTOR OF THE PARTY OF THE	INCREMENTAL STREET	1223	CONTRACTOR OF THE PARTY OF THE	Name and Address of the Owner, where	STATE OF THE PARTY OF	
Feb 3-Feb-18			6.64 7.56	843 843	422 421	8.1 2.3		27.28	Maria San San San San San San San San San Sa	The State of the S	U-MA	0.00			1000			-	1000		-			100000000000000000000000000000000000000	Contract of the	10000	0.00		W	ENGLISHED IN	STATE STATE OF		100 A	n Carrie	TAIN TO SERVICE STATE OF THE PARTY.				
Feb 4-Feb-18	6.81	345.4	7.56	843	421	2.3		27.61			CONTRACTOR OF THE PARTY OF THE	SECTION SE	ADVEN SE	the same of the	Contract of the Contract of th		BC SEC	ON THE PARTY OF			-	-				The second	Carrie Court			CONTRACTOR OF		100000	THE STATE OF	SINCE CONTRACTOR					
Feb 5-Feb-18			7.6	832	416	3.1	7.1	27.67 27.56		1					200		-	-	-		-					The same of				3000	S. D. Saraka	STATE STATE							
Feb 6-Feb-18		334.8	7,78	870	435	6.1	6.6	27.56			10.5	0.476	42.4		0.003	<0.002	<0.01	<0.002	≤0.001	≤0.01	≤0,002	0.61	2	0.004	≤0.002	0.014	0,006	<0,005	<0.1	0.037	≤0.002	0.094	0.021	< 0.05	1,153	0,1		Market Market	<0.002
Feb 7-Feb-18		346,2	6.77	841	421	4.7	7.4	27.79	1,53	<1,8	11.0	0,176	-31	0	0.003	20,000		THE REAL PROPERTY.	OREL L	RIVER DE		The same of					to an artist			- Walter			120000000000000000000000000000000000000	Name of the last					
Feb 8-Feb-18		335.8	6.93	815 770	385	35.5	5.3	27.7	-		The state of the s										No.					10 meno	Section 1		STATE OF THE PARTY.			100				10000		-	-
Feb 9-Feb-18		354,1 386,4	7.42 8.01	776		9.2	0,3	26.06	Section Section	100000000000000000000000000000000000000	ACCUPATION OF	STATE OF THE PARTY OF	NAME OF TAXABLE PARTY.	PROPERTY.	SHIPPINGS IN	Carlo College	1000	The Control of		Winds and	The second		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	50323/00		CONTRACT.				STORY OF THE			020025000						
Feb 10-Feb-1					427	7.4		27.93	The Real Property lies	MATERIAL PROPERTY.	CONTRACTOR OF THE PARTY OF THE	No.	Supra Color			ENGINEERING ST		STATE OF STREET	THE REAL PROPERTY.	CONTRACTOR OF			CHARLE		The state of	and the second	2000		The second second								Management and Section 1985	0.00	
Feb 11-Feb-1 Feb 12-Feb-1			6.42	858	429	11.1	No. of London	28.07	1000000	Santa della			SEE VILLAGE	Charles of the Control of the Contro						H 10 Page 10		FARSE	CEARSON .	100000	STORON.	100 miles	391133	HISTORY TO	100000							The same of the sa			
Feb 13-Feb-1			7.4		445	14.2	7.4	28,14	SENIOR DE	VIII STREET	THE THE PARTY OF	Suggest and					The state of	A CHARLES		1010		Ton Section 1			1	-			-	1000			1			89			
Feb 14-Feb-1		398.8	7.9	915	458	14.2	8.4	28,34	1.75	<1.8	13.2	0.375	<3.1	8											-	-				NO COLUMN					D. W. S. Control	No. of Lot, House, etc., in such states	The Name of Street, St	The second second	
Feb 15-Feb-1			7.01	843	421	10.2	6.4	28.36			SELVEN	Resident and the second	March 1985					-	-		-						10000		-			A CONTRACTOR	American Company	A THE WHITE		1000000			
Feb 16-Feb-1	7	372.9	7.01 6.15	808	403	61	12.3	28.36			Cold on the		West man	Ten and							100000000000000000000000000000000000000	Harris Co.	ALCOHOLD ST	CONTRACTOR OF THE PARTY OF THE	Annual Control	WHEN SHEET	200000000000000000000000000000000000000	District Co.	100000	MANAGEMENT AND ADDRESS OF THE PARTY OF THE P	W. Control	ALC: UNKNOWN	The state of the s	THE RES	Section 2	DESCRIPTION	A CONTRACTOR	MARINE STATE	
Feb 17-Feb-1		362.1	5,83	834	417 429	52.1 45	Name of Street	28.28	SIZE				SCORE PER		The second			-		0.000	No. of Concession, Name of Street, or other party of the Concession, Name of Street, or other pa	Contract Con			Contract of the last			E COLOR		and the second	ACCOUNT NAME OF THE PARTY.		1000	5 1 CA 10 CA			A CONTRACTOR	W. Carlot	
Feb 18-Feb-1	7.12	379,4	6,18	824	429			28.24	100000		STATE OF THE REAL PROPERTY.		-							Na Laboratoria		100000						THE RESERVE									SEIDHEIM	Charles and	CHARLES P
Feb 19-Feb-1			7.6 6.95	841	408	11.2	5.2	28.76				-						The state of			100	To be made at	THE REAL PROPERTY.			Belaides					OLD THE REAL PROPERTY.						10		
Feb 20-Feb-1		387,3	6.95	752 799	376 399	19,3	9.9	27.72	2.42	<1.8	11,8	0,401	a.1	10				100000		77		THE STATE OF THE S		TO COLOR											100	22			
Feb 21-Feb-1			7,18	799	399	18.6	9.3	28.16	2,42	£1.0	11,0	0,401									I HALLING THE																		
Feb 22-Feb-1		398,4	7.42 8.01	822 793	401	19,5	13.9	28.36	-		-			NAME OF TAXABLE	12.00	(C) (S) (S)														TANKS DEG		-			-	William Control	and the later of t	The State of the S	SPECIFICATION I
Feb 23-Feb-1		354,5 370,5	0.01	817		33,6		28.68	CANCEL ST	Control Control	MANAGEMENT	OUR SHEETING		BEN CERTIFIC	A PARTY OF	THE RESERVE	100000000000000000000000000000000000000			Dill Control					Marie Sans		O CHESTORY	mines some	100000000000000000000000000000000000000			DESCRIPTION OF							Action management
Feb 24-Feb-1			8.17 6.96	852	428	5.14		28,79	The same of	Name and Address of the Owner, where the Owner, which is the Ow			Selvices	STATE OF THE RES	THE REAL PROPERTY.	ATTENDED TO			THE STREET	PARES S	Salar Salar	Mark Share	DE ADMENDE	The second	A STATE OF	F-5-12-20-0			ALE BEREION		7-2-5		NEG PERSON		90,000000000000000000000000000000000000	THE RESIDENCE			
Feb 25-Feb-1 Feb 26-Feb-1			7.14	648	414	11.5	8.2	28.69					HONOR H		The second					100		100		12 32 21					-									Charles Co.	
Feb 27-Feb-1		398.8	7.4	776	408	11.1	16,1	28.07			IN SECURIOR S	to tropic				E STEEL					-											-	TO THE REAL PROPERTY.		den en	0.4	Contract of the Contract of th		1 1 1 1 1
Feb 28-Feb-1			6,26	825	413	58	11,2	29,01	2.02	<1.8	12.4	0,561	<3,1	4				Alexandra et				Carlo San		CHECK COLUMN	THE PERSON NAMED IN	THE REAL PROPERTY.	AND DESCRIPTION OF THE PERSON NAMED IN	CONTRACTOR OF THE PARTY OF THE	THE REAL PROPERTY.	CONTRACTOR OF THE PARTY OF THE	A STATE OF LAND	SeloxU3res	NAMES AND DESCRIPTION OF THE PERSON OF THE P	March 1971 Acres 1972	STATE STATE OF	CATHERINE S	TO DESCRIPTION OF	STATE OF THE PARTY	1 1 1 To 1 To 1
Mar 1-Mar-1		414.8	6.84	1004	502	118		29.12		The Said	STATE OF THE PARTY			192507 (70)		111500000			1000	CT-ST-ST-ST			1 TO	A CONTRACTOR OF THE PARTY OF TH	The second second	BORNES OF SALES		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	100000000000000000000000000000000000000		(SPEC) 2009 5	12 12 19 19	ACCRECATE VALUE OF	Laboratoria de la compansión de la compa	SECTION AND ADDRESS.	HOLD SERVICES	United States		
Mar 2-Mar-1		410.7	6,84	1002	511	120	I E THE STATE	29.1 27.56								CONTRACTOR		-	SUS-BUILDING.			-		The state of				-	AND DESCRIPTION		Section 1	STATE OF THE PARTY.		HOLES TO SE	TO THE REAL PROPERTY.	STREET, STREET,		BOOK BUSINESS	
Mar 3-Mar-1	6.9	413.7	6.74	1004	518	118		27,56	Participant	2555				The state of the s	200			Salada				PERSONAL PROPERTY.	Control of the Contro				10000	STATE OF THE OWNER, OWN	Name of Street	The state of the	SOURCE OF	STREET		STATE OF THE PARTY.			SECRETARIA DE LA CONTRACTORIO DE	PATRICISES.	
