Appendix C-3: Survey Sheet of Sewerage Treatment Plant (KSA)

(i) Hughenden

(ii) Whitehall

(iii) Grove Manor

(iv) Barbican

(v) Widcombe

(vi) College Green.

Survey Sheet of Sewage Treatment Plant

Survey Da 24/08/09 **Surveyor:**

・General information of STP

Items			Specification	
Name of Plant			**Hughenden Sewage Treatment Plant**	
Construction Year / Month			year :	month :
Location (name of street / avenue)			**Relay Road**	
Planned sewered population			inhabitants	
Design treatment capacity			m3/day	
Present sewered population			inhabitants	
Present inflow rate			m3/day	
Amount of electricity consumption			kWh/day	
Sewage Collection	Mode of collection system		Separate ☐ Combined ☑	
	No. of inlet sewer pipelines at STP		**Two (2)** lines (One (1) by **gravity** One (1) by pressure)	
	No. of lift P/S at STP (if more than 2, please use other sheet)	No.	No. 1	No. 2
		Number of pump	unit	unit
		Each capacity	m3/min/unit	m3/min/unit
		Design head	m	m
		Pump type	**Self Priming Cen. Pump**	**Self Priming Cen. Pump**
		Pump Manufacturer	**Gorman Rupp**	**Gorman Rupp**
		Pump bore diameter	mm	mm
		Duty (in original)	unit	unit
		Standby (in original)	unit	unit
		Out-of-service	unit	unit
Water Quality	Parameter		Influent	Effluent
	BOD	Design	mg/l	mg/l
		Actual	mg/l	mg/l
	SS	Design	mg/l	mg/l
		Actual	mg/l	mg/l
	T-N	Design	mg/l	mg/l
		Actual	mg/l	mg/l
	T-P	Design	mg/l	mg/l
		Actual	mg/l	mg/l
	Fecal Coliform	Design	qty/ml	qty/ml
		Actual	qty/ml	qty/ml
Effluent Discharge		Outlet Point	Harbor ☐ River ☐ Gully ☑ Other ☐ Specify if other (**Sea**)	
		Discharge Type	Gravity ☑ Pump ☐	

・Composition of the facility

Check to select the method of treatment.

Treatment methods	Check
Standard Activated Sludge	☐
Oxidation Ditch	☐
Trickling Filter	☐
Contact stabilization pond	☑
Lagoon (with / without aeration)	☐
the others	☐

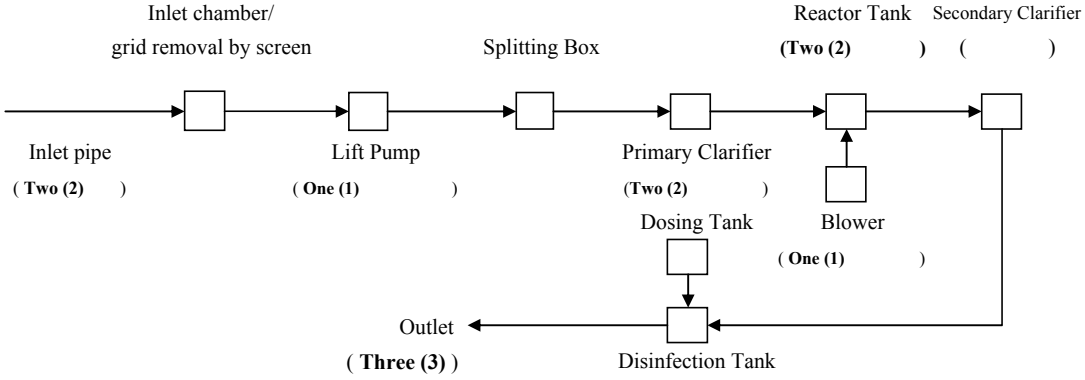
Service condition of Treatment Units

Treatment Process Line	Check
No. of treatment units	**Two (2)**
No. of treatment units in service	**Two (2)**
No. of treatment units out of servic	**Zero (0)**

Service condition of Blowers

Treatment Process Line	Check
No. of blowers in service	**One (1)**
No. of blowers out of service	**Zero (0)**

Flow Diagram (check ✓ to the existing facility)



Check to select the method of sludge treatment.

Treatment methods	Check
Thickening	☐
Digesting	☑
Dewatering	☐
Drying	☑
the others	☐

・The organization of STP

Position	Number of persons
Site Manager	persons
Operator	**One (1)** persons
Service / Maintenance	**One (1)** persons
Water quality test expert	persons
Office worker	persons
others (security, landscaper)	persons

・Operator Organization

Items	Contents
Working hours (plant operation	**24** hrs (from **7** to **3**) **3 - 11**
Work shift formation	2 shift with **Two** groups (**Two** person per group)

	☐	☐

Any chemical for wastewater treatment?	Yes	No
	☑	☐

If yes, how much and what kind ?

The kind of chemicals	Amount of use
Chlorine (Typ **Gas**	3.2 L/day
Flocculants	L/day
the others（ ）	L/day

Procurement of chemicals (Duration of delivery days / weeks / months)	Domestic	Import
	☐	☑

Frequency of power failure	No	rarely	sometime	often
	☐	☐	☑	☐

Backup generator for emergency use	Yes	No
	☐	☑

Final disposal of sludge	Landfill	Reuse	the others
	☐	☐	☑

Reuse of sludge if done currently	Composting	Materials	the others
	☐	☐	☑

・Analysis of water quality

Frequency of water quality analysis for effluent	Onse per day / week / month **Randomly**

Procedure of water quality analysis	NWC Laboratory	Outsource to local firm	the others
	☑	☑	☐

・Maintenance

Frequency of check / maintenance activity (How long interval, if regular basis Once per days / weeks / months)	Regular basis	Irregular basis
	☐	☑

Replacement of consumble parts (sealing parts for pump……) (Frequency of replacen	Yes	No
	☑	☐

Procurement of spre parts (Duration of delivery days / weeks / months)	Domestic	Import
	☐	☑

