

ภาคผนวก ข-8

เอกสารรับรองบุคลากรด้านสิ่งแวดล้อม

ที่ อก ๐๓๑๓/ ๑๖๘๓๖



กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๕๐๐

๘ ธันวาคม ๒๕๖๖

เรื่อง หนังสือรับแจ้งการมีบุคลากรด้านสิ่งแวดล้อมประจำโรงงาน

เรียน ผู้รับใบอนุญาตประกอบกิจการโรงงาน บริษัท กัลป์ เอ็นซี จำกัด

อ้างถึง คำขอเลขที่ ๑๕๕๔ ลงรับวันที่ ๖ ธันวาคม ๒๕๖๖

ตามคำขอที่อ้างถึง ท่านแจ้งการมีบุคลากรด้านสิ่งแวดล้อมประจำโรงงาน ของ โรงไฟฟ้านนทรี ทะเบียนโรงงานเลขที่ ๔๐๒๕๐๐๐๑๐๒๕๕๕ (๓-๘๘(๒)-๑๐/๕๙ ปจ) ประกอบกิจการผลิตพลังงานไฟฟ้าจาก เชื้อเพลิงก๊าซธรรมชาติ ขนาดกำลังการผลิต ๑๔๑ เมกะวัตต์ เพิ่มประเภทหรือชนิดของโรงงานลำดับที่ ๑๐๒ ประกอบกิจการเกี่ยวกับการผลิตและหรือจำหน่ายไอน้ำ ตั้งอยู่ ณ เลขที่ ๔๑๘ หมู่ที่ ๑ ตำบลนนทรี อำเภอบินทร์บุรี จังหวัดปทุมธานี โทรศัพท์ ๐ ๓๗๒๑ ๘๖๓๕ ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว รับแจ้งการมีบุคลากรด้านสิ่งแวดล้อมประจำโรงงาน และให้ท่านยื่นคำขอแจ้งการมีบุคลากรด้านสิ่งแวดล้อมประจำโรงงานครั้งต่อไป ภายในวันที่ ๒๑ ธันวาคม ๒๕๖๙ โดยมีบุคลากรด้านสิ่งแวดล้อมประจำโรงงาน ดังนี้

ผู้จัดการสิ่งแวดล้อม			นายพนพล เงินโสม		
ลำดับ	ผู้ควบคุมระบบบำบัด	เลขทะเบียน	มลพิษน้ำ	มลพิษอากาศ	มลพิษกากอุตสาหกรรม
๑	นายวรุฒม์ นมะตร์	๐๒๐-๕๘-๐๐๑๓๕		✓	
ลำดับ	ผู้ปฏิบัติงานประจำระบบบำบัด				
๑	นายประยูร สุดตา			✓	
๒	นายณพฤทธิ์ พุกเพชร			✓	
๓	นายธีรพงษ์ สุกุลงาม			✓	

หมายเหตุ ๑. การแจ้งการมี/ยกเลิก/เพิ่มเติม/เปลี่ยนแปลง บุคลากรด้านสิ่งแวดล้อมประจำโรงงาน ต้องส่งหนังสือฉบับนี้ด้วย
๒. ยกเลิกหนังสือรับแจ้งการมีบุคลากรด้านสิ่งแวดล้อมประจำโรงงาน ที่ อก ๐๓๑๓/๑๓๕๕๑ ลงวันที่ ๓๐ ธันวาคม ๒๕๖๔

จึงเรียนมาเพื่อโปรดทราบ

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วันที่ 20/12/23	เวลา 15.10 น.
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(นางสาวปัทมวรรณ คุณประเสริฐ)
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ภาคผนวก ข-9

กิจกรรมการมีส่วนร่วมกับชุมชนและกิจกรรมชุมชนสัมพันธ์

ผลการปฏิบัติงานด้านกิจกรรมเพื่อสังคม (CSR) ระหว่างเดือนมกราคม-กุมภาพันธ์



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หมวดทางหลวงกบินทร์บุรี

ภาคผนวก ข-10

เอกสารข้อกำหนดข้อมูลจำเพาะของเครื่องจักรและอุปกรณ์ที่มีเสียงดัง



Gulf MP Company Limited 12SPP Project

Applicable Projects: GNC
Requisition No: FXGB001
EPJ-GNC-002-M-121-209 [A]
System description and control philosophy

FOR APPROVAL

POYRY ENERGY LTD. Document Submission Approval	
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APPROVED WITH COMMENTS Approved subject to incorporation of comments	AWC X
NOT APPROVED Insufficient information/detail Resubmit for Approval	NAP
REJECTED Complete redesign required	REJ
Note. Approval or does not relieve Vendor/Sub-Contractor of any obligations covered under contract	
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Rev.A: FOR APPROVAL

System design Philosophy and process description

Project #: 364
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DESCRIPTION OF EQUIPMENT

When reading this chapter please refer to:

- Piping and Instrument Diagram **EPJ-GNC-002-M-121-211** (364.SC.001)
- Main layout drawings **EPJ-GNC-002-M-121-224** (364.OG.001)
- Mechanical interface list **EPJ-GNC-002-M-121-241** (364TS-4-05)
- Electrical interface list **EPJ-GNC-002-M-121-226** (364TS-4-06)
- Data sheet **EPJ-GNC-002-M-121-212** (364TS-4-12)

Main purpose of Gas Compressor Package (GCP) is to provide compressed gas to the consumers downstream of GCP keeping stable parameters of gas. In order to realize it GCP is equipped with all required and necessary systems accordingly contractual obligations and technical requirements for such kind of equipment and represents as a skid with mounted equipment GCP.

Model of functioning of GCP is following:

Inlet gas line

Through the external connection point on skid edge gas comes into GCP inlet gas line.

Before to get into compressor gas goes through the inlet hand valve HV 100, pneumatically actuate valve SV131-2, filling valve SV169-2, inlet gas filter FS175, check valve RV108, thermo compensator EJ109 and inlet filter strainer FS110. Inlet gas line is also equipped by the visual pressure gauge PI103, transmitting pressure PIT105 and temperature TIT107 transmitters in order to control conditions of the gas in the line.

Compressor

After inlet line, gas goes to the compressor K111 which is driven by the motor M112 and which are coupled by coupling C177. Coupling is covered in order not to hurt maintenance personal during the operation of GCP. Compressor is oil flooded screw compressor and it is equipped with following instruments:

- Slide position transmitter GI 168
- Vibration transmitter YIZ 111-13

Motor is equipped with the following instruments and auxiliaries:

- Temperature transmitters of winding TIA 112-5, TIA 112-6, TIA 112-7

Inside compressor gas is mixed with the oil, compresses and goes to outlet line.

Outlet gas-oil line

Mixture of compressed gas and oil leaves compressor and goes to oil separator B200 via thermo compensator EJ117. Line between compressor and oil separator is equipped by the visual (pressure gauge PI115), and transmitting (pressure transmitter PIT124, temperature transmitter TIT116 and pressure transmitter PIT113-I, II, III and temperature transmitters TIT114-I, II, III) instruments to control mixture conditions. Oil separator represents as vessel where under the action of gravity most of the oil is separating from the mixture and remain in separator which also functions as oil tank. On the top part of oil separator integrated coalescing filter cartridges FSE 120-A going through which gas is filtering from the oil in vapour phase. Oil separator is equipped by the following instruments and auxiliaries:

- Visual oil level meter LI 202 and oil level transmitter LIA 210-1
- Differential pressure transmitter for controlling of the dirtiness of the coalescent cartridges PDIA 120-1
- Pressure safety valve PSV 138 connected with the vent line tracked to the skid edge
- Drain and filling line with hand valve HV 220

Separated in coalescent cartridges oil through the orifices FO120-3, goes to the inlet line of the GCP under the action of different pressure between inlet and outlet lines.

Gas outlet line

Separated gas goes further to the gas cooler W119 which represented and shell-tube heat exchanger, where it is cooled by cooling water in order to keep required temperature of gas, measured by temperature transmitter TIT125. Then on the second stage of separation (gas filters FS 122 and FS121 which are represented as vertical vessel with integrated filter cartridges) remaining part of vaporized is separating from the gas and directing through the visual glasses FG 122-4 and FG 121-4 and check valves RV 122-5 and RV 121-5 to the inlet line of the GCP under the action of different pressure between inlet and outlet lines. In order to control conditions of filter cartridges, gas filter is equipped by differential pressure

transmitter PDIA 122-1 and PDIA 121-1. After filtration oil contamination is less than 0,5 ppm. After second stage of filtration gas goes through the check valve RV129, pneumatically actuated outlet valve SV130-2 and outlet hand valve HV 148 to the external connection point on the skid edge. In case of need to vent gas there is a branch pipe line with the hand valve HV 135-3 and pneumatically actuated vent valve SV135-2 which goes to the vent line from safety valve of the package. HV 135-3 is used for the maintenance purposes and normally closed in operations.

Oil line

Oil separated in oil separator B200 under the action of outlet pressure goes to the oil heat exchanger W203,. Cooled oil goes to oil filter FS 206 represented as two vertical 100% flow vessels with filter cartridges FSE 206 connected with each other by three way valve in order to let GCP continue operation with one dirtied filter. Level of dirtiness of the filter cartridge is controlled by differential pressure transmitter PDIA 206-1 connected to the common lines of the oil filter

After the filtration, the oil line goes to the oil pump P 214-2. In order to keep required pressure difference between outlet pressure of gas and oil mixture and oil pressure, an hydraulically actuated pressure control valve PCV 226 is installed on the oil system. Valve is bypassing oil overflow to the from the outlet line of the pump to the inlet line. In order to prevent unstable operation of the pump during the start of oil pump, oil system is equipped by the line with check valve RV 214-4 installed in order to pass oil to the outlet line of the pump. Oil goes to slide control regulation valve and to the chambers of compressor that require high pressure of the oil to be injected (bearings, mechanical seal etc.). Line between the fine filters and compressor is equipped with the following instruments:

- Oil pressure transmitters PIT 205

Cooling line

In order to cool down oil in oil heat exchanger W 203 and gas in gas heat exchanger W119 there is a liquid cooling line implemented in the GCP. This is open loop line with the inlet and outlet external connections on the skid edge. Inlet cooling line is equipped by the hand shut off valve HV 418-2 and temperature gauge TI 401. Outlet cooling line after the oil heat exchanger W 203 is equipped by the temperature gauge TI 402

Outlet cooling line after the gas heat exchanger W 119 is equipped by the temperature gauge TI 403 and controlled by the control valve TCV440-2 that is regulating the flow of cooling water. After mixing of two cooling water outlet lines, the resulting line goes through hand valve HV418-1 to the skid edge. Cooling down the cooling media is in customer scope as well as cooling water pumping and control of cooling media temperature and/or pressure.

Capacity regulation system

Regulation concept of the project is to keep stable given outlet pressure set point. In order to follow it there are two sub-systems implemented:

- Slide control valve is a hydraulic valve inside the compressor driven by the high pressure oil. This valve changes internal volume of the compression chamber that allows regulating capacity in range between 10 and 100%. Slide is operated by the slide control system FCV 270-1 and FCV 270-2 that consist of solenoid valves that regulate the flow of the oil to move compressor to load or unload direction.
- Pressure control pneumatic valves PCV 123 is connected to outlet line of the GCP with inlet line and provides bypass of the gas from outlet to inlet and regulation in range between 0 and 10% during the operation. However, PCV 123 valve is calculated and designed to provide regulation in full range of capacity (0...100%).

Instrument air line

Most of the actuated valves of the GCP are instrument air actuated. Instrument air line connection point is situated on the skid edge. Further compressed instrument air goes through filter FS504 and pressure transmitters PIT501-I, II, III to the consumers. On each

line there are sets of solenoid valves (MV) that are actuated by the electricity and opening the air flow to the actuator of actuated technological valves.

Enclosure systems

GCP is equipped by the Gas detection system with three gas sensors DAZ 307-1, DAZ 307-2, DAZ 307-3. Gas detectors are set for two set points – 10% LEL and 20% LEL. In case if any detector will recognize 10% LEL, alarm signal will be generated on PLC. In case if any detector will recognize 20% LEL, GCP will be automatically shutted down.

Electrical connections and control panel

In order to organize normal operation of GCP, external electrical connections must be organized:

- Main motor power supply. Main motor must be connected with Medium Voltage Switch Gear (MVSG) by EPC Contractor's cable directly in motor junction box. Pass through the enclosure shall be made through the special Ex-proof cable rack foreseen in enclosure wall (in scope of Enerproject).
- 400 V auxiliary equipment power supply cables are connected by customer directly at the 400 volts terminals of each equipment's (Lube oil pump, Ventilation Fan, Motor heater) while the 400V MCC system is mounted in the PLC cubicle

Control cables are required for the connection of GCP with MVSG and supervision system:

- MVSG must be connected with control cubicle in order to let GCP PLC to interact with main motor and have possibility to proceed with stop sequence in correct way in case of emergency.
- Bus line between packages in order to provide auto start option for compressor un stand by in case of operating compressor will be shut down. Cable is in EPJ scope.
- Signals with supervision are required to have possibility for remote operation of GCP by hard-wire lines. Bus connections with supervision is also foreseen and made in order to let customer current information about working parameters, conditions and active alarm and emergency signals.

GCP is fully automatized and able to keep required operating conditions and follow foreseen operating sequences including start and stop without external intervention.

Measured values from field instruments could generate Alarm (AL) or Emergency (EM) signals on Programmable Logic Controller (PLC) of GCP in order to keep safety operation of the plant. Control cubicle is equipped with HMI for the local control of operation by the maintenance personnel.

Local panel is provided with followings devices:

- Start push button
- Stop push button
- Emergency stop push button
- Local / remote operation mode switch
- Emergency and alarm lights
- Buzzer

DETAILED DESCRIPTIONS OF EQUIPMENT SYSTEMS

Oil injected type screw compressor with slide control

Screw compressors K111 are oil injected dual rotor positive displacement machines with split casing. Rotors are dynamically balanced and standard foreseen from a balancing drum in order to reduce axial thrust. To prevent gas leakage stationary pressure-balanced mechanical seal are provided.

Main characteristic:

- High efficiency due to optimum rotor profile configuration
- High efficiency in a wide range thanks to a capacity control slide
- Long life and low maintenance requirements due to small number of rotating parts
- Low noise level and vibration free running thanks to low rotor speeds and oil injection

Main drive motor

Main drive motor M112 is a self-ventilated medium-voltage three-phase asynchronous drive with a cylindrical shaft end and feather key way. The shaft with the end shield on both ends or with the inner bearing cap forms a flameproof shaft gap. The motor is suitable for continuous operation in ex-proof execution.

Mechanical coupling

Power from main drive motor to compressor, will be transmitted by a mechanical coupling C177.

Oil system

The lube oil system of the compressor package is a closed loop system. The main oil injection port feeds the rotors directly with smaller lines feeding various points on the machine for seals and bearings. Once the oil is injected it will pass through the compressor K111 where it combines with the gas. The gas / oil mixture is then discharged out of the compressor. Injected oil is removed from the gas downstream of the compressor by means

of an oil separator FS120/B200. The oil separator also acts as a reservoir for the lube oil, the oil flows from the bottom of the separator, through an oil cooler W203 and oil filters FS206 and then back to the compressor. Part of the oil is after the oil filter directed to the oil pump P214-2 which ensures proper oil supply to the compressor at all times and is required for the hydraulic device of the capacity control.

Main components:

- oil tank with oil gas separator FS120/B200
- oil cooler W203
- Duplex oil filter (FS206-I, II)
- 100% oil pump screw type with magnetic coupling P214-2

Compressor gas line

The inlet gas line can be isolated by means of a hand ball valve HV100 from here the gas is fed through a standard installed strainer in order to remove large dirt particles.

Inlet line consists of:

- hand ball valve HV100
- actuated inlet valve SV131-2
- check valve RV108
- compressor inlet strainer FS110

The high pressure gas is fed through the oil separator and is then taken through a second stage coalescent filter and then taken off the skid for connection to the field piping.

Outlet consists of:

- oil/gas separator with integrated stages coalescent filter FS120/B200
- pressure relief valve PSV138
- 2nd stage coalescent filters FS121/FS122
- hand ball valve HV148

- check valve RV129
- actuated outlet valve SV130-2

Cooling system water

Demineralized water for cooling is provided by the customer up to the connections flanges of the package. The cooling system includes two shell and tube heat exchangers built for efficient heat transfer, one for the oil W203, other is for gas W119. The heat exchangers consist of a series of tubes. Water flows through the tubes and the medium runs over the tubes in order to be cooled.

Gas Detection

The gas detection system is designed to continuously monitor the explosive level of the atmosphere within the enclosure.

The operating personnel is warned of gas through acoustical and visual signals if the gas concentration in the enclosure increases above pre-selected levels, which are set as per lower explosive limit for warning and emergency shutdown.

Main components:

- 3 gas sensors DAZ307 installed inside the enclosure (2 above the compressor area, 1 around the ventilation outlet air flow area).
- Central analysis station with gas concentration display

Base Frame

The compressor system and its auxiliaries are installed on a self-supporting base frame. The base frame is composed by two parts. The main frame, fully welded, acts as a tight retention basin which, in case of failure of the oil or water systems, can hold the liquids leak within the enclosure. The secondary frame, mounted on the main frame by means of spring pads, holds the compressor and the driving motor and avoid any vibration transmission to the main frame and therefore to the foundation.

- welded base frame with oil collecting shell
- spring pad mounted compressor frame

- lifting eyes at each corner

Sound proof enclosure

The partial enclosure covering most noise-generating components is designed in order to allow easy maintenance on the main components and is built as a classified area.

Main characteristic:

- steel profile frame
- attenuated sound pressure level

Enclosure is provided with a removable roof located over the compressor, in order to permit an easy maintenance from the top.

Vibration monitoring device

The system by mean of accelerometer sensors, monitor the vibration behaviour of the screw compressor and motor.

Main components:

- 1 (YIZ111-13) vibration sensor accelerometer type with embedded electronics mounted on casing
- vibration monitor device is in customer scope and is external. Vibration sensor shall be connected with Bently Nevada MMS.

Control panel

GCP has included to the scope of supply control panel. Control panel control the operation of whole GCP and includes following functions:

- automatic and real-time (remote) control of the start-up, shutdown and ramping unit equipment up to the optimal operation mode and its maintenance;
- automatic control of the compressor capacity depending on the pressure in the outlet pipeline of the GCP
- remote start-up and stop;
- safety as technological and electrical components of the unit operation;

- issuing control commands to actuators and their execution for the transfer of the compression unit equipment in fault-free condition;
- continuous monitoring of main operating conditions and parameters;
- time synchronization between the system components;
- control and monitoring of the unit parameters from the local control panel and DCS;
- keep the liquid level in the filters, separators, oil separator within set-points;
- controlling the temperature, pressure and gas flow at the unit outlet;
- regulation of pressure, flow and temperature of the oil in the oil system;
- integration and output of information in the DCS by standard protocol
- indicating operating hours of main motor and lube oil pump motor
- indication of open/closed, running/stopped positions of equipment of compressor package.

OPERATING CASES

GCP start up and recirculation

Any GCP can be started individually at any time regardless the Turbine operation and related load condition. The unit simply remains in operation recirculating the Gas through the By-Pass line integrated on each skid.

GT Start-up and Operation

The GCP can be started by operator in local or remote mode. This applies to all units.

Stand-By Compressor

The remaining GCP, as long as it is selected to Remote mode switches automatically to Stand-by mode. Stand-by GCP will start automatically only in case of running compressor trips or any alarm will appear. Normal Start of the Stand-by unit is initiated by hardwire signals from DCS.

GT Trip, load variation

If GT trips (even at full load), then none of the gas compressors need to be tripped, as the compressed gas is immediately by-passed through the by-pass line. The opening of the by-pass valve is triggered by the pressure increase driven by the sudden decrease of the Gas flow.

If GT tripped, then GCP will switch automatically to by-pass mode and remain ready to take load as soon as required by the GT re-start. By-pass mode does not require any signal. In case if pressure on outlet is high Compressor package will automatically move slide to the minimal position, in case if this would not be enough (i.e. zero flow) bypass valve will open automatically and compressor will bypass all the gas through itself.

OPERATION MODES

The mode of operation can be selected by the operator as Remote/Local on the HMI panel for each Gas compressor.

Local mode

In local mode of operation, gas compressor can be started individually via Local Start command. Also each gas compressor can be individually stopped using local Stop command.

Remote mode

The remote mode of operation allows Remote start from DCS. Once the local selector is positioned to Remote, the gas compressor perform automatically a preparation sequence switching the unit to Stand-By mode where the compressor is pressurized at Gas inlet pressure and the lube oil Pump is set in operation if temperature is lower than set point or slide is not on minimum position. As soon as temperature will be heated to required set point or/and slide will reach minimum position, pump will be stopped automatically. In this mode, the operator can start or stop any gas compressor at any time.

CONTROL PHILOSOPHY

Concept

During operation the control is performed by the PLC of each compressor monitoring the Pressure at the outlet vs the specific pressure Set point set on GCP HMI.

Any turbine flow variation is followed by a corresponding pressure variation which is adjusted by the Slide Valve

Ready to Start

Fuel gas compressor is in normal condition with all start permissives met.

When all the start permissives are satisfied, the system is now ready to start. By pressing the Start button on the Local Control Panel, or by Remote signal (mode have to be selected using the selector switch on the HMI [Local/ Remote mode selection for each compressor]).

Start-up Sequence

Before the system can be started, a pre start sequence must comply with the first level check of start sequence. All conditions mentioned below must be achieved in order to start the fuel gas compressor

Main equipment's initial position

Gas Inlet isolation valve (SV131-2) is closed

Gas filling valve (SV169-2) is closed

Gas outlet isolation valve (SV130-2) is closed

Recycle control valve (PCV123) is opened

Compressor motor (M112) is off position

Compressor (K111) is off position with slide valve regulation at minimum load

Gas Filling

Gas Inlet isolation bypass valve (SV169-2) is opened and gas filling the GCP until inlet pressure set point will be reached

Gas outlet isolation valve (SV130-2) is opened

Filling valve is maintained open until PIT105 pressure measurement reaches its Set Point

System start up

Gas Inlet isolation valve (SV131-2) is opened

Gas Compressor motor (M112) is started

Gas Compressor (K111) is started

Gas Inlet isolation bypass valve (SV169-2) is closed

Motor M112 and Compressor K111 are started

As soon as M112 reaches the nominal speed, the compressor slide control (figure 1) increases the load while the recycle control valves PCV123 is maintained open.

The pressure set point is achieved and controlled by close loop pressure control of the slide.

The gas stream, recirculating through the recycle control valve PCV123 is ready to supply the fuel gas to the Gas Turbine.

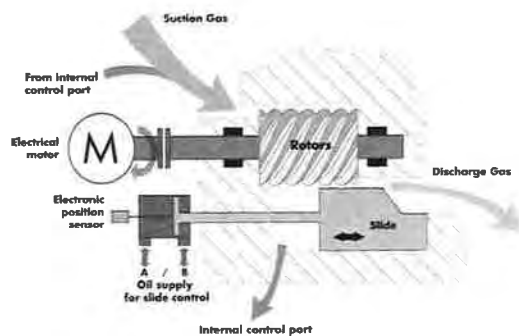


Figure 1

Gas Turbine light-off

At Gas Turbine light-off, the gas flow demand initially decrease the pressure inside the GCP line, the by-pass line PCV123 is closed while the compressor slide controller increase the load in order to maintain the pressure set point

Gas Turbine operation

During the gas turbine operation, compressor will be running and gas supply fuel gas to the Gas turbine the recycle control valve PCV123 will be in closed position. Any Gas Turbine flow demand variation affects the GCP pressure which is monitored by the PLC acting at the slide.

Gas Turbine-Stops

In case customer needs to stop the Gas Turbine temporarily, the presence of the by-pass line helps to avoid the immediate shut-down of the GFC that can remain ready to supply gas at any time. By-pass line is shown on P&ID and it is a line connecting outlet line and inlet line with pneumatically actuated valve PCV 123. This valve is needed when compressor operates at low capacity – 0...10% of nominal flow. When capacity is low, PLC automatically will open and regulate position of the by-pass valve. In this case part of the gas will be by-passed from outlet to inlet gas line that will reduce flow going to the customer even till 0% when needed. Gas outlet isolation valve SV130-2 remains open.

By-Pass mode

As long as sufficient water cooling is provided, the unit can be operated unlimited in By-Pass configuration.

During start-up sequence (waiting for Gas Turbine start-up) or after a Gas Turbine stop (waiting for GT re-start).

Gas Inlet isolation valve (SV131-2) is opened

Gas outlet isolation valve (SV130-2) is opened

Bypass automatic pressure control valve (PCV123) is opened

Compressor motor (M112) is on

Compressor (K111) is running with slide valve regulation at minimum load

During this mode gas flows through the by-pass valve PCV123 instead of going to the customer side. This allows compressor unit to operate with no-load and be ready for start working on load at any moment when turbine will be ready for gas consumption.

Compressor Shutdown (STOP) Sequence

The shutdown sequence is activated once "Stop" signal is sent by Local Control Panel or REMOTE STOP unlatched only.

There are two shutdown scenarios:

1. Compressor shutdown sequence for normal mode.
2. Compressor protective trip shutdown.

Compressor Shutdown Sequence for NORMAL Mode

When Stop-button is pushed, the following shutdown sequences are executed:

- Slide valve is forced to move to minimum position
- After slide reaches minimum position or after 30 seconds after this command Main motor and pumps are stopped and vent valve and by-pass valve are opened.
- Enclosure fan will run till required temperature in enclosure is reached.

Compressor protective trip shutdown

When Emergency Stop-button is pushed or PLC generated emergency activated, the following shutdown sequences are executed:

- Main motor and pumps are stopped immediately and vent valve and by-pass valve are opened.

Status Indications & Compressor Alarms

All the analog and digital measurements of compressor package will be monitored in the HMI located at the PLC panel. The GCP (Start up/shut down) and monitoring will be executed from the HMI. The signals that trip the compressor are listed in the related Document "BIC2-TD-CK0402 - PLC communication address list".

The different type of alarms such as low low, low, high, high high are configured in the PLC as per signal list Document. The alarms set points are indicated in the signal list. During the plant operation the alarms will appear in the HMI as per the priority of the alarm. Usually the alarms are configured in two types, one is advisory alarms i.e. low, high and second one is critical alarms these are distinct by different colour in HMI. Also the field signals such as transmitters are giving the alarm signals in HMI and the trip signals also initiated to start & stop the equipment's as per the plant "operation flow chart".

The alarms are initiated from field as described at below,

- 1) Alarm signals are generated by dry contact from field transmitter.
- 2) By comparing transmitter readings with given set point at the PLC. If reading is higher than the set point, and the system is checking for a high alarm, there will be a high alarm generated and vice versa for the low alarm. The set point will be keyed in by the operator at the HMI.

All the Gas compressor alarms will be shown in the HMI and the alarm summary page will be available in the HMI to see the history of the alarms. All the Gas compressor signals and alarms are sent to DCS through RS485 serial link Modbus communication for monitoring at control room. However each gas compressor remote start/stop and status signals are connected to DCS by hard wired.

Mode of operation

Mode of operation	Command	Action
Local mode of GCP #1 selected in PLC HMI. (same action for local mode of GCP # 2)	Start GCP #1 from PLC HMI	Outlet gas valve open (SV 130-2) Filling valve open until filling pressure is reached (SV169-2). Inlet gas valve open (SV 131-2) Lube oil pump start (P 214-2) and lube oil pressure is checked. Main motor runs (M112). Compressor discharge pressure control is enabled.
	Stop GCP # 1 from PLC HMI	Main motor stops (M112). Gas discharge pressure control is disabled. Gas inlet (SV 131-2) and outlet (SV 130-2) valves close. Lube oil pump (P 214-2) stops after 10 seconds. Gas pressure is released via vent valve (SV 135-2) and the stop sequence ends after 5 minutes.
Remote mode of GCP # 1 selected in PLC HMI. (similar action for remote mode of GCP # 2)	Start GCP # 1 from DCS HMI	GCP # 1 is already in standby mode and filling sequence performed. Lube oil pump (P 214-2) start and lube oil pressure is checked. Main motor run (M112). Compressor discharge pressure control is enabled.
	Stop GCP # 1 from DCS HMI	Main motor stops (M112). Gas discharge pressure control is disabled. Gas inlet (SV 131-2) and outlet (SV 130-2) valves close. Lube oil pump (P 214-2) stops after 10 seconds. Gas pressure is released via vent valve (SV 135-2) and the stop sequence ends after 5 minutes.

Note : Failure of any of above will initiate an alarm in HMI

CONTROLS OF AUXILIARIES

Lube Oil system

As long as the compressor is in operation the lube oil Pump P214-2 is ON. This guarantee constant lube oil flow for following purposes:

- Compressor bare shaft BRG lubrication
- Compressor bare shaft rotor lubrication
- Gas cooling
- Hydraulic control of slide valve (positioning of the slide piston by means of a 4-20mA proportional valve)

Lube oil Pump (P214-2)

Oil injection into the high pressure sections of compressor is achieved monitoring a minimum pressure difference between the high Gas pressure side and the lube oil.

PCV226

is adjusted at commissioning at its final Set Point keeping set pressure difference between gas outlet pressure and oil pressure. The lube oil pressure is monitored by means of PIT205

Cooling water system

Demineralized water flowing through the cooling water lines supplies the following equipment:

Gas Cooler W119 shell and tube heat exchanger

Oil Cooler W203 shell and tube heat exchanger :-

Gas Detection System

Gas detectors :

Gas detectors will be installed and used to monitor the explosive level of the atmosphere within the sound enclosure. Once the sensors detect the Gas level, it will give the alarm signal to Gas alarm control panel at CCR for further action by control room operator.