Mar 4-Mar-1		406,9	8.74	1027	514	58.4	S SECTION AND ADDRESS OF THE PARTY NAMED IN	28,65	permass.	A STATE OF THE PARTY OF		3-11-200		ALC: U	Company of the last	100000000000000000000000000000000000000	12000000	Dente Man		SUNTENUE !	A STATE OF THE PARTY OF THE PAR	10000	-					100000000000000000000000000000000000000	TENY CO		ALCOHOL:					-	A CONTRACTOR	Gentle (E)	
Mar 5-Mar-1	7.08		6.52	936	468	14.1	8.1	28.67						100		-																							
Mar 8-Mar-1	7.12	406.3	6.82 6.62 3,98 7.47	1008	493	113	15	28.35	0.14	40	10,4	0.216	<3.1	2	0.003	40 002	-sn n4	s0.002	≤0 001	s0.01	\$0.002	3.41	1.4	≤0,002	s0.002	0,038	0,032	0.007	0.1	0,012	≤0.002	0.09	2.66	<0.05	4,85	0.3			0.014
Mar 7-Mar-1		412,5	6,62	1017 856 763	512	124	10.4	28,72 29,76	9,11	<1.8	10,4	0,216	-3.1	-	0.000	30.002	40,01	10,002	-	14	1											1							
Mar 8-Mar-1		261.5 345.6	3,98	856	428 381	5.3	29,7	29,43		-	-					Cambridge		The same of		A PARTIE AND A				1000								-		-	-	The second second	Contract of the last	The same of the sa	THE RESERVE AND ADDRESS OF THE PERSON NAMED IN
Mar 9-Mar-1		345.6	6.19	748		3.6	of the second second	29.39	200-0000	SECTION AND DESCRIPTION OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS	CONTRACTOR OF THE PARTY OF THE	SECTION S.	COLUMN TO SERVICE	NAME OF STREET	100 m 20	Children's		100000			of the same of	San San San							10/10/20	A		Real Property				-			1
Mar 10-Mar-1 Mar 11-Mar-1			6,52	819	487	11.4		29.34	Service S	British Marie	Commence of the last		STATE OF THE STATE		ELECTRICAL DE	Marine San		distributed the		Name and		Name of Street	S TO SERVE		F-12503514	CSUDAG.		No. of Lot, Lot,		NO SERVE	SHEET SEE	DOM: NOT	CONTRACTOR CONTRACTOR	HISOTHIT LOUIS					
			6,88	753	376	11.7	6.7	29,22		100000000000000000000000000000000000000												PROPERTY OF							-		000								
Mar 12-Mar-1 Mar 13-Mar-1	8 6.74		5.96	840	420	46.7	12	29.13								1000000							1			-									THE RESERVE	0.3			I Sugar
Mar 14-Mar-		297,5	6,26	807	403	26,5	8.8	29.12	0.75	<1.8	11.9	0,473	<3.1	8					N Chicago			-	-	-							-			THE RESERVE OF THE PERSON NAMED IN	The same of the sa		Site State		
Mar 15-Mar-1		347,5	5.44	784	392	64.5	9,3	29.15							-	-	-						-				THOUSAND IN	100		Secretary 1		AND S							
May 16-Mar-1		347,5 380	6.26	1119	560	12.2	13.5	27.74						1	-	-	-	-	-	TATISCO DE	NAME OF TAXABLE PARTY.	Name of Street	1	The same of	Contraction of the last	THE RESERVE	12/19/20	THE RESERVE	Commission of	wire book			EDITOR VISIT		05.00		E TANK TO STORY		A CONTRACTOR
Mar 17-Mars	8 638	373.3	6.03	855 789	428	120 12.2	Section 1	29.29	The state of			Carp Bloom								THE RESIDENCE	Control of the last	Sall House Sale	THE PARTY OF	E STATE OF	STATE OF THE PERSON NAMED IN	EGHINAD.	Name and Address of	SHOW S	I STATE OF THE PARTY OF	STATE OF THE PARTY.		THE STATE OF THE 	PERSONAL PROPERTY.		HE SECTION				
Mar 18-Mar-1	8 6,36	379.2	6.25		402			29.22	-	TARSON.	22296004020		Section 1	-	EL PROPERTO DE		-	-	-			1		No. of Asia	1 1 3 3			1011	211			Carlotte Sal							
Mar. 19-Mar-1		381,4	6.13	819	420	11.6	5.8	29,28		-									District of the last	No.							STATE OF		The same of						100				
Mar 20-Mar-1			5.77 6.04	854 820 832	427	10.1	19.6	29.41	0.76	<1,8	15	W 200	<3.1	-								Marie Land	Maria Carlo					MS III		NAME OF TAXABLE PARTY.			-			0,4			
Mar 21-Mar-		399.3	6.04	820	410	26,4	34.1 7,9	29.62	0.75	<1,0	15	CONTRACTOR OF STREET	700/1					1					DESCRIPTION OF THE PERSON OF T			Bearing to the			The state of		75 192		(1) Mill (1)		PID COLOR	The same			
Mar 22-Mar-	8 6.29		5,94 6,14	851	422 427	11.5	0.0	29.28	SAUG	1								Marian L						The last											-	The second second	THE RESERVE OF THE PERSON NAMED IN	The second second	Sept. 19
Mar 23-Mar-1		401.2	5,72	760	380	14.8	8.8	29,49	HAROLINA .	AND DESCRIPTIONS	Wines.	CONTRACTOR	OCCUPANCE.	THE REAL PROPERTY.	THE REAL PROPERTY.		MARKET STATE	STATE			No. of the last of	CONTRACTOR OF THE PARTY OF THE	The second	State of the last		C							-	Could be desired	Bulletin meters	No. of Concession, Name of Street, or other party of the Concession, Name of Street, or other pa	th selection	AND DESCRIPTIONS	THE RESERVE OF
			5.72	782	391	6.1		29.38	disabanite		WE COMPANY	Colorado S		MERCE ST	HISTORY		Series Co.		THE PARTY	TWO STEEL	STATE OF THE PARTY.	THE PERSON	The same		ALC: UNITED BY	THE ST		EVEN NEWS				CONTRACTOR OF STREET	Contract of the last of the la					The second	
Mar 25-Mar- Mar 26-Mar-		398.2	6,81		377	9.9	7.9	29.97	No. of Concession, Name of Street, or other Designation, Name of Street, or other Designation, Name of Street,		Name and				Contract of	Anna Carlo		The state of						-	-	TOTAL PROPERTY.	Designation of the last of the	100000000000000000000000000000000000000	AND DESCRIPTIONS	A STATE OF THE PARTY OF	AND DESCRIPTION OF THE PERSON NAMED IN	OF SUPPLY	19630000	CONTRACTOR OF THE PARTY OF	AMERICAN STREET	San Vanishin	PROFESSION SERVICES		100000000000000000000000000000000000000
Mar 27-Mar-				843	421	6.3		29.48	S SECTION AND ADDRESS OF	H STATE OF THE REAL PROPERTY.	ROBERT ST		STATE OF THE PARTY OF	TO BE			1		16828		1000	1000	-	-	-		person.				Contract of		distant to	STREET,		0.1	SEE SEE		
Mar 28-Mar-			6.06	848	424	8.4	6.8	29.43	0.75	<1.8	12.7	0.261	3,1	2	12-1-01			-		-	-		1	1000	-	-		O. P. SHEETS			THE REAL PROPERTY.	CAU	Contract of the same	The Parket of					C. Colo
Mar 29-Mar-		314.8	6,04	685	418	4.9	4.1	29.13					The Parties	September 1							-	-	-	-				THE PERSON NAMED IN	11000										
Mar 30-Mar-	8 6,96	289,5	4,46	753	382	16,7	22,6	29,43	NUMBER OF STREET		150			STATE OF THE PARTY OF	The second second		and the same	Annual Property	-	SCHOOL SECTION	THE REAL PROPERTY.	A STREET, SQUARE	ACCUMULATION OF	Lie Control	TAXABLE POR	THE ROOM	THE PARTY	TOTAL CHE	Park Sale	T. S. S. S.	OF STREET	HATTER TO	100			Halle T. H.	Control of the		
Mar 31-Mar-	8 7.34			1050	525	25.5	100	30.12	No. of Street, or other	The state of	THE PERSON		THE COURT OF THE	The second	200000	The second second		A COLUMN		A.L.	of the second	A STATE OF THE PARTY OF THE PAR		1000	and the same	-											1	WADEL	1

MJTD WENT LINE OF THE PARTY OF THE PARTY LINE OF

Monitoring Parameters Result for STP(Phase-2)

		-		the sales	12 1 1 1 1 1 1	-10					To the last	No. of Concession,		The second second	Acres de la companya del companya de la companya del companya de la companya de l		WOTHLOT	niy Faran	ileters ive	Inlet	STP(Phas	e-2)			The same of the sa														
Date	pH	ORP	DO	EC	TDS	Turbidit	ty COD	Temp	BOD	T-Coll	T-N	Т-Р	OAG	88	Cyanide	Chromium	Arsenic	Mercury	Cadmium	Selenium	Lead	Color	Odor	Zinc	Copper	Barlum	Nickel	Sulphide	Free Chlorine	Formal	Silver	Iron	Ammonia	Hexavalent Chromium	Fluoride	Total	Total	Total Heavy	Pheno
	L			Daily P	arameters						Weekly F	Parameters			othly Parame	eters			202000										Chlorine	dehyde				(Cr6+)		Chlorine	Cyanide	Metals	