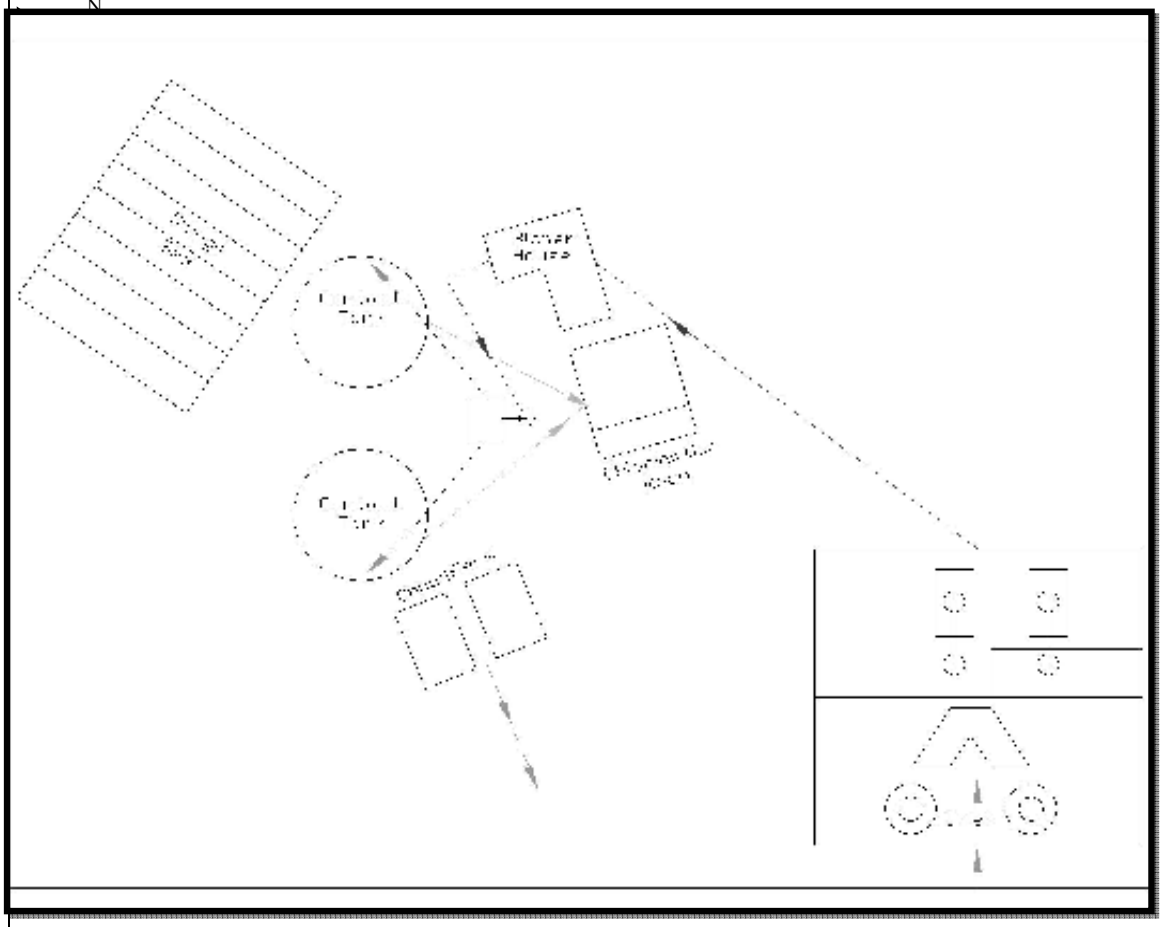
Procedure of repair	NWC	Outsource
	☑	☐

・Current Issues

If any issues for improvements of the assets and O&M of facility.

The current issues that this treatment plant undergoes is the absence of a generator in-case of power failures.
The infrastructure of the stabilization tanks needs improvement.

・Scketch of general layout



The above Picture displays the general view of the facility




The above picture displays the inlet point and outlet point of the facililty; Wet well, Clarifier, Automatic level Switch




The above pictures depict the chlorination room and the blower inside their respective housings




The above images depict the active contact tanks and the splitter box at the treatment plant

Survey Sheet of Sewage Treatment Plant

Survey Da 2009/1/9 **Surveyor:** **Mr. Odean Samuels, Mr. Kristoffer Henry**

・General information of STP

Items			Specification	
Name of Plant			**Whitehall Sewage Treatment Plant**	
Construction Year / Month			year : month :	
Location (name of street / avenue)			**Victoria Court**	
Planned sewered population			inhabitants	
Design treatment capacity			m3/day	
Present sewered population			inhabitants	
Present inflow rate			m3/day	
Amount of electricity consumption			kWh/day	
Sewage Collection	Mode of collection system		Separate Combined	
	No. of inlet sewer pipelines at STP		**One (1)** lines	
			(One (1) by **gravity** by pressure)	
	No. of lift P/S at STP (if more than 2, please use other sheet)	No.	No. 1	No. 2
		Number of pump	unit	unit
		Each capacity	m3/min/unit	m3/min/unit
		Design head	m	m
		Pump type	**Self Priming Cen. Pump**	
		Pump Manufacturer	**Gorman Rupp**	
		Pump bore diameter	mm	mm
		Duty (in original)	unit	unit
		Standby (in original)	unit	unit
		Out-of-service	unit	unit
Water Quality	Parameter		Influent	Effluent
	BOD	Design	mg/l	mg/l
		Actual	mg/l	mg/l
	SS	Design	mg/l	mg/l
		Actual	mg/l	mg/l
	T-N	Design	mg/l	mg/l
		Actual	mg/l	mg/l
	T-P	Design	mg/l	mg/l
		Actual	mg/l	mg/l
	Fecal Coliform	Design	qty/ml	qty/ml
		Actual	qty/ml	qty/ml
Effluent Discharge		Outlet Point	Harbor River Gully Other	
			Specify if other (**(Sea)**)	
		Discharge Type	Gravity Pump	

・Composition of the facility

Check to select the method of treatment.

Treatment methods	Check
St☐lard Activated Sludge	
O☐ation Ditch	
Tr☐:ling Filter	
C☑act stabilization pond	
La☐on (with / without aeration)	
th☐thers	

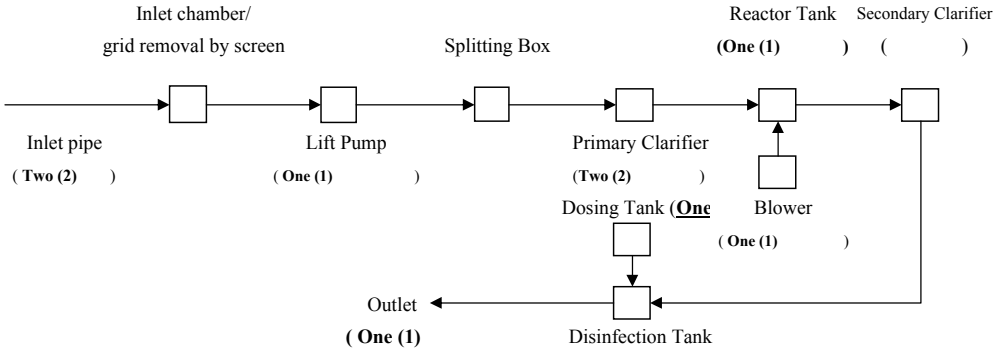
Service condition of Treatment Units

Treatment Process Line	Check
No. of treatment units	**One (1)**
No. of treatment units in service	**One (1)**
No. of treatment units out of servic	**Zero (0)**

Service condition of Blowers

Treatment Process Line	Check
No. of blowers in service	**One (1)**
No. of blowers out of service	**Zero (0)**

Flow Diagram (check ✓ to the existing facility)



Check to select the method of sludge treatment.

Treatment methods	Check
Th☐ening	
Di☐:ting	
D☐.tering	
Dr☐:g	
th☑hers	

Extended Aeration

・The organization of STP

Position	Number of persons
Site Manager	persons
Operator	persons
Service / Maintenance	persons
Water quality test expert	persons
Office worker	persons
others (security, landscaper)	persons

Mobile Team Does Daily Ch

・Operator Organization

Items	Contents
Working hours (plant operation)	hrs (from to)
Work shift formation	shift with groups (person per group)

☐ ☐	

Any chemical for wastewater treatment?	Yes	No
☑ ☐		

If yes, how much and what kind ?