Fire detection and fire fighting System

Compressor package is equipped with two fire detector sensors IS 318-2-I and IS318-2-II. In case if one detects fire compressor package alarm is activated (BUS signal, local light and horn HA318-3), in case of two detectors would detect fire, package would be shuttled down and fire fighting system with CO₂ would be activated.

START/STOP & LOAD CHANGE FUNCTIONS FOR MULTI UNIT OPERATION

Each GCP will be controlled automatically by respective local control panel to maintain the discharge gas pressure. Discharge gas pressure will be decided by the maximum required gas pressure among all running gas turbine corresponding to the gas turbine load demand.

One (1) gas compressor will be working for one (1) gas turbine. The stand-by compressor will start to operate if receive command from DCS except the case when running compressor trips or alarm is generated. In this case stand-by compressor will start operation.

ภาคผนวก ข-11

เอกสารการตรวจสอบ Silencer

Applicable Equipment List for Near Field Noise Measurement
Project: GNC

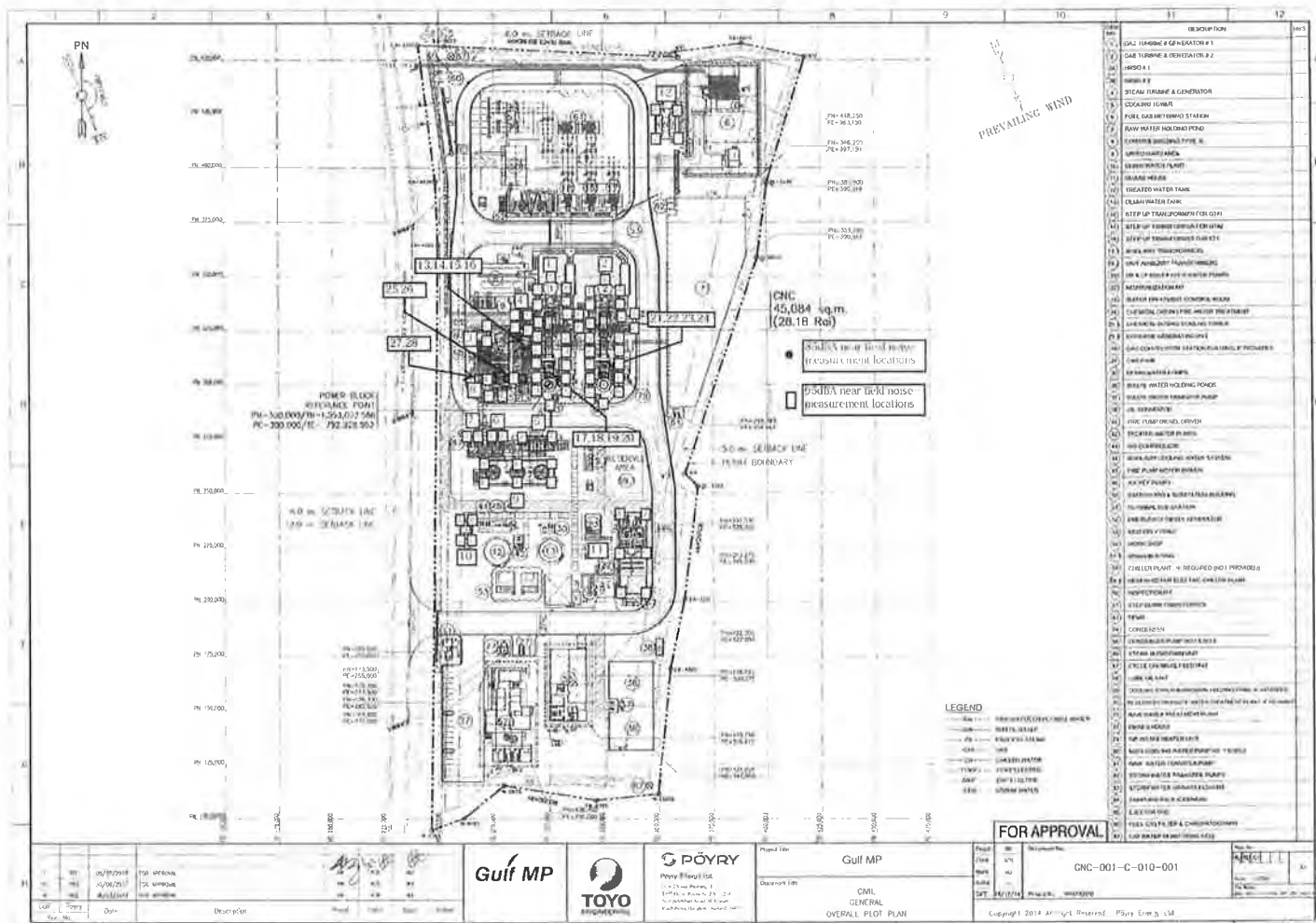
Rev. 3/

1

Date :

2018/1/28

Sr. #	KKS tag	Equipment	Type of test	Remarks
		For 85 dBA near field noise		
1	11MB, 11HA	GTG11&HRSG11	85dBA	
2	12MB, 12HA	GTG12&HRSG12	85dBA	
3	10MA	STG	85dBA	
4	10LAC11AP001, 10LAC12AP001, 10LAC12AP001	BFW pumps	85dBA	
5	10PAC11AP001, 10PAC12AP001	MCW pumps	85dBA	
6	10PCC11AP001, 10PCC12AP001	ACW pumps	85dBA	
7	10PGC11AP001, 10PGC12AP001	CCW pumps	85dBA	
8	10LCB10AP001, 10LCB20AP001	Condensate pumps	85dBA	
9	10PAD91AN001, 10PAD92AN001, 10PAD93AN001	Cooling tower fans	85dBA	
10	10QEA	Air compressor package	85dBA	
11	10GC	Water treatment plant	85dBA	
12	10EKH	Fuel gas compressor package	85dBA	
		For 95 dBA near field noise		
13	11LBH10BS001	HRSG11 HP start up vent silencer	95dBA	
14	11LBH65BS001	HRSG11 LP start up vent silencer	95dBA	
15	12LBH10BS001	HRSG12 HP start up vent silencer	95dBA	
16	12LBH65BS001	HRSG12 LP start up vent silencer	95dBA	
17	11LBA10BS201	HRSG11 HP superheater safety valve silencer	95dBA	
18	11LBA50BS201	HRSG11 LP superheater safety valve silencer	95dBA	
19	11HAD10BS201	HRSG11 HP drum safety valve silencer	95dBA	
20	11HAD50BS201	HRSG11 LP drum safety valve silencer	95dBA	
21	12LBA10BS201	HRSG12 HP superheater safety valve silencer	95dBA	
22	12LBA50BS201	HRSG12 LP superheater safety valve silencer	95dBA	
23	12HAD10BS201	HRSG12 HP drum safety valve silencer	95dBA	
24	12HAD50BS201	HRSG12 LP drum safety valve silencer	95dBA	
25	11MAN40AA001	HRSG 11 HP turbine bypass valve	95dBA	
26	11MAN10AA001	HRSG 11 LP turbine bypass valve	95dBA	
27	12MAN40AA001	HRSG 12 HP turbine bypass valve	95dBA	
28	12MAN10AA001	HRSG 12 LP turbine bypass valve	95dBA	



Near field noise (85dBA)
(To follow)

Near field noise (95dBA)
Start up vent silencers



Report No. : 2018-00090 / 001-6 (Page 1 of 6)

Issued date : February 8, 2018

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Tel. 085-020-0134 Email : osamu.yamasaki@toyo-eng.com

Analysis Report

SAMPLE DESIGNATED AS : Noise Level MEASUREMENT DATE : February 7, 2018
MEASUREMENT LOCATION : HRS G11 HP&LP start up vent silencer, GNC MEASURED BY : Suriya Srithomee
CALIBRATION DATA : Calibrator Model CR-515, Cemus Research plc. Serial No. 81969
Calibration Value Reference : 94.0 dB(A), Pre Cal. : 93.7 dB(A), Post Cal. : 93.7 dB(A)
SOUND LEVEL METER NO. : Model CR-161B, Serial No. G080136

Noise Level [dB(A)] : February 7, 2018					
Time	Leq 10 sec	Time	Leq 10 sec	Time	Leq 10 sec
7:58:19 - 7:58:29	81.5	8:03:19 - 8:03:29	70.6	8:08:19 - 8:08:29	74.0
7:58:29 - 7:58:39	70.3	8:03:29 - 8:03:39	74.3	8:08:29 - 8:08:39	73.8
7:58:39 - 7:58:49	70.1	8:03:39 - 8:03:49	74.2	8:08:39 - 8:08:49	73.0
7:58:49 - 7:58:59	70.1	8:03:49 - 8:03:59	72.4	8:08:49 - 8:08:59	72.8
7:58:59 - 7:59:09	70.0	8:03:59 - 8:04:09	72.9	8:08:59 - 8:09:09	73.6
7:59:09 - 7:59:19	70.0	8:04:09 - 8:04:19	75.1	8:09:09 - 8:09:19	73.7
7:59:19 - 7:59:29	70.8	8:04:19 - 8:04:29	72.9	8:09:19 - 8:09:29	73.0
7:59:29 - 7:59:39	70.2	8:04:29 - 8:04:39	73.4	8:09:29 - 8:09:39	72.8
7:59:39 - 7:59:49	71.5	8:04:39 - 8:04:49	73.3	8:09:39 - 8:09:49	74.0
7:59:49 - 7:59:59	70.2	8:04:49 - 8:04:59	74.2	8:09:49 - 8:09:59	73.5
7:59:59 - 8:00:09	70.0	8:04:59 - 8:05:09	73.7	8:09:59 - 8:10:09	74.1
8:00:09 - 8:00:19	69.9	8:05:09 - 8:05:19	73.6	8:10:09 - 8:10:19	73.8
8:00:19 - 8:00:29	69.8	8:05:19 - 8:05:29	73.4	8:10:19 - 8:10:29	73.8
8:00:29 - 8:00:39	69.8	8:05:29 - 8:05:39	73.4	8:10:29 - 8:10:39	74.2
8:00:39 - 8:00:49	70.2	8:05:39 - 8:05:49	73.0	8:10:39 - 8:10:49	74.1
8:00:49 - 8:00:59	71.3	8:05:49 - 8:05:59	72.5	8:10:49 - 8:10:59	74.3
8:00:59 - 8:01:09	70.6	8:05:59 - 8:06:09	72.8	8:10:59 - 8:11:09	75.0
8:01:09 - 8:01:19	72.6	8:06:09 - 8:06:19	73.3	8:11:09 - 8:11:19	74.3
8:01:19 - 8:01:29	70.6	8:06:19 - 8:06:29	73.7	8:11:19 - 8:11:29	74.9
8:01:29 - 8:01:39	70.6	8:06:29 - 8:06:39	73.7	8:11:29 - 8:11:39	72.5
8:01:39 - 8:01:49	70.7	8:06:39 - 8:06:49	74.4	8:11:39 - 8:11:49	72.9
8:01:49 - 8:01:59	71.3	8:06:49 - 8:06:59	73.9	8:11:49 - 8:11:59	73.6
8:01:59 - 8:02:09	70.4	8:06:59 - 8:07:09	73.0	8:11:59 - 8:12:09	73.2
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8:02:19 - 8:02:29	70.3	8:07:19 - 8:07:29	73.7	8:12:19 - 8:12:29	77.3
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8:02:39 - 8:02:49	70.6	8:07:39 - 8:07:49	73.3	8:12:39 - 8:12:49	77.3
8:02:49 - 8:02:59	70.6	8:07:49 - 8:07:59	73.2	8:12:49 - 8:12:59	77.3
8:02:59 - 8:03:09	70.6	8:07:59 - 8:08:09	72.7	8:12:59 - 8:13:09	77.5
8:03:09 - 8:03:19	70.5	8:08:09 - 8:08:19	73.1	8:13:09 - 8:13:19	77.4
Guaranteed Value*		95	dB(A)		



Report No. : 2018-00090 / 001-6 (Page 2 of 6)

Issued date : February 8, 2018

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Noise Level [dB(A)] : February 7, 2018					
Time	Leq 10 sec	Time	Leq 10 sec	Time	Leq 10 sec
8:13:19 - 8:13:29	77.4	8:18:19 - 8:18:29	77.3	8:23:19 - 8:23:29	84.8
8:13:29 - 8:13:39	77.3	8:18:29 - 8:18:39	77.3	8:23:29 - 8:23:39	84.6
8:13:39 - 8:13:49	77.3	8:18:39 - 8:18:49	76.9	8:23:39 - 8:23:49	84.8
8:13:49 - 8:13:59	77.3	8:18:49 - 8:18:59	77.1	8:23:49 - 8:23:59	84.9
8:13:59 - 8:14:09	77.4	8:18:59 - 8:19:09	77.6	8:23:59 - 8:24:09	85.1
8:14:09 - 8:14:19	77.4	8:19:09 - 8:19:19	78.1	8:24:09 - 8:24:19	85.4
8:14:19 - 8:14:29	77.4	8:19:19 - 8:19:29	78.8	8:24:19 - 8:24:29	85.4
8:14:29 - 8:14:39	77.4	8:19:29 - 8:19:39	79.4	8:24:29 - 8:24:39	85.2
8:14:39 - 8:14:49	77.4	8:19:39 - 8:19:49	80.2	8:24:39 - 8:24:49	85.2
8:14:49 - 8:14:59	77.4	8:19:49 - 8:19:59	80.6	8:24:49 - 8:24:59	85.4
8:14:59 - 8:15:09	77.4	8:19:59 - 8:20:09	81.2	8:24:59 - 8:25:09	85.4
8:15:09 - 8:15:19	77.5	8:20:09 - 8:20:19	81.7	8:25:09 - 8:25:19	85.7
8:15:19 - 8:15:29	77.4	8:20:19 - 8:20:29	82.1	8:25:19 - 8:25:29	86.0
8:15:29 - 8:15:39	77.5	8:20:29 - 8:20:39	82.3	8:25:29 - 8:25:39	86.1
8:15:39 - 8:15:49	77.5	8:20:39 - 8:20:49	82.6	8:25:39 - 8:25:49	86.3
8:15:49 - 8:15:59	77.5	8:20:49 - 8:20:59	82.9	8:25:49 - 8:25:59	86.3
8:15:59 - 8:16:09	77.5	8:20:59 - 8:21:09	83.4	8:25:59 - 8:26:09	86.5
8:16:09 - 8:16:19	77.5	8:21:09 - 8:21:19	83.8	8:26:09 - 8:26:19	86.5
8:16:19 - 8:16:29	77.5	8:21:19 - 8:21:29	84.0	8:26:19 - 8:26:29	86.4
8:16:29 - 8:16:39	77.6	8:21:29 - 8:21:39	84.0	8:26:29 - 8:26:39	86.5
8:16:39 - 8:16:49	77.4	8:21:39 - 8:21:49	84.1	8:26:39 - 8:26:49	86.3
8:16:49 - 8:16:59	77.4	8:21:49 - 8:21:59	84.1	8:26:49 - 8:26:59	86.5
8:16:59 - 8:17:09	77.5	8:21:59 - 8:22:09	84.0	8:26:59 - 8:27:09	86.6
8:17:09 - 8:17:19	77.4	8:22:09 - 8:22:19	84.1	8:27:09 - 8:27:19	86.3
8:17:19 - 8:17:29	77.4	8:22:19 - 8:22:29	84.4	8:27:19 - 8:27:29	86.1
8:17:29 - 8:17:39	77.5	8:22:29 - 8:22:39	84.4	8:27:29 - 8:27:39	86.2
8:17:39 - 8:17:49	77.5	8:22:39 - 8:22:49	84.3	8:27:39 - 8:27:49	86.3
8:17:49 - 8:17:59	77.4	8:22:49 - 8:22:59	84.4	8:27:49 - 8:27:59	86.4
8:17:59 - 8:18:09	77.6	8:22:59 - 8:23:09	84.6	8:27:59 - 8:28:09	86.4
8:18:09 - 8:18:19	77.5	8:23:09 - 8:23:19	84.7	8:28:09 - 8:28:19	86.3
Guaranteed Value*		95	dB(A)		

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E 165727

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Report No. : 2018-00090 / 001-6 (Page 3 of 6)

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Analysis Report

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SOUND LEVEL METER NO. : Model CR:161B, Serial No. G080136

Noise Level [dB(A)] : February 7, 2018					
Time	Leq 10 sec	Time	Leq 10 sec	Time	Leq 10 sec
8:28:19	86.3	8:33:19	87.3	8:38:19	84.8
8:28:29	86.2	8:33:29	87.3	8:38:29	78.5
8:28:39	86.2	8:33:39	87.2	8:38:39	78.3
8:28:49	86.2	8:33:49	87.1	8:38:49	84.1
8:28:59	86.3	8:33:59	87.2	8:38:59	85.2
8:29:09	86.4	8:34:09	87.2	8:39:09	85.7
8:29:19	86.5	8:34:19	87.1	8:39:19	86.5
8:29:29	86.5	8:34:29	86.9	8:39:29	86.6
8:29:39	86.8	8:34:39	86.8	8:39:39	87.2
8:29:49	86.7	8:34:49	86.7	8:39:49	87.3
8:29:59	86.8	8:34:59	86.7	8:39:59	87.6
8:30:09	86.7	8:35:09	86.6	8:40:09	88.0
8:30:19	86.7	8:35:19	86.6	8:40:19	88.4
8:30:29	86.7	8:35:29	86.5	8:40:29	88.6
8:30:39	86.7	8:35:39	86.4	8:40:39	88.6
8:30:49	86.8	8:35:49	86.4	8:40:49	88.9
8:30:59	86.7	8:35:59	86.2	8:40:59	89.3
8:31:09	86.7	8:36:09	86.3	8:41:09	89.3
8:31:19	86.9	8:36:19	86.4	8:41:19	89.5
8:31:29	87.0	8:36:29	86.4	8:41:29	89.4
8:31:39	87.0	8:36:39	86.2	8:41:39	89.6
8:31:49	87.0	8:36:49	86.2	8:41:49	89.6
8:31:59	87.1	8:36:59	86.3	8:41:59	89.7
8:32:09	87.1	8:37:09	86.5	8:42:09	89.8
8:32:19	87.1	8:37:19	86.5	8:42:19	89.8
8:32:29	87.3	8:37:29	86.2	8:42:29	89.1
8:32:39	87.3	8:37:39	85.9	8:42:39	89.8
8:32:49	87.4	8:37:49	85.7	8:42:49	89.1
8:32:59	87.5	8:37:59	85.9	8:42:59	89.7
8:33:09	87.5	8:38:09	85.8	8:43:09	89.6
Guaranteed Value*		95		dB(A)	



Report No. : 2018-00090 / 001-6 (Page 4 of 6)

Issued date : February 8, 2018

CLIENT : TOYO ENGINEERING CORPORATION
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Tel. 085-020-0134
Email : osamu.yamasaki@toyo-eng.com

Analysis Report

SAMPLE DESIGNATED AS : Noise Level MEASUREMENT DATE : February 7, 2018
MEASUREMENT LOCATION : HRSG11 HP&LP start up vent silencer, GNC MEASURED BY : Suriya Srithomee
CALIBRATION DATA : Calibrator Model CR:515, Cerus Research plc. Serial No. 81969
Calibration Value Reference : 94.0 dB(A), Pre Cal. : 93.7 dB(A), Post Cal. : 93.7 dB(A)
SOUND LEVEL METER NO. : Model CR:161B, Serial No. G080136

Noise Level [dB(A)] : February 7, 2018					
Time	Leq 10 sec	Time	Leq 10 sec	Time	Leq 10 sec
8:43:19	90.1	8:48:19	90.8	8:53:19	90.9
8:43:29	90.4	8:48:29	90.7	8:53:29	90.7
8:43:39	90.8	8:48:39	90.8	8:53:39	91.0
8:43:49	91.0	8:48:49	90.7	8:53:49	90.6
8:43:59	91.1	8:48:59	90.7	8:53:59	90.8
8:44:09	91.1	8:49:09	90.8	8:54:09	90.9
8:44:19	91.1	8:49:19	90.9	8:54:19	90.6
8:44:29	91.0	8:49:29	90.7	8:54:29	91.0
8:44:39	91.3	8:49:39	90.9	8:54:39	90.8
8:44:49	91.0	8:49:49	90.7	8:54:49	90.7
8:44:59	91.1	8:49:59	90.8	8:54:59	91.1
8:45:09	91.2	8:50:09	90.9	8:55:09	90.7
8:45:19	91.1	8:50:19	90.6	8:55:19	90.9
8:45:29	91.3	8:50:29	90.9	8:55:29	91.1
8:45:39	91.1	8:50:39	90.7	8:55:39	90.7
8:45:49	91.4	8:50:49	90.9	8:55:49	91.0
8:45:59	91.1	8:50:59	90.7	8:55:59	90.7
8:46:09	91.0	8:51:09	91.1	8:56:09	91.0
8:46:19	91.1	8:51:19	90.9	8:56:19	90.9
8:46:29	91.1	8:51:29	91.1	8:56:29	90.7
8:46:39	91.1	8:51:39	90.9	8:56:39	91.0
8:46:49	91.0	8:51:49	91.0	8:56:49	90.6
8:46:59	90.9	8:51:59	90.8	8:56:59	90.8
8:47:09	91.2	8:52:09	91.0	8:57:09	90.9
8:47:19	90.9	8:52:19	90.7	8:57:19	90.5
8:47:29	91.1	8:52:29	90.8	8:57:29	91.0
8:47:39	90.8	8:52:39	90.8	8:57:39	90.9
8:47:49	90.9	8:52:49	90.9	8:57:49	90.8
8:47:59	90.7	8:52:59	90.7	8:57:59	91.2
8:48:09	90.8	8:53:09	90.9	8:58:09	90.8
Guaranteed Value*		95		dB(A)	

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Report No. : 2018-00090 / 001-6 (Page 5 of 6)

Issued date : February 8, 2018

CLIENT : TOYO ENGINEERING CORPORATION
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Analysis Report

SAMPLE DESIGNATED AS : Noise Level MEASUREMENT DATE : February 7, 2018
MEASUREMENT LOCATION : HRSG11 HP&LP start up vent silencer, GNC MEASURED BY : Suriya Srithomee
CALIBRATION DATA : Calibrator Model CR:515, Cernus Research plc. Serial No. 81969
Calibration Value Reference : 94.0 dB(A), Pre Cal. : 93.7 dB(A), Post Cal. : 93.7 dB(A)
SOUND LEVEL METER NO. : Model CR:161B, Serial No. G080136

Noise Level [dB(A)] : February 7, 2018					
Time	Leq 10 sec	Time	Leq 10 sec	Time	Leq 10 sec
8:58:19	91.0	9:03:19	91.0	9:08:19	89.4
8:58:29	91.2	9:03:29	90.7	9:08:29	89.5
8:58:39	90.9	9:03:39	90.8	9:08:39	89.1
8:58:49	91.2	9:03:49	90.9	9:08:49	88.7
8:58:59	90.9	9:03:59	90.8	9:08:59	88.7
8:59:09	90.7	9:04:09	88.5	9:09:09	88.0
8:59:19	91.0	9:04:19	88.5	9:09:19	88.2
8:59:29	90.8	9:04:29	87.6	9:09:29	88.0
8:59:39	90.9	9:04:39	86.9	9:09:39	87.4
8:59:49	91.0	9:04:49	86.5	9:09:49	88.0
8:59:59	90.6	9:04:59	86.1	9:09:59	87.0
9:00:09	90.9	9:05:09	85.6	9:10:09	86.8
9:00:19	90.6	9:05:19	85.2	9:10:19	87.2
9:00:29	90.7	9:05:29	82.2	9:10:29	85.9
9:00:39	91.0	9:05:39	85.0	9:10:39	86.3
9:00:49	90.7	9:05:49	86.1	9:10:49	86.3
9:00:59	90.9	9:05:59	86.0	9:10:59	84.9
9:01:09	91.0	9:06:09	86.6	9:11:09	85.9
9:01:19	90.7	9:06:19	87.2	9:11:19	83.8
9:01:29	91.0	9:06:29	87.6	9:11:29	83.9
9:01:39	90.8	9:06:39	87.6	9:11:39	83.8
9:01:49	90.7	9:06:49	87.7	9:11:49	83.8
9:01:59	91.0	9:06:59	87.7	9:11:59	83.9
9:02:09	90.6	9:07:09	87.0	9:12:09	83.8
9:02:19	90.7	9:07:19	88.4	9:12:19	83.9
9:02:29	90.9	9:07:29	89.4	9:12:29	83.9
9:02:39	90.6	9:07:39	90.2	9:12:39	80.7
9:02:49	90.9	9:07:49	89.7	9:12:49	83.7
9:02:59	90.7	9:07:59	90.3	9:12:59	82.5
9:03:09	90.7	9:08:09	90.1	9:13:09	78.8
9:03:19	90.7	9:08:19	90.1	9:13:19	78.8
Guaranteed Value* 95 dB(A)					



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Issued date : February 8, 2018

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Analysis Report

SAMPLE DESIGNATED AS : Noise Level MEASUREMENT DATE : February 7, 2018
MEASUREMENT LOCATION : HRSG11 HP&LP start up vent silencer, GNC MEASURED BY : Suriya Srithomee
CALIBRATION DATA : Calibrator Model CR:515, Cernus Research plc. Serial No. 81969
Calibration Value Reference : 94.0 dB(A), Pre Cal. : 93.7 dB(A), Post Cal. : 93.7 dB(A)
SOUND LEVEL METER NO. : Model CR:161B, Serial No. G080136

Noise Level [dB(A)] : February 7, 2018					
Time	Leq 10 sec	Time	Leq 10 sec	Time	Leq 10 sec
9:13:19	78.8	9:15:09	78.8	9:16:59	80.1
9:13:29	78.9	9:15:19	78.8	9:17:09	80.0
9:13:39	79.0	9:15:29	78.8	9:17:19	79.8
9:13:49	82.0	9:15:39	79.0	9:17:29	79.6
9:13:59	78.3	9:15:49	78.9	9:17:39	79.6
9:14:09	79.0	9:15:59	84.3	9:17:49	79.6
9:14:19	78.9	9:16:09	81.8	9:17:59	79.6
9:14:29	79.0	9:16:19	80.4	9:18:09	79.8
9:14:39	79.0	9:16:29	79.2	9:18:19	79.6
9:14:49	79.0	9:16:39	79.2		
9:14:59	78.8	9:16:49	79.8		
Guaranteed Value* 95 dB(A)					

Source : * Guaranteed Value of GNC Power Plant

Siriporn Imwilaiwan
(Siriporn Imwilaiwan)
Environmental Monitoring Manager

Thapson Yommana
(Thapson Yommana)
Technical Manager



TY/SS/AS/CJ

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Report No. : 2018-00090 / 001-7 (Page 1 of 5)

Issued date : February 8, 2018

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Analysis Report

SAMPLE DESIGNATED AS : Noise Level MEASUREMENT DATE : February 7, 2018
 MEASUREMENT LOCATION : HRS12 HP&LP start up vent silencer, GNC MEASURED BY : Suriya Srithomee
 CALIBRATION DATA : Calibrator Model CR:515, Cerus Research plc. Serial No. 81969
 Calibration Value Reference : 94.0 dB(A), Pre Cal. : 93.7 dB(A), Post Cal. : 93.7 dB(A)
 SOUND LEVEL METER NO. : Model CR:161B, Serial No. G080136