ird .	6.5-6.5			A STATE OF THE PARTY OF THE PAR	Max 2,000	0 -	Max 300	Max 35 °C	Max 200	Max 400 MPN/100m		ppm		THE OWNER WHEN PERSON NAMED IN	Max 0.2	Max 0.5	_		Max 0,03		-	_	400	Max 5		Max 1	-		The state of the last		Max 0.5	100000	-	Max9.1	Max20	Max0.2	Max	Max	Max
Oct-17					77		268	100000	ppiii	mr/e (com	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	Co-Pt	Co-Pt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Oct-17 Oct-17		254.2	4.45	570	284	33.8			# ROSEQUE	1000000	URBANICA.		1000000			Carlesa		-	A CONTRACTOR OF	A 250/505/00	1000000											1000000		-					
ct-17 ct-17 ct-17 ct-17															RESIDENCE OF							Directions Sections			School Services					Principal Control	750		SACRES.	THE STATE OF					
ot-17		378.3	5,43	499	250	18.6	144	29.67					To be seen										September 1																
ot-17 lot-17 lot-17 lot-17 lot-17	5.8 5.98 6.06	413.6 335.2 329.6	3,7	414 404 406	207 202 196	9.7	94	29.15		Tem	porarily stopp	oed for tank of	leaning			BE 14.18				90000	2000																		
ct-17	5.85	222	4.04 0,37	404	202	9.2	46	29.53 29.37	-		100000000000000000000000000000000000000		Sales and a				100000000000000000000000000000000000000																						
#-17 #-17 #-17	6.07	364,4 268,3	3,34	370 411	192 206	56,4 20	36 66	29.77		>160000	6																							Maria Con					
t-17 t-17	6.43	198.7	5.46 5.76	i college		22.8		29,43	33,/3	>160000		0.326	5.27	30	0.019	≤0.002	≤0.01	≤0.002	≤0.001	≤0.01	≤0,002	7,37	2	0.044	≤0.002	0.022	0.014	0.023	0.1	0.085					100100				0
-17 -17 -17	6.46	341	5.76	432 832	413	66.6	70 28	29,61				2000000		CONTRACT OF				100000										Contractor of							Electric Control				
17	6.53 6.83	285.8 401.1	5.13	535 609	267 304	64.1	100	29.63 29.79	8	>160000	9	0.643	4	72				1020700							A CONTRACTOR														
-17 -17 -17 -17 -17 -17 -17	6.71	423,2 276,8	4.05 4.2 4.46	609 539 523	304 262 310	26.4 32.1 12.9	65 37	29.82 29.62																															
17	6.42	360.5	4.85	596	193	25.2	211	29.97	NAME OF THE OWNER, OWNE			N. I Park	No. Laboratoria						10000		DOX COX	TO THE			and the same						900000	CALL SECTION							
17	6.05 5,26 6,74	313,4 422,9	5,06 5,51 4,85	467 702 688	234 351 344	25 26,2 11,2	291 114 64	30.02 29.94 29.95	10.8	130	13	0.412	9.09	70																									
7 7 7 7	6.74 4.52 6.34 6.21	292.2 485.1 342.2	4,85 3,29 4,01 2,87	688 894 461 669	344 447 231 335	11.2 10.4 10.7	64	29.39					20000000								Manage				relia de la constante de la co	0800200													
	6.21	342.2 448.2 427.9	4.01	937	469	6.4 7.7		29.26 28.94 29.46																															
7 7 7	6,84 5.82	346,3 438.2 353.5	6.05 4.9	2128 514 758	1072 257 379	56.8 10.3 15.9	43 49 91	29,75 29,45	28.9	201	15.7	0.351	42	34	0.011	0.009	≤0.01	≤0,002	≤0.001	≤0,01	≤0.002	11.99	4	0.062	0.013	0.004	0.019	0.01	0.1	0.221									
	6.41 6.38 6.72	341	3,16 3,63 3,28	479 481	242 241	35.1 9.5	48 68	29,98 29,87 30,25																															
7	6.63 6.32 6.48	356.5 363.1 361.4	4,07 3,3 5,14	534 1014 668	267 507 335	10 33,8 10,5		30,1 29.78 29.57							NET DAY																BEAU CO								
7	6.61 6.62	392.2 277.8	3.93 4.34 5.72	1038 806	516 403	35,3 18,7	97	29.98	15.43	E-PT GROUND	23.7	1.84	7,82	40					1																				
7	7.15 6.36 6.52	300.1	6.11	911 716	456 358	21.5	25 68	29,93 29,6												V C																			
	6.34	317.4 362.8 353,1	4.13 3,77 3,85	1124 934 894	562 467 447	27.1 5.1 8.2	80	30.26 30.19 29.99											Name of the last							Distantial N												COLUMN TO SERVICE	Service Servic
7	6.1	379 301,6	5,79 3.39	894 863 864	441 432	8.2 9.5 16.2	81 53	30,12 29,78	9,6	220	9,1	<0.05	4	10																									
7	6.6 6.78 6.72	374.3 334.8 337.2	5.39 6.6 6.9	787 1023 850	394 512 530	45.9 4.1 4	242 31,3	30.3 29.3 29.97																															Ē
7 7 7 7 7	6.94 7.01	294,5 322.2	3.32 4.12	1617 992	808 496	37.5 12.2	87	30.27 30.12																															
	6,77 6,72 6,52	286,6 283,4 273.1	5,04 4.11 3,83	828 782 900	438 391 450	35,1 25,3	39 23 33	30,08 30,12 29,42	5.2	15900	5	0.1	<3.1	18									MUZES SEEL		A AL	100 mm							0300						
7	6,19	303,2 370	3,62	771 942	450 385 471	9,1 9,3 7,2 10,2	99	29.48 29.23						NO CONTRACTOR NAME OF TAXABLE PARTY.				To Location																					
	6.84 2,61 6.67	355.5 472.1 336.8	4.5 4.1 6.82	1016 3420 1153	543 1705 578	10,2 41,8 6,7 5,6	139	26.86 29.71 28.86	18.8		14.1	1.38	7000	000	0.000	C0.000	-						To the second					no access				(C) (C) (C)						9958	-
	6,84	357,7 342.1	4.38 4.22	721 684	578 361 343 247	5,6 4,9 11	74	29,67 28,29	10.0	45000	14,1	1,30	1800	96	0.003	\$0,002	\$0.01	≤0.002	≤0.001	≤0,01	≤0.002	17.47	4	0.026	≤0.002	0,026	0.01	0.071	<0.1	0.167	\$0.002	1.674	0,853	<0.05	3,555	<0.1			
	6,93 7,05 6,87	348.2 281.5 334.6	3.82 4.45 0.87	495 612 635	306	11 13,2 10,8	69	29.92 29.81 29.32	20000	100000				902634																	KATAL DIV								i
17	6.66 7,31	323.2 238,1	2,97 3,86	498 716	333 358	19.9	47	29.46																			-												
	7.17 7.29 7.11	279.3 325.4 335.3	4,36 5.18 4,33	1141	533 571 665	7,4 12.7 9.9	51 41 62	30.02 30.31 29.99	10.18	(99999)	6.8	0,396	7,64	52																									
7	7.24 7.02	314,8 283.3	5,12	1412 821	620 411	10,7	82	30.12														02-220		I SERVICE															
7	7.07	290,5 301,9 290,6	4,85	370	185 205	13,1	34	29,45								(Ins.)/853(Mark State													
17	4.89 7.21	366.8	5.16	1016	259 508 326	6,9 5,8 10,7	33 62 42	28.89 28,74 29,01	34.4	23	8.8	0.842	5.45	22																									į
	6,97 7,25 6,98	335.8 348.5 330.1	1.54 3,45 1,22	703 362 604	353	12.5		27,9 30,11															2005200																
7	6.93	361.1	1,03	615 599	307	10.5 20 8.5	Not run	27.34 27.34 27.7																				-			MARKET ST								
7	7,14 6.86 7.08	236.6	5.56	608 475	304 238	7,1		27.94 29.07																						100									Ē
	7,08	305.3 282.5	5.26 4.26	578 676 784	339 392	25.2		29.24 29.28 29.24												I STANSON																			
3	6.95	305,9	4,46	820 698	410 350	9.2	48 36	29.15 29 29.07	7.99	- 100 GHC	13.2	0.424	4,91	50	0.007	≤0.002	≤0,01	s0,002	≤0,001	≤0.01	≤0,002	18.97	1	0.03	0,008	0,036	0,006	<0,005	0.1	0.084	≤0,002	2.196	TO STATE OF THE ST	<0.05	1.544	0.1			
- 19	6,71		5,19	1084 1022 778		9,1		29,07 29,06 28,03																										EARL SY					1
8	7.2	431.7	4.01	678	442	113	SI COMPANIES IN	27.24 28.15													8 10 20 20																		
18	7.17	353,1 274	3,88	623 634 955 Battery S	316 476	6.8 19.3		28,33 29.8																										DATE OF THE PARTY					
18 18	6.83 5.38	290,7 365,8	7.36 4.84	727 1247 1173	342 620	30,7	Carriering	29,06		No.																						SHEWARD.			NAME OF TAXABLE PARTY.				
18	6.78	313,3	4,77	624	312	18.2	30	28,89 29,31	May 200		May 20	Mark	No. of	No.																									