The kind of chemicals	Amount of use
Chlorine (Typ **Gas**	3.2 L/day
Flocculants	L/day
the others（ ）	L/day

Procurement of chemicals	Domestic	Import
(Duration of delivery ☐ ☑ days / weeks / months)		

Frequency of power failure	No	rarely	sometime	often
☐ ☐ ☑ ☐				

Backup generator for emergency use	Yes	No
☐ ☑		

Final disposal of sludge	Landfill	Reuse	the others
☐ ☐ ☑			

Reuse of sludge if done currently	Composting	Materials	the others
☐ ☐ ☑			

・Analysis of water quality

Frequency of water quality analysis for effluent	Onse per day / week / month **Randomly**

Procedure of water quality analysis	NWC Laboratory	Outsource to local firm	the others
☑ ☑ ☐			

・Maintenance

Frequency of check / maintenance activity	Regular basis	Irregular basis
(How long interval, if r☐ l☑asis Once per days / weeks / months)		

Replacement of consumble parts (sealing parts for pump……)	Yes	No
(Frequency of replacem ☐ ☑		

Procurement of spre parts	Domestic	Import
(Duration of delivery ☐ ☑ days / weeks / months)		

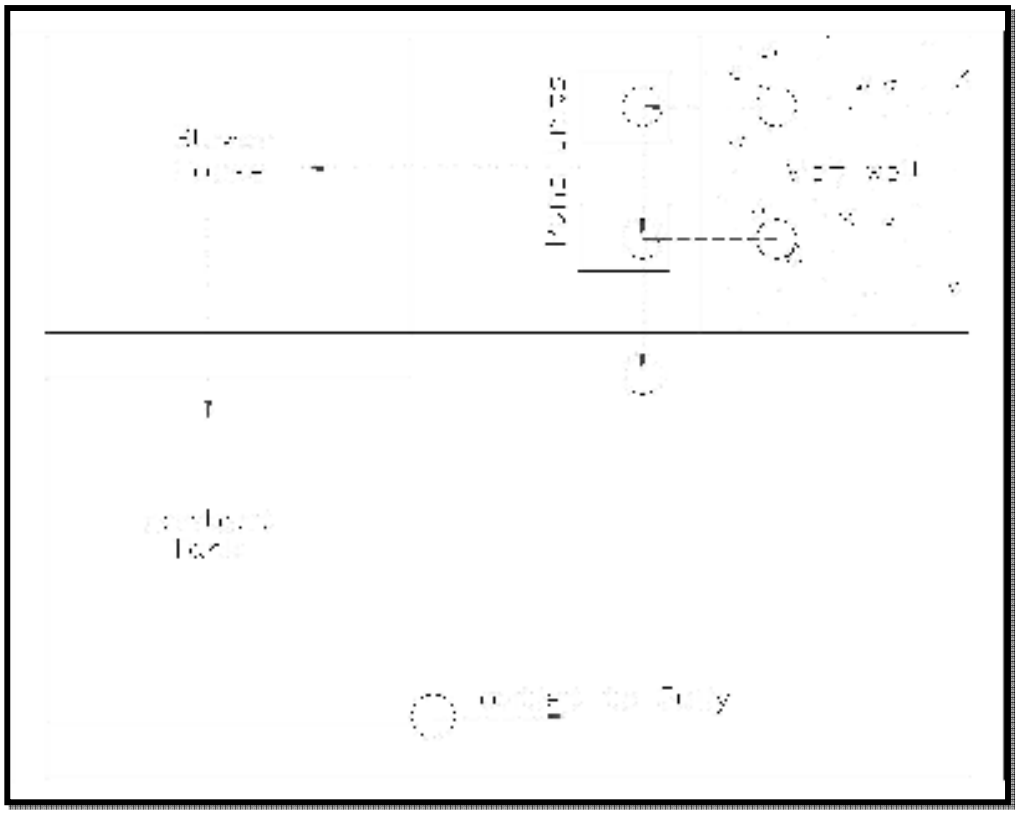
Procedure of repair	NWC	Outsource
☑ ☐		

・Current Issues

If any issues for improvements of the assets and O&M of facility.

There is evidence of squatting taking place on the compund.
There is severe overgrowth taking place on the on the site.

・Scketch of general layout



・Photographs and comments of the site condition

Overall view of the site layout (2-3photos)

Lift pump facilities (general, pump unit, control panel, sump)

Blower house (general, blower unit)

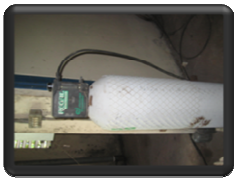
Tanks (outside, inside)

Clarifier (outside, inside)

Disinfection tank, dosing tank (general for each facility)

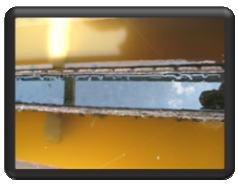
Comments on color, odor of sewage

The above pictures depict the general over view of the facility at the Victoria Court's Treatment Plant



The above pictures displays the electrical panels and controls along with the blower units, pump units and the chlorination u

The above pictures depict the contact tanks at the facility and the respective inlet point



the above pictures depicts the outlet point and gives an idea of the TS level the leaves this facility

Survey Sheet of Sewage Treatment Plant

Survey Da 2009/1/9 **Surveyor:** Mr. K.Henry, Mr. O.Samuels

・General information of STP

Items			Specification	
Name of Plant			**Grove Manor Sewage Treatment Plant**	
Construction Year / Month			year : month :	
Location (name of street / avenue)			**Grove Manor Court**	
Planned sewered population			inhabitants	
Design treatment capacity			m3/day	
Present sewered population			inhabitants	
Present inflow rate			m3/day	
Amount of electricity consumption			kWh/day	
Sewage Collection	Mode of collection system ☐ ☑		Separate Combined	
	No. of inlet sewer pipelines at STP		**Two (2)** lines **Two (2)** by **gravity** by pressure)	
	No. of lift P/S at STP (if more than 2, please use other sheet)	No.	No. 1	No. 2
		Number of pump	**Zero (0)** unit	unit
		Each capacity	m3/min/unit	m3/min/unit
		Design head	m	m
		Pump type	**Self Priming Centrifugal Pump**	
		Pump Manufacturer	**Gorman Rupp**	
		Pump bore diameter	mm	mm
		Duty (in original)	unit	unit
		Standby (in original)	unit	unit
		Out-of-service	unit	unit
Water Quality	Parameter		Influent	Effluent
	BOD	Design	mg/l	mg/l
		Actual	mg/l	mg/l
	SS	Design	mg/l	mg/l
		Actual	mg/l	mg/l
	T-N	Design	mg/l	mg/l
		Actual	mg/l	mg/l
	T-P	Design	mg/l	mg/l
		Actual	mg/l	mg/l
	Fecal Coliform	Design	qty/ml	qty/ml
		Actual	qty/ml	qty/ml
Effluent Discharge ☐ ☐ ☑		Outlet Point ☐	Harbor River Gully Other Specify if other (**(Sea)**)	
☑ ☐		Discharge Type	Gravity Pump	

・Composition of the facility

Check to select the method of treatment.