Noise Level [dB(A)] : February 7, 2018					
Time	Leq 10 sec	Time	Leq 10 sec	Time	Leq 10 sec
9:46:05 - 9:46:15	78.5	9:51:05 - 9:51:15	78.5	9:56:05 - 9:56:15	78.7
9:46:15 - 9:46:25	78.7	9:51:15 - 9:51:25	78.7	9:56:15 - 9:56:25	78.8
9:46:25 - 9:46:35	78.7	9:51:25 - 9:51:35	78.5	9:56:25 - 9:56:35	78.8
9:46:35 - 9:46:45	78.8	9:51:35 - 9:51:45	78.5	9:56:35 - 9:56:45	78.4
9:46:45 - 9:46:55	78.7	9:51:45 - 9:51:55	78.6	9:56:45 - 9:56:55	78.5
9:46:55 - 9:47:05	78.6	9:51:55 - 9:52:05	78.6	9:56:55 - 9:57:05	78.7
9:47:05 - 9:47:15	78.4	9:52:05 - 9:52:15	78.7	9:57:05 - 9:57:15	78.8
9:47:15 - 9:47:25	78.6	9:52:15 - 9:52:25	78.6	9:57:15 - 9:57:25	78.8
9:47:25 - 9:47:35	78.7	9:52:25 - 9:52:35	78.4	9:57:25 - 9:57:35	78.8
9:47:35 - 9:47:45	78.7	9:52:35 - 9:52:45	78.3	9:57:35 - 9:57:45	78.9
9:47:45 - 9:47:55	78.7	9:52:45 - 9:52:55	78.5	9:57:45 - 9:57:55	78.8
9:47:55 - 9:48:05	78.8	9:52:55 - 9:53:05	78.5	9:57:55 - 9:58:05	78.7
9:48:05 - 9:48:15	78.6	9:53:05 - 9:53:15	78.5	9:58:05 - 9:58:15	78.7
9:48:15 - 9:48:25	78.6	9:53:15 - 9:53:25	78.5	9:58:15 - 9:58:25	78.8
9:48:25 - 9:48:35	78.6	9:53:25 - 9:53:35	78.5	9:58:25 - 9:58:35	79.0
9:48:35 - 9:48:45	78.5	9:53:35 - 9:53:45	78.6	9:58:35 - 9:58:45	78.9
9:48:45 - 9:48:55	78.7	9:53:45 - 9:53:55	78.6	9:58:45 - 9:58:55	78.9
9:48:55 - 9:49:05	78.7	9:53:55 - 9:54:05	78.5	9:58:55 - 9:59:05	79.0
9:49:05 - 9:49:15	78.6	9:54:05 - 9:54:15	78.5	9:59:05 - 9:59:15	79.1
9:49:15 - 9:49:25	79.0	9:54:15 - 9:54:25	78.6	9:59:15 - 9:59:25	79.0
9:49:25 - 9:49:35	78.6	9:54:25 - 9:54:35	78.6	9:59:25 - 9:59:35	79.1
9:49:35 - 9:49:45	78.5	9:54:35 - 9:54:45	78.7	9:59:35 - 9:59:45	79.3
9:49:45 - 9:49:55	78.4	9:54:45 - 9:54:55	78.7	9:59:45 - 9:59:55	79.4
9:49:55 - 9:50:05	78.4	9:54:55 - 9:55:05	78.8	9:59:55 - 10:00:05	79.3
9:50:05 - 9:50:15	78.4	9:55:05 - 9:55:15	78.7	10:00:05 - 10:00:15	79.1
9:50:15 - 9:50:25	78.6	9:55:15 - 9:55:25	78.4	10:00:15 - 10:00:25	79.0
9:50:25 - 9:50:35	78.6	9:55:25 - 9:55:35	78.4	10:00:25 - 10:00:35	78.9
9:50:35 - 9:50:45	78.6	9:55:35 - 9:55:45	78.4	10:00:35 - 10:00:45	78.9
9:50:45 - 9:50:55	78.7	9:55:45 - 9:55:55	78.5	10:00:45 - 10:00:55	78.8
9:50:55 - 9:51:05	78.8	9:55:55 - 9:56:05	78.6	10:00:55 - 10:01:05	78.8
Guaranteed Value*		95	dB(A)		



Report No. : 2018-00090 / 001-7 (Page 2 of 5)

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Analysis Report

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 Calibration Value Reference : 94.0 dB(A), Pre Cal. : 93.7 dB(A), Post Cal. : 93.7 dB(A)
 SOUND LEVEL METER NO. : Model CR:161B, Serial No. G080136

Noise Level [dB(A)] : February 7, 2018					
Time	Leq 10 sec	Time	Leq 10 sec	Time	Leq 10 sec
10:01:05 - 10:01:15	78.9	10:06:05 - 10:06:15	84.8	10:11:05 - 10:11:15	87.7
10:01:15 - 10:01:25	79.1	10:06:15 - 10:06:25	83.1	10:11:15 - 10:11:25	85.2
10:01:25 - 10:01:35	79.1	10:06:25 - 10:06:35	85.6	10:11:25 - 10:11:35	87.8
10:01:35 - 10:01:45	79.1	10:06:35 - 10:06:45	85.6	10:11:35 - 10:11:45	88.1
10:01:45 - 10:01:55	78.9	10:06:45 - 10:06:55	85.8	10:11:45 - 10:11:55	87.9
10:01:55 - 10:02:05	77.7	10:06:55 - 10:07:05	84.7	10:11:55 - 10:12:05	88.1
10:02:05 - 10:02:15	77.8	10:07:05 - 10:07:15	84.5	10:12:05 - 10:12:15	87.4
10:02:15 - 10:02:25	78.1	10:07:15 - 10:07:25	85.2	10:12:15 - 10:12:25	86.9
10:02:25 - 10:02:35	78.5	10:07:25 - 10:07:35	86.2	10:12:25 - 10:12:35	88.2
10:02:35 - 10:02:45	79.3	10:07:35 - 10:07:45	85.5	10:12:35 - 10:12:45	88.1
10:02:45 - 10:02:55	80.2	10:07:45 - 10:07:55	84.8	10:12:45 - 10:12:55	88.4
10:02:55 - 10:03:05	80.4	10:07:55 - 10:08:05	84.1	10:12:55 - 10:13:05	88.8
10:03:05 - 10:03:15	80.8	10:08:05 - 10:08:15	83.6	10:13:05 - 10:13:15	88.9
10:03:15 - 10:03:25	81.2	10:08:15 - 10:08:25	85.9	10:13:15 - 10:13:25	88.7
10:03:25 - 10:03:35	81.3	10:08:25 - 10:08:35	86.4	10:13:25 - 10:13:35	86.9
10:03:35 - 10:03:45	81.5	10:08:35 - 10:08:45	85.7	10:13:35 - 10:13:45	88.4
10:03:45 - 10:03:55	79.9	10:08:45 - 10:08:55	87.1	10:13:45 - 10:13:55	87.3
10:03:55 - 10:04:05	78.8	10:08:55 - 10:09:05	87.2	10:13:55 - 10:14:05	86.7
10:04:05 - 10:04:15	80.0	10:09:05 - 10:09:15	85.9	10:14:05 - 10:14:15	87.0
10:04:15 - 10:04:25	81.0	10:09:15 - 10:09:25	86.8	10:14:15 - 10:14:25	89.1
10:04:25 - 10:04:35	81.4	10:09:25 - 10:09:35	87.5	10:14:25 - 10:14:35	88.8
10:04:35 - 10:04:45	82.2	10:09:35 - 10:09:45	87.7	10:14:35 - 10:14:45	86.4
10:04:45 - 10:04:55	82.7	10:09:45 - 10:09:55	88.0	10:14:45 - 10:14:55	89.2
10:04:55 - 10:05:05	82.2	10:09:55 - 10:10:05	88.0	10:14:55 - 10:15:05	88.8
10:05:05 - 10:05:15	82.9	10:10:05 - 10:10:15	87.7	10:15:05 - 10:15:15	89.5
10:05:15 - 10:05:25	82.7	10:10:15 - 10:10:25	87.8	10:15:15 - 10:15:25	88.8
10:05:25 - 10:05:35	85.2	10:10:25 - 10:10:35	87.7	10:15:25 - 10:15:35	87.7
10:05:35 - 10:05:45	85.5	10:10:35 - 10:10:45	87.9	10:15:35 - 10:15:45	88.0
10:05:45 - 10:05:55	84.7	10:10:45 - 10:10:55	87.9	10:15:45 - 10:15:55	88.2
10:05:55 - 10:06:05	84.5	10:10:55 - 10:11:05	86.2	10:15:55 - 10:16:05	86.3
Guaranteed Value*		95	dB(A)		

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E 165733

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Report No. : 2018-00090 / 001-7 (Page 3 of 5)

Issued date : February 8, 2018

CLIENT : TOYO ENGINEERING CORPORATION
CONTACT : Mr. Osamu Yamasaki
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Rajchathewi, Bangkok 10400
Tel. 085-020-0134
Email : osamu.yamasaki@toyo-eng.com

Analysis Report

SAMPLE DESIGNATED AS : Noise Level MEASUREMENT DATE : February 7, 2018
MEASUREMENT LOCATION : HRS12 HP&LP start up vent silencer, GNC MEASURED BY : Suriya Srithomee
CALIBRATION DATA : Calibrator Model CR:515, Cerus Research plc. Serial No. 81969
Calibration Value Reference : 94.0 dB(A), Pre Cal. : 93.7 dB(A), Post Cal. : 93.7 dB(A)
SOUND LEVEL METER NO. : Model CR:161B, Serial No. G080136

Noise Level [dB(A)] : February 7, 2018					
Time	Leq 10 sec	Time	Leq 10 sec	Time	Leq 10 sec
10:16:05 - 10:16:15	88.1	10:21:05 - 10:21:15	87.1	10:26:05 - 10:26:15	83.9
10:16:15 - 10:16:25	87.8	10:21:15 - 10:21:25	86.9	10:26:15 - 10:26:25	83.6
10:16:25 - 10:16:35	88.0	10:21:25 - 10:21:35	87.1	10:26:25 - 10:26:35	84.1
10:16:35 - 10:16:45	88.1	10:21:35 - 10:21:45	87.0	10:26:35 - 10:26:45	85.0
10:16:45 - 10:16:55	88.1	10:21:45 - 10:21:55	87.1	10:26:45 - 10:26:55	85.9
10:16:55 - 10:17:05	88.0	10:21:55 - 10:22:05	87.0	10:26:55 - 10:27:05	86.7
10:17:05 - 10:17:15	87.2	10:22:05 - 10:22:15	87.0	10:27:05 - 10:27:15	87.1
10:17:15 - 10:17:25	86.7	10:22:15 - 10:22:25	87.0	10:27:15 - 10:27:25	87.2
10:17:25 - 10:17:35	87.1	10:22:25 - 10:22:35	87.0	10:27:25 - 10:27:35	87.5
10:17:35 - 10:17:45	87.0	10:22:35 - 10:22:45	87.0	10:27:35 - 10:27:45	87.9
10:17:45 - 10:17:55	87.0	10:22:45 - 10:22:55	86.7	10:27:45 - 10:27:55	88.2
10:17:55 - 10:18:05	86.9	10:22:55 - 10:23:05	86.7	10:27:55 - 10:28:05	88.6
10:18:05 - 10:18:15	86.7	10:23:05 - 10:23:15	86.7	10:28:05 - 10:28:15	88.9
10:18:15 - 10:18:25	86.7	10:23:15 - 10:23:25	86.6	10:28:15 - 10:28:25	88.9
10:18:25 - 10:18:35	86.8	10:23:25 - 10:23:35	86.6	10:28:25 - 10:28:35	89.2
10:18:35 - 10:18:45	86.9	10:23:35 - 10:23:45	86.6	10:28:35 - 10:28:45	89.3
10:18:45 - 10:18:55	86.8	10:23:45 - 10:23:55	86.6	10:28:45 - 10:28:55	89.1
10:18:55 - 10:19:05	86.7	10:23:55 - 10:24:05	86.6	10:28:55 - 10:29:05	89.2
10:19:05 - 10:19:15	86.8	10:24:05 - 10:24:15	86.7	10:29:05 - 10:29:15	89.3
10:19:15 - 10:19:25	86.8	10:24:15 - 10:24:25	86.7	10:29:15 - 10:29:25	89.4
10:19:25 - 10:19:35	86.8	10:24:25 - 10:24:35	86.7	10:29:25 - 10:29:35	89.5
10:19:35 - 10:19:45	86.7	10:24:35 - 10:24:45	86.6	10:29:35 - 10:29:45	89.8
10:19:45 - 10:19:55	86.8	10:24:45 - 10:24:55	86.5	10:29:45 - 10:29:55	90.0
10:19:55 - 10:20:05	86.8	10:24:55 - 10:25:05	86.7	10:29:55 - 10:30:05	90.2
10:20:05 - 10:20:15	86.7	10:25:05 - 10:25:15	86.6	10:30:05 - 10:30:15	90.4
10:20:15 - 10:20:25	86.8	10:25:15 - 10:25:25	86.6	10:30:15 - 10:30:25	90.5
10:20:25 - 10:20:35	86.9	10:25:25 - 10:25:35	86.7	10:30:25 - 10:30:35	90.5
10:20:35 - 10:20:45	87.0	10:25:35 - 10:25:45	86.8	10:30:35 - 10:30:45	90.6
10:20:45 - 10:20:55	87.0	10:25:45 - 10:25:55	86.7	10:30:45 - 10:30:55	90.7
10:20:55 - 10:21:05	86.9	10:25:55 - 10:26:05	86.4	10:30:55 - 10:31:05	90.9
Guaranteed Value*		95	dB(A)		



Report No. : 2018-00090 / 001-7 (Page 4 of 5)

Issued date : February 8, 2018

CLIENT : TOYO ENGINEERING CORPORATION
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Tel. 085-020-0134
Email : osamu.yamasaki@toyo-eng.com

Analysis Report

SAMPLE DESIGNATED AS : Noise Level MEASUREMENT DATE : February 7, 2018
MEASUREMENT LOCATION : HRS12 HP&LP start up vent silencer, GNC MEASURED BY : Suriya Srithomee
CALIBRATION DATA : Calibrator Model CR:515, Cerus Research plc. Serial No. 81969
Calibration Value Reference : 94.0 dB(A), Pre Cal. : 93.7 dB(A), Post Cal. : 93.7 dB(A)
SOUND LEVEL METER NO. : Model CR:161B, Serial No. G080136

Noise Level [dB(A)] : February 7, 2018					
Time	Leq 10 sec	Time	Leq 10 sec	Time	Leq 10 sec
10:31:05 - 10:31:15	91.0	10:36:05 - 10:36:15	90.1	10:41:05 - 10:41:15	90.1
10:31:15 - 10:31:25	91.0	10:36:15 - 10:36:25	90.1	10:41:15 - 10:41:25	90.1
10:31:25 - 10:31:35	91.1	10:36:25 - 10:36:35	90.1	10:41:25 - 10:41:35	90.1
10:31:35 - 10:31:45	91.1	10:36:35 - 10:36:45	90.0	10:41:35 - 10:41:45	90.2
10:31:45 - 10:31:55	91.2	10:36:45 - 10:36:55	90.1	10:41:45 - 10:41:55	90.2
10:31:55 - 10:32:05	91.2	10:36:55 - 10:37:05	90.1	10:41:55 - 10:42:05	90.1
10:32:05 - 10:32:15	91.2	10:37:05 - 10:37:15	90.1	10:42:05 - 10:42:15	90.1
10:32:15 - 10:32:25	91.3	10:37:15 - 10:37:25	90.1	10:42:15 - 10:42:25	90.1
10:32:25 - 10:32:35	91.2	10:37:25 - 10:37:35	90.2	10:42:25 - 10:42:35	90.0
10:32:35 - 10:32:45	91.3	10:37:35 - 10:37:45	90.2	10:42:35 - 10:42:45	89.9
10:32:45 - 10:32:55	91.2	10:37:45 - 10:37:55	90.2	10:42:45 - 10:42:55	89.4
10:32:55 - 10:33:05	91.1	10:37:55 - 10:38:05	90.2	10:42:55 - 10:43:05	88.8
10:33:05 - 10:33:15	91.0	10:38:05 - 10:38:15	90.1	10:43:05 - 10:43:15	88.6
10:33:15 - 10:33:25	90.8	10:38:15 - 10:38:25	90.1	10:43:15 - 10:43:25	88.1
10:33:25 - 10:33:35	90.7	10:38:25 - 10:38:35	90.2	10:43:25 - 10:43:35	87.9
10:33:35 - 10:33:45	90.7	10:38:35 - 10:38:45	90.3	10:43:35 - 10:43:45	87.7
10:33:45 - 10:33:55	90.5	10:38:45 - 10:38:55	90.3	10:43:45 - 10:43:55	87.5
10:33:55 - 10:34:05	90.5	10:38:55 - 10:39:05	90.2	10:43:55 - 10:44:05	87.4
10:34:05 - 10:34:15	90.5	10:39:05 - 10:39:15	90.2	10:44:05 - 10:44:15	87.4
10:34:15 - 10:34:25	90.3	10:39:15 - 10:39:25	90.1	10:44:15 - 10:44:25	87.0
10:34:25 - 10:34:35	90.2	10:39:25 - 10:39:35	90.2	10:44:25 - 10:44:35	86.5
10:34:35 - 10:34:45	90.2	10:39:35 - 10:39:45	90.1	10:44:35 - 10:44:45	86.7
10:34:45 - 10:34:55	90.1	10:39:45 - 10:39:55	90.2	10:44:45 - 10:44:55	87.4
10:34:55 - 10:35:05	90.1	10:39:55 - 10:40:05	90.2	10:44:55 - 10:45:05	87.6
10:35:05 - 10:35:15	90.0	10:40:05 - 10:40:15	90.2	10:45:05 - 10:45:15	87.7
10:35:15 - 10:35:25	89.9	10:40:15 - 10:40:25	90.2	10:45:15 - 10:45:25	87.8
10:35:25 - 10:35:35	90.0	10:40:25 - 10:40:35	90.2	10:45:25 - 10:45:35	87.7
10:35:35 - 10:35:45	90.2	10:40:35 - 10:40:45	90.1	10:45:35 - 10:45:45	87.5
10:35:45 - 10:35:55	90.2	10:40:45 - 10:40:55	90.0	10:45:45 - 10:45:55	87.6
10:35:55 - 10:36:05	90.2	10:40:55 - 10:41:05	90.1	10:45:55 - 10:46:05	87.4
Guaranteed Value*		95	dB(A)		

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E 165735

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E 165736

Report No. : 2018-00090 / 001-7 (Page 5 of 5)

Issued date : February 8, 2018

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 Tel. 085-020-0134 Email : osamu.yamasaki@toyo-eng.com

Analysis Report

SAMPLE DESIGNATED AS : Noise Level **MEASUREMENT DATE :** February 7, 2018
MEASUREMENT LOCATION : HRSG12 HP&LP start up vent silencer, GNC **MEASURED BY :** Suriya Srithomee
CALIBRATION DATA : Calibrator Model CR:515, Cernus Research plc Serial No 81969
 Calibration Value Reference : 94.0 dB(A), Pre Cal : 93.7 dB(A), Post Cal : 93.7 dB(A)
SOUND LEVEL METER NO. : Model CR:161B, Serial No. G080136

Noise Level [dB(A)] : February 7, 2018					
Time	Leq 10 sec	Time	Leq 10 sec	Time	Leq 10 sec
10:46:05 - 10:46:15	87.3	10:50:35 - 10:50:45	79.8	10:55:05 - 10:55:15	79.4
10:46:15 - 10:46:25	87.1	10:50:45 - 10:50:55	81.5	10:55:15 - 10:55:25	79.4
10:46:25 - 10:46:35	86.9	10:50:55 - 10:51:05	82.9	10:55:25 - 10:55:35	79.6
10:46:35 - 10:46:45	86.9	10:51:05 - 10:51:15	80.0	10:55:35 - 10:55:45	80.2
10:46:45 - 10:46:55	86.5	10:51:15 - 10:51:25	83.3	10:55:45 - 10:55:55	78.7
10:46:55 - 10:47:05	86.9	10:51:25 - 10:51:35	80.4	10:55:55 - 10:56:05	77.9
10:47:05 - 10:47:15	86.8	10:51:35 - 10:51:45	80.7	10:56:05 - 10:56:15	78.0
10:47:15 - 10:47:25	86.9	10:51:45 - 10:51:55	82.0	10:56:15 - 10:56:25	77.9
10:47:25 - 10:47:35	86.7	10:51:55 - 10:52:05	79.9	10:56:25 - 10:56:35	77.9
10:47:35 - 10:47:45	86.6	10:52:05 - 10:52:15	79.9	10:56:35 - 10:56:45	78.0
10:47:45 - 10:47:55	86.5	10:52:15 - 10:52:25	79.6	10:56:45 - 10:56:55	78.2
10:47:55 - 10:48:05	86.4	10:52:25 - 10:52:35	78.7	10:56:55 - 10:57:05	78.2
10:48:05 - 10:48:15	86.2	10:52:35 - 10:52:45	79.7	10:57:05 - 10:57:15	78.5
10:48:15 - 10:48:25	86.0	10:52:45 - 10:52:55	79.6	10:57:15 - 10:57:25	78.4
10:48:25 - 10:48:35	85.9	10:52:55 - 10:53:05	79.7	10:57:25 - 10:57:35	78.3
10:48:35 - 10:48:45	85.8	10:53:05 - 10:53:15	79.7	10:57:35 - 10:57:45	78.4
10:48:45 - 10:48:55	85.5	10:53:15 - 10:53:25	79.7	10:57:45 - 10:57:55	78.3
10:48:55 - 10:49:05	85.2	10:53:25 - 10:53:35	79.6	10:57:55 - 10:58:05	78.1
10:49:05 - 10:49:15	85.0	10:53:35 - 10:53:45	79.7	10:58:05 - 10:58:15	78.7
10:49:15 - 10:49:25	84.5	10:53:45 - 10:53:55	79.8	10:58:15 - 10:58:25	78.4
10:49:25 - 10:49:35	84.1	10:53:55 - 10:54:05	79.8	10:58:25 - 10:58:35	78.3
10:49:35 - 10:49:45	83.8	10:54:05 - 10:54:15	79.7	10:58:35 - 10:58:45	78.2
10:49:45 - 10:49:55	83.7	10:54:15 - 10:54:25	79.7	10:58:45 - 10:58:55	78.5
10:49:55 - 10:50:05	83.6	10:54:25 - 10:54:35	79.8	10:58:55 - 10:59:05	78.4
10:50:05 - 10:50:15	83.6	10:54:35 - 10:54:45	79.8	10:59:05 - 10:59:15	78.4
10:50:15 - 10:50:25	80.8	10:54:45 - 10:54:55	79.7	10:59:15 - 10:59:25	78.5
10:50:25 - 10:50:35	79.6	10:54:55 - 10:55:05	78.5	10:59:25 - 10:59:35	78.6
Guaranteed Value*		95	dB(A)		

Source : * Guaranteed Value of GNC Power Plant.

Siriporn
 (Siriporn Imwilaiwan)
 Environmental Monitoring Manager



Thapson
 (Thapson Yommana)
 Technical Manager

TY/SS/AS/CJ

E 165737

Near field noise (95dBA)
 Turbine bypass valves



Report No. : 2018-00090 / 001-2 (Page 1 of 1)

Issued date : February 7, 2018

CLIENT : TOYO ENGINEERING CORPORATION
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Tel. 085-020-0134

Email : osamu.yamasaki@toyo-eng.com

Analysis Report

SAMPLE DESIGNATED AS : Noise Level
MEASUREMENT LOCATION : HRSG11 HP turbine bypass valve, GNC
CALIBRATION DATA : Calibrator Model CR:515, Cerrus Research plc
SOUND LEVEL METER NO. : Model CR:161B, Serial No. G080136

MEASUREMENT DATE : February 6, 2018
MEASURED BY : Suriya Srithomee
Serial No. 81969
Calibration Value Reference : 94.0 dB(A), Pre Cal. : 93.7 dB(A), Post Cal. : 93.7 dB(A)

Noise Level [dB(A)] : February 6, 2018					
Time	Leq 10 sec	Time	Leq 10 sec	Time	Leq 10 sec
14:28:05 - 14:28:15	92.5	14:32:05 - 14:32:15	91.7	14:36:05 - 14:36:15	91.9
14:28:15 - 14:28:25	92.1	14:32:15 - 14:32:25	91.8	14:36:15 - 14:36:25	91.8
14:28:25 - 14:28:35	91.8	14:32:25 - 14:32:35	91.8	14:36:25 - 14:36:35	92.0
14:28:35 - 14:28:45	92.0	14:32:35 - 14:32:45	92.0	14:36:35 - 14:36:45	91.7
14:28:45 - 14:28:55	91.8	14:32:45 - 14:32:55	91.9	14:36:45 - 14:36:55	91.9
14:28:55 - 14:29:05	91.9	14:32:55 - 14:33:05	91.9	14:36:55 - 14:37:05	91.8
14:29:05 - 14:29:15	91.9	14:33:05 - 14:33:15	91.6	14:37:05 - 14:37:15	91.7
14:29:15 - 14:29:25	91.8	14:33:15 - 14:33:25	91.8	14:37:15 - 14:37:25	91.6
14:29:25 - 14:29:35	91.8	14:33:25 - 14:33:35	91.8	14:37:25 - 14:37:35	91.6
14:29:35 - 14:29:45	91.7	14:33:35 - 14:33:45	91.8	14:37:35 - 14:37:45	91.6
14:29:45 - 14:29:55	91.9	14:33:45 - 14:33:55	91.7	14:37:45 - 14:37:55	91.5
14:29:55 - 14:30:05	91.8	14:33:55 - 14:34:05	91.7	14:37:55 - 14:38:05	91.5
14:30:05 - 14:30:15	91.8	14:34:05 - 14:34:15	91.9	14:38:05 - 14:38:15	91.6
14:30:15 - 14:30:25	91.7	14:34:15 - 14:34:25	91.9	14:38:15 - 14:38:25	91.7
14:30:25 - 14:30:35	91.8	14:34:25 - 14:34:35	91.9	14:38:25 - 14:38:35	91.6
14:30:35 - 14:30:45	91.7	14:34:35 - 14:34:45	91.7	14:38:35 - 14:38:45	91.9
14:30:45 - 14:30:55	91.5	14:34:45 - 14:34:55	91.9	14:38:45 - 14:38:55	91.8
14:30:55 - 14:31:05	91.6	14:34:55 - 14:35:05	91.8	14:38:55 - 14:39:05	92.2
14:31:05 - 14:31:15	91.6	14:35:05 - 14:35:15	91.8	14:39:05 - 14:39:15	92.2
14:31:15 - 14:31:25	91.6	14:35:15 - 14:35:25	91.7	14:39:15 - 14:39:25	92.3
14:31:25 - 14:31:35	91.6	14:35:25 - 14:35:35	91.7	14:39:25 - 14:39:35	92.2
14:31:35 - 14:31:45	91.6	14:35:35 - 14:35:45	91.7	14:39:35 - 14:39:45	92.2
14:31:45 - 14:31:55	91.6	14:35:45 - 14:35:55	91.8	14:39:45 - 14:39:55	92.3
14:31:55 - 14:32:05	91.6	14:35:55 - 14:36:05	91.7	14:39:55 - 14:40:05	92.2
Guaranteed Value*		95		dB(A)	

Source : * Guaranteed Value of GNC Power Plant.

Singam Z
(Siriporn Imwilaiwan)
Environmental Monitoring Manager



Thompson Y
(Thompson Yommana)
Technical Manager

TY/SS/AS/CJ



Report No. : 2018-00090 / 001-3 (Page 1 of 1)

Issued date : February 7, 2018

CLIENT : TOYO ENGINEERING CORPORATION
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Tel. 085-020-0134

Email : osamu.yamasaki@toyo-eng.com

Analysis Report

SAMPLE DESIGNATED AS : Noise Level
MEASUREMENT LOCATION : HRSG11 LP turbine bypass valve, GNC
CALIBRATION DATA : Calibrator Model CR:515, Cerrus Research plc
SOUND LEVEL METER NO. : Model CR:161B, Serial No. G080136

MEASUREMENT DATE : February 6, 2018
MEASURED BY : Suriya Srithomee
Serial No. 81969
Calibration Value Reference : 94.0 dB(A), Pre Cal. : 93.7 dB(A), Post Cal. : 93.7 dB(A)

Noise Level [dB(A)] : February 6, 2018					
Time	Leq 10 sec	Time	Leq 10 sec	Time	Leq 10 sec
14:40:05 - 14:40:15	92.1	14:41:15 - 14:41:25	92.2	14:42:25 - 14:42:35	92.0
14:40:15 - 14:40:25	92.2	14:41:25 - 14:41:35	92.1	14:42:35 - 14:42:45	92.1
14:40:25 - 14:40:35	92.1	14:41:35 - 14:41:45	91.9	14:42:45 - 14:42:55	92.0
14:40:35 - 14:40:45	92.2	14:41:45 - 14:41:55	91.9	14:42:55 - 14:43:05	92.0
14:40:45 - 14:40:55	92.1	14:41:55 - 14:42:05	91.8	14:43:05 - 14:43:15	91.9
14:40:55 - 14:41:05	92.2	14:42:05 - 14:42:15	92.0	14:43:15 - 14:43:25	91.9
14:41:05 - 14:41:15	92.1	14:42:15 - 14:42:25	92.0		
Guaranteed Value*		95		dB(A)	

Source : * Guaranteed Value of GNC Power Plant.

Singam Z
(Siriporn Imwilaiwan)
Environmental Monitoring Manager



Thompson Y
(Thompson Yommana)
Technical Manager

TY/SS/AS/CJ

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Report No. : 2018-00090 / 001-4 (Page 1 of 1)

Issued date : February 7, 2018

CLIENT : TOYO ENGINEERING CORPORATION
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 Tel. 085-020-0134 Email : osamu.yamasaki@toyo-eng.com

Analysis Report

SAMPLE DESIGNATED AS : Noise Level
MEASUREMENT LOCATION : HRS12 HP turbine bypass valve, GNC
CALIBRATION DATA : Calibrator Model CR:515, Cemus Research plc Serial No. 81969
 Calibration Value Reference : 94.0 dB(A), Pre Cal. : 93.7 dB(A), Post Cal. : 93.7 dB(A)
SOUND LEVEL METER NO. : Model CR:161B, Serial No. G080136

MEASUREMENT DATE : February 6, 2018

MEASURED BY : Suriya Srithomee

Noise Level [dB(A)] : February 6, 2018					
Time	Leq 10 sec	Time	Leq 10 sec	Time	Leq 10 sec
14:51:03 - 14:51:13	89.2	14:52:13 - 14:52:23	89.5	14:53:23 - 14:53:33	89.5
14:51:13 - 14:51:23	89.4	14:52:23 - 14:52:33	89.6	14:53:33 - 14:53:43	89.4
14:51:23 - 14:51:33	89.2	14:52:33 - 14:52:43	89.4	14:53:43 - 14:53:53	89.5
14:51:33 - 14:51:43	89.2	14:52:43 - 14:52:53	89.6	14:53:53 - 14:54:03	89.6
14:51:43 - 14:51:53	89.3	14:52:53 - 14:53:03	89.4	14:54:03 - 14:54:13	89.5
14:51:53 - 14:52:03	89.2	14:53:03 - 14:53:13	89.4	14:54:13 - 14:54:23	89.5
14:52:03 - 14:52:13	89.4	14:53:13 - 14:53:23	89.4	14:54:23 - 14:54:33	89.5
Guaranteed Value*		95	dB(A)		

Source : * Guaranteed Value of GNC Power Plant.