	6.89	mv 218.7	mg/L 5,19	µs/cm 2022	ppm 1012	FNU 12,9	ppm 33	*C 29.05	ppm	MPN/100ml	ppm	ppm	ppm	ppm	ppm	ppm ppm	ppm	ppm	ppm	ppm ppm	ppm	Co-Pt	Co-Pt	ppm ppm	ppm	ppm	ppm	ppm	ppm	ppm ppm	ppm	ppm ppm	ppm ppm	ppm ppm	ppm ppm	ppm	ppm	MALIE	1
18	7.1 6,95 6,93	234.7 361.1 318.4	2.12 1.18 3.78	1150 849 665	6755 425 332	12 8.9 9.5		28.29 28.03																		ppm											/	2	
-18	6,96	32,6	4.66	B90	492	9,6		29.06		Barriero Barriero						SCALE OF																				-		\$ M	J
						15,7	The state of the s	27.22							Fall Control	Description.	No.			Name and Address of the Owner, where the Owner, which is the Owner, whic	NAME OF TAXABLE PARTY.	DESCRIPTION OF	CHICAGO INC.			THE REAL PROPERTY.		1	A CONTRACTOR	100000	The second	-	STATE OF THE PERSON NAMED IN	-				A LA	

The column The	40.000		All Sales	May 2 000		Max 400	Max 35 'C	Max 200		Max 80	Maxil	Max 49 N	Max 200	Max 0.1	Max 0.5	Max 0,1	Max 0.005	Max 0.03	Max 0.02	Max 0.1	150	150	Max 2	Max 0,5	Max 1	Max 0.2	Max 1 Max	1 Max I	Max0,6	Max3.5	Max90	Max0.1	Max20	Max0.2	Mast	Max10	Max 0.5
Column C	Standard 6-9 Unit	mv	mg/L µs/cm	ppm	FNU	ppm	*c	ppm N	MPN/100ml	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	Co-Pt	Co-Pt	ppm	ppm	ppm	ppm	ppm ppr	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	Pym
Section Sect	Jan 23-Jan-18 7.08	376.1	1.04 646	323	12		27.16																	Ten la constitución de la consti	900							M. W. S.	Sales III				
Control Cont	Jan 24-Jan-18 7.02		0.71 671	336					-									and the second		The state of the s	100	DESCRIPTION OF		The same	Estate Property	in the second of	No.	mark Touch									4100 10
Section Control Cont	Jan 25-Jan-18 7.08			364	9.5		27.5											PHONE WAY										The state of the s	-	and the second	No. of Concession, Name of Street, or other party of the Concession, Name of Street, or other pa	100 STR. 100 ST.	STREET, STREET	A CONTRACTOR OF THE PARTY OF TH	Mark Control	Section 2	T-31/51
Section Control Cont	Jan 27-Jan-18 6.7		2.14 836	418	7.1		27.36				30000000		CONTRACT N		Allering I		DE DOME	SUSSESSE						STAPLEX			AND DESCRIPTION OF THE PARTY OF	Contract of					Designation of the	1000		San San San	
Section Control Cont	Jan 28-Jan-18 6.76		1,62 1018	509	8.3	STATE OF THE STATE OF	27.32							XXXIII.									200		Description of the	Inches of	Automorphic Company	COLUMN TANK	and the second	E CHANGE		TOTAL CENT	DELICO B				
## Company	Jan 29-Jan-18 6.79	432.6	1.26 968	398	8.6		27,42			-					10000								76200	Marie Sale		the system of the							1 1-327				
Column	Jan 30-Jan-18 6,84	432.1		363		-	26,43				TOTAL STREET						- Va	Uprelie II				Extractly H					THE RES	REAL PROPERTY.		10000000	_						
Column C		Te	mporary stoped for tank	cleaning in Februar	ry and March	2018																		-			-				Total Control		(ALTHUR DE LA CONTRACTION DE L				100 FE 6 5 1
The content of the	Feb 2-Feb-18					The same			H POT TO	The latest							Contract of the last	STATE OF THE PARTY OF		-		THE RESIDENCE	CONTRACTOR OF THE PARTY OF THE		-	DESCRIPTION NO.	ALC: NO SHALL	200) 200 E				Constant		EDWGE	CONTRACT OF		
The content of the	Feb 3-Feb-18 6.95	424.8	2.14 757	379	12.8		27,68	2000			25 616		SE INC.					Series de la						SHOWER						34 699		LD-SYBER					THE PERSON NAMED IN
Column C			0.97 782	391	10.6		27.13															Notice and		2000							-						
The content of the			4.9 841	421	18.2		28,67										A				SERVICE AND				-					N. Carlotte							
Total Column Co	Feb 7-Feb-18 6.88	427	1,54 813	407	12.6	The same	27.68						-									A PARTY OF								il laneras						1000	
1			2,63 729	364			27.49										MUELE				1997											-		No. of Concession, Name of Street, or other Designation, Name of Street, Name	-	-	Contract of the
Column C				405	12.2	S SECONDARY	28.06	OCCUPATION OF			9 90				Market L			WK CO		State of the last				SHED U								79.20	District Control				200
1	Feb 11-Feb-18 6.86	352	2,65 732	369	12.5		28.32						TO STATE OF							A STATE OF THE PARTY OF T			Design Street		and the second	The second second	STATE OF THE OWNER.										
Table 1750		328.9			9,7	THE REAL PROPERTY.	27,34	2000	Name of Street, or other Persons or othe	THE PERSON NAMED IN			and thought	7				100000		(company)	02 1.00									1							5301155
Table 1750		340.5	1.25 819	395	10.4		27,55	7			A PART OF					Energy.							CENTRAL P		-												The state of the s
Total 190 191 201 20 20 20 20 20 20	Feb 15-Feb-18 7.04	375.4	1,13 752	376	7.5		27.58		ELECTION OF					POSSULE !															99 24 11 11			W-HUE		0-2-01V			
16	Feb 16-Feb-18 7.08	361.7	2.48 800	400	7.7		27.6			NATURE OF THE PARTY OF THE PART			-	Contract of the last	THE RESERVE OF THE PERSON NAMED IN	00000000	No. of Concession, Name of Street, or other Designation, Name of Street, or other Designation, Name of Street,	SZIESCI O	CONTRACTOR OF	ACCOUNTS.	STANDER IN	PROPERTY OF	THE REAL PROPERTY.	HIXESSHIP	The second second	SCHOOL SECTION	SECTION AND DESCRIPTION OF THE PERSON AND DESCRIPTION OF THE PERSO	50° 72° 3503				HI COLUMN					
16			1.58 738	369	3.6		27.22	NAME OF THE PARTY					Labora I								MEDICAL				CO COLOR							150000	3000 M		ATTEMPT OF		STICL STILL
Tell 20-2-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	The second leading to					A STATE OF	27.31		317 X 14 X 15	No America															1000000					-				-			THE RESERVE
Table Corp. Corp			2.31 767	384	6,6	CONTRACTOR OF THE PARTY OF THE	26,88										200										Maria de Cara				The state of the s	die seel	Contract Of				
Columb C	Feb 21-Feb-18 6.77	356,8	2.27 619				27,16			001 112/1																Dec 19 miles and											
Table Tabl	Feb 22-Feb-18 7.04	349.6	1.75 672	420			26.68										To the same of	A													-	-	-	-			CARLES TO SERVICE
A A A A A A A A A A	Feb 23-Feb-18 7.26					a stolen and the	26.57	HAZEN E	USE SEC	ALINE SEE					THE SECOND				CONTRACT OF STREET	lesson with		BLUSSING O											STATE OF STREET	Control of the			100000000000000000000000000000000000000
Table 7.75	Feb 25-Feb-18 7.02	365.1	2.84 580	288	14.6	III GSENRIHIII	28.87	Secretaria de la										SCHOOL SE	CONSTRUCTION	MASSES AND ADDRESS OF THE PARTY		-7-07-00															
Total State Total Tota	Feb 26-Feb-18 7.22	352.5	2.68 749	328					1 11 11										-							Day of the last											
Calcular		364	2.65 738		12.2																						(Section 1		3 000		-	-	-	Section Contraction	-	CONTRACTOR OF	0000000
Simple Column C		400.2	2.3 1080	EAR	24.2	NEW COLUMN	28.43	2/19/20/20	WEIGHT.	HEED S.	100								STEED END	BEETING DAY	11/2/101					Chemical Control of					NAME OF TAXABLE PARTY.			Water Street			
Out	Mar 2-Mar-16 7,11	410.6	2.3 1079	549	25.3		29.21	SECURIOR D		COLD TENS				CCS III CO						0.0000000000000000000000000000000000000	CONTRACTOR OF THE PARTY OF THE						1000	SECTION AND DESCRIPTION OF THE PERSON NAMED IN COLUMN TWO IN COLUMN TO THE PERSON NAMED IN COLUMN TWO IN COLUMN TW	NO DESCRIPTION			RESIDE	MATERIAL PROPERTY.				THE SECTION
Mar. Mar. Mar. 1712 405.0 238 1025 590 108 27.96			2.3 1052	549	24.2		27.56													TO ALLE		EQUITATION D	AL MINE LA	THE STATE OF	TO BENEVI	Discount of the	Section Service		S RIVER				0 7 5 7		MA CONTRACTOR		STATE SE
Mar. Mar. Mar. 1712 405.0 238 1025 590 108 27.96			1.76 888	599	19.1		27.83	The state of the s	O SECTION AND								- CANADA														-						10000
Cur SAMA-13 6.47 26.15 3.96 568 529 15.5 3.90 561 1.07 1.07 561 1.07			2.38 1025	563	19.8		27,36							W02-07	-										-												AND DESCRIPTION OF THE PERSON
War 15-Mar-18 0.79 50.61 1.97 648 502 10.5 22.00	Mar 7-Mar-18 7.01	410.5	2.31 1008				27,48														Contraction of the																Contract to
War 19-May 19-M			3,98 856				29.76								38.0		-0.					A A SECTION	and the								The same		F-3 - 5 (18)			a medical and the	ACCOUNTS NO.
War 17-May-10 77-11 77-12 77-12 301 6.6 28-50 1.	Mar 9-Mar-18 6.73	296.6				THE RESERVE TO SERVE	27.86	AUGUST S	Carpetall	H-SPACE.			272/5					N DESK		ENSWER																	12000
May 12-May 18 0.22 31.55 139 771 325 86 0.6 28.36 May 14-May 18 0.22 31.55 139 771 325 86 0.6 28.26 May 14-May 18 0.22 31.55 139 771 325 86 0.6 28.26 May 14-May 18 0.22 25 25 14 12 28 14 12 0.5 25 14 12 12 12 12 12 12 12 12 12 12 12 12 12			1,78 1008		20,1	e enneem	27.59			Section 1	and the same	THE RESERVE OF	1000	WHITE SERVICE	SEE COLOR				NAME OF TAXABLE PARTY.	ALC: UNIO	A STREET, SQUARE,	CONTRACTOR OF THE PARTY OF											Ballebak				
May 14Aba-18 7.79 794 1.99 722 981 12 28.81 May 16Aba-18 6.96 254.8 1.42 603 340 8.4 20.92 May 17Aba-18 6.97 27.1 27.1 27.2 27.1 27.2 May 17Aba-18 6.98 24.8 1.92 27.2 27.1 27.2 May 17Aba-18 6.98 24.8 1.92 27.2 27.2 May 18Aba-18 6.98 24.8 1.98 28.8 28.8 May 18Aba-18 6.98 24.8 1.98 28.8 May 18Aba-18 6.98 28.8 27.2 27.2 27.2 May 18Aba-18 7.79 28.8 27.2 27.2 May 28Aba-18 27.7 27.7 27.8 May 28Aba-18 27.7 27.7 27.7 27.7 May 28Aba-18 27.7 27.7 27.7 27.7 27.7 May 28Aba-18 27.7 27.7 27.7 27.7 27.7 May 28Aba-18 27.7 27.7 27.7 27.7 May 28Aba-18 27.7 27.7 27.7 27.7 May 28Aba-18 27.7 27.7 27.7 27.7 May 28Aba-18 27.7 27.7 27.7	Mar 12-Mar-18 7.11		1,9 782	391		P DER		-								100				10000		Section 1			and a line												200
Main 15,481-19 0,59 254,8 1,42 590 254,8 1,42 590 254,9 1,91 779 390 7.7 28,72 1,91 779 390 7.7 28,72 1,91 779 390 7.7 28,72 1,91 7.9 390 7.7 28,72 1,91 7.9					12			CHILDREN.									NESTAL		100000																		-
Mar 374Mar18 6.88 327.7 19.7 823 412 19.2 28.59			1.42 693	346	8.4		28.52																												4/15/2011		AND REAL PROPERTY.