Treatment methods	Check
Standard A ivated Sludge	
Oxidation tch	
Trickling l er	
Contact st lization pond	
Lagoon (w / without aeration)	
the others	

Extended Aeration

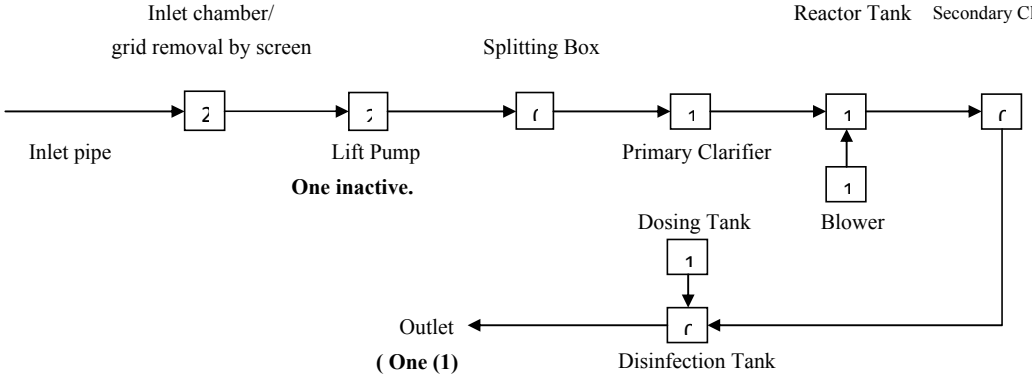
Service condition of Treatment Units

Treatment Process Line	Check
No. of treatment units	**One (1)**
No. of treatment units in service	**One (1)**
No. of treatment units out of servic	**Zero (0)**

Service condition of Blowers

Treatment Process Line	Check
No. of blowers in service	**One (1)**
No. of blowers out of service	**Zero (0)**

Flow Diagram (check ✓ to the existing facility)



Check to select the method of sludge treatment.

Treatment methods	Check
Thickenin	
Digesting	
Dewaterin	
Drying	
the others	

・The organization of STP

Position	Number of persons
Site Manager	persons
Operator	persons
Service / Maintenance	persons
Water quality test expert	persons
Office worker	persons
others (security, landscaper)	persons

Mobile Team Does Daily Ch

・Operator Organization

Items	Contents
Working hours (plant operation	hrs (from to)
Work shift formation	shift with groups (person per group)

☐ ☐	

Any chemical for wastewater treatment?	Yes	No
☑ ☐		

If yes, how much and what kind ?

The kind of chemicals	Amount of use
Chlorine (Typ **Gas**	**3.2** L/day
Flocculants	L/day
the others（ ）	L/day

Procurement of chemicals	Domestic	Import
(Duration of delivery ☐ ☑ days / weeks / months)		

Frequency of power failure	No	rarely	sometime	often
☐ ☐ ☑ ☐				

Backup generator for emergency use	Yes	No
☐ ☑		

Final disposal of sludge	Landfill	Reuse	the others
☐ ☐ ☑			

Reuse of sludge if done currently	Composting	Materials	the others
☐ ☐ ☑			

・Analysis of water quality

Frequency of water quality analysis for effluent	Onse per day / week / month **Randomly**

Procedure of water quality analysis	NWC Laboratory	Outsource to local firm	the others
☑ ☑ ☐			

・Maintenance

Frequency of check / maintenance activity	Regular basis	Irregular basis
(How long interval, if regular basis ☐ ☑ Once per days / weeks / months)		

Replacement of consumble parts (sealing parts for pump……)	Yes	No
(Frequency of replacen ☐ ☑		

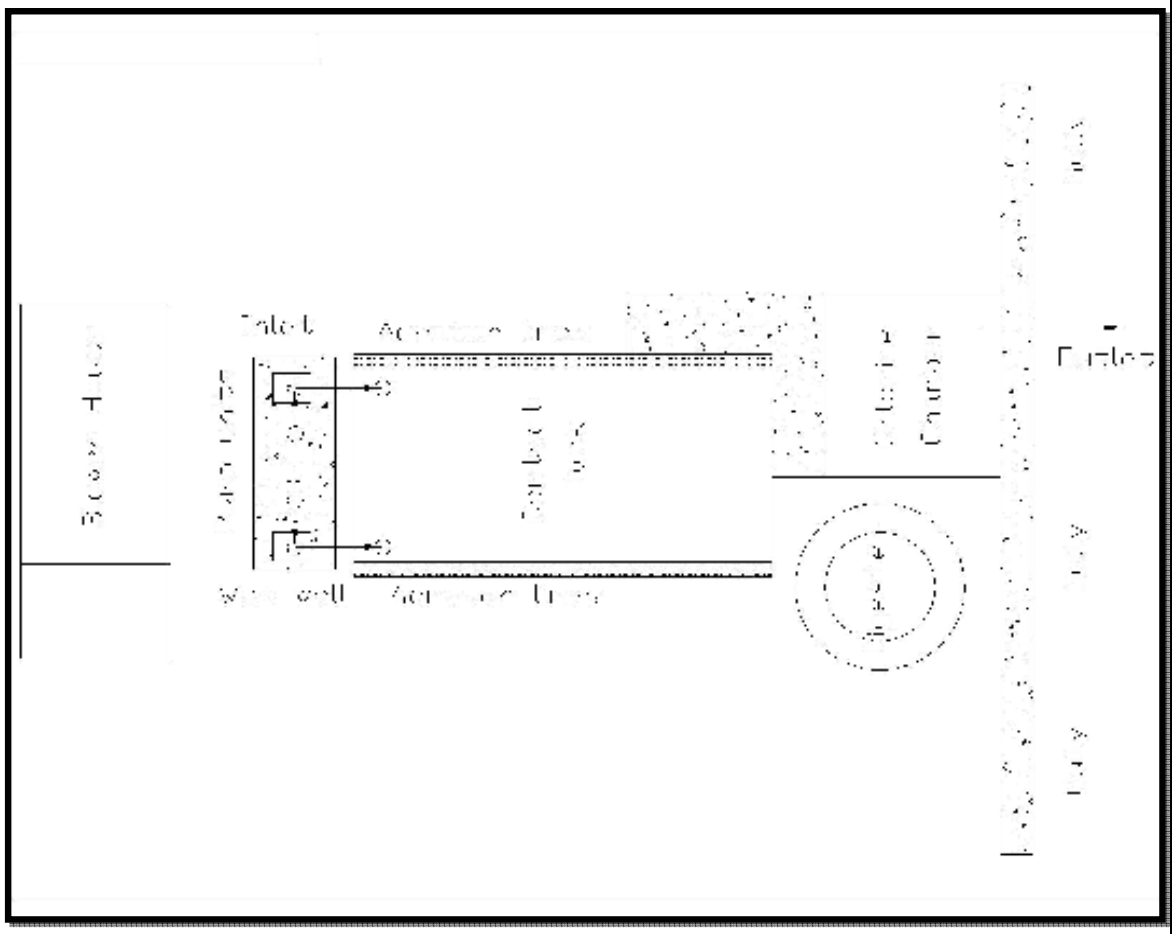
Procurement of spre parts	Domestic	Import
(Duration of delivery ☐ ☑ days / weeks / months)		

Procedure of repair	NWC	Outsource
☑ ☐		

・Current Issues

If any issues for improvements of the assets and O&M of facility.