Siriporn
 (Siriporn Imwilaiwan)
 Environmental Monitoring Manager



Thapson
 (Thapson Yommana)
 Technical Manager

TY/SS/AS/Cj

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SGS (THAILAND) LIMITED



Report No. : 2018-00090 / 001-5 (Page 1 of 1)

Issued date : February 7, 2018

CLIENT : TOYO ENGINEERING CORPORATION
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 Tel. 085-020-0134 Email : osamu.yamasaki@toyo-eng.com

Analysis Report

SAMPLE DESIGNATED AS : Noise Level
MEASUREMENT LOCATION : HRS12 LP turbine bypass valve, GNC
CALIBRATION DATA : Calibrator Model CR:515, Cemus Research plc Serial No. 81969
 Calibration Value Reference : 94.0 dB(A), Pre Cal. : 93.7 dB(A), Post Cal. : 93.7 dB(A)
SOUND LEVEL METER NO. : Model CR:161B, Serial No. G080136

MEASUREMENT DATE : February 6, 2018

MEASURED BY : Suriya Srithomee

Noise Level [dB(A)] : February 6, 2018					
Time	Leq 10 sec	Time	Leq 10 sec	Time	Leq 10 sec
14:55:03 - 14:55:13	89.4	14:56:33 - 14:56:43	89.4	14:58:03 - 14:58:13	89.3
14:55:13 - 14:55:23	89.2	14:56:43 - 14:56:53	89.3	14:58:13 - 14:58:23	89.2
14:55:23 - 14:55:33	89.1	14:56:53 - 14:57:03	89.2	14:58:23 - 14:58:33	89.3
14:55:33 - 14:55:43	89.4	14:57:03 - 14:57:13	89.3	14:58:33 - 14:58:43	89.3
14:55:43 - 14:55:53	89.3	14:57:13 - 14:57:23	89.2	14:58:43 - 14:58:53	89.4
14:55:53 - 14:56:03	89.3	14:57:23 - 14:57:33	89.3	14:58:53 - 14:59:03	89.3
14:56:03 - 14:56:13	89.4	14:57:33 - 14:57:43	89.4	14:59:03 - 14:59:13	89.3
14:56:13 - 14:56:23	89.2	14:57:43 - 14:57:53	89.3		
14:56:23 - 14:56:33	89.4	14:57:53 - 14:58:03	89.3		
Guaranteed Value*		95	dB(A)		

Source : * Guaranteed Value of GNC Power Plant.

Siriporn
 (Siriporn Imwilaiwan)
 Environmental Monitoring Manager



Thapson
 (Thapson Yommana)
 Technical Manager

TY/SS/AS/Cj

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SGS (THAILAND) LIMITED

Near field noise (95dBA)
HRSG safety valve silencers

Measured Noise Data by 3rd party, SGS



Report No. : 2018-00090 / 001-1 (Page 1 of 1)

Issued date : February 6, 2018

CLIENT : TOYO ENGINEERING CORPORATION
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Tel. 085-020-0134

Email : osamu.yamasaki@toyo-eng.com

Analysis Report

SAMPLE DESIGNATED AS : Noise Level
MEASUREMENT LOCATION : HRSG Safety Valve, GNC
CALIBRATION DATA : Calibrator Model CR:515, Cirrus Research plc. Serial No. 81969
Calibration Value Reference : 94.0 dB(A), Pre Cal. : 93.9 dB(A), Post Cal. : 94.0 dB(A)
SOUND LEVEL METER NO. : Model NL-21, Serial No. 00596472

MEASUREMENT DATE : February 6, 2018
MEASURED BY : Suriya Srihomee

Equipment	Steam Pressure	Date	Time	Noise Level [dB(A)]
				Leq 2 sec
HRSG11 HP superheater safety valve silencer	62.7 barG	06/02/2018	13:40	91.4
HRSG11 HP drum safety valve silencer	65.1 barG	06/02/2018	13:27	88.8
HRSG11 LP superheater safety valve silencer	6.6 barG	06/02/2018	13:46	84.6
HRSG11 LP drum safety valve silencer	6.97 barG	06/02/2018	13:47	86.1
HRSG12 HP superheater safety valve silencer	62.7 barG	06/02/2018	14:05	85.6
HRSG12 HP drum safety valve silencer	65.2 barG	06/02/2018	14:01	88.5
HRSG12 LP superheater safety valve silencer	6.7 barG	06/02/2018	14:07	87.9
HRSG12 LP drum safety valve silencer	7.0 barG	06/02/2018	14:10	85.5
Guaranteed Value*				95

Source : * Guaranteed Value of GNC Power Plant.


(Siriporn Imwailaiwan)
Environmental Monitoring Manager




(Thepsorn Yommana)
Technical Manager

TY/SS/AS/CJ

Test Results Corrected by Toyo

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Model: 001-001-001

Test Results:
The below table summarize test results of HRS safety valve silencers noise. Noise were measured by 3rd party SGS at the indicated test pressure.
Measured noise reported by 3rd party SGS were corrected by applying correction factor in order to take into account influence of test pressure incorporating Owner's comment

Correction method:

The attachment 3 shows the correction curves which were created based on the noise calculation sheets of PSVs (see Attachment 1) and PSV silencers (see Attachment 2) in order to estimate the noise at PSV noise test at lower operating pressure than SPV popping pressure. Basis of the correction curves are as below;

- (1) Power level of noise at PSV outlet (PWL) is function of set pressure (Ps) and is varied corresponding to variation of Ps. PWL can be calculated according to the equation 1) - 7) in the PSV noise calculation sheet and weighting correction using Table-A provided by Fukui as shown in the Attachment 1
- (2) PWL at test condition can be estimated by entering operation pressure at test into Ps in the equations in the Attachment-1
- (3) The PWL can be converted to sound pressure level (SPL) by the equation 9) in the Attachment-1
- (4) This noise from PSV (= PWL) is reduced by the silencers as Attachment 2. The silencer is sized to achieve guarantee noise level of not exceeding 95dBA at 1m from silencer at design point (PSV popping at set pressure). The Attachment 2 also shows that silencer outlet noise is governed by the silencer inlet noise (= PSV outlet noise) and effect of flow noise is negligible. Therefore the sound pressure level (SPL) at 1 m from silencer outlet at test condition can be estimated by subtracting difference of PSV outlet noise between the one at PSV set pressure and test pressure from design noise level of 95 dBA at silencer outlet as shown in the Attachment 3
- (5) Correction curves are created by plotting estimated noise at various test pressure (x axis) and expected noise at each test pressure (y axis)

Based on the proposed correction curves, the noise test results will be judged as successful when measured noise [dBA] does not exceed expected noise [dBA] at test pressure

	PSV set barg	Test date (See SGS Report) yyyy/mm/dd	Test Press barg	Noise		Noise correction curve equation
				Measured dBA	Corrected dBA	
HRS G11						
HP drum	70.67	2018/2/6	65.1	88.8	90.7	Pass
HP S/H	67.55	2018/2/6	62.7	91.4	92.8	Pass
LP drum	8.27	2018/2/6	6.97	86.1	87.4	Pass
LP S/H	7.4	2018/2/6	6.6	84.6	85.5	Pass
HRS G12						
HP drum	70.67	2018/2/6	65.2	88.5	90.4	Pass
HP S/H	67.55	2018/2/6	62.7	85.6	86.9	Pass
LP drum	8.27	2018/2/6	7.0	85.5	86.8	Pass
LP S/H	7.4	2018/2/6	6.7	87.9	88.7	Pass

Noise Calculation Sheet 騒音計算書 (ISO4216-9 Annex F)			
PLANT		Gulf SPP3 B	
P.O. No.		150200-010	
JOB No.		150200	
<div> <div> <div>GENERAL 全欄</div> <div>1 Item No.</div> <div>アイテム番号</div> <div>2 Tag No.</div> <div>弁番号</div> <div>3 Fukui Use 1</div> <div>福井 使用欄 1</div> <div>4 Fukui Use 2</div> <div>福井 使用欄 2</div> <div>5 FUKUI Style</div> <div>型式番号</div> <div>6 Size</div> <div>サイズ</div> </div> <div> <div>DIMENSIONS 寸法</div> <div>7 Throat Diameter</div> <div>のど部の径</div> <div>8 Orifice Area</div> <div>吹出し面積</div> <div>9 Outlet Diameter</div> <div>出口の径</div> <div>10 Outlet Area</div> <div>出口面積</div> <div>11 Fluid</div> <div>流体名</div> <div>12 Mol. Wt.</div> <div>分子量</div> <div>13 Specific Heat Ratio</div> <div>比熱比</div> <div>14 Relieving Temp.</div> <div>吹出温度</div> <div>15</div> <div>16 Set Pressure</div> <div>設定圧力</div> <div>17</div> <div>18 Allowable Over Press.</div> <div>許容超過圧力</div> <div>19 Atmos. Press.</div> <div>大気圧</div> <div>20 Gas Constant</div> <div>ガス定数</div> <div>21 Relieving Pressure from (2)</div> <div>吹出し量決定圧力 (2)式より</div> <div>22 Ratio Volume at Throat from (3)</div> <div>のど部の比容積 (3)式より</div> <div>23 Pressure at Outlet from (4)</div> <div>出口圧力 (4)式より</div> <div>24 Ratio Volume at Outlet from (5)</div> <div>出口部比容積 (5)式より</div> <div>25 Speed at Throat from (6)</div> <div>のど部流体速度 (6)式より</div> <div>26 Power Level at Valve from (1)</div> <div>音響出力*1 (1)式より</div> <div>27 Center Frequency from (7)</div> <div>中心周波数(7)式より</div> <div>28 Surface Density</div> <div>二次側配管材の面密度 *2</div> <div>29 Power Level from Table (A)</div> <div>音響出力 (A)表より</div> <div>30 Sound Pressure Level from (9)</div> <div>音圧レベル (9)式より</div> </div> </div>			

CONDITIONS
仕様

11/12HAD10AA401

15L-032A-C/0

20150 2250,2257,2264-1-2

SL631-M2(T)

2.1/2*K*6

40.6 mm

12.946 cm²

150 mm

176.714 cm²

STEAM

18

1.25

289.4 °C

562.4 K

70.67 barG

7.067 MPaG

3 %

0.101 MPaA

8.314 J / (mol·K)

7.38001 MPaA

0.0352 m³/kg

0.3 MPaA

0.4563 m³/kg

570 m/s

144 dB

760 Hz

55.7 kg/m²

142 dBA

135 dBA

CALCULATION
計算式

$$PWL_1 = 20 \log \frac{dt}{1000} - 10 \log v_1 + 80 \log U - 53 \quad (1)$$

$$P_0 = P_s \left(1 + \frac{Ac}{100} \right) + P_s \quad (2)$$

$$v_1 = \frac{RT}{1000 \times MP_0} \quad (3)$$

$$P_2 = \left(\frac{2}{\kappa + 1} \right)^{\frac{\kappa}{\kappa - 1}} \frac{A_1}{A_2} P_0 \quad (4)$$

$$v_2 = \left(\frac{P_0}{P_2} \right)^{\frac{1}{\kappa}} v_1 \quad (5)$$

$$SPL = PWL - 10 \log (2\pi r^2) \quad (9)$$

$$U = \sqrt{\frac{1000 \kappa RT}{M}} \quad (6)$$

$$f = \frac{0.2U}{do} \times 1000 \quad (7)$$

$$TL = 18 \log (m \times f) - 44 \quad (8)$$

REMARKS
記号

51 (A)

52 Octave band / オクターブバンド

53 PWL₁

54 A Weighting / A特性補正

55 Transmission Loss / 透過損失 TL(8)

56 PWL

57

58

59

60

*1: Power level generated from valve outlet to outlet pipe internal / 安全弁から二次側配管内に発生する音響出力

*2: Calculation is outlet pipe Sch40 (Steel Pipe) basis / 二次側配管サイズはSch40(鋼管)とする。

Hz

63

125

250

500

1000

2000

4000

8000

OA

dB

134

134

135

135

136

135

134

132

144

dB

-26

-16

-9

-3

0

1

1

-1

-

dBA

108

118

126

132

136

136

135

131

142

Noise Calculation Sheet				PLANT	Gulf SPP3 B																																																							
騒音計算書 (ISO4216-9 Annex F)				P.O. No.	150200-010																																																							
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	4 Fukui Use 2	福井 使用欄 2		20150 2251,2258,2265-1-2																																																								
	5 FUKUI Style	型式番号		SL651-C2-M2(T)																																																								
DIMENSIONS 寸法	6 Size	サイズ		2*H*3																																																								
	7 Throat Diameter	のど部の径	dt	26.6 mm																																																								
	8 Orifice Area	吹出し面積	A ₁	5.557 cm ²																																																								
	9 Outlet Diameter	出口の径	do	80 mm																																																								
	10 Outlet Area	出口面積	A ₂	50.265 cm ²																																																								
CONDITIONS 仕様	11 Fluid	流体名		STEAM																																																								
	12 Mol. Wt.	分子量	M	18																																																								
	13 Specific Heat Ratio	比熱比	k	1.28																																																								
	14 Relieving Temp.	吹出温度	T	472 °C																																																								
				745 K																																																								
	15 Set Pressure	設定圧力	Ps	67.55 barG																																																								
				6.755 MPaG																																																								
	16 Allowable Over Press.	許容超過圧力	Ac	3 %																																																								
	17 Atmos. Press.	大気圧	Pa	0.101 MPaA																																																								
	18 Gas Constant	ガス定数	R	8.314 J / (mol·K)																																																								
	19 Relieving Pressure from (2)	吹出し量決定圧力 (2)式より	P ₀	7.05865 MPaA																																																								
	20 Ratio Volume at Throat from (3)	のど部の比容積 (3)式より	V ₁	0.04875 m ³ /kg																																																								
	21 Pressure at Outlet from (4)	出口圧力 (4)式より	P ₂	0.4287 MPaA																																																								
	22 Ratio Volume at Outlet from (5)	出口部比容積 (5)式より	V ₂	0.4349 m ³ /kg																																																								
	23 Speed at Throat from (6)	のど部流体速度 (6)式より	U	664 m/s																																																								
24 Power Level at Valve from (1)	音響出力*1 (1)式より	PWL ₁	145 dB																																																									
25 Center Frequency from (7)	中心周波数 (7)式より	f	1660 Hz																																																									
26 Surface Density	二次側配管材の面密度 *2	m	43.2 kg/m ²																																																									
27 Power Level from Table (A)	音響出力 (A)表より	PWL	144 dBA																																																									
28 Sound Pressure Level from (9)	音圧レベル (9)式より	SPL	137 dBA																																																									
CALCULATION 計算式	$PWL_1 = 20 \log \frac{dt}{1000} - 10 \log v_2 + 80 \log U - 53 \quad (1)$																																																											
	$P_0 = P_s \left(1 + \frac{Ac}{100} \right) + P_a \quad (2)$																																																											
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	r = 1m (from Outlet)																																																											
	$U = \sqrt{\frac{1000kRT}{M}} \quad (6)$																																																											
	$f = \frac{0.2U}{do} \times 1000 \quad (7)$																																																											
	$TL = 18 \log (m \times f) - 44 \quad (8)$																																																											
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<table border="1"> <thead> <tr> <th>Octave band / オクターブバンド</th> <th>Hz</th> <th>63</th> <th>125</th> <th>250</th> <th>500</th> <th>1000</th> <th>2000</th> <th>4000</th> <th>8000</th> <th>OA</th> </tr> </thead> <tbody> <tr> <td>PWL₁</td> <td>dB</td> <td>134</td> <td>135</td> <td>135</td> <td>136</td> <td>136</td> <td>137</td> <td>136</td> <td>135</td> <td>145</td> </tr> <tr> <td>A Weighting / A特性補正</td> <td>dB</td> <td>-26</td> <td>-16</td> <td>-9</td> <td>-3</td> <td>0</td> <td>1</td> <td>1</td> <td>-1</td> <td>-</td> </tr> <tr> <td>Transmission Loss / 透過損失 TL(8)</td> <td>dB</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>-</td> </tr> <tr> <td>PWL</td> <td>dBA</td> <td>108</td> <td>119</td> <td>126</td> <td>133</td> <td>136</td> <td>138</td> <td>137</td> <td>134</td> <td>144</td> </tr> </tbody> </table>						Octave band / オクターブバンド	Hz	63	125	250	500	1000	2000	4000	8000	OA	PWL ₁	dB	134	135	135	136	136	137	136	135	145	A Weighting / A特性補正	dB	-26	-16	-9	-3	0	1	1	-1	-	Transmission Loss / 透過損失 TL(8)	dB	0	0	0	0	0	0	0	0	-	PWL	dBA	108	119	126	133	136	138	137	134	144
Octave band / オクターブバンド	Hz	63	125	250	500	1000	2000	4000	8000	OA																																																		
PWL ₁	dB	134	135	135	136	136	137	136	135	145																																																		
A Weighting / A特性補正	dB	-26	-16	-9	-3	0	1	1	-1	-																																																		
Transmission Loss / 透過損失 TL(8)	dB	0	0	0	0	0	0	0	0	-																																																		
PWL	dBA	108	119	126	133	136	138	137	134	144																																																		

Noise Calculation Sheet				PLANT	Gulf SPP3 B																																																							
騒音計算書 (ISO4216-9 Annex F)				P.O. No.	150200-010																																																							
				JOB No.	150200																																																							
GENERAL 全項目	1 Item No.	アイテム番号																																																										
	2 Tag No.	弁番号		11/12HAD50AA401																																																								
	3 Fukui Use 1	福井 使用欄 1		15L-032A-C/0																																																								
	4 Fukui Use 2	福井 使用欄 2		20150 2253,2260,2267-1-2																																																								
	5 FUKUI Style	型式番号		SL231(T)																																																								
DIMENSIONS 寸法	6 Size	サイズ		4*P*6																																																								
	7 Throat Diameter	のど部の径	dt	75.7 mm																																																								
	8 Orifice Area	吹出し面積	A ₁	45.007 cm ²																																																								
	9 Outlet Diameter	出口の径	do	150 mm																																																								
	10 Outlet Area	出口面積	A ₂	176.714 cm ²																																																								
CONDITIONS 仕様	11 Fluid	流体名		STEAM																																																								
	12 Mol. Wt.	分子量	M	18																																																								
	13 Specific Heat Ratio	比熱比	k	1.29																																																								
	14 Relieving Temp.	吹出温度	T	177.8 °C																																																								
				450.8 K																																																								
	15 Set Pressure	設定圧力	Ps	8.27 barG																																																								
				0.827 MPaG																																																								
	16 Allowable Over Press.	許容超過圧力	Ac	3 %																																																								
	17 Atmos. Press.	大気圧	Pa	0.101 MPaA																																																								
	18 Gas Constant	ガス定数	R	8.314 J / (mol·K)																																																								
	19 Relieving Pressure from (2)	吹出し量決定圧力 (2)式より	P ₀	0.95281 MPaA																																																								
	20 Ratio Volume at Throat from (3)	のど部の比容積 (3)式より	V ₁	0.21853 m ³ /kg																																																								
	21 Pressure at Outlet from (4)	出口圧力 (4)式より	P ₂	0.1329 MPaA																																																								
	22 Ratio Volume at Outlet from (5)	出口部比容積 (5)式より	V ₂	1.0062 m ³ /kg																																																								
	23 Speed at Throat from (6)	のど部流体速度 (6)式より	U	518 m/s																																																								
24 Power Level at Valve from (1)	音響出力*1 (1)式より	PWL ₁	142 dB																																																									
25 Center Frequency from (7)	中心周波数 (7)式より	f	691 Hz																																																									
26 Surface Density	二次側配管材の面密度 *2	m	55.7 kg/m ²																																																									
27 Power Level from Table (A)	音響出力 (A)表より	PWL	140 dBA																																																									
28 Sound Pressure Level from (9)	音圧レベル (9)式より	SPL	133 dBA																																																									
CALCULATION 計算式	$PWL_1 = 20 \log \frac{dt}{1000} - 10 \log v_2 + 80 \log U - 53 \quad (1)$																																																											
	$P_0 = P_s \left(1 + \frac{Ac}{100} \right) + P_a \quad (2)$																																																											
	$v_1 = \frac{RT}{1000 \times MP_0} \quad (3)$																																																											
	$P_2 = \left(\frac{2}{k+1} \right)^{\frac{k}{k-1}} \frac{A_1}{A_2} P_0 \quad (4)$																																																											
	$v_2 = \left(\frac{P_0}{P_2} \right)^{\frac{1}{k}} v_1 \quad (5)$																																																											
	$SPL = PWL - 10 \log (2\pi r^2) \quad (9)$																																																											
	r = 1m (from Outlet)																																																											
	$U = \sqrt{\frac{1000kRT}{M}} \quad (6)$																																																											
	$f = \frac{0.2U}{do} \times 1000 \quad (7)$																																																											
	$TL = 18 \log (m \times f) - 44 \quad (8)$																																																											
<p>*1: Power level generated from valve outlet to outlet pipe internal / 安全弁から二次側配管内に発生する音響出力</p> <p>*2: Calculation is outlet pipe Sch40 (Steel Pipe) basis / 二次側配管サイズはSch40(鋼管)とする。</p>																																																												
<table border="1"> <thead> <tr> <th>Octave band / オクターブバンド</th> <th>Hz</th> <th>63</th> <th>125</th> <th>250</th> <th>500</th> <th>1000</th> <th>2000</th> <th>4000</th> <th>8000</th> <th>OA</th> </tr> </thead> <tbody> <tr> <td>PWL₁</td> <td>dB</td> <td>133</td> <td>134</td> <td>134</td> <td>135</td> <td>134</td> <td>133</td> <td>131</td> <td>130</td> <td>142</td> </tr> <tr> <td>A Weighting / A特性補正</td> <td>dB</td> <td>-26</td> <td>-16</td> <td>-9</td> <td>-3</td> <td>0</td> <td>1</td> <td>1</td> <td>-1</td> <td>-</td> </tr> <tr> <td>Transmission Loss / 透過損失 TL(8)</td> <td>dB</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>-</td> </tr> <tr> <td>PWL</td> <td>dBA</td> <td>107</td> <td>118</td> <td>125</td> <td>132</td> <td>134</td> <td>134</td> <td>132</td> <td>129</td> <td>140</td> </tr> </tbody> </table>						Octave band / オクターブバンド	Hz	63	125	250	500	1000	2000	4000	8000	OA	PWL ₁	dB	133	134	134	135	134	133	131	130	142	A Weighting / A特性補正	dB	-26	-16	-9	-3	0	1	1	-1	-	Transmission Loss / 透過損失 TL(8)	dB	0	0	0	0	0	0	0	0	-	PWL	dBA	107	118	125	132	134	134	132	129	140
Octave band / オクターブバンド	Hz	63	125	250	500	1000	2000	4000	8000	OA																																																		
PWL ₁	dB	133	134	134	135	134	133	131	130	142																																																		
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Transmission Loss / 透過損失 TL(8)	dB	0	0	0	0	0	0	0	0	-																																																		
PWL	dBA	107	118	125	132	134	134	132	129	140																																																		

PLANT	Gulf SPP3 B
P.O. No.	150200-010
JOB No.	150200

株式会社 福井製作所

Page 1 of 1



Attachment 2

NOISE CALCULATION STEAM VENT SILENCER																						

Date:	25/Nov/15																					
Project:	P15419 - Gulf SPP3 B - NE-PO: 150200-020																					
Item:	1 - 11 / 12HAD10BS201																					
Revision:	1																					

Freq.Hz	31	63	125	250	500	1000	2000	4000	8000	dBA												

Lw core 1 inlet	117	120	124	129	136	141	146	147	147	152												
Diffuser Element 1	0	8	18	21	28	34	37	33	30													
Lw core 1 silenced	117	112	108	108	108	107	108	114	117	119												
	0	0	0	0	0	0	0	0	0	7												
	0	0	0	0	0	0	0	0	0	0												
Lw core 2 silenced	0	0	0	0	0	0	0	0	0	7												
	0	0	0	0	0	0	0	0	0	7												
	0	0	0	0	0	0	0	0	0	0												
Lw core 3 silenced	0	0	0	0	0	0	0	0	0	7												
	0	0	0	0	0	0	0	0	0	7												
Total Silenced Cores	117	112	108	108	108	107	108	114	117	119 **												
Casing (=Dir 90°)	2	2	3	5	6	8	9	10	11													
Splitter Package	0	0	0	0	0	0	0	0	0													

Total Lw no flow noise	115	110	105	103	102	99	99	104	106	109												
Flow noise*	70	70	70	70	66	61	56	52	47	67												

Lw Ir	115	110	105	103	102	99	99	104	106	109												
Lw - Lp @ 1 m	15	15	15	15	15	15	15	15	15													

Expected Lp @ 1 m / 90°	99	94	89	87	86	83	83	88	90	94												

Required Lp @ 1 m / 90° 95.0 dBA																						

ø Casing	49.7 [Inch]		1,262 [mm]																			
Flow	107,855 [lb/hr]		48,922 [kg/hr]																			
Temp	549 [°F]		287 [°C]																			
Lw max*			151.7 [dB]																			
Lw core1			151.7 [dB]																			
			0.0 [dB]																			
**Core with the highest reduction																						
Velocity casing	68 [ft/s]		20.67 [m/s]																			
Open area casing	4.10 [ft²]		1.25 [m²]																			
Temp in casing	322 [°F]		147 [°C]																			
Flow Noise*			75 [dB]																			

*In case of combined Flows																						

"These acoustic calculations are based on actual venting noise of the silencer discharge with no inclusion of silencer upstream pipe radiated noise or any and all other noise sources within the measurement vicinity that may increase our acoustic prediction results due to measurement locations."



Attachment 2

NOISE CALCULATION STEAM VENT SILENCER

Date:
Project:
Item:
Revision:

25/Nov/15

P15419 - Gulf SPP3 B - NE-PO: 150200-020

4 - 11 / 12HAD50BS201

1

Freq.Hz

31

63

125

250

500

1000

2000

4000

8000

dBA

Lw core 1 Inlet

106

109

113

118

125

130

134

136

136

141

Diffuser Element 1

0

8

14

20

28

32

31

27

22

Lw core 1 silenced

106

103

99

98

97

98

103

109

114

115

0

0

0

0

0

0

0

0

0

7

0

0

0

0

0

0

0

0

0

Lw core 2 silenced

0

0

0

0

0

0

0

0

0

7

0

0

0

0

0

0

0

0

0

7

0

0

0

0

0

0

0

0

0

Lw core 3 silenced

0

0

0

0

0

0

0

0

0

7

0

0

0

0

0

0

0

0

0

7

Total Silenced Cores

106

103

99

98

97

98

103

109

114

115 **

Casing (=Dir 90°)

2

2

3

5

6

8

9

10

11

Splitter Package

0

0

0

0

0

0

0

0

0

Total Lw no flow noise

104

101

96

93

91

90

94

99

103

105

Flow noise*

61

61

61

60

55

51

46

41

37

57

Lw Ir

104

101

96

93

91

90

94

99

103

105

Lw - Lp @ 1 m

14

14

14

14

14

14

14

14

14

Expected Lp @ 1 m / 90°

90

87

82

79

77

76

80

85

89

90

Required Lp @ 1 m / 90°

95.0 dBA

ø Casing

38.2 [Inch]

970 [mm]

Flow

48,404 [lb/hr]

21,956 [kg/hr]

Temp

350 [°F]

177 [°C]

Lw max*

141.0 [dB]

Lw core1

141.0 [dB]

0.0 [dB]

[dB]

**Core with the highest reduction

Velocity casing

52 [ft/s]

15.78 [m/s]

Open area casing

2.42 [ft²]

0.74 [m²]

Temp in casing

326 [°F]

149 [°C]

Flow Noise*

66 [dB]

*In case of combined Flows

"These acoustic calculations are based on actual venting noise of the silencer discharge with no inclusion of silencer upstream pipe radiated noise or any and all other noise sources within the measurement vicinity that may increase our acoustic prediction results due to measurement locations."