Mar 19-Mar/18 6.9 254.8 136 698 399 8.5 29.46	Mar 16-Mar-18 6.74	349,7										-						all supplies the	P. Company	DESCRIPTION OF THE PARTY OF THE	5-560-000	SECTION ASSESSMENT AS	AND LOS	THE REAL PROPERTY.	THE REAL PROPERTY.	STATE OF THE PARTY			SOLD PROPERTY.	CONTRACTOR OF		100000					
Mar 20-Mar-18 0.68 346.8 22.2 608 349 7.3 28.47 Mar 21-Mar-18 0.571 364.8 2.59 676 339 5.6 28.77 Mar 22-Mar-18 0.707 347.7 2.16 688 375 6.9 28.77 Mar 22-Mar-18 0.707 347.7 2.16 688 375 6.9 28.57 Mar 22-Mar-18 0.79 351 2.1 623 362 7.2 28.91 Mar 24-Mar-18 0.43 364.7 3.50 38 797 38 368 10.8 28.91 Mar 24-Mar-18 0.43 364.7 3.50 38 797 36 368 10.8 28.91 Mar 24-Mar-18 0.43 364.7 3.50 38 797 36 368 10.8 28.91 Mar 24-Mar-18 0.43 364.7 3.50 38 797 36 368 10.8 28.91 Mar 24-Mar-18 0.43 364.7 3.50 38 797 369 5.6 28.03 Mar 24-Mar-18 0.68 34.7 35.6 3.8 797 369 5.6 28.03 Mar 24-Mar-18 0.68 34.7 35.6 3.8 797 369 5.6 28.03 Mar 24-Mar-18 0.68 34.7 35.6 3.8 797 369 5.6 28.03 Mar 24-Mar-18 0.68 34.7 35.6 3.8 797 369 5.6 28.03 Mar 24-Mar-18 0.68 34.7 35.6 38 797 369 5.6 28.03 Mar 24-Mar-18 0.68 34.7 35.6 38 797 369 5.6 28.03 Mar 30-Mar-19 0.78 35.4 35.9 36.8 79.8 28.5 Mar 30-Mar-19 0.78 35.4 35.9 798 489 7.4 28.5 Mar 30-Mar-19 0.78 35.4 35.9 798 794 398 7.4 28.5 Mar 30-Mar-19 0.78 35.4 35.9 794 398 7.4 28.4 Mar 30-Mar-19 0.78 35.4 35.9 794 398 7.4 28.4 Mar 30-Mar-19 0.78 35.4 35.9 794 398 7.4 28.4 Mar 30-Mar-19 0.78 35.4 35.9 794 398 7.4 28.4 Mar 30-Mar-19 0.78 35.4 35.9 794 398 7.4 28.4 Mar 30-Mar-19 0.78 35.4 35.9 794 398 7.4 28.4 Mar 30-Mar-19 0.78 35.4 35.9 794 398 7.4 28.4 Mar 30-Mar-19 0.78 35.4 35.9 794 398 7.4 28.4 Mar 30-Mar-19 0.78 35.4 35.9 794 398 7.4 28.4 Mar 30-Mar-19 0.78 35.4 35.9 794 398 7.4 28.4 Mar 30-Mar-19 0.78 35.4 35.9 794 398 7.4 28.4 Mar 30-Mar-19 0.78 35.4 35.9 794 398 7.4 28.4 Mar 30-Mar-19 0.78 35.4 35.9 794 398 7.4 28.4 Mar 30-Mar-19 0.78 35.4 35.9 794 398 7.4 28.4 Mar 30-Mar-19 0.78 35.4 35.9 794 398 7.4 28.4 Mar 30-Mar-19 0.78 35.4 35.9 794 398 7.4 28.4 Mar 30-Mar-19 0.78 35.4 35.9 794 398 7.4 28.4 Mar-19 0.78 35.4 35.9 794 398 7.	Mar 17-Mar-18 6,81		1.07 823				28.59			TO SHEET WELL	Association Street					C CONTRACTOR	3000000		the state of	NAME OF TAXABLE PARTY.			W 18 18 18 18 18 18 18 18 18 18 18 18 18	S-16830	TIS OVE		When the				N SELECTION	CONTRACTOR OF THE PARTY OF THE	5 5 5 5 5 5			A CONTRACTOR	(C)(C)(S)
Mar 20-Mar-18 6.68 346.8 2.2 698 349 73 2847 Mar 21-Mar-18 0.71 35-6.8 2.59 676 338 5.6 28.77 Mar 22-Mar-18 7.07 34.7 2.16 688 375 6.9 20.56 Mar 23-Mar-18 6.79 351 2.1 623 352 72 28.91 Mar 23-Mar-18 6.79 351 2.1 623 352 72 28.91 Mar 23-Mar-18 6.84 375.9 368 10.8 29.88 Mar 25-Mar-18 6.62 399.9 2.38 744 362 8.5 29.03 Mar 27-Mar-18 6.47 335.8 3.5 499.4 489 7.1 29.96 Mar 27-Mar-18 6.47 335.8 3.5 499.4 489 7.1 29.96 Mar 27-Mar-18 6.47 335.8 3.5 99.4 489 7.1 29.96 Mar 27-Mar-18 6.47 335.8 3.5 99.4 489 7.1 29.96 Mar 27-Mar-18 6.47 335.8 3.5 99.4 489 7.1 29.96 Mar 27-Mar-18 6.47 335.8 3.5 99.4 489 7.1 29.96 Mar 27-Mar-18 6.47 335.8 3.5 99.4 489 7.1 29.96 Mar 39-Mar-18 6.8 37 35.2 79.4 39.8 7.4 29.92 Mar 39-Mar-18 6.74 352.4 3.22 704 39.8 7.4 29.42 Mar 30-Mar-18 6.74 352.4 3.22 704 39.8 7.4 29.42 Mar 30-Mar-18 7.28 33.95 1.2 712 356 10.6 29.04		254.8	171 723	389		The state of the s								E CLASS			KA ELECTION													DI COMPAN			3-1-01-5				-
Mar 21-Mar-18 8.71 394.8 2.59 6.76 338 5.6 28.77 Mar 22-Mar-18 6.79 351 2.1 623 352 7.2 28.91 Mar 23-Mar-18 6.79 351 2.1 623 352 7.2 28.91 Mar 24-Mar-18 6.49 375.6 3.8 717 359 5.6 29.03 Mar 27-Mar-18 6.49 375.6 2.8 717 359 5.6 29.03 Mar 27-Mar-18 6.49 375.8 2.8 717 359 5.6 29.03 Mar 28-Mar-18 6.47 335.6 3.84 984 483 7.1 29.67 Mar 29-Mar-18 6.52 360.5 2.8 724 352 8.5 29.67 Mar 29-Mar-18 6.67 37.6 5.6 29.03 Mar 39-Mar-18 6.81 319.6 2.51 80.0 40.0 7.8 29.67 Mar 39-Mar-18 6.68 34.7 35.6 766 426 7.2 28.5 Mar 39-Mar-18 6.74 352.4 3.22 764 398 7.4 29.42 Mar 39-Mar-18 6.74 352.4 3.22 764 398 7.4 29.42 Mar 39-Mar-18 6.74 352.4 3.22 764 398 7.4 29.42 Mar 39-Mar-18 6.74 352.4 3.22 764 398 7.4 29.42		346,6	2.2 698	349	7.3		28.47		N N						THE SECTION .										-		HE HALL TO SEE				100-2110			North State	The second		
Mar 23-Mar-18 6.79 35: 2.1 623 552 7.2 29.91 Mar 24-Mar-18 6.49 375.6 3.8 717 559 5.6 29.03 Mar 27-Mar-18 6.49 375.6 3.8 717 559 5.6 29.03 Mar 27-Mar-18 6.52 369.5 2.38 724 352 8.5 29.68 Mar 27-Mar-18 6.47 335.6 3.84 894 489 7.1 29.67 Mar 29-Mar-18 6.81 319.6 2.51 80.0 40.0 7.8 29.67 Mar 29-Mar-18 6.63 319.6 2.51 80.0 40.0 7.8 29.67 Mar 39-Mar-18 6.63 319.6 2.51 80.0 40.0 7.8 29.65 Mar 30-Mar-18 6.74 352.4 3.22 764 398 7.4 29.42 Mar 30-Mar-18 6.74 352.4 3.22 764 398 7.4 29.42 Mar 30-Mar-18 6.74 352.4 3.22 764 398 7.4 29.42	Mar 21-Mar-18 6.71	354,8	2.59 676			of the same of	28.77			(0.0)												500000000000000000000000000000000000000		1000000		THE STATE OF THE S	STATE OF THE STATE									1000	
Mar 24-Mar-18 0.43 35.47 3.28 736 388 10.8 29.81 Mar 25-Mar-18 0.49 375.0 3.8 774 35.2 8.5 29.03 Mar 28-Mar-18 0.47 335.8 35.4 984 493 7.1 29.67 Mar 22-Mar-18 0.68 31 335.8 35.4 984 493 7.1 29.67 Mar 22-Mar-18 0.68 34.7 3.50 798 428 7.2 28.5 Mar 30-Mar-18 0.68 34.7 3.50 798 428 7.2 28.5 Mar 30-Mar-18 7.28 333.9 1.2 712 35.6 10.8 29.04		347.7	2,16 688		6.9		28.56	DO STREET														December 1	-				A PART OF THE PART		1000						-	-	2000
Mar 28-Mar-18 6.52 369.5 2.38 724 352 8.5 29.68 Mar 27-Mar-18 6.47 335.6 3.54 984 483 7.1 29.67 Mar 28-Mar-18 6.81 319.6 2.51 800 400 7.8 29.46 Mar 28-Mar-18 6.68 344.7 3.56 798 428 7.2 28.5 Mar 29-Mar-18 6.68 344.7 3.56 798 428 7.2 28.5 Mar 30-Mar-18 6.74 352.4 3.22 764 398 7.4 29.42 Mar 31-Mar-18 7.28 333.9 1.2 712 356 10.6 29.04		354.7	3.28 736	368		O PROPERTY.	29.81		No. of the last	NO STATE	A 18 18 18 18 18 18 18 18 18 18 18 18 18		2000	PENTER.		HOUSE AND AND ADDRESS OF					10000			BS (21)		DESCRIPTION OF	CONTRACTOR OF THE PARTY OF THE		SW INTERNAL		STATE OF THE PARTY		Charles San				200
Mar 27-Mar-18 6.52 399.5 2.38 724 362 8.5 29.68 Mar 27-Mar-18 6.47 335.8 3.54 984 493 7.1 29.867 Mar 28-Mar-18 6.81 319.6 2.51 800 400 7.8 29.46 Mar 29-Mar-18 6.68 344.7 3.56 798 428 7.2 28.5 Mar 30-Mar-18 6.74 352.4 3.22 79.4 39.8 7.4 29.42 Mar 30-Mar-18 6.74 352.4 3.22 712 356 10.6 29.04			3.8 717	359	5.6	No. of Lots of Lots	29.03			MERCHANICA .		DESCRIPTION OF REAL PROPERTY.			SELECTION OF SELEC		DISCUSSION OF THE PERSON OF TH	THE STATE OF	POSC PAR	2 C 2 C 2 C 2 C 2 C 2 C 2 C 2 C 2 C 2 C	1000000	The state of the s	-		-												ALC: U.S.