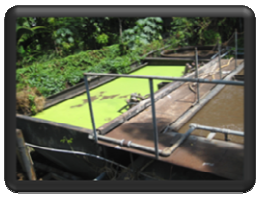
・Scketch of general layout






The above pictures depicts the over view of the facility at the grove manor treatment plant






The above displays the digester, the chlorination room and chamber along with the outlet which runs to the adjacent gully




The above pictures displays the control panels at the grove manor treatment facility

Survey Sheet of Sewage Treatment Plant

Survey Da 2009/1/9 **Surveyor:**

・General information of STP

Items			Specification		
Name of Plant			**Barbican Sewage Treatment Plant**		
Construction Year / Month			year :	month :	
Location (name of street / avenue)			**Barbican Road**		
Planned sewered population			inhabitants		
Design treatment capacity			m3/day		
Present sewered population			inhabitants		
Present inflow rate			m3/day		
Amount of electricity consumption			kWh/day		
Sewage Collection	Mode of collection system ☐ ☑		Separate Combined		
	No. of inlet sewer pipelines at STP		**One (1)** lines **(One (1)** by **gravity** by pressure)		
	No. of lift P/S at STP (if more than 2, please use other sheet)	No.	No. 1	No. 2	
		Number of pump	**Zero (0)** unit	unit	
		Each capacity	m3/min/unit	m3/min/unit	
		Design head	m	m	
		Pump type			
		Pump Manufacturer			
		Pump bore diameter	mm	mm	
		Duty (in original)	unit	unit	
		Standby (in original)	unit	unit	
		Out-of-service	unit	unit	
Water Quality	Parameter		Influent	Effluent	
	BOD	Design	mg/l	mg/l	
		Actual	mg/l	mg/l	
	SS	Design	mg/l	mg/l	
		Actual	mg/l	mg/l	
	T-N	Design	mg/l	mg/l	
		Actual	mg/l	mg/l	
	T-P	Design	mg/l	mg/l	
		Actual	mg/l	mg/l	
	Fecal Coliform	Design	qty/ml	qty/ml	
		Actual	qty/ml	qty/ml	
Effluent Discharge ☐ ☐ ☑ ☐		Outlet Point	Harbor River Gully Other Specify if other (**(Sea)**)		
☑ ☐		Discharge Type	Gravity Pump		

・Composition of the facility

Check to select the method of treatment.

Treatment methods	Check
Standard A[illegible]ivated Sludge	
Oxidation [illegible]tch	
Trickling l[illegible]ter	
Contact st[illegible]lization pond	
Lagoon (w[illegible]ı / without aeration)	
the others ☑	

Extended Aeration

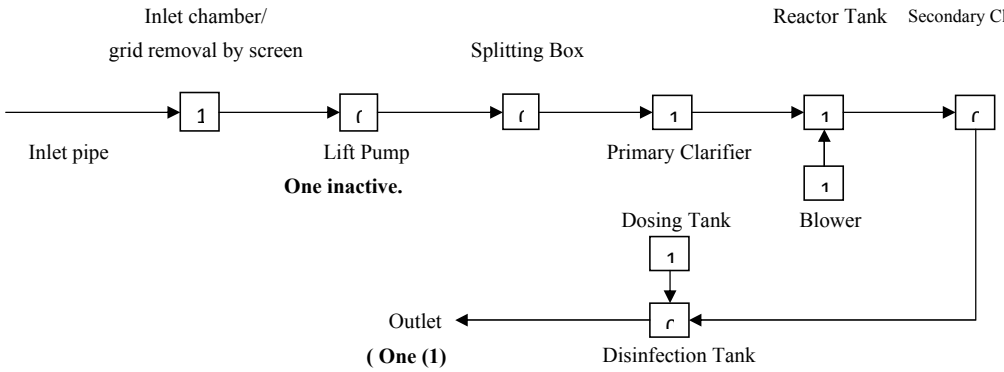
Service condition of Treatment Units

Treatment Process Line	Check
No. of treatment units	**One (1)**
No. of treatment units in service	**One (1)**
No. of treatment units out of servic[illegible]	**Zero (0)**

Service condition of Blowers

Treatment Process Line	Check
No. of blowers in service	**One (1)**
No. of blowers out of service	**Zero (0)**

Flow Diagram (check ✓ to the existing facility)



Check to select the method of sludge treatment.

Treatment methods	Check
Thickenin[illegible]	
Digesting ☑	
Dewaterin[illegible]	
Drying	
the others	

・The organization of STP

Position	Number of persons
Site Manager	persons
Operator	persons
Service / Maintenance	persons
Water quality test expert	persons
Office worker	persons
others (security, landscaper)	persons

Mobile Team Does Daily Che

・Operator Organization

Items	Contents
Working hours (plant operation	hrs (from to)
Work shift formation	shift with groups (person per group)

☐ ☐	

Any chemical for wastewater treatment?	Yes	No
☑ ☐		

If yes, how much and what kind ?

The kind of chemicals	Amount of use
Chlorine (Typ **Gas**	**3.2** L/day
Flocculants	L/day
the others（ ）	L/day

Procurement of chemicals	Domestic	Import
(Duration of delivery ☐ ☑ days / weeks / months)		

Frequency of power failure	No	rarely	sometime	often
☐ ☐ ☑ ☐				

Backup generator for emergency use	Yes	No
☐ ☑		

Final disposal of sludge	Landfill	Reuse	the others
☐ ☐ ☑			

Reuse of sludge if done currently	Composting	Materials	the others
☐ ☐ ☑			

・Analysis of water quality

Frequency of water quality analysis for effluent	Onse per day / week / month **Randomly**

Procedure of water quality analysis	NWC Laboratory	Outsource to local firm	the others
☑ ☑ ☐			

・Maintenance

Frequency of check / maintenance activity	Regular basis	Irregular basis
(How long interval, if regular basis ☐ ☑ Once per days / weeks / months)		

Replacement of consumble parts (sealing parts for pump……)	Yes	No
(Frequency of replacen ☐ ☑		

Procurement of spre parts	Domestic	Import
(Duration of delivery ☐ ☑ days / weeks / months)		