Attachment 2

NOISE CALCULATION STEAM VENT SILENCER

Date:	25/Nov/15
Project:	P15419 - Gulf SPP3 B - NE-PO; 150200-020
Item:	2 - 11 / 12LBA10BS201
Revision:	1

Freq.Hz 31 63 125 250 500 1000 2000 4000 8000 dBA

Lw core 1 Inlet	115	118	122	127	134	139	143	145	145	150
Diffuser Element 1	0	5	16	21	28	34	37	33	30	
Lw core 1 silenced	115	110	106	106	106	105	106	112	115	117

	0	0	0	0	0	0	0	0	0	7
	0	0	0	0	0	0	0	0	0	7

Lw core 2 silenced	0	0	0	0	0	0	0	0	0	7
	0	0	0	0	0	0	0	0	0	7

Lw core 3 silenced	0	0	0	0	0	0	0	0	0	7
--------------------	---	---	---	---	---	---	---	---	---	---

Total Silenced Cores	115	110	106	106	106	105	106	112	115	117 **
Casing (=Dir 90°)	2	2	3	5	6	8	9	10	11	
Splitter Package	0	0	0	0	0	0	0	0	0	

Total Lw no flow noise	113	108	103	101	100	97	97	102	104	107
Flow noise*	51	51	51	47	42	38	33	28	24	44

Lw Ir	113	108	103	101	100	97	97	102	104	107
Lw - Lp @ 1 m	15	15	15	15	15	15	15	15	15	

Expected Lp @ 1 m / 90°	97	92	87	85	84	81	81	86	88	92
-------------------------	----	----	----	----	----	----	----	----	----	----

Required Lp @ 1 m / 90° 95.0 dBA

ø Casing	49.7 [Inch]	1,262 [mm]
Flow	35,617 [lb/hr]	16,156 [kg/hr]
Temp	882 [°F]	472 [°C]
Lw max*		149.7 [dB]

Lw core1	149.7 [dB]
	0.0 [dB]
	[dB]

**Core with the highest reduction

Velocity casing	38 [ft/s]	11.54 [m/s]
Open area casing	4.10 [ft²]	1.25 [m²]
Temp In casing	835 [°F]	432 [°C]
Flow Noise*		56 [dB]

*In case of combined Flows

σ Casing	49.7 [Inch]	1,262 [mm]
Flow	35,617 [lb/hr]	16,156 [kg/hr]
Temp	882 [°F]	472 [°C]
Lw max*		149.7 [dB]
Lw core1		149.7 [dB]
		0.0 [dB]
		[dB]
**Core with the highest reduction		
Velocity casing	38 [ft/s]	11.54 [m/s]
Open area casing	4.10 [ft²]	1.25 [m²]
Temp in casing	835 [°F]	432 [°C]
Flow Noise*		56 [dB]

*In case of combined Flows

"These acoustic calculations are based on actual venting noise of the silencer discharge with no inclusion of silencer upstream pipe radiated noise or any and all other noise sources within the measurement vicinity that may increase our acoustic prediction results due to measurement locations."



Attachment 2

NOISE CALCULATION STEAM VENT SILENCER

Date:25/Nov/15

Project:P15419 - Gulf SPP3 B - NE-PO: 150200-020

Item:5 - 11 / 12LBA50BS201

Revision:1

Freq.Hz	31	63	125	250	500	1000	2000	4000	8000	dBA
Lw core 1 Inlet	99	102	106	111	118	123	127	129	129	134
Diffuser Element 1	0	8	13	18	27	29	28	25	21	
Lw core 1 silenced	99	94	93	93	91	94	99	104	108	110
	0	0	0	0	0	0	0	0	0	7
	0	0	0	0	0	0	0	0	0	7
Lw core 2 silenced	0	0	0	0	0	0	0	0	0	7
	0	0	0	0	0	0	0	0	0	7
	0	0	0	0	0	0	0	0	0	7
Lw core 3 silenced	0	0	0	0	0	0	0	0	0	7
	0	0	0	0	0	0	0	0	0	7
Total Silenced Cores	99	94	93	93	91	94	99	104	108	110 **
Casing (=Dir 90°)	2	2	3	5	6	8	9	10	11	
Splitter Package	0	0	0	0	0	0	0	0	0	
Total Lw no flow noise	97	92	90	88	85	86	90	94	97	100
Flow noise*	30	30	25	20	16	11	6	2	-3	18
Lw Ir	97	92	90	88	85	86	90	94	97	100
Lw - Lp @ 1 m	14	14	14	14	14	14	14	14	14	
Expected Lp @ 1 m / 90°	83	78	76	74	71	72	76	80	83	85

Required Lp @ 1 m / 90° 95.0 dBA

ø Casing	38.2 [Inch]	970 [mm]
Flow	11,947 [lb/hr]	5,419 [kg/hr]
Temp	487 [°F]	253 [°C]
Lw max*		134.1 [dB]
Lw core1		134.1 [dB]
		0.0 [dB]
		[dB]

**Core with the highest reduction

Velocity casing	16 [ft/s]	4.76 [m/s]
Open area casing	2.42 [ft²]	0.74 [m²]
Temp in casing	490 [°F]	240 [°C]
Flow Noise*		35 [dB]

*In case of combined Flows

σ Casing	38.2 [Inch]	970 [mm]
Flow	11,947 [lb/hr]	5,419 [kg/hr]
Temp	487 [°F]	253 [°C]
Lw max*		134.1 [dB]
Lw core1		134.1 [dB]
		0.0 [dB]
		[dB]
**Core with the highest reduction		
Velocity casing	16 [ft/s]	4.76 [m/s]
Open area casing	2.42 [ft²]	0.74 [m²]
Temp in casing	490 [°F]	240 [°C]
Flow Noise*		35 [dB]

*In case of combined Flows

"These acoustic calculations are based on actual venting noise of the silencer discharge with no inclusion of silencer upstream pipe radiated noise or any and all other noise sources within the measurement vicinity that may increase our acoustic prediction results due to measurement locations."



Attachment 3

HRSG PSV Silencer Noise Test for GNC, GNRV1 and GNRV2 (LM6000 sites)

GNC					
PSV set	Test date	Test Pmax	Tpsm		Noise correction curve equation
			Measured	Corrected	
freq	yyy/mm/dd	freq	dBA	dBA	
Noise correction curve equation					
HP drum	70.67	60.0	90.0	90.0	$90.0 = 5.9056E+00(\text{m}) + 6.87769E+01$
HP S-H	67.55	60.0	90.0	90.0	$90.0 = 4.30671E+00(\text{m}) + 7.68143E+01$
LP drum	8.37	7.0	90.0	90.0	$90.0 = 4.67242E+00(\text{m}) + 6.46530E+01$
LP S-H	7.4	6.0	90.0	90.0	$90.0 = 3.65038E+00(\text{m}) + 6.76584E+01$

By Fuku
Original message from Fuku (Japanese)
1) 中心周波数及びUTRBAEにより周波数帯に別ける修正値を求める
2) 500Hzの場合、中心周波数761Hzの10*log(761/500)の修正値になります。
3) 10*log(10*(P1/10) + 10*(P2/10) + 10*(P3/10) + 10*(P4/10) + 10*(P5/10) + 10*(P6/10) + 10*(P7/10) + 10*(P8/10) + ... (1式)
4) (1式)がPWLと同等になるように各周波数でのPを求める。PからPは各周波数でのPWL(下表参照)
5) 400Hzの場合、中心は1000Hzとなる(1000Hzで修正値)のでP5を算出したPWL1を初期値として146、143、142と1づつ減らしていき(1式)が各PWL1に近くなるP5を決定します。P5以外のPはP5+P1で求めます。(例P1=P5+P1)
6) PWL=A weighting+Transmission loss+111各周波数でのPWLを求めます。
7) (1式)GNCに各周波数でのPWLを代入することによってPWLが求まります。

English translation
1) Calculate center frequency per equation 7 on the PSV noise calculation sheet and obtain A weighting correction from the table B below
2) In case P=8000, center frequency is 761 Hz. Therefore use A weighting correction for 770Hz<f<1400Hz as per table B
3) 10*log(10*(P1/10) + 10*(P2/10) + 10*(P3/10) + 10*(P4/10) + 10*(P5/10) + 10*(P6/10) + 10*(P7/10) + 10*(P8/10) + ... (Equation 1)
4) Determine all of P1 to be overall PWL1 per equation 1 above and overall PWL1 per PSV noise calculation sheet is equal
5) In case P=8000, center frequency is 1000Hz. Therefore A weighting correction at P5 is zero. The other P1 can be automatically calculated from the above table B
A quiet figure of P5 manually in order for overall PWL1 per noise calculation sheet equals to PWL1 per above equation 1
6) Obtain PWL = PWL1+A weighting+Transmission loss
7) By entering PWL for each frequency in the above equation 1, Overall PWL (after corrections)

TABLE B									
Center frequency	Hz	80	125	250	500	1000	2000	4000	8000
A weighting	dB	-26	-18	-9	-3	0	1	1	-1
Transmission loss	dB	0	0	0	0	0	0	0	0
PWL	dBA	106.6901	117.89013	125.89013	131.89013	133.89013	133.89013	133.89013	131.8901

Attachment 3

HRSG PSV Silencer Noise Test

Name									
HP drum PSV									
Tag									
TUT24-01GAM401									
Description									
Inlet diameter	d	mm	40.8	40.8	40.8	40.8	40.8	40.8	40.8
Outlet area	A1	mm ²	12.946	12.946	12.946	12.946	12.946	12.946	12.946
Outlet diameter	d0	mm	150	150	150	150	150	150	150
Outlet area	A2	mm ²	176.714	176.714	176.714	176.714	176.714	176.714	176.714
Moist. wt.	M	mm	18	18	18	18	18	18	18
Specific heat ratio	γ		1.25	1.25	1.25	1.25	1.25	1.25	1.25
Relieving temp.	T	deg.C	284.4	284.4	284.4	284.4	284.4	284.4	284.4
Relieving temp.	T	°C	562.4	562.4	562.4	562.4	562.4	562.4	562.4
Set pressure	Ps	bar	70.67	70.67	70.67	70.67	70.67	70.67	70.67
Set pressure	Ps	MPaG	7.067	7.067	7.067	7.067	7.067	7.067	7.067
Atmos. Press.	Pa	MPaA	0.101	0.101	0.101	0.101	0.101	0.101	0.101
Atmos. Press.	Pa	MPaA	0.101	0.101	0.101	0.101	0.101	0.101	0.101
Gas constant	R	J/mol.K	8.314	8.314	8.314	8.314	8.314	8.314	8.314
Relieving pressure from (2)	PD	MPaA	7.300010	7.300010	7.300010	7.300010	7.300010	7.300010	7.300010
Ratio volume at throat from (3)	V1	kg/m ³	0.03199	0.03199	0.03199	0.03199	0.03199	0.03199	0.03199
Pressure at outlet from (4)	P2	MPaA	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Ratio volume at outlet from (5)	V2	kg/m ³	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Speed at throat from (6)	U	m/s	568.8	568.8	568.8	568.8	568.8	568.8	568.8
Center frequency from (7)	f	Hz	760	760	760	760	760	760	760
Power level at PSV from (1)	PWL1	dB	143.4	143.4	143.4	143.4	143.4	143.4	143.4
Power level from table (A)	PWL	dBA	141.0	140.8	140.4	140.0	139.6	139.2	138.3
Sound pressure level from (9)	SPL	dBA	133.0	132.8	132.4	132.0	131.6	131.2	130.3
Δ SPL (Design-Cases)	Δ SPL	dBA	0	-0.19	-0.59	-0.99	-1.39	-1.79	-1.79
At Silencer	SPL	dBA	86	84.81	84.41	84.01	83.61	83.21	82.31
Design +0.5dBA	SPL	dBA	86	84.81	84.41	84.01	83.61	83.21	82.31
Other case +0.5dBA - Δ SPL	SPL	dBA	86	84.81	84.41	84.01	83.61	83.21	82.31

Table A									
70.67 barg									
Octave band	Hz	80	125	250	500	1000	2000	4000	8000
PWL1	dB	133	134	134	135	135.7	134	133	132
A weighting	dB	-26	-18	-9	-3	0	1	1	-1
Transmission loss	dB	0	0	0	0	0	0	0	0
PWL	dBA	107	116	125	132	135.7	135	134	131

80 barg									
Octave band	Hz	80	125	250	500	1000	2000	4000	8000
PWL1	dB	132.8901	133.89013	134.89013	135.89013	136.89013	135.89013	134.89013	133.8901
A weighting	dB	-26	-18	-9	-3	0	1	1	-1
Transmission loss	dB	0	0	0	0	0	0	0	0
PWL	dBA	106.8901	117.89013	125.89013	132.89013	136.89013	136.89013	135.89013	132.8901

84 barg									
Octave band	Hz	80	125	250	500	1000	2000	4000	8000
PWL1	dB	132.4901	133.49013	134.49013	135.49013	136.49013	135.49013	134.49013	133.4901
A weighting	dB	-26	-18	-9	-3	0	1	1	-1
Transmission loss	dB	0	0	0	0	0	0	0	0
PWL	dBA	106.4901	117.49013	125.49013	132.49013	136.49013	136.49013	135.49013	132.4901

86 barg									
Octave band	Hz	80	125	250	500	1000	2000	4000	8000
PWL1	dB	132.0901	133.09013	134.09013	135.09013	136.09013	135.09013	134.09013	133.0901
A weighting	dB	-26	-18	-9	-3	0	1	1	-1
Transmission loss	dB	0	0	0	0	0	0	0	0
PWL	dBA	106.0901	117.09013	125.09013	132.09013	136.09013	136.09013	135.09013	132.0901

88 barg									
Octave band	Hz	80	125	250	500	1000	2000	4000	8000
PWL1	dB	131.6901	132.69013	133.69013	134.69013	135.69013	134.69013	133.69013	132.6901
A weighting	dB	-26	-18	-9	-3	0	1	1	-1
Transmission loss	dB	0	0	0	0	0	0	0	0
PWL	dBA	105.6901	116.69013	124.69013	131.69013	135.69013	135.69013	134.69013	131.6901

92 barg									
Octave band	Hz	80	125	250	500	1000	2000	4000	8000
PWL1	dB	131.2901	132.29013	133.29013	134.29013	135.29013	134.29013	133.29013	132.2901
A weighting	dB	-26	-18	-9	-3	0	1	1	-1
Transmission loss	dB	0	0	0	0	0	0	0	0
PWL	dBA	105.2901	116.29013	124.29013	131.29013	135.29013	135.29013	134.29013	131.2901

HRSG PSV Silencer Noise Test

Name		HP SH 5HV						
Tag		1112 BA 10A041						
Description	Unit	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7
Throat diameter	mm	26.0	26.8	26.5	26.6	26.6	26.6	26.6
Orifice diameter	A1 mm2	3.567	3.557	3.557	3.557	3.557	3.557	3.557
Orifice area	mm	50	50	50	50	50	50	50
Orifice area	A2 mm2	50.295	50.295	50.295	50.295	50.295	50.295	50.295
Med. Wt.	kg	18	18	18	18	18	18	18
Specific heat ratio	γ	1.29	1.28	1.28	1.28	1.28	1.28	1.28
Relieving limits	kg/c	473	473	473	473	473	473	473
Relieving temp.	°C	745	745	745	745	745	745	745
Set pressure	PS	82.55	82.55	81	81	81	81	81
Set pressure	PS	MPa(a)	6.120	6.5	6.1	5.7	5.4	5
Allowable over press.	AC	%						
Relieving Pressure	PS	0.101	0.101	0.101	0.101	0.101	0.101	0.101
Gas constant	kg	J/(mol K)	8.314	8.314	8.314	8.314	8.314	8.314
Relieving pressure from (2)	PS	MPa	7.0265805	6.7560602	6.704000	5.9720000	5.9630000	5.2910000
Pressure at throat from (3)	PS	m3/kg	0.0347530	0.0290342	0.0539302	0.0570000	0.000784	0.0053332
Pressure at outlet from (4)	PS	MPa(a)	0.4237	0.4128	0.3677	0.3632	0.3439	0.3448
Pressure at outlet from (5)	PS	MPa(a)	0.4249	0.4249	0.4885	0.5141	0.5423	0.5488
Speed of throat flow (6)	U	m/s	663.7	663.7	663.7	663.7	663.7	663.7
Center Frequency from (7)	U	Hz	15699	16519	16519	16519	16519	16519
Power loss as PSD from (8)	PWL	dB	148.9	144.7	144.4	144.1	143.9	143.5
Power loss from inlet (A)	PWL	dB	144.7	143.7	143.3	142.6	142.4	142.1
Sound pressure level from (9)	SPL	dB	134.4	130.2	134.3	134.8	134.4	134.1
Δ SPL (Exhaust - Canal)	ΔSPL	dB	0	-3.50	-0.92	-0.60	-1.01	-1.30

At Silencer		Case 6=95dBA		Case 7=95dBA - Δ SPL	
PWL	dBA	95	94.8C	94.50	94.20
94.00	93.70				

Table A

P ₀	87.95 dBm									
Excav. Band	Hz	dB	125	250	500	1000	2000	4000	8000	JA
PWLT	dB	134.3406	134.3406	135.5406	138.1406	135.7406	137.3406	136.1406	134.9406	144.9
A weighting	dB	-25	-16	-9	-3	0	0	0	0	-1
Transmission loss	dB	0	0	0	0	0	0	0	0	0
PWA	dB	108.3406	116.8400	126.5400	133.1406	136.7406	137.3406	137.1406	135.9406	143.4

Pos	US Reg									
Order & Band	Hz	63	75	250	500	1000	2500	4000	8000	FA
FWL1	all	134.1400	134.7400	135.5400	135.9400	136.5400	137.5400	135.9400	134.7400	144.7
A weighting	dB	-26	-18	-9	-3	0	1	1	-1	
Transmission loss	dB	0	0	0	0	0	0	0	0	
PWL	dB(A)	108.1400	118.7400	126.5400	129.9400	136.5400	138.1400	136.9400	133.7400	143.2

Port	81 Bay	125	250	500	1000	2000	4000	8000	16A
Coarse band	Hz	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
PWLT	ms	133.8406	134.8406	135.8406	136.8406	137.8406	138.8406	139.8406	140.8406
A weighting	dB	-29	-18	-9	-3	0	1	1	-1
Transmission loss	dB	0	0	0	0	0	0	0	0
PWLT	ms	107.8406	118.8406	129.8406	132.8406	137.8406	138.8406	141.8406	142.8406

Pos	ST	17	83	125	250	500	1000	2000	4000	8000	TA
Octave band	Hz										
PW-1	dB	133	5406	134	1406	134	7406	138	3406	134	1406
A-weighting	dB	-26	-16	0	0	-3	0	1	1	-1	
Transmission loss	dB			0	0	0	0	0	0	0	
PWL	dBA	107	5406	118	1406	125	7406	133	3406	133	1406

Part	54 being									
Output base	Hz	63	125	250	500	1000	2000	4000	8000	16
PWL1	dB	133.3406	133.9406	134.5406	135.1406	135.7406	136.3406	136.9406	137.5406	143.9
A weighting	dB	-26	-18	0	0	0	1	1	1	-1
Transmission loss	dB	0	0	0	0	0	0	0	0	0
PWL	dBA	107.3406	117.5406	135.5406	135.1406	135.7406	137.3406	136.9406	138.5406	142.4

Pos	50 bag									
Octave band	Hz	63	125	250	500	1000	2000	4000	8000	2A
PWL1	dB	123.6406	123.6406	134.7406	134.8406	135.6406	135.6406	134.8406	133.6406	143.6
A weighting	dB	-2.6	-1.6	-3	-3	0	1	1	1	-1
Transmission loss	dB	0	0	0	0	0	0	0	0	
PWL	dBA	107.0406	117.6406	125.6406	131.8406	135.6406	137.6406	135.8406	132.6406	142.1

HRSG PSV Silencer Noise Test

[illegible]

Table A

Parameter	63	125	250	500	1000	2000	4000	8000	1/3 Octave band
Octave band PWL	132.5826	133.1826	133.7826	134.3826	133.1826	131.9826	130.7826	129.5826	141.7
A weighting	-24	-16	-8	-3	0	1	1	-1	
Transmission loss	0	0	0	0	0	0	0	0	
PWL	108.5826	117.1826	124.7826	131.3826	133.1826	132.9826	131.7826	128.5826	138.0

		83	125	250	500	1000	2000	4000	8000	OA
Octave band	Hz									
PWL1	dB	132.1826	132.7806	133.3826	133.9826	132.7826	131.5826	130.3826	129.1826	147.3
A-weighting	dB	-29	-16	-8	-2	0	-1	-1	-1	
Transmission loss	dB	0	0	0	0	0	0	0	0	
PWL	dBA	106.1826	116.7806	124.3826	130.9826	132.7826	130.5826	131.3826	128.1826	156.3

Due	7.1 barg									
Octave band	Hz	83	125	250	500	1000	2000	4000	8000	OA
PWL1	dB	131.7626	132.3826	132.9826	133.5826	132.3826	131.1826	129.9826	128.7826	140.9
A weighting	dB	-26	-16	-8	-3	0	1	1	1	
Transmission loss	dB	0	0	0	0	0	0	0	0	
PWL	dBA	105.7626	116.3826	124.9826	130.5826	132.3826	132.1826	130.9826	127.7826	136.2

Pay	0.5 barg									
Octave band	Fz	63	125	250	500	1000	2000	4000	8000	FA
P.V.E. 1	dL	131.5026	131.8026	132.5026	133.0026	131.8026	130.7826	129.5826	128.5626	140.5
A weighting	dB	-26	-16	0	-3	0	1	1	-3	
Triexponential loss	dB	0	0	0	0	0	0	0	0	
P.V.E. max	dBA	105.5026	115.8026	123.5026	130.0026	131.8026	130.5826	127.5826	127.5626	137.5

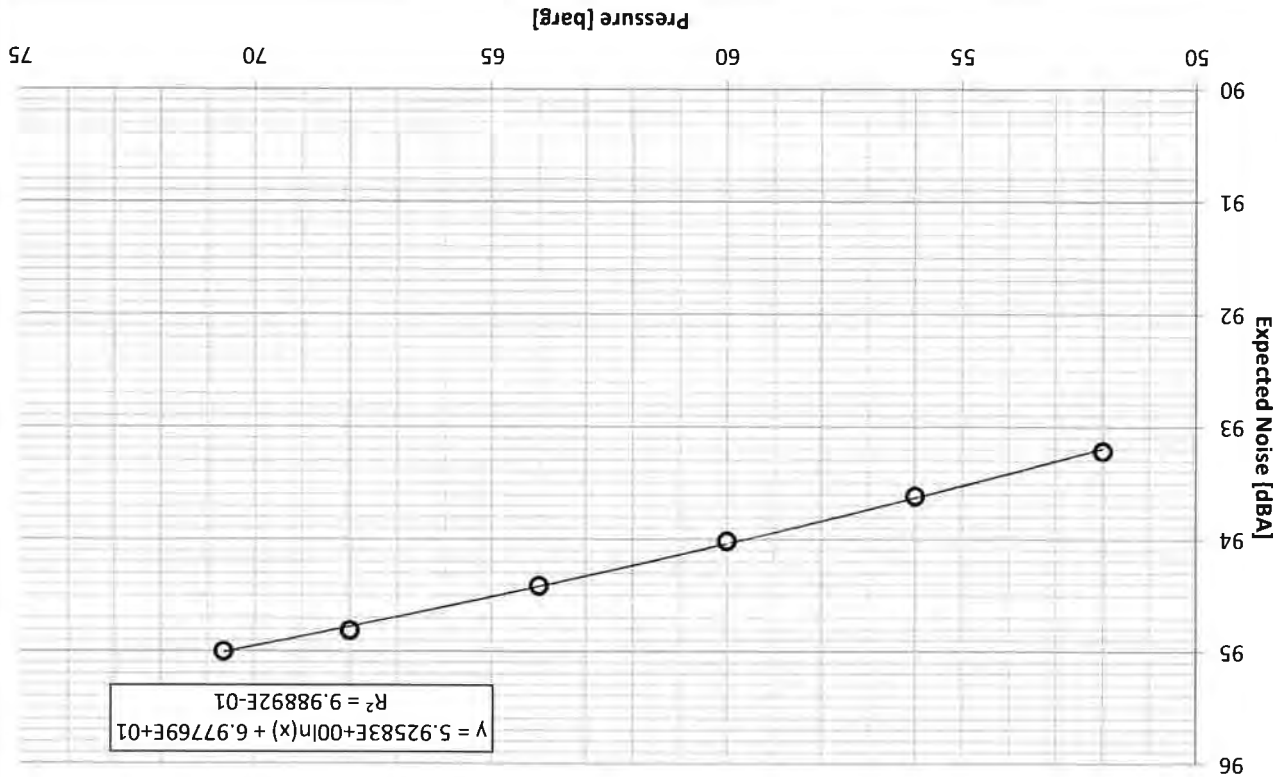
Psy	59 days	125	250	500	1000	2000	4500	8000	DA
Octave band	Hz	63	125	250	500	1000	2000	4500	
PWL 1	dB	130.6826	131.4670	132.0626	132.6582	133.4826	130.2926	125.0626	127.5826
A weighting	dB	-26	-10	0	-3	0	1	1	-1
Transmission loss	dB	0	0	0	0	0	0	0	0
PWL	dB(A)	104.6826	115.4826	122.0626	129.6582	133.4826	131.2926	126.0626	126.5826

Page	5.3 Gang										
Octave band	Hz	63	125	250	500	1000	2000	4000	8000	16	
Psy. L	dB	130.3626	130.8626	131.5626	132.1626	130.8626	129.7626	128.5626	127.3626	138.5	
A weighting	dB	-0.8	-1.6	-3	-5	-0	1	1	-1		
Transmission loss	dB	0	0	0	0	0	0	0	0		
TLV	dB	124.5626	118.8626	122.5626	129.1626	130.8626	130.7626	129.5626	127.3626	138.5	

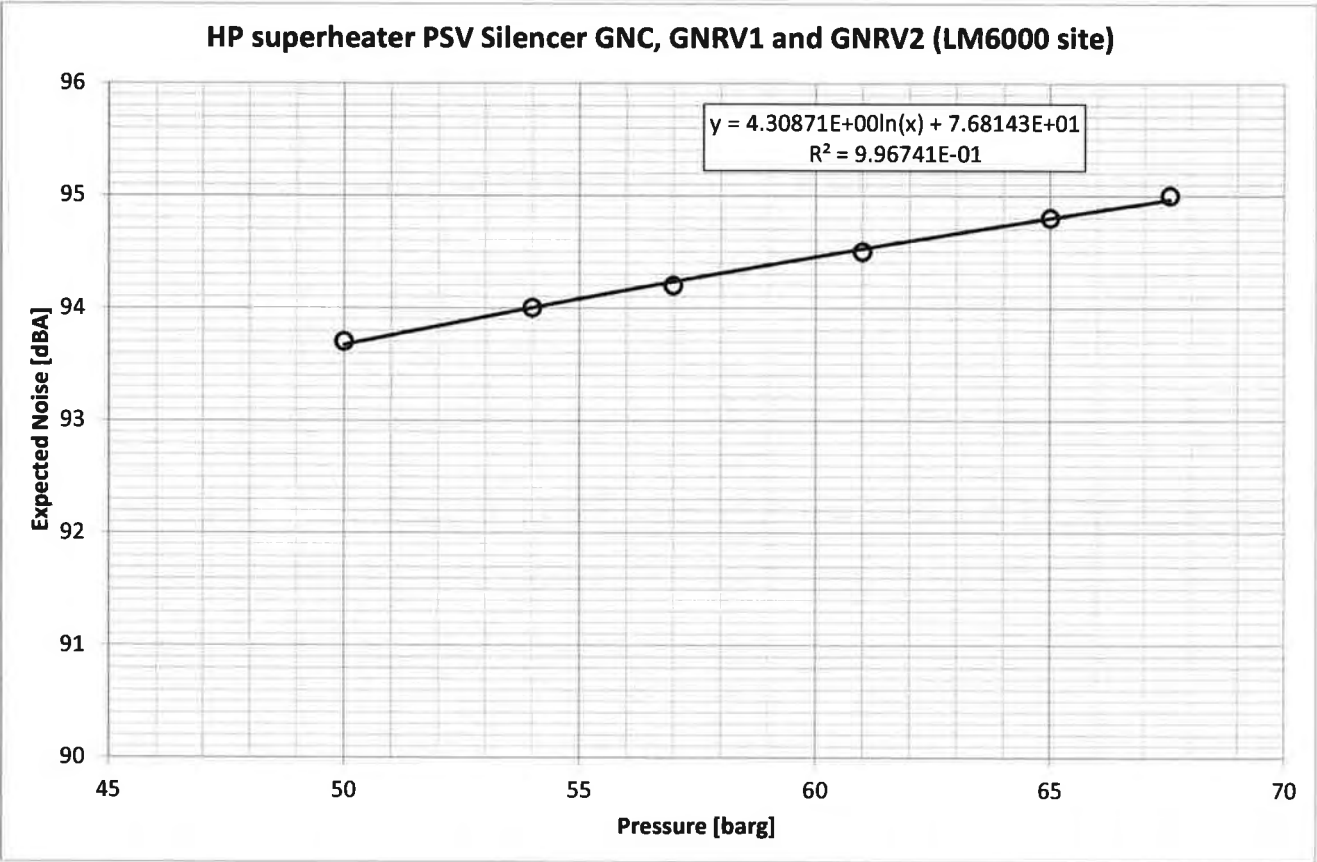
Attachment 3

Name	LPS/H PSV
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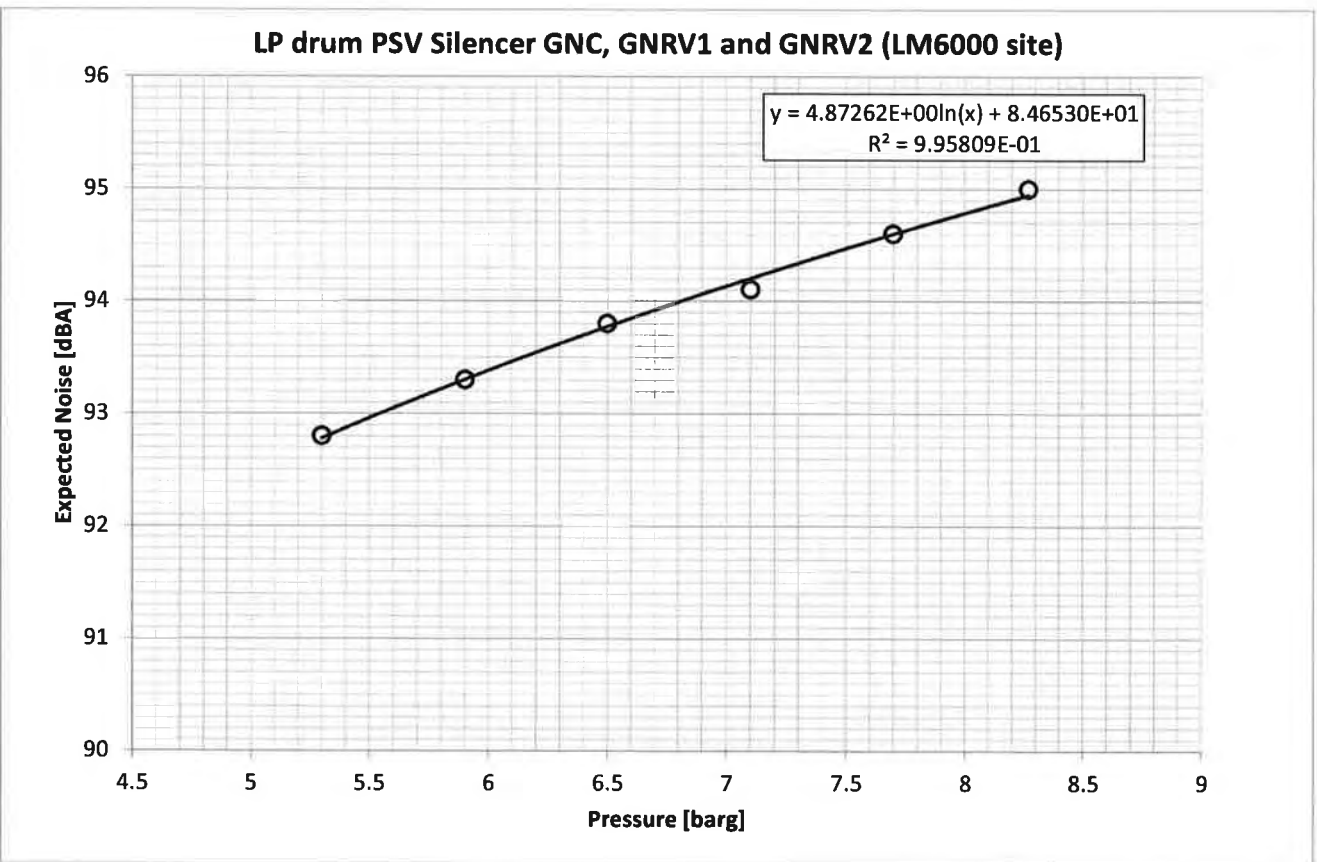
$$y = 5.92583E+00 \ln(x) + 6.97769E+01$$