Mar 27-Mar-18 6.81 335.6 35.4 984 483 7.1 29.67 Mar 28-Mar-18 6.81 339.6 251 80.0 400 7.8 28.46 Mar 29-Mar-18 6.06 344.7 3.56 798 428 7.2 28.5 Mar 30-Mar-18 6.74 352.4 3.22 764 398 7.4 28.42 Mar 31-Mar-18 7.28 333.9 1.2 712 356 10.6 29.04	Mar 26-Mar-18 6,52	369,5	2.38 724	352	8.5	SEC. 10.			The state of the s	Marie San	-	The second second		Complete Service	-	1000	THE REAL PROPERTY.			USIGNO.	GEOGRAPHICA .	WALKER OF STREET	COLUMN TO A STATE OF THE PARTY	THE REAL PROPERTY.	-	BELLEVILLE IN	SEATING TOWERS	BU SUSSE	C C CONTR		R SERVICE			The second	SOUTH SERVICE	No. of Lot of Lo	
Mar 31-Mar-18 7.28 333.9 12 712 356 10.6 29.04	Mar 27-Mar-18 6.47		3.54 984	493	7.1	No. of Concession,		The state of the s	A DESCRIPTION	100	-										1		STATE OF					Name and Address of the Owner, where								11	TV
Mar 31-Mar-18 7.28 333.9 12 712 356 10.6 29.04	Mar 28-Mar-18 6.81	344.7	3.56 798	428	7.2	1	28,5		The same of		Out a proper of				La proper la		1000								-										1	MAH	VEC
Mar 31-Mar-18 7.28 333.9 12 712 356 10.6 29.04	Mar 30-Mar-18 6.74	352.4	3.22 764	398	7.4		29.42									-	Control of the last	The state of the s		-	POR DELIVERY		LOS TABLE		THE REAL PROPERTY.	SALES SALES		SE MANAGE	50 ES 100	To Paralle San P	-	THE BUILDING		10000000		×/	100
	Mar 31-Mar-18 7.28	333.9	1.2 712	356	10.6		29.04		BIE CASE	THE RESERVE OF THE PARTY OF THE			-	and the same		Mary Colonia	100000		-									-							1/1	:/	70/1
																																			113	1 -1	CV13

Monitoring Parameters Result for STP(Phase-2)

		STATE OF THE PARTY	-	Contract of	No.	10 mg 5		100	Name of	170000		STATE OF	OF SAME	(PROPERTY)	NEW THE		morritor	ing r drui	II CLUTS THE	Outlet	TT (T Hus		(C 20/A)		0.7.6.0	4/50-94N	- Delmi	21000		The same of		RESIDENT		New York	ATTENDED				100000
Month Date	pH	ORP	DO	EC	TDS	Turbidity	COD	Temp	BOD	T-Coll	T-N	T-P	O&G	55	Cyanide	Chromium	Arsenic	Mercury	Cadmium	Selenium	Lead	Color	Odor	Zinc	Copper	Barium	Nickel	Sulphide	Free Chlorine	Formal- dehyde	Silver	Iron	Ammonia	Hexavalent	Fluoride	Total Chlorine	Total	Total Heavy	Phanols
				Daily P	arameters						Weekly	Parameters														M	onthly Parame		Chlorine	denyde				Chromium (Cr6+)		Chlorine	Cyanide	Metals	
Standard Unit	5,0 -9,0		0		Max-2,000				May 20															Max 5	Max 1		-		Max-1	Max 1	Max	Max3.5	Max10	Max0.1	Mux20	Max0,2			Max 1
Oct 1-Oct-17	1000 (St.)	In the state of th	Company of the last of the las	464	ppm		and the same	S. S. State of the last of the	ppm	MNP/100m	il ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm		DO STORY	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Oct 3-Oct-17	6.17 6.81	405.1 408.8	5.22	464 487	232 244	1.5	3,4	30.03 30.08			-			- Contract																									
Oct 4-Oct-17 Oct 5-Oct-17 Oct 6-Oct-17 Oct 7-Oct-17	ne sales Presenta						i brinders Semisais													Maria de la composición dela composición de la composición de la composición dela composición de la composición de la composición dela composición dela composición de la composición de la composición dela composición del composición dela												250							
Oct B-Oct-17	5.45	537.4	558	459	230	2.2	13	29.18																Second Second															
Oct 10-Oct-17 Oct 11-Oct-17	5.89	410.8 382.1	5.14	455	228	2.8	- 6	29,77																															
Oct 9-Oct-17 Oct 10-Oct-17 Oct 11-Oct-17 Oct 11-Oct-17 Oct 12-Oct-17 Oct 13-Oct-17 Oct 14-Oct-17 Oct 15-Oct-17	6,11 6,55	362.9 360.5	4.74 5.22 4.33	445 439 443	241 222	3.1 2.7	5,4	29.44																															
Oct 14-Oct-17 Oct 15-Oct-17 Oct 16-Oct-17	6.37	334.8	5.35	423	264	22	51	29.38								September 1																							
Oct 16-Oct-17 Oct 17-Oct-17 Oct 18-Oct-17	6,37 6,17	339.5	5,35 4,76	423 476	264 239	1.9	5.1	29,38 29,41	1.13	<1.8	4	0.076	<3.1	2	0.008	≤0.002	≤0.01	≤0.002	≤0.001	≤0.01	≤0.002	2.42	1	0.04	≤0.002	0.018	≤0.002	0.009	<0.1	0.012									0.006
Oct 19-Oct-17 Oct 20-Oct-17 Oct 21-Oct-17 Oct 22-Oct-17	6,65 6,77	434.7 392.4	6,02 6,62	411	220 206	1.7	6,8 <0,7	29,01 28.53																							Company Compan				Control of the Contro				
Oct 22-Oct-17 Oct 23-Oct-17	6.69	42.58	5.62	505	253	2	6.3	29.39																	Service Service														
Oct 23-Oct-17 Oct 24-Oct-17 Oct 25-Oct-17 Oct 26-Oct-17 Oct 27-Oct-17	6,69 6,92 6,31	42.58 413.1 456.4	5,62 6,48 5,22 5,66 5,34	505 480 493 531	241 225	1.7	3.2 4,5 5.3	29.46	2,63	<1.8	7.	0,082	3.1	2																									
Oct 26-Oct-17 Oct 27-Oct-17	6.19 6.56	403.5 413,7	5,66	531 522	219 250	2.6	5.3	29.42 29.37																															
Oct 28-Oct-17 Oct 29-Oct-17 Oct 30-Oct-17	6.73	353,4	6.95	639	320	7.1	11.6	29.95								-										MISSION I													
Oct 30-Oct-17 Oct 31-Oct-17 Nov 1-Nov-17	6.73 6.67 6.63	356.9 376.6	6.95 5.35 6.55	639 621 600	320 310 300	1.7	6.9	29.95 29.51 29.4	1,52	<1.8	12	0.091	<3.1	8																									
Nov 2-Nov-17 Nov 3-Nov-17 Nov 4-Nov-17 Nov 5-Nov-17	5.97 6.03 6.14	458.2 439 468.3	5,78 5,57 5,13	617 626 845	308 313	1.6 3.8 1.7		29.82 29.15															ESCHOOL	Maria Salah															
Nov 5-Nov-17 Nov 6-Nov-17 Nov 7-Nov-17	6.02 6.82 6.32	447.8 354,1	6.06 4,97	656 681 759	329 340 380	1,8	8,3	29 29.16 28.92 28.47																															
Nov 8-Nov-17	6.32	445.8	5.06 4.97 5.21 5.07 6.97 5.35	759 796	380 399 370 313	1,5 1,8 1,5 2,1	3,8	28.47 28.79	2.77	<1.8	5,9	0,106	<3.1	8	0.007	0.007	≤0.01	≤0.002	≤0.001	≤0.01	≤0,002	3,24	1	0.022	0.009	≤0,001	800.0	<0.005	0.1	0.033									0.002
Nov 9-Nov-17 Nov 10-Nov-17 Nov 11-Nov-17 Nov 12-Nov-17	6.53 6.81 6.62 6.64	375.9 342.8 377.2 356.5	5.35	796 739 626 609	313 305	2.1	5,3 4,5	28.79 29.1 29.48 29.69			1																												
Nov. 13-Nov-17	6.64 6.85 6.45	355.5 346,3 362.4	6.11	584 570	292 285	2.2 1.7		29.4						CONTRACTOR OF THE PARTY OF THE																									
Nov 15-Nov-17	6,53 6,53 7,3	397.6 419.2 317.2 386.3 293.6	6,12 5,9 6,43 6,11	613 660 674	306 330 337	1.7 1.9 4.1 1.5	4.2 3 3.5	28.97 29,33 29.11	12.26	<1.8	6,9	0,077	<3.1	В																		Services Parkets	2			Table 1			
Nov 18-Nov-17	6.38	386.3 293.6	5.46	716 993	358 497	1.5	5	20.0				and the latest and th																											
Nov 19-Nov-17 Nov 20-Nov-17	6.29 6.47 6.31	397,5 351,2 410,3	6	910 857 986	455 429	2.5 2.1	8.3 13,1	29.73 29.81 29.97 29.6			ESSENCES.V																												
Nov 22-Nov-17	6.77	378,4	5,67 6,01 4,85 6,57	774	429 493 337 534	2.1 4.9 2.7 2.1	13,7	29.82	1.8	<1.8	9.2	0.072	<3.1	2																									