Procedure of repair	NWC	Outsource
☑ ☐		

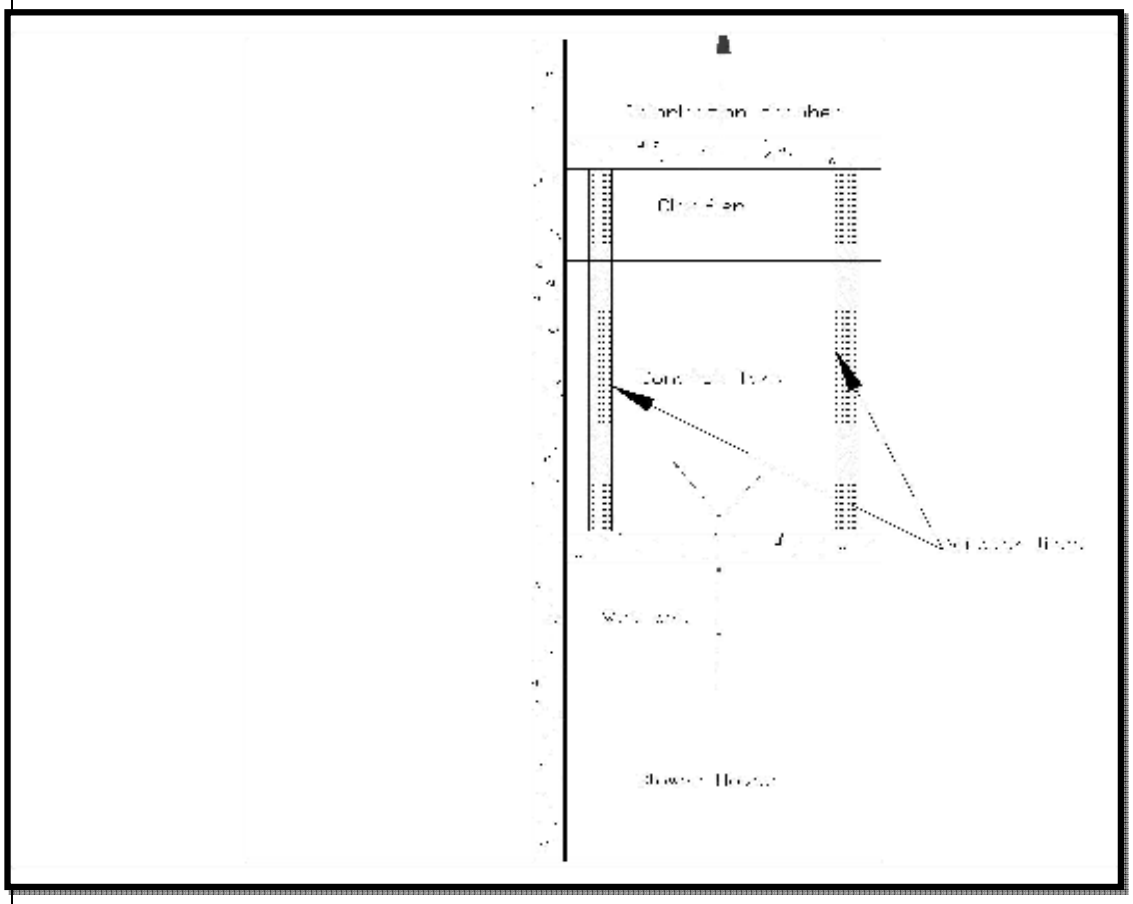
・Current Issues

If any issues for improvements of the assets and O&M of facility.

There is no lift pump present on site.

The discharge point is directly in the gully, even if the effluent is unsatisfactory.

・Scketch of general layout



The general overview of the facility at the barbican treatment plant

The above pictures show the contact tank and the aeration lines, and blower unit physical condition inside the blower house

The above pictures are to depicts the physical quality of the treated water as it leaves the barbican facility

Survey Sheet of Sewage Treatment Plant

Survey Da 2009/1/9 **Surveyor:**

・General information of STP

Items			Specification	
Name of Plant			**Widcombe Sewage Treatment Plant**	
Construction Year / Month			year : month :	
Location (name of street / avenue)			**Ravinia Road**	
Planned sewered population			inhabitants	
Design treatment capacity			m3/day	
Present sewered population			inhabitants	
Present inflow rate			m3/day	
Amount of electricity consumption			kWh/day	
Sewage Coll☐ i☑	Mode of collection system		Separate Combined	
	No. of inlet sewer pipelines at STP		**One (1)** lines **(One (1)** by **gravity** by pressure)	
	No. of lift P/S at STP (if more than 2, please use other sheet)	No.	No. 1	No. 2
		Number of pump	**One (1)** unit	unit
		Each capacity	m3/min/unit	m3/min/unit
		Design head	m	m
		Pump type	**Self Priming Centrifugal Pump**	
		Pump Manufacturer	**Gorman Rupp**	
		Pump bore diameter	mm	mm
		Duty (in original)	unit	unit
		Standby (in original)	unit	unit
		Out-of-service	unit	unit
Water Quality	Parameter		Influent	Effluent
	BOD	Design	mg/l	mg/l
		Actual	mg/l	mg/l
	SS	Design	mg/l	mg/l
		Actual	mg/l	mg/l
	T-N	Design	mg/l	mg/l
		Actual	mg/l	mg/l
	T-P	Design	mg/l	mg/l
		Actual	mg/l	mg/l
	Fecal Coliform	Design	qty/ml	qty/ml
		Actual	qty/ml	qty/ml
Effluent Discharge ☐☐☑☐		Outlet Point	Harbor River Gully Other Specify if other (**(Sea)**)	
☑☐		Discharge Type	Gravity Pump	

・Composition of the facility

Check to select the method of treatment.

Treatment methods	Check
S□ ıdard Activated Sludge	
C□ dation Ditch	
T□ :kling Filter	
C☑ ıtact stabilization pond	
L□ oon (with / without aeration)	
t□ others	

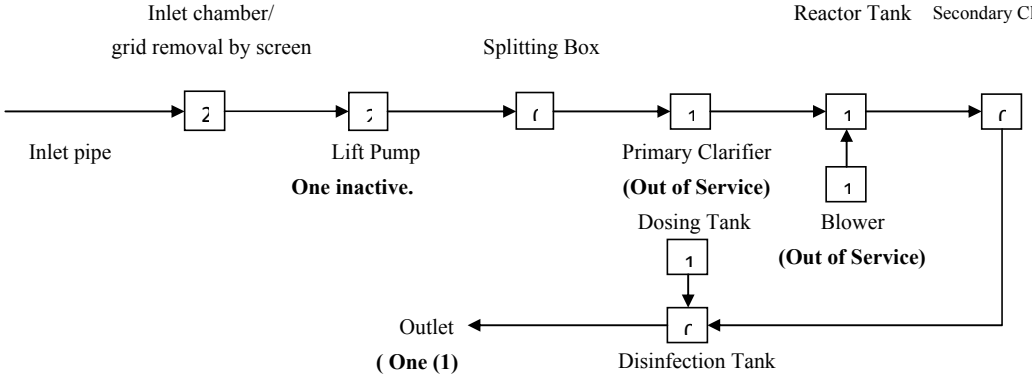
Service condition of Treatment Units

Treatment Process Line	Check
No. of treatment units	**One (1)**
No. of treatment units in service	**One (1)**
No. of treatment units out of servic	**Zero (0)**

Service condition of Blowers

Treatment Process Line	Check
No. of blowers in service	**One (1)**
No. of blowers out of service	**Zero (0)**

Flow Diagram (check ✓ to the existing facility)



Check to select the method of sludge treatment.

Treatment methods	Check
T□ :kening	
D☑ ɔsting	
D□ ɾatering	
D□ ing	
t□ ɔthers	

・The organization of STP

Position	Number of persons
Site Manager	persons
Operator	**One (1)** persons
Service / Maintenance	**One (1)** persons
Water quality test expert	persons
Office worker	persons
others (security, landscaper)	persons

・Operator Organization

Items	Contents
Working hours (plant operation	**24** hrs (from to)
Work shift formation	**2** shift with groups (person per group)

☐ ☐	

Any chemical for wastewater treatment? ☑ ☐	Yes	No

If yes, how much and what kind ?