$$R^2 = 9.98892E-01$$


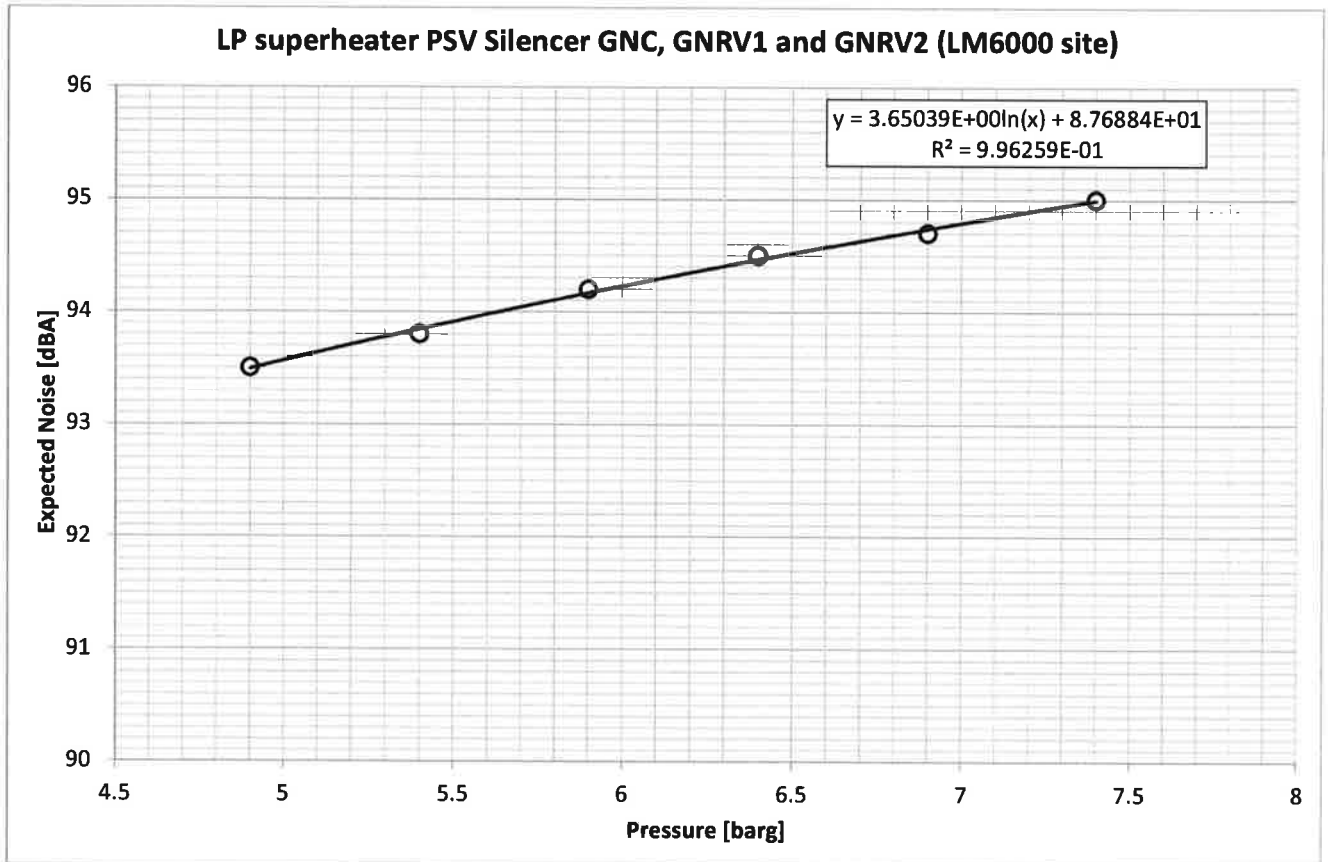
Attachment 3



Attachment 3



Attachment 3



ภาคผนวก ข-12

ผังแสดงชั้นระดับเสียง (Noise Contour)

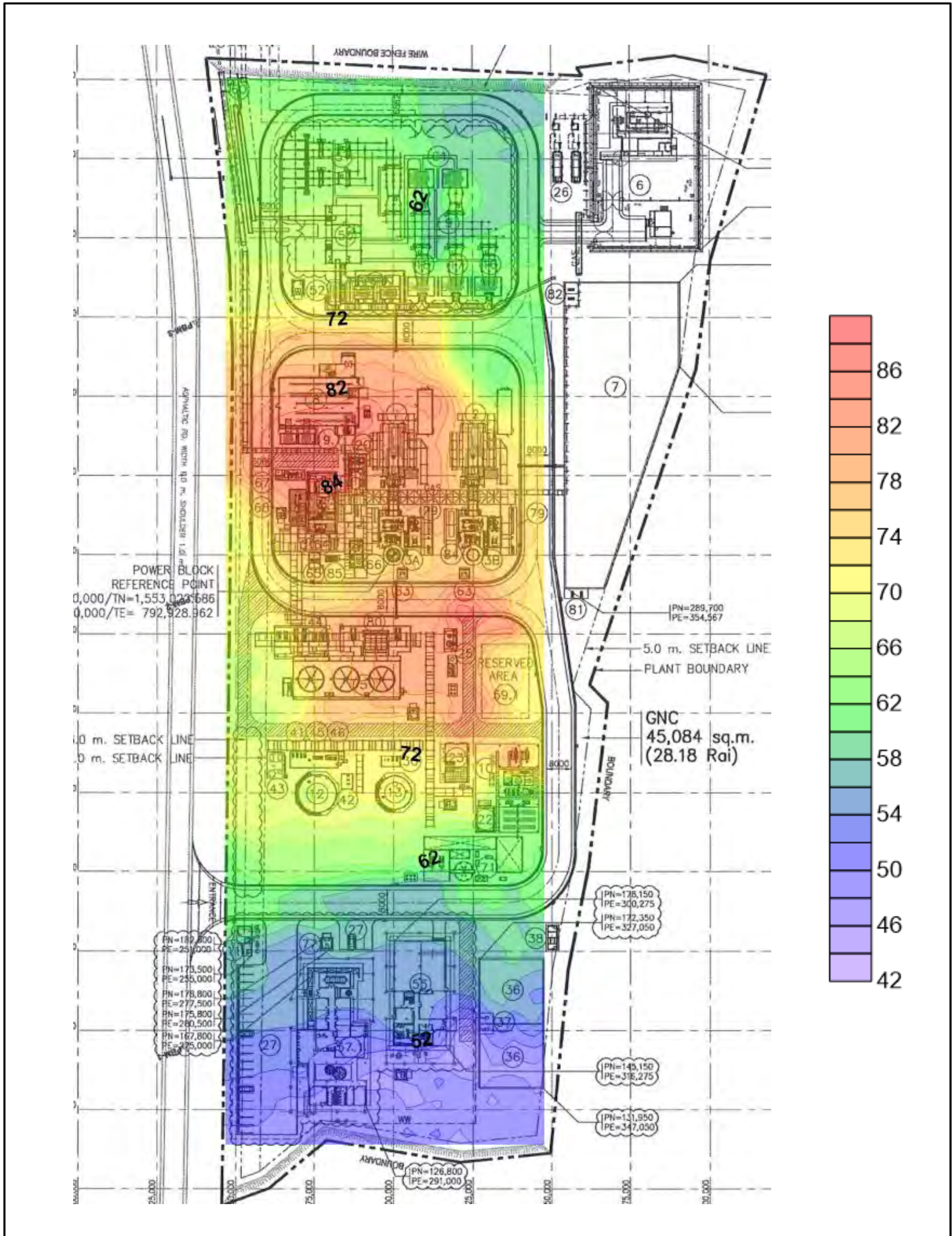


Noise Contour Map

Gulf NC Co., Ltd.

Reference Number : 2479827-1

Measurement Date : Sep 17, 2024



ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250, Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197

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ภาคผนวก ข-13

ผลการติดตามตรวจสอบคุณภาพน้ำทิ้ง แบบต่อเนื่อง
(Online Monitoring) บริเวณจุดระบายน้ำทิ้งของโครงการ

January-24

Значок
Copy HTML код таблицы value

Time	LOGMACHC0001.KQZL.PV	LOGMACHC0001.KQZL.PV	LOGMACHC0001.KQZL.PV	LOGMACHC0001.KQZL.PV	LOGMACHC0001.KQZL.PV	LOGMACHC0001.KQZL.PV
	WASTE WATER OUTFLOW T/HR	WASTE WATER TEMP DEG C	WASTE WATER PH	WASTE WATER CONDUCTIVITY µS/cm	WASTE WATER D.O. mg/L	Raw water inlet Row T/HR
13.8-n-21.000000	44.8866534	27.80331338	7.10221298	486.1310346	8.76723993	0.050183287
13.8-n-21.010000	45.32817078	27.71911274	7.03702278	484.174408	8.88027206	0.028676618
13.8-n-21.020000	45.3378891	27.4408981	7.27728896	482.720884	8.89274479	0.027414474
13.8-n-21.030000	46.66535187	27.4909006	7.27258868	480.320566	8.79268763	0.028055577
13.8-n-21.040000	53.7229531	27.7274949	7.02777623	478.316924	8.81709243	0.028679671
13.8-n-21.050000	50.48470111	27.56326918	7.04477893	476.477893	8.74477893	0.028679671
13.8-n-21.060000	51.0567023	27.4080865	6.7704887	477.338887	9.50647673	0.029272665
13.8-n-21.070000	54.3489144	26.8388661	7.33159879	477.939887	9.79940562	0.028679671
13.8-n-21.080000	54.13026554	26.71653254	7.16245881	478.415881	9.74158881	0.028679671
13.8-n-21.090000	54.54524948	26.8720028	7.3303618	479.018618	10.048664	0.028679671
13.8-n-21.100000	54.66410828	26.8839502	7.33952934	480.257483	10.1138944	0.02745455
13.8-n-21.110000	54.6217717	26.8411176	6.60131845	481.01845	10.0465056	0.02745455
13.8-n-21.080000	54.71512314	26.861063	6.91937234	481.788059	10.081984	0.02745455
13.8-n-21.090000	54.85318549	26.8744235	6.90788883	482.625281	10.0956258	0.02745455
13.8-n-21.100000	54.82076937	27.0084932	7.28090663	484.000462	10.0204052	0.02745455
13.8-n-21.110000	54.26592537	27.0077484	7.0077484	485.387158	9.94525368	0.02745455
13.8-n-21.120000	54.87576575	27.0709845	7.13098865	486.7559814	9.95051785	0.02745455
13.8-n-21.010000	54.70084937	27.0809437	7.13098865	488.1338196	9.95051785	0.02745455
13.8-n-21.020000	55.14057115	28.3437565	7.27590022	493.517272	9.9106305	0.02745455
13.8-n-21.030000	56.12079133	28.6413948	7.26502407	490.888448	9.75020022	0.02745455
13.8-n-21.040000	56.3982475	28.5480338	7.28457790	492.457279	9.75429679	0.02745455
13.8-n-21.050000	56.9484623	28.33373703	7.33373703	493.9007793	9.8037793	0.02745455
13.8-n-21.060000	56.8894972	28.31364615	6.87435747	494.718347	9.48834747	0.02745455
13.8-n-21.070000	56.8511687	28.1416817	6.78245076	495.927485	9.57638026	0.02745455
13.8-n-21.080000	57.02020073	27.63336882	6.78245076	497.1239812	9.71433981	0.02745455
13.8-n-21.090000	57.09539338	26.95523276	6.80204906	498.393268	9.87023268	0.02745455
13.8-n-21.100000	57.17451596	27.8805392	7.16379362	501.135919	9.66093157	0.02745455
13.8-n-21.110000	57.14317675	27.42046242	7.12105778	505.495778	9.87054778	0.02745455
13.8-n-21.010000	53.41118893	27.3803491	7.18938127	509.343738	9.87054778	0.02745455
13.8-n-21.020000	53.6113862	27.1020274	7.18973044	513.456972	9.96791362	0.02745455
13.8-n-21.030000	54.0901733	27.02046242	7.12105778	517.175663	9.87054778	0.02745455
13.8-n-21.040000	54.30017454	26.5800274	7.20735449	521.284328	10.2157130	0.02745455
13.8-n-21.050000	54.50521851	26.1199749	7.21657927	525.188591	10.2848441	0.02745455
13.8-n-21.060000	54.6201793	26.058793	7.23461532	527.113754	10.29127505	0.02745455
13.8-n-21.070000	54.11050542	25.9150338	7.31586768	531.158678	9.91552429	0.02745455
13.8-n-21.080000	54.10476079	25.6550002	6.92938047	531.705706	4.93971367	0.02745455
13.8-n-21.090000	54.0801763	25.120793	6.39676832	535.889845	3.84727863	0.02745455
13.8-n-21.100000	54.0913651	24.5613441	5.7188417	538.05513	3.1812417	0.02745455
13.8-n-21.110000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.120000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.010000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.020000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.030000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.040000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.050000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.060000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.070000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.080000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.090000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.100000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.110000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.120000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.010000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.020000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.030000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.040000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.050000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.060000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.070000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.080000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.090000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.100000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.110000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.120000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.010000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.020000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.030000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.040000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.050000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.060000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.070000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.080000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.090000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.100000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.110000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.120000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.010000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.020000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.030000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.040000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.050000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.060000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.070000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.080000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.090000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.100000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.110000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.120000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.010000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.020000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.030000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.040000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.050000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.060000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.070000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.080000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.090000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.100000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.110000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.120000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.010000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.020000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.030000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.040000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.050000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
13.8-n-21.060000	54.0854688	26.4976938	7.00009337	540.774411	8.8173738	0.02745455
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January-24

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Time	LODMBAC00100K02L.PV WASTE WATER OUTLET FLOW T/Hr	LODMBAC00100K02L.PV WASTE WATER TEMP DEG.C	LODMBAC00100K02L.PV WASTE WATER PH	LODMBAC00100K02L.PV WASTE WATER CONDUCTIVITY uS/cm	LODMBAC00100K02L.PV WASTE WATER D.O. mg/L	LODMBAC00100K02L.PV Raw water inlet flow T/Hr
26-Jan-25 16:00:00	0.04355321		7.23588144	826.9559717	2.990154862	0.011575971
26-Jan-25 17:00:00	0.04474983		7.25677124	827.5667227	3.002936282	0.012936282
26-Jan-25 18:00:00	0.04248136		7.02884705	7.02884705	0.004400593	0.004400593
26-Jan-25 19:00:00	0.043534845		7.29378864	824.0752119	3.118931314	0.015662903
26-Jan-25 20:00:00	0.04097057		7.01749777	813.1205459	3.411128261	0.012052144
26-Jan-25 21:00:00	0.04061286		7.01801286	7.01801286	0.004453076	0.004453076
26-Jan-25 22:00:00	0.039714453		28.7824182	8.18730932	800.3781831	10.46714878
26-Jan-25 23:00:00	0.17457473		29.0483185	8.3605278	802.1886597	0.012672254
27-Jan-25 00:00:00	0.151020387		29.0164746	8.10373466	815.4376362	0.010766868
27-Jan-25 01:00:00	50.85975647		25.0006999	8.48485676	804.006128	0.006741512
27-Jan-25 02:00:00	53.30540195		29.3259811	8.29888889	805.5415894	0.009276142
27-Jan-25 03:00:00	52.81765237		28.9433823	8.10373466	807.3250469	0.010310772
27-Jan-25 04:00:00	52.13451335		28.0752068	8.15900467	808.4434814	0.0343454
27-Jan-25 05:00:00	52.303392		28.7130697	8.14927673	809.494458	9.446267128
27-Jan-25 06:00:00	52.0229214		28.7564348	811.1023137	7.285202238	0.009414655
27-Jan-25 07:00:00	0.02488421		24.6222763	8.006120682	812.0793213	1.393694951
27-Jan-25 08:00:00	0.02682702		23.0141059	8.50582943	5.399525642	142.1423667
27-Jan-25 09:00:00	0.02676286		23.1807166	7.02854953	5.00254953	137.2624277
27-Jan-25 10:00:00	0.030713933		25.5069389	7.705248954	817.4135132	4.2085356
27-Jan-25 11:00:00	0.03284554		25.0464509	7.94497581	818.3951882	133.0251932
27-Jan-25 12:00:00	0.039438623		25.2174099	7.52365536	820.5697021	3.44755624
27-Jan-25 13:00:00	0.036648105		36.7805617	7.512133558	822.1477861	123.9518661
27-Jan-25 14:00:00	0.041523612		36.5316251	7.501171589	823.4912111	3.346108055
27-Jan-25 15:00:00	0.04589294		37.6888236	7.49022862	824.3284302	3.240772495
27-Jan-25 16:00:00	0.050636126		37.9782697	7.47937652	825.4878933	3.381495514
27-Jan-25 17:00:00	0.055317177		35.8841763	7.47873271	826.2871094	3.34348373
27-Jan-25 18:00:00	0.060110142		34.0874622	7.49152148	827.2644185	3.432544977
27-Jan-25 19:00:00	0.10644736		32.1578124	7.10647067	828.1526509	3.175465059
27-Jan-25 20:00:00	0.06958405		30.7400444	7.519742488	829.2509777	3.274736393
27-Jan-25 21:00:00	0.05670263		28.3399834	7.656714943	830.2044678	3.41247638
27-Jan-25 22:00:00	0.146013097		27.7683763	7.69431668	831.2264403	3.171331756
27-Jan-25 23:00:00	52.1341931		27.5380075	7.7308075	831.9790039	142.2304535
28-Jan-25 00:00:00	51.52511597		27.28474045	7.977776802	832.8739702	139.5073853
28-Jan-25 01:00:00	51.8601037		27.0382149	7.94021746	833.1768154	134.7823486
28-Jan-25 02:00:00	51.99842702		26.7817806	7.886172771	834.6152727	138.6818848
28-Jan-25 03:00:00	52.2890625		26.5231332	7.810210488	833.0181835	129.856369
28-Jan-25 04:00:00	52.54509238		26.5644899	7.78084747	832.7143896	127.5742874
28-Jan-25 05:00:00	0.038025087		25.0732508	7.72372459	831.0570068	6.608624374
28-Jan-25 06:00:00	0.040109802		23.7752134	7.66138015	829.739613	3.131729032
28-Jan-25 07:00:00	0.041617157		22.8611718	7.60004383	828.7744713	5.218371713
28-Jan-25 08:00:00	0.041256313		21.9054613	7.55003405	829.873521	5.114888966
28-Jan-25 09:00:00	0.044613804		22.09415817	7.501171589	830.972188	4.93889356
28-Jan-25 10:00:00	0.046414982		28.4838196	7.43207773	832.0710449	4.225241184
28-Jan-25 11:00:00	0.047448575		28.1749913	7.39584595	833.4699119	3.27115581
28-Jan-25 12:00:00	0.049544055		30.5846555	7.412287961	833.977051	5.54529523
28-Jan-25 13:00:00	0.044857777		32.1432877	7.324420538	833.489664	3.220841296
28-Jan-25 14:00:00	0.04806754		30.8488271	7.234722587	833.7232587	3.354758844
28-Jan-25 15:00:00	0.047437738		36.2155487	7.30240202	833.459668	3.20821874
28-Jan-25 16:00:00	0.0468878		36.5272127	7.317746639	833.7194685	3.139314117
28-Jan-25 17:00:00	0.04621907		35.0188884	7.339241264	833.8242066	3.254745844
28-Jan-25 18:00:00	0.045750681		33.6202077	7.360953211	833.0216309	3.401721554
28-Jan-25 19:00:00	0.045161676		31.9450158	7.382529736	834.0089722	3.547321558
28-Jan-25 20:00:00	0.045420025		30.8428646	7.366291636	836.1696788	3.380953695
28-Jan-25 21:00:00	0.043259647		28.3411022	7.432287971	839.7889902	3.83205962
28-Jan-25 22:00:00	52.1684182		27.1801438	7.405849723	842.803937	9.704670806
28-Jan-25 23:00:00	52.7220005		27.0001288	7.380428643	843.4281663	138.4281663
29-Jan-25 00:00:00	0.019174539		27.30132076	7.30132076	845.2170299	1.013525047
29-Jan-25 01:00:00	0.03855114		26.3380973	7.446263335	845.6623335	3.37739913
29-Jan-25 02:00:00	0.040170007		25.8687073	7.460748973	846.4287012	3.384287062
29-Jan-25 03:00:00	0.02952122		24.7697067	7.41088939	846.5115408	4.399438938
29-Jan-25 04:00:00	0.027457273		23.7183147	8.09120393	846.3365485	4.070174634
29-Jan-25 05:00:00	0.02591927		22.5630926	8.00861678	847.1613851	3.991207574
29-Jan-25 06:00:00	0.02313038		22.8008199	8.071860218	847.7860218	3.978001299
29-Jan-25 07:00:00	0.021259433		21.7407173	7.835862286	848.4466004	4.068119553
29-Jan-25 08:00:00	0.01924222		21.3409174	7.79168374	849.2990112	4.0924221
29-Jan-25 09:00:00	0.023478194		20.7481393	7.72961494	850.1330021	4.060617199
29-Jan-25 10:00:00	0.027974864		24.4594326	7.667193029	851.0030318	3.984021788
29-Jan-25 11:00:00	0.01701203		27.0748565	7.578314304	851.4504415	3.67425077
29-Jan-25 12:00:00	0.01847001		26.0189662	7.506974913	852.7070923	3.641741181
29-Jan-25 13:00:00	0.039915252		35.0912552	7.52621603	853.559082	3.34453936
29-Jan-25 14:00:00	0.040479915		36.5839038	7.50474567	854.411132	3.257394532
29-Jan-25 15:00:00	0.045210453		37.12148363	7.514861366	855.4146129	3.386109642
29-Jan-25 16:00:00	0.051051814		37.0426409	7.178524971	856.4851063	3.31450833
29-Jan-25 17:00:00	0.053885996		35.74052811	7.138816357	857.5483398	3.138082677
29-Jan-25 18:00:00	0.051846729		34.25186729	7.08445173	858.651173	3.045373862
29-Jan-25 19:00:00	0.057575436		32.5392005	7.07172785	859.6820068	3.09255646
29-Jan-25 20:00:00	0.05858842		30.1464138	7.03031344	860.7488803	0.291222753

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Time	LODMBAC00100K02L.PV WASTE WATER OUTLET FLOW T/Hr	LODMBAC00100K02L.PV WASTE WATER TEMP DEG.C	LODMBAC00100K02L.PV WASTE WATER PH	LODMBAC00100K02L.PV WASTE WATER CONDUCTIVITY uS/cm	LODMBAC00100K02L.PV WASTE WATER D.O. mg/L	LODMBAC00100K02L.PV Raw water inlet flow T/Hr
29-Jan-25 21:00:00	0.061622724		27.94772184	8.313171803	864.8139038	10.2189396
29-Jan-25 22:00:00	54.7894747		26.8844207	8.31713805	871.0590928	10.7308986
29-Jan-25 23:00:00	53.8889986		28.0709933	8.277841205	877.7316428	9.73364085
30-Jan-25 00:00:00	54.0581856		27.96869795	8.22564084	879.5940005	10.2171172
30-Jan-25 01:00:00	54.3407257		27.9203795	8.17766464	881.331932	9.90268267
30-Jan-25 02:00:00	54.7194277		27.4749752	8.12709044	882.7131486	9.7552433
30-Jan-25 03:00:00	55.0815812		27.8463414	6.80428864	884.026534	9.56481734
30-Jan-25 04:00:00	0.23209544		27.8481029	6.81154591	885.472729	9.316704254
30-Jan-25 05:00:00	0.03824748		27.8394585	6.57006705	886.811565	8.90120555
30-Jan-25 06:00:00	0.039974827		27.6565527	888.231323	9.15907481	0.07724813
30-Jan-25 07:00:00	0.041704897		25.2302326	889.638988	6.745559687	0.0798086
30-Jan-25 08:00:00	0.043454956		24.8015563	891.7509042	5.790674099	0.06868484
30-Jan-25 09:00:00	0.04516054		24.2801005	893.888836	4.32401514	0.077731884
30-Jan-25 10:00:00	0.05		27.50	7.39	896.22	3.70
30-Jan-25 11:00:00	0.05		31.37	7.34	898.45	3.33
30-Jan-25 12:00:00	0.05		35.33	7.28	900.68	3.35
30-Jan-25 13:00:00	0.05		36.50	7.23	902.91	3.11
30-Jan-25 14:00:00	0.06		38.49	7.22	905.34	3.05
30-Jan-25 15:00:00	0.06		39.20	7.20	907.23	3.02
30-Jan-25 16:00:00	0.06		7.19	7.07	907.10	2.58
30-Jan-25 17:00:00	0.07		37.65	7.18	906.97	3.02
30-Jan-25 18:00:00	0.07		38.98	7.15	908.45	3.15
30-Jan-25 19:00:00	0.07		33.70	7.13	906.70	3.35
30-Jan-25 20:00:00	0.08		28.25	7.49	917.67	3.66
30-Jan-25 21:00:00	0.08		29.00	7.40	924.53	3.40
30-Jan-25 22:00:00	52.38		27.74	7.70	951.04	3.25
30-Jan-25 23:00:00	52.28		27.48	7.66	950.06	3.01
31-Jan-25 00:00:00	51.59		27.12	7.60	988.06	9.00
31/1/2025 1:00	-0.07		26.53	7.42	985.05	4.785
31/1/2025 3:00	-0.06		25.11	7.18	987.05	4.33
31/1/2025 5:00	-0.05		24.63	7.20	988.45	4.19
31/1/2025 7:00	-0.03		24.63	7.20	987.23	3.73
31/1/2025 9:00	-0.03		21.69	7.07	988.05	4.21
31/1/2025 11:00	0.02		20.44	6.86	994.14	3.99
31/1/2025 13:00	0.01		24.65	7.06	997.23	3.73
31/1/2025 15:00	0.01		20.20	7.06	987.95	4.26
31/1/2025 17:00	0.01		19.84	7.06	991.04	4.18
31/1/2025 19:00	0.02		20.44	6.86	994.14	3.99
31/1/2025 21:00	0.02		24.65	7.06	997.23	3.73
31/1/2025 23:00	0.03		29.73	7.07	997.58	3.46
31/2/2025 0:00	0.04		34.90	7.02	997.36	3.24
31/2/2025 2:00	0.04		31.20	7.07	997.15	3.14
31/2/2025 4:00	0.05		29.73	7.07	997.58	3.46
31/2/2025 6:00	0.05		27.07	7.07	996.93	3.09
31/2/2025 8:00	0.05		26.06	7.07	996.71	3.04
31/2/2025 10:00	0.05		25.06	7.06	996.49	2.99
31/2/2025 12:00	0.06		24.88	7.06	996.27	3.06
31/2/2025 14:00	0.05		24.27	7.05	996.05	3.16
31/2/2025 16:00	0.05		23.79	7.05	995.82	3.25
31/2/2025 18:00	0.04		23.31	7.05	995.59	3.34
31/2/2025 20:00	0.03		22.79	7.05	994.67	3.69
31/2/2025 22:00	0.03		22.49	7.05	994.08	3.84
31/2/2025 24:00	0.03		22.14	7.05	993.49	4.31
31/2/2025 26:00	51.63		28.56	7.42	925.72	9.41
12/2/2025 0:00	51.47		28.44	7.85	926.34	9.35

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*Remark
Copy 30th row in PL and call it value.