Nov 22-Nov-17 Nov 23-Nov-17 Nov 24-Nov-17 Nov 25-Nov-17 Nov 25-Nov-17 Nov 27-Nov-17	6.57 6,74 6,58	386.1 328.8 352.3	6.57 6.22 5.68	1067 933 859	534 467 470	2.1 4.2 4.6	8.6 12.8	29.49 26.9 30,3																															
Nov 26-Nov-17 Nov 27-Nov-17	7 7 6,83	267.7 324.1	4.82 5.92	830 1071	415 536	3,1	26.5 20.1	29,91 30,01									City Care																						
Nov 28-Nov-17 Nov 29-Nov-17 Nov 30-Nov-17	7.01 6.44	304.2 300.7 295,2	6.14 5.05	828 897 888	492 478 444	4.2 3.5 2.7	14.1	29,94 30,19 29,61	3.25	<1.8	7,9	0.126	9.1	2																									
Dec 1-Dec-17 Dec 2-Dec-17 Dec 3-Dec-17	6.38 6.63	295,9 403,5	6,59 6,14 5,05 5,68 5,32 5,78	893 822	447 441 454	2.4 2.3 2.1	9,1	28,88 28,76 28,49									675E465E5				all the same																		
Dec 3-Dec-17 Dec 4-Dec-17 Dec 5-Dec-17	6.83 4.63 6.51	354,4 415 386.3	6,29	908 936 954	454 468 477	2.5	0,8 5,5 7	28,49 27,94 27,53	1.74	<1.8	10.8	<0.05																											
Dec 6-Dec-17 Dec 7-Dec-17	6.51 6,81 6,74	386,3 387,1 376,4	6,17 5,65 5,42	1025 1019	512 432	2.5 2.4 2.3 2.3	7 6.2	28,15 28,29 29		- 1/4	10.0	10,05	<3.1	- 2	0.002	≤0.002	\$0.01	≤0.002	≤0.00t	≤0.01	≤0.002	9.76	1.4	≤0.002	≤0.002	0.008	0,006	<0,005	0.1	<0.003	≤0.002	0.1	0.117	<0.05	2.634	0,1			0.012
Dec 8-Dec-17 Dec 9-Dec-17 Dec 10-Dec-17	6.9 6.97 7.1	350,5 242,9	5,82 6,35	896 885	448 433	3,3	6	29,31										11/2 10/5														MONTH OF							
Dec 11-Dec-17 Dec 12-Dec-17	6.86	288.7 237.7	5.24 5.92	789 828	398 414	2.6 2.6	6.6 5.8	29.21 28.27 29.2																															
Dec 13-Dec-17 Dec 14-Dec-17	7,26 7,34	287.1 345.7	6.07	869 874	435 437	2.5	7,9 9.3	29,07 29,42	0	<1,8	7,9	<0.05	<3.1	4																									
Dec 15-Dec-17 Dec 16-Dec-17 Dec 17-Dec-17 Dec 18-Dec-17	7,17 7,23 7,07 7,08	339.1 352.2 283.3	5,11 8,04 5,74	831 856 1000	415 428	3.1	11,6	29,32		edition.	HOUSE								2027 A. Verille		400000																		1100
Dec 18-Dec-17 Dec 19-Dec-17	7,08 7,12	292.3 305.2	6,42 5,38	938 783	501 469 392	5.8 3.9 2.3	4.7	28.71 28.43 27.92																															
Dec 19-Dec-17 Dec 20-Dec-17 Dec 20-Dec-17 Dec 21-Dec-17 Dec 22-Dec-17 Dec 23-Dec-17 Dec 24-Dec-17 Dec 25-Dec-17 Dec 25-Dec-17	7.01 5.39 7.22	303.1 367.8 327.7	5,25 4,61 5,37	636 657	319 329	2,3 2.8 2,6	6.7 7.1	27.48 26,45	0	<1,8	11	0.156	<3.1	4																									
Dec 23-Dec-17 Dec 24-Dec-17	6.99	385.7 386.7	6.91 5.65	712 747 752	356 373 382	2.8 1.3 2.6	7,3	26.3 26.52 26.63																							02000								
Dec 25-Dec-17 Dec 26-Dec-17 Dec 27-Dec-17	0,00	403.7 406.6	5.85 5.79 7.98	751	376 376 378	1.5	Not run	25.93 26.15																															
Dec 27-Dec-17 Dec 28-Dec-17 Dec 29-Dec-17	6.93 7,21 7,11	415,2 192,5 343,7	7,98 8,67 6,83	656 767 780	378 384 390	1.9 2.2 2.5 2.6		26,3 26,24																															
Dec 30-Dec-17 Dec 31-Dec-17	6.99 7.07	326.6 386.1	5.9	741 670	371 335	2.2		26.1 27.09 28.3					Harris and	HE WAY															12 05 05										
Jan 1-Jan-18 Jan 2-Jan-18 Jan 3-Jan-18	THE STATE OF STATE OF	465.9	6.81	649	324	2.5	5,6	27,92																															
Jan 4-Jan-18	7.13	302.1 310.3 322.2	6,04	825	399 412 385	2.2 2.6 2.4	8,4	27,79 26.07 28,12		<1,8	8	0.366	9,1	2	<0.002	≤0,002	≤0,01	≤0,002	≤0.001	≤0.01	≤0.002	6.22	1.4	≤0,002	≤0.002	0.012	0.01	<0,005	0,1	-0.006	≤0,002	0.214	0.264	<0.05	2,606				<0.002
Jan 5-Jan-18 Jan 7-Jan-18	6.97 7.71	352.9	5.94	837	419 389	1.8		27,22 25.29	ENGINEEN VI																														
Jan 8-Jan-18 Jan 8-Jan-18 Jan 10-Jan-18	7,23	400,1 326,9	6.2 7.06 6.54	842 842	421 421	3.1		27.69																							Resident								
lan 11-lan-18	7.07							27.8																Name of Street								NO SE							
Jan 12-Jan-18 Jan 13-Jan-18 Jan 14-Jan-18	5,95 6,06	349.7 350.8	6.5 6.1	866 863	433 432	10.6 3,2		27.84 27.8														20101 213						Control of										-	
Standard Unit	6-9	330,3 mv	5,78	876	435 Max 2 000 ppm	2.7 FNU	Max 125 W	27.64 Max 36	Max 30	Max 400 MNP/100m1	Max 80	Max-2	Max 10	Max-50	Max 0.1	Max 0:5	Max 0.1	Max 9.006	Max 0.03	Max 0.02	Max 0.1	Max 150	Max 150	Max Z	Max 0.5	Max 1	Max 0.2	Max/1	Maxt	Max 1	Max0.5	Max3.5	Max10	Max9.1	Max20	Max9.2	i de la constantina		Mar 0.5
Jan 16-Jan-18 Jan 17-Jan-18	7.12 7.07	267,6 240,7	mg/L 7.55 6.14	845	431 422	14,3 2.2 2,3	6	27.85	ppt	- Assumit	ppin	ppiit	ppm	Ppm	ppm	ppm	ρpm	ppm	ppm	ppm	ppm			ppm	ppm	ppm	ppm	ppm	ppm	ppin	ppm	ppm	ppm	ppm	ppm	ppm		ppm	
Jan 18-Jan-18 Jan 19-Jan-18 Jan 20-Jan-18 Jan 21-Jan-18	7.02 7.06	402,7 330.4	5,88 6,02	841 843	420 422	2,3		27.04																													1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	XII AW	ADEVE
Jan 21-Jan-18 Jan 22-Jan-18	7,05 7,02	406.3 413.9	6.1		432 426	22		27.5 26.22			Illection			-																			Wee All						
											Company of the Compan													-														M)	TU

Standard	1-0	1000			Max 2.000		Max 125	Max 35	Max 30	Max 400	Max 80	Max 2	Max 10	Mar 50	Max 0.1	Max 0.6	Max 0.1	Mar 0.00	Max 0.63	Max 0.02	Max 0,1	Max 150	Max 150	Max 2	Max 0.5	Max 1	Max 0.2	Max 1	Max 1	Max 1	Max0.5	Max3,5	Max10	Max0.1	ppm ppm	ppm ppm	ppm	ppm ppm
Unit					ppm		ppm	°C	ppm	MNP/100ml	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm		-	ppm	ppm	ppm	ppm	ppm	ppiii	PP	PP				t resident and			
Jan 23-Jan-18 Jan 24-Jan-18	7.12 7.01	405.5 345.4	6.75 7.61	846 853	423	2.5		25.71 25,72			ARUL STATE																	182								2011	Alexander and	
Jan 24-Jan-16 Jan 25-Jan-18	7.02	405.2	6.66	836 857	436	2.3	ELLEN DOS	25,62	Daniel St							2000								A December 1975											1			
Jan 26-Jan-18	6.99	397.7 526.6	7,31 6,87	857	428 443	2.7	A CONTRACTOR OF THE PARTY OF TH	25.65 25.71	District States	NAME OF TAXABLE PARTY.	CONTRACTOR AND ADDRESS OF THE PARTY OF THE P	Sales Sales		ALCO LA COL	ALTERON DE	283000		O COURSE	NAME OF STREET				(Strawn	TO THE RE			Section 20					SELVEN SIL	A STATE OF THE PARTY OF THE PAR					Transcendo Marcola
Jan 27-Jan-18 Jan 28-Jan-18	6,74	498.8	7.45	902	452	7,3		25,83								E Chicken									All residents		Distribution in	Lia Ma	mousemen		William	The second					TO SHAPE	
Jan 29-Jan-18	6.86	588.7	7.41	862 926	432 463	12.8 3.6		25.64 25.42												14-011				THE RES	CHIES			Water and the										
Jan 30-Jan-18 Jan 31-Jan-18	6.76 6.97	520,3 296,6	6.12 4.68		299	9.9		28,52		200019						Fig. 1								Control of the Contro			and the state of				-							
Jan 31-Jan-18 Feb 1-Feb-18 Feb 2-Feb-18												-							A COLUMN TO							DOM: NO		normalis.									No. of Concession, Name of Street, or other party of the last of t	