The kind of chemicals	Amount of use
Chlorine (Typ **Gas**	**3.2** L/day
Flocculants	L/day
the others（ ）	L/day

Procurement of chemicals (Duration of delivery☐ ☑ days / weeks / months)	Domestic	Import

Frequency of power failure ☐ ☐ ☑ ☐	No	rarely	sometime	often

Backup generator for emergency use ☐ ☑	Yes	No

Final disposal of sludge ☐ ☐ ☑	Landfill	Reuse	the others

Reuse of sludge if done currently ☐ ☐ ☑	Composting	Materials	the others

・Analysis of water quality

Frequency of water quality analysis for effluent	Onse per day / week / month **Randomly**

Procedure of water quality analysis ☑ ☑ ☐	NWC Laboratory	Outsource to local firm	the others

・Maintenance

Frequency of check / maintenance activity (How long interval, i☐ ☑ ar basis Once per days / weeks / months)	Regular basis	Irregular basis

Replacement of consumble parts (sealing parts for pump……) (Frequency of replac☐ ☑	Yes	No

Procurement of spre parts (Duration of delivery☐ ☑ days / weeks / months)	Domestic	Import

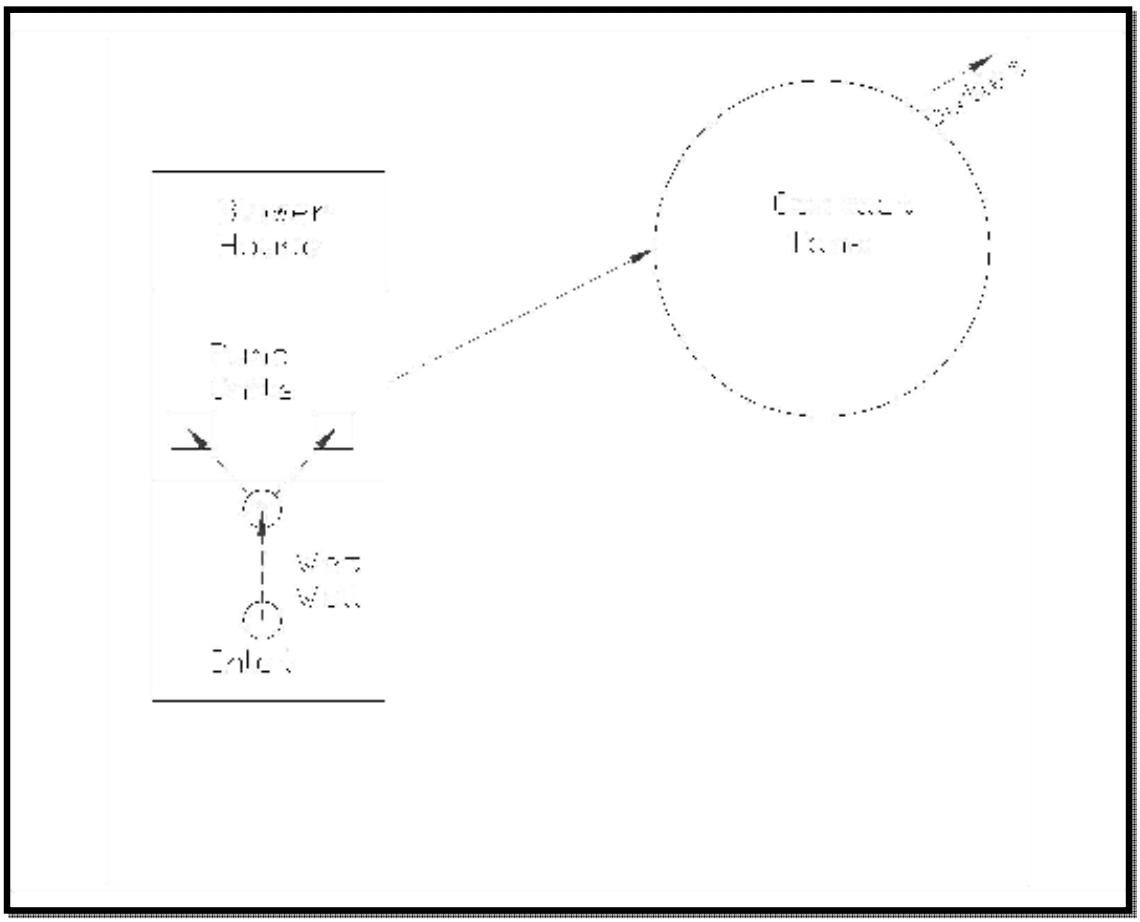
Procedure of repair ☑ ☐	NWC	Outsource

・Current Issues

If any issues for improvements of the assets and O&M of facility.

The site will be decommissioned in a matter of months, therefore a lot of the equipment is out of commission.

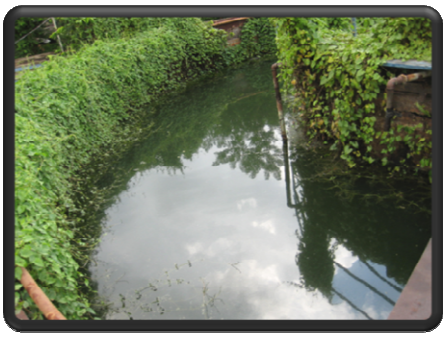
・Scketch of general layout



The sign which indicates the facility purpose

The above pictures depicts the pump units and the blower house at the facility

The pictures above depicts the electrical panels inside the facility's housing



The above pictures depict the out of service contact tank at the facility

Survey Sheet of Sewage Treatment Plant

Survey Da 2009/1/9 **Surveyor:** **Mr. O. Samuels, Mr. K. henry**

・General information of STP

Items			Specification	
Name of Plant			**College Green Sewage Treatment Plant**	
Construction Year / Month			year :	month :
Location (name of street / avenue)			**Hope Boulevard**	
Planned sewered population			inhabitants	
Design treatment capacity			m3/day	
Present sewered population			inhabitants	
Present inflow rate			m3/day	
Amount of electricity consumption			kWh/day	
Sewage Coll☐ i☑	Mode of collection system		Separate Combined	
	No. of inlet sewer pipelines at STP		**One (1)** lines **(One (1)** by **gravity** by pressure)	
	No. of lift P/S at STP (if more than 2, please use other sheet)	No.	No. 1	No. 2
		Number of pump	**One (1)** unit	unit
		Each capacity	m3/min/unit	m3/min/unit
		Design head	m	m
		Pump type	**Self Priming Centrifugal Pump**	
		Pump Manufacturer	**Gorman Rupp**	
		Pump bore diameter	mm	mm
		Duty (in original)	unit	unit
		Standby (in original)	unit	unit
		Out-of-service	unit	unit
Water Quality	Parameter		Influent	Effluent
	BOD	Design	mg/l	mg/l
		Actual	mg/l	mg/l
	SS	Design	mg/l	mg/l
		Actual	mg/l	mg/l
	T-N	Design	mg/l	mg/l
		Actual	mg/l	mg/l
	T-P	Design	mg/l	mg/l
		Actual	mg/l	mg/l
	Fecal Coliform	Design	qty/ml	qty/ml
		Actual	qty/ml	qty/ml
Effluent Discharge ☐☐☑☐		Outlet Point	Harbor River Gully Other Specify if other (**(Sea)**)	
☑☐		Discharge Type	Gravity Pump	

・Composition of the facility

Check to select the method of treatment.