Time	USG84M-02-001001.P01	USG84M-02-001001.P01	USG84M-02-001001.P01	USG84M-02-001001.P01	USG84M-02-001001.P01	USG84M-02-001001.P01	USG84M-02-001001.P01	Raw water inlet flow
	WASTE WATER OUTLET	WASTE WATER TEMP	WASTE WATER PH	WASTE WATER CONDUCTIVITY	WASTE WATER S.D.C.	WASTE WATER S.D.C.		T/Hr
	FLOW TON	DEG C	PH	µS/CM	mg/L	mg/L		
07-Feb-25 18:00:00	0.0	38.78	7.23	1,011.02	2.38	2.38	128.63	
07-Feb-25 19:00:00	0.0	36.65	7.25	1,021.45	3.16	3.16	131.05	
07-Feb-25 20:00:00	0.01	34.51	7.01	1,011.40	3.16	3.16	132.00	
07-Feb-25 21:00:00	0.04	28.84	7.12	1,039.05	4.92	4.92	131.18	
07-Feb-25 22:00:00	0.30	29.81	7.14	1,024.12	5.73	5.73	125.57	
07-Feb-25 23:00:00	0.30	29.17	7.03	1,031.17	5.73	5.73	126.00	
08-Feb-25 00:00:00	0.52	29.77	7.19	1,024.27	7.13	7.13	128.97	
08-Feb-25 01:00:00	0.53	29.14	7.22	1,009.34	7.13	7.13	123.27	
08-Feb-25 02:00:00	0.51	28.80	7.24	1,009.40	7.13	7.13	124.00	
08-Feb-25 03:00:00	0.58	29.69	7.36	999.48	7.66	7.66	122.81	
08-Feb-25 04:00:00	0.50	29.63	7.29	994.35	7.70	7.70	132.40	
08-Feb-25 05:00:00	0.51	29.88	7.49	991.30	7.49	7.49	132.00	
08-Feb-25 06:00:00	0.56	29.36	7.34	990.90	7.70	7.70	137.99	
08-Feb-25 07:00:00	0.540545963	29.13023122	7.305051005	988.2821501	7.617774477	7.617774477	130.474142	
08-Feb-25 08:00:00	0.540741725	29.12031119	7.379591125	985.975249	7.580358851	7.580358851	140.274673	
08-Feb-25 09:00:00	0.540538833	29.12600202	7.35012862	985.980428	7.602017074	7.602017074	130.312850	
08-Feb-25 10:00:00	0.540741756	29.12031119	7.379591125	985.975249	7.580358851	7.580358851	132.341280	
08-Feb-25 11:00:00	0.510138488	29.10661161	7.406261116	986.1786247	6.834868683	6.834868683	135.787933	
08-Feb-25 12:00:00	0.510138488	29.10661161	7.406261116	986.1786247	6.834868683	6.834868683	135.787933	
08-Feb-25 13:00:00	0.510138488	29.10661161	7.406261116	986.1786247	6.834868683	6.834868683	135.787933	
08-Feb-25 14:00:00	0.510138488	29.10661161	7.406261116	986.1786247	6.834868683	6.834868683	135.787933	
08-Feb-25 15:00:00	0.510138488	29.10661161	7.406261116	986.1786247	6.834868683	6.834868683	135.787933	
08-Feb-25 16:00:00	0.510138488	29.10661161	7.406261116	986.1786247	6.834868683	6.834868683	135.787933	
08-Feb-25 17:00:00	0.510138488	29.10661161	7.406261116	986.1786247	6.834868683	6.834868683	135.787933	
08-Feb-25 18:00:00	0.510138488	29.10661161	7.406261116	986.1786247	6.834868683	6.834868683	135.787933	
08-Feb-25 19:00:00	0.510138488	29.10661161	7.406261116	986.1786247	6.834868683	6.834868683	135.787933	
08-Feb-25 20:00:00	0.510138488	29.10661161	7.406261116	986.1786247	6.834868683	6.834868683	135.787933	
08-Feb-25 21:00:00	0.510138488	29.10661161	7.406261116	986.1786247	6.834868683	6.834868683	135.787933	
08-Feb-25 22:00:00	0.510138488	29.10661161	7.406261116	986.1786247	6.834868683	6.834868683	135.787933	
08-Feb-25 23:00:00	0.510138488	29.10661161	7.406261116	986.1786247	6.834868683	6.834868683	135.787933	
08-Feb-25 00:00:00	0.510138488	29.10661161	7.406261116	986.1786247	6.834868683</			

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*Remark
Copy 30 minutes PL 1000 as per val

Time	LDGM-B3-FC001001_PU		LDGM-B3-FC001001_PU		LDGM-B3-FC002001_PU		LDGM-B3-FC002001_PU		LDGM-B3-FC003001_PU		LDGM-B3-FC003001_PU		Raw water inlet flow
	Flow	DO2	pH	COND	Flow	DO2	pH	COND	Flow	DO2	pH	COND	
11.n.m. 25.07.00.00	0.00084338	23.20707893	7.18260561	926.2739688	0.00138868	24.6688467	7.18260561	926.2739688	0.00138868	24.6688467	7.18260561	926.2739688	
11.n.m. 25.08.00.00	0.00430327	22.29799387	7.17802783	927.6426234	0.00281825	24.02283525	7.17802783	927.6426234	0.00281825	24.02283525	7.17802783	927.6426234	
11.n.m. 25.09.00.00	0.00000000	23.24744844	7.17718048	926.2739688	0.00000000	24.6688467	7.17718048	926.2739688	0.00000000	24.6688467	7.17718048	926.2739688	
11.n.m. 25.10.00.00	0.00219387	23.79441881	7.18168842	932.6338888	0.10095937	24.46859757	7.18168842	932.6338888	0.10095937	24.46859757	7.18168842	932.6338888	
11.n.m. 25.10.07.00	0.00612269	20.03702928	7.16438898	934.1234888	0.14589647	24.04867477	7.16438898	934.1234888	0.14589647	24.04867477	7.16438898	934.1234888	
11.n.m. 25.10.14.00	0.00000000	23.24744844	7.17718048	926.2739688	0.00000000	24.6688467	7.17718048	926.2739688	0.00000000	24.6688467	7.17718048	926.2739688	
11.n.m. 25.10.19.00	0.00449934	23.34622574	7.16414216	933.1234888	0.16995644	24.04867477	7.16414216	933.1234888	0.16995644	24.04867477	7.16414216	933.1234888	
11.n.m. 25.10.26.00	0.00191938	29.33882424	7.03498432	925.7344844	0.15938188	24.04867477	7.03498432	925.7344844	0.15938188	24.04867477	7.03498432	925.7344844	
11.n.m. 25.11.03.00	0.00000000	23.24744844	7.17718048	926.2739688	0.00000000	24.6688467	7.17718048	926.2739688	0.00000000	24.6688467	7.17718048	926.2739688	
11.n.m. 25.11.10.00	0.00420906	37.16774368	6.97986532	925.7344844	0.19397043	24.04867477	6.97986532	925.7344844	0.19397043	24.04867477	6.97986532	925.7344844	
11.n.m. 25.11.17.00	0.00413255	38.69078104	6.96701804	926.2739688	0.19151444	24.04867477	6.96701804	926.2739688	0.19151444	24.04867477	6.96701804	926.2739688	
11.n.m. 25.11.24.00	0.00000000	23.24744844	7.17718048	926.2739688	0.00000000	24.6688467	7.17718048	926.2739688	0.00000000	24.6688467	7.17718048	926.2739688	
11.n.m. 25.11.31.00	0.00292987	37.00012057	6.92398882	925.7344844	0.18613064	24.04867477	6.92398882	925.7344844	0.18613064	24.04867477	6.92398882	925.7344844	
11.n.m. 25.12.07.00	0.00000000	23.24744844	7.17718048	926.2739688	0.00000000	24.6688467	7.17718048	926.2739688	0.00000000	24.6688467	7.17718048	926.2739688	
11.n.m. 25.12.14.00	0.00474735	37.00012057	6.92398882	925.7344844	0.18613064	24.04867477	6.92398882	925.7344844	0.18613064	24.04867477	6.92398882	925.7344844	
11.n.m. 25.12.21.00	0.00465003	39.03201875	6.95423134	925.738806	0.20047634	24.04867477	6.95423134	925.738806	0.20047634	24.04867477	6.95423134	925.738806	
11.n.m. 25.12.28.00	0.00000000	23.24744844	7.17718048	926.2739688	0.00000000	24.6688467	7.17718048	926.2739688	0.00000000	24.6688467	7.17718048	926.2739688	
11.n.m. 26.01.04.00	0.00465003	39.03201875	6.95423134	925.738806	0.20047634	24.04867477	6.95423134	925.738806	0.20047634	24.04867477	6.95423134	925.738806	
11.n.m. 26.01.11.00													

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*Remark

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*Remark

Time	DOUMBE000000021.PV		DOUMBE000000021.PV		DOUMBE000000021.PV		DOUMBE000000021.PV		DOUMBE000000021.PV		DOUMBE000000021.PV		DOUMBE000000021.PV		DOUMBE000000021.PV		DOUMBE000000021.PV	
	WASTE WATER INLET	FLOW	WASTE WATER	TEMP	WASTE WATER	TEMP	WASTE WATER	TEMP	WASTE WATER	TEMP	WASTE WATER	TEMP	WASTE WATER	TEMP	WASTE WATER	TEMP	Raw water inlet	TEMP
17.n.a. vs 21.00.00	0.04218827		11.04431538		7.91981493		907.9869701		9.63724385		0.316432475		17.n.a. vs 21.00.00		0.04218827		11.04431538	
17.n.a. vs 22.00.00	0.037526729		11.0365448		7.99216642		916.6778172		9.74820790		0.2661719938		17.n.a. vs 22.00.00		0.037526729		11.0365448	
17.n.a. vs 23.00.00	0.0248747248		10.95551847		7.993588497		925.446660		9.76079617		0.1981213211		17.n.a. vs 23.00.00		0.0248747248		10.95551847	
17.n.a. vs 24.00.00	0.037526729		10.95551847		7.993588497		925.446660		9.76079617		0.242410000		17.n.a. vs 24.00.00		0.037526729		10.95551847	
18.n.a. vs 01.00.00	0.037526729		10.95551847		7.993588497		930.8957097		9.247401509		0.0561195185		18.n.a. vs 01.00.00		0.037526729		10.95551847	
18.n.a. vs 02.00.00	0.037526729		10.95551847		7.993588497		930.8957097		9.247401509		0.0561195185		18.n.a. vs 02.00.00		0.037526729		10.95551847	
18.n.a. vs 03.00.00	0.037526729		10.95551847		7.993588497		930.8957097		9.247401509		0.0561195185		18.n.a. vs 03.00.00		0.037526729		10.95551847	
18.n.a. vs 04.00.00	0.037526729		10.95551847		7.993588497		930.8957097		9.247401509		0.0561195185		18.n.a. vs 04.00.00		0.037526729		10.95551847	
18.n.a. vs 05.00.00	0.037526729		10.95551847		7.993588497		930.8957097		9.247401509		0.0561195185		18.n.a. vs 05.00.00		0.037526729		10.95551847	
18.n.a. vs 06.00.00	0.037526729		10.95551847		7.993588497		930.8957097		9.247401509		0.0561195185		18.n.a. vs 06.00.00		0.037526729		10.95551847	
18.n.a. vs 07.00.00	0.037526729		10.95551847		7.993588497		930.8957097		9.247401509		0.0561195185		18.n.a. vs 07.00.00		0.037526729		10.95551847	
18.n.a. vs 08.00.00	0.037526729		10.95551847		7.993588497		930.8957097		9.247401509		0.0561195185		18.n.a. vs 08.00.00		0.037526729		10.95551847	
18.n.a. vs 09.00.00	0.037526729		10.95551847		7.993588497		930.8957097		9.247401509		0.0561195185		18.n.a. vs 09.00.00		0.037526729		10.95551847	
18.n.a. vs 10.00.00	0.037526729		10.95551847		7.993588497		930.8957097		9.247401509		0.0561195185		18.n.a. vs 10.00.00		0.037526729		10.95551847	
18.n.a. vs 11.00.00	0.037526729		10.95551847		7.993588497		930.8957097		9.247401509		0.0561195185		18.n.a. vs 11.00.00		0.037526729		10.95551847	
18.n.a. vs 12.00.00	0.037526729		10.95551847		7.993588497		930.8957097		9.247401509		0.0561195185		18.n.a. vs 12.00.00		0.037526729		10.95551847	
18.n.a. vs 13.00.00	0.037526729		10.95551847		7.993588497		930.8957097		9.247401509		0.0561195185		18.n.a. vs 13.00.00		0.037526729		10.95551847	
18.n.a. vs 14.00.00	0.037526729		10.95551847	</														

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*Remark

Copy to clipboard or print table value.

Time	UDM84BCQ201KQZL.PV WASTE WATER OUTFLOW FLOW T/Hr	UDM84BCQ201KQZL.PV WASTE WATER TEMP DEG.C	UDM84BCQ201KQZL.PV WASTE WATER pH	UDM84BCQ201KQZL.PV WASTE WATER CONDUCTIVITY uS/CM	UDM84BCQ201KQZL.PV WASTE WATER D.O. mg/L	UDM84BCQ201KQZL.PV Raw water inlet flow T/Hr
21.n.m.-25.06:00	0.00289369	7.30747572	881.9482422	4.54803807	133.9981781	
21.n.m.-25.07:00	0.00248871	7.17213091	981.1918031	4.54501931	134.0990373	
21.n.m.-25.08:00	0.002322052	7.34331428	884.4389648	4.561271193	132.7999373	
21.n.m.-25.09:00	0.00219252	7.31312768	886.929787	4.576134481	131.0006745	
21.n.m.-25.10:00	0.002138844	7.373921581	886.929787	4.573961733	130.2017684	
21.n.m.-25.11:00	0.002021581	7.379119181	888.1704881	4.580370071	128.9026814	
21.n.m.-25.12:00	0.002051737	7.381510259	890.610912	4.586612254	127.0005173	
21.n.m.-25.13:00	0.002097394	7.383103596	895.891172	4.592969512	125.9046252	
21.n.m.-25.14:00	7.889016.05	7.380898934	991.9111938	4.5993431	125.0052948	
21.n.m.-25.15:00	0.002044714	7.386891373	992.160623	4.60588251	124.7061786	
21.n.m.-25.16:00	0.002091237	7.386861761	994.4019165	4.612033844	122.4070965	
21.n.m.-25.17:00	0.001719781	7.390481549	947.672778	4.618719114	121.0707659	
21.n.m.-25.18:00	7.801231764	7.390123764	996.8924381	4.624714386	119.8086466	
21.n.m.-25.19:00	0.001913008	7.390471102	998.1380065	4.63106661	118.597261	
21.n.m.-25.20:00	0.002279832	7.39585544	999.3831861	4.637449932	117.1036247	
21.n.m.-25.21:00	0.002646651	7.397650273	1000.627273	4.643210543	115.815143	
21.n.m.-25.22:00	0.002031476	7.398545117	1001.874146	4.650010953	114.4242889	
21.n.m.-25.23:00	0.002388903	7.401248455	1003.119507	4.656454123	113.1332933	
21.n.m.-25.24:00	0.002461126	7.403462783	1004.364689	4.662765487	112.0164183	
21.n.m.-25.01:00	0.00411395	7.404831732	1005.610228	4.669417681	110.7150776	
21.n.m.-25.02:00	7.40682147	7.40682147	1006.855951	4.675475074	109.4193862	
21.n.m.-25.03:00	0.004847597	7.409434385	1008.100952	4.682182314	108.1188442	
21.n.m.-25.04:00	0.00214421	7.410212963	1009.343112	4.688173388	106.8717381	
21.n.m.-25.05:00	0.002582444	7.412014961	1010.591675	4.694521395	105.5186234	
21.n.m.-25.06:00	0.00204958	7.413801289	1011.837108	4.70086927	104.1193122	
21.n.m.-25.07:00	0.002614891	7.415061638	1013.082397	4.707218673	102.8024935	
21.n.m.-25.08:00	0.006881713	7.417139759	1014.327759	4.713535153	101.4012621	
21.n.m.-25.09:00	0.007084318	7.419151314	1015.571181	4.719958127	100.1224817	
21.n.m.-25.10:00	0.007143062	7.420986652	1016.818542	4.726426269	99.02107129	
21.n.m.-25.11:00	0.007762186	7.423726991	1018.064904	4.732969697	97.7239808	
21.n.m.-25.12:00	0.007821005	7.426451126	1019.311205	4.739531581	96.4291386	
21.n.m.-25.13:00	0.008115813	7.428370144	1020.556426	4.746218988	95.11254005	
21.n.m.-25.14:00	0.00888267	7.431164881	1021.799868	4.753011293	93.8066207	
21.n.m.-25.15:00	0.00949444	7.434991882	1023.043781	4.759791511	92.5127116	
21.n.m.-25.16:00	0.009616104	7.438173159	1024.290771	4.766471804	91.21840118	
21.n.m.-25.17:00	0.010134947	7.441354787	1025.537197	4.772942134	89.9241348	
21.n.m.-25.18:00	0.010349991	7.453134183	1026.781494	4.779313439	88.6301904	
21.n.m.-25.19:00	0.010761775	7.473181373	1028.028855	4.783378242	87.33100995	
21.n.m.-25.20:00	7.438910088	7.474910088	1029.276217	4.789710231	86.0371003	
21.n.m.-25.21:00	0.011450422	7.440775327	1030.519758	4.796041614	84.74361184	
21.n.m.-25.22:00	0.011817248	7.444511965	1031.762339	4.802393913	83.44318781	
21.n.m.-25.23:00	7.444140033	7.446848033	1033.004912	4.808747818	82.14378183	
21.n.m.-25.00:00	0.012550892	7.446108341	1034.251362	4.815091567	80.84535178	
21.n.m.-25.01:00	0.012917718	7.447962078	1035.499023	4.821449728	79.54607447	
21.n.m.-25.02:00	7.447316023	7.449823164	1036.746544	4.827776242	78.2471841	
21.n.m.-25.03:00	0.01364364	7.451491156	1037.989746	4.834121074	76.94817902	
21.n.m.-25.04:00	0.014018187	7.453128564	1039.235107	4.840464564	75.6490868	
21.n.m.-25.05:00	0.014398021	7.454788029	1040.480919	4.846810918	74.35009391	
21.n.m.-25.06:00	0.0147515835	7.456457847	1041.72831	4.853155787	73.05108747	
21.n.m.-25.07:00	0.015111863	7.458168618	1042.971191	4.859501839	71.7521373	
21.n.m.-25.08:00	0.015484861	7.460862124	1044.219543	4.865847111	70.4531962	
21.n.m.-25.09:00	0.015852206	7.463552782	1045.467514	4.872192564	69.15435264	
21.n.m.-25.10:00	0.016221218	7.46624552	1046.720725	4.878537693	67.85446133	
21.n.m.-25.11:00	0.016590618	7.468938835	1047.973981	4.884882912	66.55457042	
21.n.m.-25.12:00	0.016959275	7.471632987	1049.227198	4.891221398	65.2546833	
21.n.m.-25.13:00	0.017328997	7.474327315	1050.480481	4.897561473	63.95477038	
21.n.m.-25.14:00	0.017698138	7.477021783	1051.733718	4.903901548	62.65486764	
21.n.m.-25.15:00	0.01806743	7.479716303	1052.986951	4.910241623	61.35495691	
21.n.m.-25.16:00	0.01843677	7.482410823	1054.240184	4.916581698	60.05504418	
21.n.m.-25.17:00	0.018806194	7.485105343	1055.493417	4.922921773	58.75513687	
21.n.m.-25.18:00	0.019175178	7.487800861	1056.746650	4.929261848	57.4552152	
21.n.m.-25.19:00	0.019544163	7.490496379	1057.999883	4.935601923	56.1552935	
21.n.m.-25.20:00	0.019913148	7.493191897	1059.253116	4.941941998	54.8553718	
21.n.m.-25.21:00	0.020282133	7.495887415	1060.506349	4.948282173	53.5554501	
21.n.m.-25.22:00	0.020651118	7.498582933	1061.759582	4.954622248	52.2555284	
21.n.m.-25.23:00	0.021020103	7.498737951	1063.012815	4.960962323	50.9556067	
21.n.m.-25.00:00	0.021389187	7.497370747	1064.266048	4.967302417	49.6556849	
21.n.m.-25.01:00	0.021758262	7.495903122	1065.519281	4.973642511	48.3557632	
21.n.m.-25.02:00	0.022127346	7.494435504	1066.772514	4.979982604	47.0558415	
21.n.m.-25.03:00	0.022496431	7.492967886	1068.025747	4.986322698	45.7559198	
21.n.m.-25.04:00	0.022865515	7.491499261	1069.278980	4.992662792	44.4559981	
21.n.m.-25.05:00	0.023234600	7.489737951	1070.532213	4.999002886	43.1560764	
21.n.m.-25.06:00	0.023603684	7.487976047	1071.785446	5.005342980	41.8561547	
21.n.m.-25.07:00	0.023972769	7.486214154	1073.038679	5.011683074	40.5562330	
21.n.m.-25.08:00	0.024341853	7.484452261	1074.291912	5.018023168	39.2563113	
21.n.m.-25.09:00	0.024710938	7.482690368	1075.545145	5.024363262	37.9563896	
21.n.m.-25.10:00	0.025080022	7.480928474	1076.798378	5.030703356	36.6564679	
21.n.m.-25.11:00	0.025449107	7.479166581	1078.051611	5.037043450	35.3565462	
21.n.m.-25.12:00	0.025818191	7.477404688	1079.304844	5.043383544	34.0566245	
21.n.m.-25.13:00	0.026187276	7.475642795	1080.558077	5.049723638	32.7567028	
21.n.m.-25.14:00	0.026556360	7.473880902	1081.811310	5.056063732	31.4567811	

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*Remark

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Time	UDM84BCQ201KQZL.PV WASTE WATER OUTFLOW FLOW T/Hr	UDM84BCQ201KQZL.PV WASTE WATER TEMP DEG.C	UDM84BCQ201KQZL.PV WASTE WATER pH	UDM84BCQ201KQZL.PV WASTE WATER CONDUCTIVITY uS/CM	UDM84BCQ201KQZL.PV WASTE WATER D.O. mg/L	UDM84BCQ201KQZL.PV Raw water inlet flow T/Hr
24.n.m.-25.13:00	0.02887815	86.33892029	7.518089439	1082.827998	5.062514422	80.17018128
24.n.m.-25.14:00	0.027723817	86.25571736	7.517884734	1084.968378	5.06871724	78.87270286
24.n.m.-25.15:00	0.027390864	86.17250661	7.518799933	1087.112061	5.075342996	77.573196045
24.n.m.-25.16:00	0.026957065	86.08937964	7.519714731	1089.256406	5.081968368	76.273196045
24.n.m.-25.17:00	0.026523268	86.00620983	7.521071708	1091.400683	5.08951354	74.97373772
24.n.m.-25.18:00	0.026089413	85.92308761	7.522086187	1093.544928	5.097138812	73.6746273
24.n.m.-25.19:00	0.025655617	85.84001766	7.523100666	1095.689174	5.104764084	72.37516488
24.n.m.-25.20:00	0.02522182	85.75694799	7.524115145	1097.833420	5.112389357	71.07545057
24.n.m.-25.21:00	0.024788061	85.67387846	7.525129624	1099.977666	5.120014629	69.77578464
24.n.m.-25.22:00	0.024354305	85.59080843	7.526144103	1102.121912	5.127639902	68.47633575
24.n.m.-25.23:00	0.023920549	85.50773897	7.527158582	1104.266158	5.135265174	67.17707143
24.n.m.-25.00:00	0.023486793	85.42466944	7.528173061	1106.410404	5.142890446	65.8778087
24.n.m.-25.01:00	0.023053037	85.34160000	7.529187540	1108.554650	5.150515718	64.5785461
24.n.m.-25.02:00	0.022619281	85.25853056	7.530202019	1110.698896	5.158140990	63.2792835
24.n.m.-25.03:00	0.022185525	85.17546112	7.531216498	1112.843142	5.165766262	61.9799208
24.n.m.-25.04:00	0.021751769	85.09239168	7.532230977	1114.987388	5.173391534	60.6806581
24.n.m.-25.05:00	0.021318013	85.00932224	7.533245456	1117.131634	5.181016806	59.3813954
24.n.m.-25.06:00	0.020884257	84.92625280	7.534259935	1119.275880	5.188642078	58.0821327
24.n.m.-25.07:00	0.020450501	84.84318336	7.535274414	1121.420126	5.196267350	56.7828700
24.n.m.-25.08:00	0.020016745	84.76011392	7.536288893	1123.564372	5.203892622	55.4836073
24.n.m.-25.09:00	0.019582989	84.67704448	7.537303372	1125.708618	5.211517894	54.1843446
24.n.m.-25.10:00	0.019149233	84.59397504	7.538317851	1127.852864	5.219143166	52.8850819
24.n.m.-25.11:00	0.018715477	84.51090560	7.539332330	1129.997110	5.226768438	51.5858192
24.n.m.-25.12:00	0.018281721	84.42783616	7.540346809	1132.141356	5.234393710	50.2865565
24.n.m.-25.13:00	0.017847965	84.34476672	7.541361288	1134.285602	5.242018982	48.9872938
24.n.m.-25.14:00	0.017414209	84.26169728	7.542375767	1136.429848	5.249644254	47.6880311
24.n.m.-25.15:00	0.016980453	84.17862784	7.543390246	1138.574094	5.257269526	46.3887684
24.n.m.-25.16:00	0.016546697	84.09555840				

*Remark
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Time	1206M40C0110Q12L PH	1206M30C0010Q13L PH	1206M30C0010Q13L PH	1206M30C0010Q13L PH	1206M30C0010Q13L PH	1206M30C0010Q13L PH	1206M30C0010Q13L PH
	WASTE WATER INLET FLOW	WASTE WATER TEMP	WASTE WATER PH	WASTE WATER PH	WASTE WATER CONDUCTIVITY	WASTE WATER D.O.	Raw water inlet flow
	l/min	DEG. C	ph		uS/cm	mg/L	l/min
04.06.25.05:00:00	0.03	30.75	7.99		1,078.22	5.89	0.21
04.06.25.06:00:00	0.03	29.90	7.93		1,080.70	5.89	0.27
04.06.25.07:00:00	0.03	29.94	7.98		1,081.39	5.88	0.37
04.06.25.08:00:00	0.03	29.78	7.93		1,085.60	5.88	0.44
04.06.25.09:00:00	0.03	30.73	7.77		1,088.17	5.88	0.53
04.06.25.10:00:00	0.04	30.63	7.60		1,090.66	5.88	0.60
04.06.25.11:00:00	0.04	30.67	7.39		1,093.15	5.88	0.68
04.06.25.12:00:00	0.04		7.26		1,095.64	4.55	0.71
04.06.25.13:00:00	0.03		7.36		1,097.55	2.99	0.79
04.06.25.14:00:00	0.03		7.21		1,098.94	2.99	0.85
04.06.25.15:00:00	0.03		7.18		1,099.13	2.98	0.92
04.06.25.16:00:00	0.02		7.15		1,099.92	2.98	0.98
04.06.25.17:00:00	0.02		7.14		1,100.71	2.97	1.07
04.06.25.18:00:00	0.01	38.96	7.07		1,101.50	31.97	
04.06.25.19:00:00	0.01	38.56	7.00		1,102.29	38.58	
04.06.25.20:00:00	0.02	31.89	7.55		1,040.34	38.58	
04.06.25.21:00:00	0.04	31.83	7.81		1,058.90	32.20	
04.06.25.22:00:00	53.55	31.67	8.00		1,068.58	4.81	155.66
04.06.25.23:00:00	53.22	31.51	7.92		1,066.82	4.81	158.13
04.06.25.00:00:00	52.43	31.36	7.53		1,055.69	4.81	159.22
04.06.25.01:00:00	52.67	31.20	7.51		1,054.48	4.81	161.10
04.06.25.02:00:00	51.15	31.04	7.52		1,058.48	4.81	164.04
04.06.25.03:00:00	51.51	30.89	7.29		1,054.48	4.81	167.00
04.06.25.04:00:00	53.54	30.72	7.53		1,060.66	4.81	165.89
04.06.25.05:00:00	53.79	30.52	7.54		1,062.46	4.81	171.21
04.06.25.06:00:00	51.82	30.32	7.54		1,064.45	4.52	175.25
04.06.25.07:00:00	53.92	30.12	7.50		1,066.44	4.52	181.13
04.06.25.08:00:00	-0.01	29.96	7.40		1,068.44	4.27	187.50
04.06.25.09:00:00	0.01	30.87	7.40		1,068.44	4.88	192.66
04.06.25.10:00:00	0.01	34.40	6.87		1,176.85	318.48	
04.06.25.11:00:00	0.02	38.36	6.85		1,177.86	312.43	
04.06.25.12:00:00	0.01		6.88		1,178.88	319.55	
04.06.25.13:00:00	0.04		6.83		1,179.89	319.88	
04.06.25.14:00:00	0.07		6.62		1,80.91	311.75	
04.06.25.15:00:00	0.06		6.83		1,181.36	316.86	
04.06.25.16:00:00	0.07		6.67		1,184.18	5.88	311.90
04.06.25.17:00:00	0.07		6.65		1,186.48	5.88	326.25
04.06.25.18:00:00	0.07		6.64		1,189.19	5.88	328.00
04.06.25.19:00:00	0.07		6.43		1,191.32	5	
04.06.25.20:00:00	0.06	37.84	6.61		1,196.70	5.88	327.30
04.06.25.21:00:00	0.06	35.89	6.61		1,194.23	5.88	325.22
04.06.25.22:00:00	0.06	31.70	6.51		1,192.44	5.88	345.45
04.06.25.23:00:00	0.06	31.81	6.51		1,072.64	5.89	342.00
04.06.25.00:00:00	0.06	31.66	6.50		1,079.94	5.89	348.65
04.06.25.01:00:00	0.06	31.51	6.51		1,087.25	5.89	353.23
04.06.25.02:00:00	79.97	31.35	8.45		1,094.55	5.89	351.02
04.06.25.03:00:00	53.41	31.20	8.40		1,101.86	5.89	333.64
04.06.25.04:00:00	51.94	31.04	8.38		1,109.16	5.88	336.89
04.06.25.05:00:00	52.18	30.79	8.29		1,112.97	5.87	329.01
04.06.25.06:00:00	52.34	30.84	8.24		1,114.59	5.54	327.16
04.06.25.07:00:00	50.77	30.70	8.20		1,116.21	5.54	330.88
04.06.25.08:00:00	52.98	30.70	8.18		1,117.83	5.54	325.84
04.06.25.09:00:00	53.14	30.77	8.16		1,119.45	5.54	340.83
04.06.25.10:00:00	53.22	30.64	8.14		1,121.07	5.54	349.90
04.06.25.11:00:00	53.00	30.52	7.97		1,122.69	5.88	351.89
04.06.25.12:00:00	0.01	38.32	7.83		1,124.30	5.88	326.45
04.06.25.13:00:00	0.01		7.70		1,125.25	5.88	327.59
04.06.25.14:00:00	0.02		7.58		1,125.96	5.88	320.00
04.06.25.15:00:00	0.01		7.50		1,126.67	5.88	320.52
04.06.25.16:00:00	0.03		7.42		1,127.88	5.88	320.52
04.06.25.17:00:00	0.04		7.27		1,128.09	5.88	324.72
04.06.25.18:00:00	0.04		7.20		1,128.80	5.88	328.87
04.06.25.19:00:00	0.04	37.15	7.21		1,129.52	5.87	323.13
04.06.25.20:00:00	0.04	37.20	7.23		1,130.23	5.88	310.88
04.06.25.21:00:00	0.05	31.70	7.08		1,058.87	5.88	335.52
04.06.25.22:00:00	52.67	31.48	7.53		1,140.15	5.87	327.57
04.06.25.23:00:00	52.67	31.38	7.54		1,157.27	6.01	315.39
04.06.25.00:00:00	52.45	31.44	7.55		1,164.59	5.88	317.88
04.06.25.01:00:00	52.10	31.30	7.56		1,175.91	6.11	316.89
04.06.25.02:00:00	52.71	31.18	7.56		1,185.23	6.11	351.70
04.06.25.03:00:00	52.61	31.05	7.57		1,195.07	6.11	351.68
04.06.25.04:00:00	53.25	30.78	7.58		1,193.51	6.10	324.22
04.06.25.05:00:00	52.73	30.73	7.59		1,194.26	6.10	340.89
04.06.25.06:00:00	53.08	30.58	7.59		1,195.02	6.10	340.47
04.06.25.07:00:00	53.21	30.44	7.58		1,195.77	5.89	344.85
04.06.25.08:00:00	0.02	30.31	7.47		1,196.52	5.89	346.34
04.06.25.09:00:00	0.02	30.25	7.43		1,197.27	5.89	347.77