Feb 2-Feb-18 Feb 3-Feb-18	6.92	457,6	5.56	947	479	2.1	(10000000000000000000000000000000000000	24.73 25.12	DISTRICT.	1.000 Die		-			CONTRACTOR OF THE PARTY OF THE	NUMBER OF	S DESIGNATION			Section 1	MARK N		in est	U7 68 58					STATE OF THE PARTY			Name of the last						
Feb 4-Feb-18	6.77	351.2	6.49	947 945	472	2.7	Contract of the	25.12					assines.	SELECTION OF SELEC	- CONTRACTOR OF THE PERSON NAMED IN COLUMN 1	NAME OF TAXABLE PARTY.	STORE OF						10-10-1										THE STREET					
Feb 5-Feb-18 Feb 6-Feb-18	6,82	371.4 421.5	7.19 6.32	951 948	476 478	2.7		25,52 25.66											NAME OF THE OWNER, OWNE				00000															
Feb 7-Feb-18	6.77	510.8	7.42	965	482	7.9		25.32	MARIE												1												Park I I					
Feb 8-Feb-18	6,91 6,82	359.9 356.8	7,44	958 969	479 485	5.1 3.6		25,46 25,68																	1100000									100000	CONTRACTOR OF THE PARTY OF THE		A CONTRACT OF	
Feb 9-Feb-18 Feb 10-Feb-18	7.22	355.9	8.24 7,5		512	4		26.12 26.18			CO RESERVE			67030		economic and		N Secretary					THE SECOND					-			902000			DE SE				CHECK BAYES
Feb 11-Feb-18	7,32	358.8		992 986	562	4.2	The second	26,18		Shellale						No de mu	a salarana				Carrie and	-	1000		DESCRIPTION OF THE PERSON OF T	SERVICE	STATE OF THE PARTY.					North Ca	0.00	WENGER!	100 CO	STANSEL S	NAS ELLE	
Feb 12-Feb-18 Feb 13-Feb-18	6,87 6,73	346.2 351.8	6.47	975 977	488 488	2.4	e reasons	26.44	No.						THE REAL PROPERTY.																	and the same				No.		
Feb 14-Feb-18	6.7	415.1	7.68	980	490	2.1		26.61 26.68							200										Service of		Walley S							E TO S				
Feb 15-Feb-18 Feb 16-Feb-18	6.83	411.4 378.2	7.61 6.63	981 959	491 479	1,8		26.53							16846								MANUFACTURE OF THE PARTY OF THE		1000			-	DOM: NA	W-100000		None and	CONTRACTOR AND ADDRESS OF THE PARTY OF THE P	CONT. 10 TO SE	THE RESERVE OF			STATE STATE
Feb 17-Feb-18	6.83	367.1	6,27	965	483	2.2	N COLUMN	26.58	NESSEE	Desert S	ENERGIE			Company of							TO A STATE OF	A CHARLEST ME									PHONES H	RELIGIOUS.	OCCUPATION AND ADDRESS.	Total Control				
Feb 18-Feb-18		368,2 371.6	6.22 6.34	952 945	492 478	2.3		26,45 26,68			Section 1988				AND RELIES			S. C. Pictor	E HOUSE																	-6/10		
Feb 19-Feb-18 Feb 20-Feb-18	6.76	392.5	7.76	945 959	478 429	2.3	a La Company	26.24		110000																4						Per III.		La constitution of				
Feb 21-Feb-18	6.62	431,5	6.87 7.44	992 967	987 883	2		26.26	00000														State Medical															
Feb 22-Feb-18 Feb 23-Feb-18	6.69	412.8 359.8	7.68	958	562	2.1		26.25 26,93	100		A STATE OF THE STA	-		and the										STATE OF THE PARTY.	and the second	-	MINE DE		No.		NAME OF STREET		September 1	24 Day 1/2 Ex			CHECKE S	
Feb 24-Feb-18	7.14	337	3.71	1189	595		Name of Street, or other teams of the last	29,63 27.01						Section 1	100000					SI SECTION AND ADDRESS OF THE PARTY OF THE P	1	Secretary S	200	DATE OF THE PARTY.	Section 1	1000	11/2/2		1000000		STATE OF THE PARTY	NO INC	9500000		THE PERSON NAMED IN		SECISIE	
Feb 25-Feb-18 Feb 26-Feb-18	6.86	385 362.3	7.52 6.45	1077	538 521	3.6		27,06	EMMEN															The special section											The same of			
Feb 27-Feb-18	7.22	355.8	6.28	965	479	2.1		27,12 27.4																												250110	- Control of the	NIGH SALE
Feb 28-Feb-18 Mar 1-Mar-18	6.89	350,5 408,6	6.31	1063	532 538	7.07	20033050	27.6	NAME OF THE OWNER, OWNE	I mega	80000000	B200500	Name of Street	MANSO			BESSA																					
Mar 2-Mar-18	6.9	407.8	90,8	1058	547	7.06		27.6 29.1 27.56	I DELLE												-		Se date											MEN A				TOTAL STREET
Mar 3-Mar-18 Mar 4-Mar-18	6.86	409.4 414.3	90.8 6.43	1082 1091	539 546	7.23		27,56	100000000000000000000000000000000000000			ENGL ST	raset est	102-103-103										NEW COLOR	(Unicoles	TOTAL STREET			N SAVA		301930			A STATE OF THE PARTY.				
Mar 4-Mar-18 Mar 5-Mar-18	6.87	407.1	6,3	1094	547	4.5		27.72 27.38		- Marie											-																	
Mar 6-Mar-18	6.89	407.3 408.2	6.41 6.45	1092	544 503	4.8		27,38									1000									I SEE STEE									-			
Mar 6-Mar-18 Mar 7-Mar-18 Mar 8-Mar-18 Mar 9-Mar-18	5.74	371.2	6.32	1080	540	4,3		28					in the same								-																	
Mar 9-Mar-18	6.44	343.7 371.3	6.89 6.42	1091	545 547	4.1 5.1		28.29		-																						The state of				-		
Mar 10-Mar-18 Mar 11-Mar-18	6.76 6.89	392.1	6.3	1095	548	4,6		28.73			Vi Commenciali P	F 1 5 6 6																										
Mar 12-Mar-18	6.94	299.6	8.24 7,05	1156	578 543	4.9 3.5		28.3 28.1					100											Delin State of the last	1000		7.2											
Mar 13-Mar-18 Mar 14-Mar-18	6.69	333.9 367.3	6,86	1089	548	4.6		28,36																														
Mar 15-Mar-18	6.57	340.3	6.04	1088	544 560	12.2		28.24		The state of								TO BUTTON					W E			To see a		The same										
Mar 16-Mar-18 Mar 17-Mar-18	6,35 6.34	380 376,3	6,26	1119	562	8.1	S - 18 (FS	27.71		The state of																The Party of the P	Carlotte Series						200					
Mar 18-Mar-18	6.36	368.9	6.86	446	548	8.3		27.72 27.79																							THE RE		1000					
Mar 19-Mar-18 Mar 20-Mar-18	6,53 6,15	378 386.8	8,19 5,95	1135	561 563	4.6 3.9		28,26		(Interested						EARL			Al Asserta									-					-		BI BE WANTE			
Mar 21-Mar-18	6.17	398,7	6.58	1147	574	2.9		28.55																												Edward P		
Mar 22-Mar-18 Mar 23-Mar-18	6,3 6,52	374.4 378.3	6.23	1131	581 590	4.3 5.1	NA PROPERTY.	28,2 28.29														Name and Address of				177.6-10 T												
Mar 24-Mar-18	6.27	401.2	5.2	1138	589	7.5	Market B	28.38							The latest											Section 1										1010000		
Mar 24-Mar-18 Mar 25-Mar-18	6,11	405.1 414.6	5,65	1160	580 546	4.7		28.37 28.44	-				market and the														10000				3 3 3 3							
Mar 26-Mar-18 Mar 27-Mar-18	6.21 6.25	399.6	6.22 4.32	1168	584	7.4		28.44																		10.00				-								
Mar 28-Mar-18	6.51	388.8	6.25	1170	585	6,3	1905-056	28,64 28.69									100									MANUAL S						-						
Mar 29-Mar-18 Mar 30-Mar-18	6,73	364.7 376.2	5,88 6,41	915 1154	416 568	7.4		28.41		a street water							and the same of						21		-		Constitute	Total Contract	And owners and		SHOP IN	COLUMN TO SERVICE	No.	1 (S 50 (S)		V216		000
Mar 31-Mar-18	6,97	410.1		1146		5,4		28.76	Direction of		The walks to	PER HOUSE						The second						September 1		-				-							MANA	PEVEL
																																					T.	1.00
																																				1/	3/	TDIE
																																					MI	10/5
																																				1	2/2	15
																																				1	12	1

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