Treatment methods	Check
S ıdard Activated Sludge	
C ✔ dation Ditch	
T :kling Filter	
C ıtact stabilization pond	
L oon (with / without aeration)	
t] others	

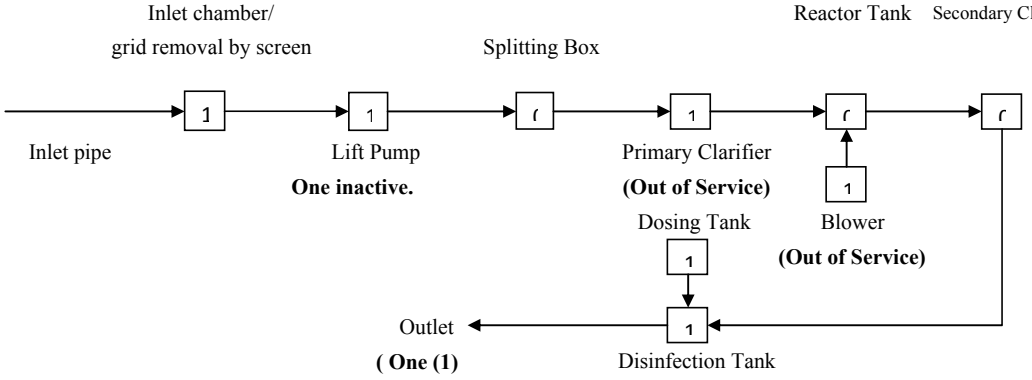
Service condition of Treatment Units

Treatment Process Line	Check
No. of treatment units	**One (1)**
No. of treatment units in service	**One (1)**
No. of treatment units out of servic	**Zero (0)**

Service condition of Blowers

Treatment Process Line	Check
No. of blowers in service	**One (1)**
No. of blowers out of service	**Zero (0)**

Flow Diagram (check ✓ to the existing facility)



Check to select the method of sludge treatment.

Treatment methods	Check
T :kening	
L :sting	
L ratering	
L ✔ ing	
t] others	

・The organization of STP

Position	Number of persons
Site Manager	persons
Operator	**One (1)** persons
Service / Maintenance	persons
Water quality test expert	persons
Office worker	persons
others (security, landscaper)	persons

・Operator Organization

Items	Contents
Working hours (plant operation	**24** hrs (from to)
Work shift formation	**2** shift with groups (person per group)

☐ ☐	

Any chemical for wastewater treatment? ☑ ☐	Yes	No

If yes, how much and what kind ?

The kind of chemicals	Amount of use
Chlorine (Typ **Gas**	**3.2** L/day
Flocculants	L/day
the others（ ）	L/day

Procurement of chemicals (Duration of delivery☐ ☑ days / weeks / months)	Domestic	Import

Frequency of power failure ☐ ☐ ☑ ☐	No	rarely	sometime	often

Backup generator for emergency use ☐ ☑	Yes	No

Final disposal of sludge ☐ ☐ ☑	Landfill	Reuse	the others

Reuse of sludge if done currently ☐ ☐ ☑	Composting	Materials	the others

・Analysis of water quality

Frequency of water quality analysis for effluent	Onse per day / week / month **Randomly**

Procedure of water quality analysis ☑ ☑ ☐	NWC Laboratory	Outsource to local firm	the others

・Maintenance

Frequency of check / maintenance activity (How long interval, i☐ ☑ ar basis Once per days / weeks / months)	Regular basis	Irregular basis

Replacement of consumble parts (sealing parts for pump……) (Frequency of replac☐ ☑	Yes	No

Procurement of spre parts (Duration of delivery☐ ☑ days / weeks / months)	Domestic	Import

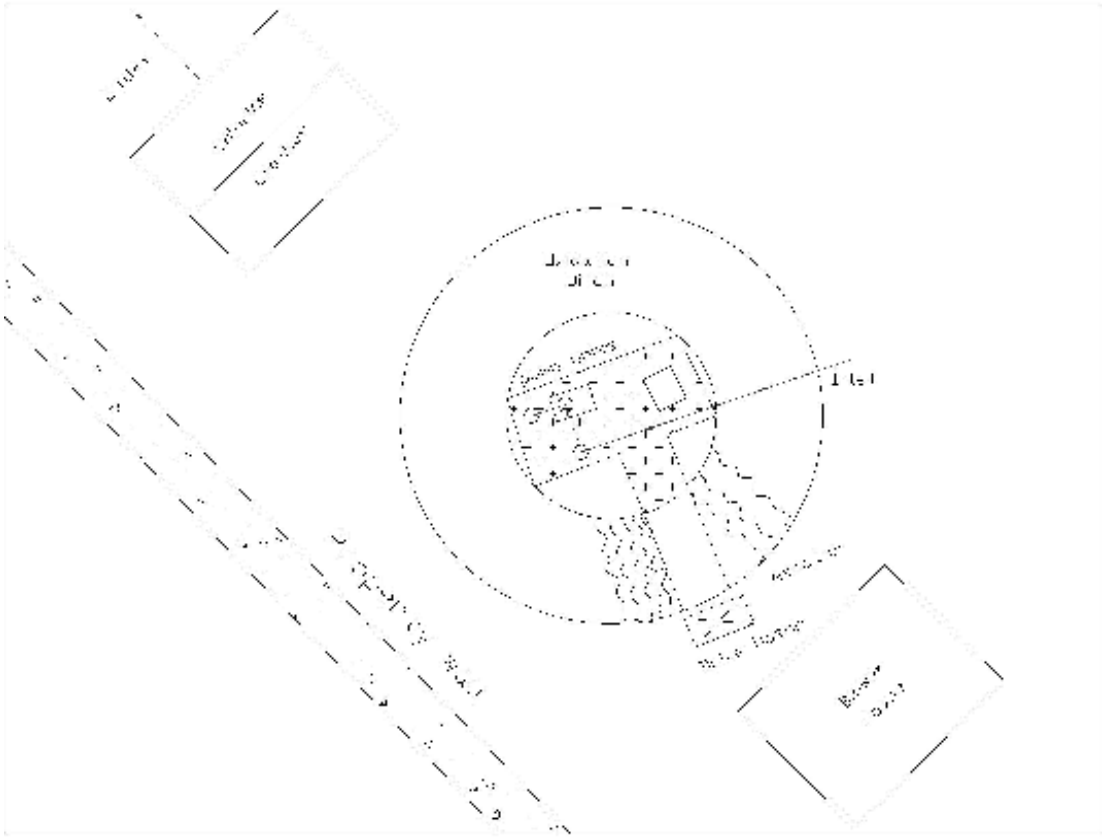
Procedure of repair ☑ ☐	NWC	Outsource

・Current Issues

If any issues for improvements of the assets and O&M of facility.

The site will be decommissioned in a matter of months, therefore a lot of the equipment is in disrepair.

・Scketch of general layout



・Photographs and comments of the site condition

Overall view of the site layout (2-3photos)

Lift pump facilities (general, pump unit, control panel, sump)

Blower house (general, blower unit)

Tanks (outside, inside)

Clarifier (outside, inside)

Disinfection tank, dosing tank (general for each facility)

Comments on color, odor of sewage

The general over view of the college green waste water treatment plant




The above pictures depicts the drive motor, the blower (not working), Pumping units at the facility




The above pictures depicts the level of aeration that is achieved at the treatment plant




The above pictures depict the sludge bed, chlorination chamber, and the dosing tank




The above pictures depict the qaulity of the treated water that leaves the college green plant