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	DECAHEDRAC(W) WATER WASTE WATER OUTFLOW FLOW	DECAHEDRAC(W) WATER WASTE WATER TEMP.	DECAHEDRAC(W) WATER WASTE WATER PH.	DECAHEDRAC(W) WATER WASTE WATER CONDUCTIVITY	DECAHEDRAC(W) WATER WASTE WATER TDS	DECAHEDRAC(W) WATER Raw water yield
	Flow	TEMP	PH	uS/cm	mg/L	lit/s
10-E-W-15-15-00-00	0.029740502		7.035121441	1058.473222	5.87856327	0.13379727
10-E-W-15-16-00-00	0.030677935		7.014308454	1050.685137	5.78803575	136.46778923
10-E-W-15-17-00-00	0.031615824		7.013080656	1052.489773	5.87716549	127.13500555
10-E-W-15-18-00-00	0.032553713	30.07044601	7.012537194	1050.202007	5.81220972	131.22097222
10-E-W-15-19-00-00	0.033491585	30.08417187	7.012108625	1052.178018	5.88174495	130.92781555
10-E-W-15-20-00-00	0.034294968	31.86200313	7.01088951	1052.415527	5.826282918	0.448349499
10-E-W-15-21-00-00	0.035132811	32.83774868	7.009551529	1052.482915	5.854071483	0.000000000
10-E-W-15-22-00-00	0.035982344	31.85784819	7.007631238	1051.106169	5.884731386	0.330060706
10-E-W-15-23-00-00	0.036789737	32.3044038	7.022696972	1042.121262	5.886354451	0.71773937
10-E-W-15-24-00-00	0.03764712	32.14914904	7.020551529	1042.121262	5.886354451	0.330060706
10-E-W-15-01-00-00	0.037446587	30.0425972	7.49880202	1043.490706	5.91370923	0.152709083
10-E-W-15-02-00-00	0.037963191	30.3594634	7.50054643	1049.584229	5.911605206	0.090512883
10-E-W-15-03-00-00	0.038479735	31.66807392	7.501697329	1049.584229	5.911605206	0.090512883
10-E-W-15-04-00-00	0.038996238	29.8497905	7.504143854	1061.709792	5.905735169	0.044983998
10-E-W-15-05-00-00	0.039512783	29.596988	7.499830455	1068.412482	5.90201475	0.090000571
10-E-W-15-06-00-00	0.040029378	28.898101	7.36991765	1071.562886	5.89486265	0.033311747
10-E-W-15-07-00-00	0.040545922	29.03842932	7.29912852	1074.282182	5.872762293	0.033311747
10-E-W-15-08-00-00	0.041062467	28.84211627	7.296723223	1074.42021	5.881179602	0.031594079
10-E-W-15-09-00-00	0.041579012	31.0420194	7.25407748	1075.932683	5.877968018	0.032642525
10-E-W-15-10-00-00	0.042095557	37.15512849	7.251482155	1078.482915	5.877968018	0.032642525
10-E-W-15-11-00-00	0.042612102	37.15512849	7.178043898	1078.833008	5.876926255	0.067640025
10-E-W-15-12-00-00	0.043128647	35.82866973	7.33484704	1024.403808	5.875391441	0.008357365
10-E-W-15-13-00-00	0.043645192	35.82866973	7.33484704	1024.403808	5.875391441	0.008357365
10-E-W-15-14-00-00	0.044161737	35.82866973	7.33484704	1024.403808	5.875391441	0.008357365
10-E-W-15-15-00-00	0.044678282	35.82866973	7.33484704	1024.403808	5.875391441	0.008357365
10-E-W-15-16-00-00	0.045194827	35.82866973	7.33484704	1024.403808	5.875391441	0.008357365
10-E-W-15-17-00-00	0.045711372	35.82866973	7.33484704	1024.403808	5.875391441	0.008357365
10-E-W-15-18-00-00	0.046227917	35.82866973	7.33484704	1024.403808	5.875391441	0.008357365
10-E-W-15-19-00-00	0.046744462	35.82866973	7.33484704	1024.403808	5.875391441	0.008357365
10-E-W-15-20-00-00	0.047261007	35.82866973	7.33484704	1024.403808	5.875391441	0.008357365
10-E-W-15-21-00-00	0.047777552	35.82866973	7.33484704	1024.403808	5.875391441	0.008357365
10-E-W-15-22-00-00	0.048294097	35.82866973	7.33484704	1024.403808	5.875391441	0.008357365
10-E-W-15-23-00-00	0.048810642	35.82866973	7.			

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Time	USAGM03F02C001.PK		USAGM03F02C002.PK		USAGM03F02C003.PK		USAGM03F02C004.PK		USAGM03F02C005.PK		USAGM03F02C006.PK		Raw water inlet flow Tons
	WASTE WATER OUTLET Flow	Temp	WASTE WATER TEMP DEG C	Temp	WASTE WATER PH	Temp	WASTE WATER CONDUCTIVITY uS/cm	Temp	WASTE WATER D.O. mg/L	Temp			
07.8.25.10.00.00	0.03	30.97	30.97	1.188.03			1.188.03		5.89			134.39	
07.8.25.11.00.00	0.03	33.55	33.55	1.188.17			1.188.17		5.89			136.66	
07.8.25.12.00.00	0.04	35.17	35.17	1.187.86			1.187.86		5.89			134.13	
07.8.25.13.00.00	0.04	35.57	35.57	1.197.56			1.197.56		5.89			134.35	
07.8.25.14.00.00	0.04	36.78	36.78	1.197.15			1.197.15		5.89			143.33	
07.8.25.15.00.00	0.04	35.75	35.75	1.196.75			1.196.75		5.89			135.35	
07.8.25.16.00.00	0.04	31.25	31.25	1.196.34			1.196.34		5.89			134.33	
07.8.25.17.00.00	0.04	28.48	28.48	1.192.54			1.192.54		5.89			132.12	
07.8.25.18.00.00	0.05	28.68	28.68	1.195.95			1.195.95		5.89			127.49	
07.8.25.19.00.00	0.06	27.72	27.72	1.195.21			1.195.21		5.89			129.30	
07.8.25.20.00.00	0.05	26.67	26.67	1.194.95			1.194.95		5.89			132.27	
07.8.25.21.00.00	0.05	30.44	30.44	1.136.76			1.136.76		5.89			123.22	
07.8.25.22.00.00	0.06	52.86	52.86	1.122.2			1.122.2		5.89			120.23	
07.8.25.23.00.00	52.74	30.4	30.4	1.144.33			1.144.33		5.89			132.78	
08.8.25.24.00.00	52.88	29.94	29.94	1.147.22			1.147.22		5.89			127.38	
08.8.25.25.00.00	52.40	27.77	27.77	1.140.47			1.140.47		5.89			138.43	
08.8.25.26.00.00	52.63	29.44	29.44	1.151.72			1.151.72		5.89			145.72	
08.8.25.27.00.00	52.83	29.44	29.44	1.153.38			1.153.38		5.89			138.63	
08.8.25.28.00.00	52.83	29.44	29.44	1.153.38			1.153.38		5.89			141.43	
08.8.25.29.00.00	53.05	27.87	27.87	1.158.48			1.158.48		5.89			144.74	
08.8.25.30.00.00	0.03	27.52	27.52	1.158.95			1.158.95		5.89			148.54	
08.8.25.31.00.00	0.03426772	25.9099758	7.7242473	1.159.44976			1.159.44976		5.89			129.68965	
08.8.25.32.00.00	0.031984902	25.9099758	7.7242473	1.159.44976			1.159.44976		5.89			129.68965	
08.8.25.33.00.00	0.03993971	22.8967531	7.68924943	1.160.43682			1.160.43682		5.89			143.79022	
08.8.25.34.00.00	0.03077223	22.9091131	7.63182943	1.160.54434			1.160.54434		5.89			125.888198	
08.8.25.35.00.00	0.02940712	20.4931653	7.60145267	1.161.62427			1.161.62427		5.89			126.00272	
08.8.25.36.00.00	0.02894362	26.7895778	7.40039617	1.161.33486			1.161.33486		5.89			138.796493	
08.8.25.37.00.00	0.02845429	25.8157243	7.21310482	1.161.70996			1.161.70996		5.89			138.880774	
08.8.25.38.00.00	0.02797878	25.4931653	7.21310482	1.161.70996			1.161.70996		5.89			137.412727	
08.8.25.39.00.00	0.03120817	26.8490249	7.23052998	1.163.65258			1.1						

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March-25

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Time	10GAMB0CF001KQ01.PV WASTE WATER OUTLET FLOW T/Hr	10GAMB0CF001KQ01.PV WASTE WATER TEMP DEG C	10GAMB0CF001KQ01.PV WASTE WATER PH	10GAMB0CF001KQ01.PV WASTE WATER CONDUCTIVITY uS/cm	10GAMB0CF001KQ01.PV WASTE WATER D.O. mg/L	10GAMB0CF001KQ01.PV Raw water inlet flow T/Hr
29-Mar.-25 21:00:00	70.11805275	32.9187393	7.83972728	1190.02002	6.49176347	145.153893
29-Mar.-25 22:00:00	52.4906132	32.2679547	7.81521046	1136.37913	5.48684766	149.142666
29-Mar.-25 23:00:00	53.17607161	32.19671701	7.810719021	1233.16121	6.23116215	144.003864
30-Mar.-25 00:00:00	51.67184048	32.09131855	7.826211929	1150.34768	6.24579082	145.850469
30-Mar.-25 01:00:00	51.8118338	32.0299098	7.821168314	1157.33129	6.28412618	147.483293
30-Mar.-25 02:00:00	52.4343811	31.94893811	7.849999809	1164.115308	6.62700708	144.891133
30-Mar.-25 03:00:00	52.76418686	31.8940317	7.849999809	1166.491089	6.61331305	142.4116364
30-Mar.-25 04:00:00	52.57798841	31.83224741	7.849999809	1167.927246	6.59962368	158.0569913
30-Mar.-25 05:00:00	53.15850746	31.79487785	7.856602407	1169.362831	6.580619371	146.445728
30-Mar.-25 06:00:00	53.27774426	31.81891518	7.867030171	1170.799316	6.560403772	145.4702759
30-Mar.-25 07:00:00	53.64420755	31.82397059	7.859999905	1172.235352	6.832957583	142.4778995
30-Mar.-25 08:00:00	0.01741081	31.84608792	7.859999905	1173.671529	6.831264532	145.628460
30-Mar.-25 09:00:00	0.01952573	30.86502333	7.859999905	1175.107544	6.833633039	148.584888
30-Mar.-25 10:00:00	0.02	31.81	732.81	1172.81	6.83	143.60
30-Mar.-25 11:00:00	0.02	32.74	228.36	1188.36	6.83	0.06
30-Mar.-25 12:00:00	0.03	36.00	223.32	1183.32	6.83	0.06
30-Mar.-25 13:00:00	0.03	37.68	219.48	1183.48	6.83	0.06
30-Mar.-25 14:00:00	0.03	39.41	218.50	1184.50	6.84	0.05
30-Mar.-25 15:00:00	0.03	39.41	218.51	1184.51	6.84	0.05
30-Mar.-25 16:00:00	0.04	35.93	218.52	1184.52	6.84	0.05
30-Mar.-25 17:00:00	0.04	35.95	218.52	1184.52	6.84	0.04
30-Mar.-25 18:00:00	0.05	32.27	7.39	218.53	6.84	0.04
30-Mar.-25 19:00:00	0.05	31.14	218.54	1184.54	6.84	0.04
30-Mar.-25 20:00:00	0.06	30.09	218.55	1184.55	6.84	0.04
30-Mar.-25 21:00:00	0.05	31.46	6.76	1203.46	6.84	0.05
30-Mar.-25 22:00:00	52.88	31.44	6.88	1115.93	6.85	0.05
30-Mar.-25 23:00:00	52.77	31.36	6.81	1125.18	6.85	0.05
31-Mar.-25 00:00:00	51.87	31.29	6.83	1137.80	6.85	0.05
31/3/2025 1:00	52.08	31.21	6.80	1124.80	6.94	0.06
31/3/2025 2:00	52.88	31.13	6.82	1121.69	6.65	0.06
31/3/2025 3:00	52.33	31.05	6.83	1118.59	6.65	0.05
31/3/2025 4:00	52.85	30.98	6.85	1115.48	6.65	0.05
31/3/2025 5:00	53.00	30.90	6.87	1112.37	6.65	0.05
31/3/2025 6:00	53.09	30.82	6.88	1109.27	6.65	0.05
31/3/2025 7:00	53.14	30.75	6.89	1106.16	6.94	0.04
31/3/2025 8:00	53.66	30.67	6.89	1102.39	6.94	0.04
31/3/2025 9:00	54.31	30.63	6.91	1098.31	6.94	0.04
31/3/2025 10:00	54.60	31.00	6.90	1094.23	6.94	0.04
31/3/2025 11:00	54.82	30.97	6.97	1093.05	6.94	0.04
31/3/2025 12:00	54.77	30.93	6.96	1094.05	6.94	0.04
31/3/2025 13:00	54.80	30.81	6.95	1096.24	6.94	0.05
31/3/2025 14:00	54.86	30.57	6.93	1097.84	6.94	0.05
31/3/2025 15:00	54.88	30.89	6.93	1099.44	6.94	0.06
31/3/2025 16:00	54.90	30.00	6.90	1101.04	6.94	0.06
31/3/2025 17:00	54.96	30.95	7.12	1146.55	6.94	0.06
31/3/2025 18:00	54.96	35.06	7.45	224.90	6.94	0.07
31/3/2025 19:00	54.96	35.06	7.45	224.90	6.94	0.07
31/3/2025 20:00	54.96	35.06	7.45	224.90	6.94	0.07
31/3/2025 21:00	54.96	35.06	7.45	224.90	6.94	0.07
31/3/2025 22:00	54.96	35.06	7.45	224.90	6.94	0.07
31/3/2025 23:00	54.96	35.06	7.45	224.90	6.94	0.07

April-25

*Remark

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Time	10GAMB0CF001KQ01.PV WASTE WATER OUTLET FLOW T/Hr	10GAMB0CF001KQ01.PV WASTE WATER TEMP DEG C	10GAMB0CF001KQ01.PV WASTE WATER PH	10GAMB0CF001KQ01.PV WASTE WATER CONDUCTIVITY uS/cm	10GAMB0CF001KQ01.PV WASTE WATER D.O. mg/L	10GAMB0CF001KQ01.PV Raw water inlet flow T/Hr
04-Apr.-25 02:00:00	51.92	31.72	7.53	971.00	5.85	150.43
04-Apr.-25 03:00:00	52.86	31.59	7.54	970.62	5.85	149.26
04-Apr.-25 04:00:00	52.87	31.46	7.53	970.24	5.85	148.12
04-Apr.-25 05:00:00	52.81	31.32	7.55	969.86	5.85	141.93
04-Apr.-25 06:00:00	52.83	31.19	7.54	969.48	5.85	140.71
04-Apr.-25 07:00:00	52.88	31.05	7.54	969.10	5.85	140.49
04-Apr.-25 08:00:00	52.87	31.63	7.54	968.72	5.55	141.68
04-Apr.-25 09:00:00	52.87	31.23	7.79	411.70	6.55	152.44
04-Apr.-25 10:00:00	52.87	31.61	7.89	239.33	6.55	151.10
04-Apr.-25 11:00:00	52.87	37.61	7.95	227.55	6.55	151.68
04-Apr.-25 12:00:00	52.87	37.61	7.96	219.47	6.55	151.84
04-Apr.-25 13:00:00	52.86	37.95	7.95	218.31	6.55	147.51
04-Apr.-25 14:00:00	52.86	37.97	7.97	217.13	6.55	151.03
04-Apr.-25 15:00:00	52.86	37.97	7.97	215.88	6.55	140.48
04-Apr.-25 16:00:00	52.86	37.96	7.96	215.66	6.55	142.35
04-Apr.-25 17:00:00	52.86	37.96	7.94	213.66	6.55	141.07
04-Apr.-25 18:00:00	52.86	37.96	7.93	212.49	6.55	149.15
04-Apr.-25 19:00:00	52.86	39.06	7.91	212.11	6.55	142.13
04-Apr.-25 20:00:00	52.86	36.17	7.80	213.64	6.56	141.67
04-Apr.-25 21:00:00	52.86	31.66	7.53	925.68	6.56	157.33
04-Apr.-25 22:00:00	52.86	31.59	7.60	934.23	6.56	159.17
04-Apr.-25 23:00:00	52.86	31.27	7.59	942.78	6.56	158.59
04-Apr.-25 00:00:00	52.84	31.16	7.58	951.33	6.56	138.73
04-Apr.-25 01:00:00	52.26	30.95	7.58	959.88	6.56	155.88
04-Apr.-25 02:00:00	52.86	31.09	7.59	969.13	6.56	155.88
04-Apr.-25 03:00:00	52.86	31.07	7.57	967.51	6.56	160.43
04-Apr.-25 04:00:00	52.87	30.80	7.56	943.11	6.56	153.17
04-Apr.-25 05:00:00	52.86	31.13	7.58	948.46	6.56	151.54
04-Apr.-25 06:00:00	52.87	28.44	7.74	427.47	6.56	153.38
04-Apr.-25 07:00:00	52.86	31.17	7.88	237.33	6.55	148.84
04-Apr.-25 08:00:00	52.86	31.87	8.00	222.99	6.55	149.35
04-Apr.-25 09:00:00	52.86	31.26	8.03	219.66	6.55	144.21
04-Apr.-25 10:00:00	52.86	37.67	8.03	218.37	6.55	145.82
04-Apr.-25 11:00:00	52.86	37.67	8.03	218.37	6.55	145.82
04-Apr.-25 12:00:00	52.86	37.67	8.03	218.37	6.55	145.82
04-Apr.-25 13:00:00	52.86	37.67	8.03	218.37	6.55	145.82
04-Apr.-25 14:00:00	52.86	37.67	8.02	214.53	6.55	145.88
04-Apr.-25 15:00:00	52.86	37.67	8.03	218.37	6.55	145.82
04-Apr.-25 16:00:00	52.86	37.67	8.03	218.37	6.55	145.82
04-Apr.-25 17:00:00	52.86	37.67	8.03	211.97	6.55	146.18
04-Apr.-25 18:00:00	52.86	37.67	7.99	210.81	6.55	142.18
04-Apr.-25 19:00:00	52.86	37.67	7.98	211.12	6.55	138.06
04-Apr.-25 20:00:00	52.86	37.55	7.88	211.83	6.55	144.22
04-Apr.-25 21:00:00	52.86	35.25	7.88	212.34	6.55	146.88
04-Apr.-25 22:00:00	52.86	35.19	7.88	214.60	6.56	146.08
04-Apr.-25 23:00:00	53.51	32.29	7.66	952.06	6.56	159.21
04-Apr.-25 00:00:00	52.77	32.22	7.65	954.24	6.56	0.23
04-Apr.-25 01:00:00	52.86	32.46	7.65	956.42	6.56	0.23
04-Apr.-25 02:00:00	52.83	32.03	7.63	958.61	6.56	0.18
04-Apr.-25 03:00:00	52.95	32.03	7.64	960.79	6.56	0.15
04-Apr.-25 04:00:00	53.19	32.03	7.64	960.79	6.56	0.13
04-Apr.-25 05:00:00	53.17	31.81	7.64	959.93	6.56	0.10
04-Apr.-25 06:00:00	53.10	31.85	7.64	958.97	6.56	0.07
04-Apr.-25 07:00:00	53.81	31.80	7.65	958.11	6.56	0.05
04-Apr.-25 08:00:00	53.86	31.76	7.64	957.24	6.56	0.02
04-Apr.-25 09:00:00	54.27	31.84	7.64	956.38	6.56	0.03
04-Apr.-25 10:00:00	54.20	31.85	7.65	955.52	6.55	0.02
04-Apr.-25 11:00:00	54.25	32.07	7.65	954.66	6.55	0.01
04-Apr.-25 12:00:00	54.25	32.28	7.67	955.37	6.55	0.01
04-Apr.-25 13:00:00	54.51	32.50	7.68	956.25	6.55	0.00
04-Apr.-25 14:00:00	54.08	37.55	7.70	957.13	6.54	0.00
04-Apr.-25 15:00:00	54.07	37.69	7.69	958.01	6.55	0.01
04-Apr.-25 16:00:00	54.08	37.68	7.68	954.73	6.55	144.64
04-Apr.-25 17:00:00	54.07	37.68	7.68	949.82	6.55	138.31
04-Apr.-25 18:00:00	54.07	37.67	7.67	950.99	6.55	150.81
04-Apr.-25 19:00:00	54.06	37.69	7.69	953.12	6.55	146.16
04-Apr.-25 20:00:00	54.05	36.87	7.80	935.49	6.55	145.36
04-Apr.-25 21:00:00	54.06	32.49	7.62	963.81	6.56	134.15
04-Apr.-25 22:00:00	53.37	32.39	7.63	972.33	6.56	131.50
04-Apr.-25 23:00:00	52.81	32.80	7.63	980.86	6.56	141.43
04-Apr.-25 00:00:00	52.14	32.38	7.64	981.53	6.56	134.99
04-Apr.-25 01:00:00	52.57	32.14	7.65	978.33	6.56	142.45
04-Apr.-25 02:00:00	52.77	32.08	7.64	975.13	6.56	143.43
04-Apr.-25 03:00:00	52.87	32.08	7.65	971.52	6.56	146.15
04-Apr.-25 04:00:00	53.02	31.93	7.65	968.72	6.56	145.08
04-Apr.-25 05:00:00	53.08	31.88	7.65	965.32	6.56	145.82
04-Apr.-25 06:00:00	53.08	31.85	7.66	962.31	6.56	139.11

April-25

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Time	10GMBAC001001K02L.PV WASTE WATER OUTFLOW FLOW T/MH	10GMBAC001001K02L.PV WASTE WATER TEMP DEG C	10GMBAC001001K02L.PV WASTE WATER PH PH	10GMBAC001001K02L.PV WASTE WATER CONDUCTIVITY uS/CM	10GMBAC001001K02L.PV WASTE WATER D.O. mg/L	10GMBAC001001K02L.PV Raw water inlet flow T/MH
29-04-0.25-08:00:00	53.72723477	31.8990334	7.78669243	554.479393	5.5027037	135.183469
29-04-0.25-09:00:00	51.64482624	31.9337759	7.83377803	544.727703	5.47718398	138.08389
29-04-0.25-10:00:00	0.00791138	33.5174942	7.56051286	295.533354	7.5559585	135.087756
29-04-0.25-11:00:00	0.05591128	38.1618270	7.0994965	152.999465	6.84053278	127.671426
29-04-0.25-12:00:00	0.05101288		6.91861583	153.360278	6.81404261	121.775977
29-04-0.25-13:00:00	0.04635347		6.90021286	149.7254249	6.82424733	123.087756
29-04-0.25-14:00:00	0.04173467		6.88134986	148.090773	6.84467372	127.67487977
29-04-0.25-15:00:00	0.03819749		6.86276579	145.050567	6.78357287	124.0236069
29-04-0.25-16:00:00	0.03511527		6.84413815	144.8211381	6.74464284	127.6743378
29-04-0.25-17:00:00	0.02661538		6.83502526	143.188542	6.74483484	130.0261063
29-04-0.25-18:00:00	0.02781937		6.84997586	141.565185	6.7887568	126.9398749
29-04-0.25-19:00:00	0.01572868	38.5914063	6.83581269	140.338402	6.74187021	121.7874665
29-04-0.25-20:00:00	0.05563867	36.1536337	6.879880428	138.7431875	7.40834054	139.05506
29-04-0.25-21:00:00	0.03954982	33.07843781	7.181647855	501.845527	5.66848022	122.7544022
29-04-0.25-22:00:00	0.02616864		7.09591285	395.980132	6.85590132	126.9402568
29-04-0.25-23:00:00	52.1466576	33.0547109	7.051466575	510.7453507	5.71453615	127.67487977
29-04-0.25-00:00:00	52.2267189	33.07176657	7.079821301	514.2991545	6.33548987	162.8916473
29-04-0.25-01:00:00	52.30081512	32.78812612	7.07812612	634.7688947	6.347688947	166.6217041
29-04-0.25-02:00:00	52.8364886	32.6485986	7.37641573	512.643091	6.34345969	119.7526051
29-04-0.25-03:00:00	52.8064444	32.5068444	7.37195408	526.758497	6.39427473	146.782418
29-04-0.25-04:00:00	52.8893594	32.4899587	7.3644444	530.589478	6.42729864	138.6296386
29-04-0.25-05:00:00	52.1703859	32.2339052	7.35959438	535.8059128	6.45499821	138.6296386
29-04-0.25-06:00:00	52.9206165	32.1577362	7.34884435	531.5222778	6.35466877	151.546691
29-04-0.25-07:00:00	53.32143021	32.1453126	7.34186359	532.1039429	6.27968779	127.471287
29-04-0.25-08:00:00	53.07713486	32.11485791	7.34384361	532.4866079	6.29733779	124.8066793
29-04-0.25-09:00:00	53.34873581	32.2357211	7.326842783	532.2607279	6.24578086	128.357806
29-04-0.25-10:00:00	53.12729513	32.12861709	7.311104567	533.848877	6.33408819	128.930477
29-04-0.25-11:00:00	52.95187851	32.0533058	7.32253058	534.439242	6.40002433	131.4327386
29-04-0.25-12:00:00	0.17786181	32.022681	7.33719482	532.044878	6.27144478	122.044878
29-04-0.25-13:00:00	0.11134515	32.0114515	6.89213863	528.039508	6.24048877	122.289978
29-04-0.25-14:00:00	0.08478197	32.00478197	6.87496197	527.4221197	6.24048877	122.289978
29-04-0.25-15:00:00	0.08361174	32.00636788	6.90367088	525.002643	6.38186403	130.186403
29-04-0.25-16:00:00	0.08897597	32.00977406	6.93746148	533.766148	6.38186403	130.186403
29-04-0.25-17:00:00	0.05411761	32.01867959	6.788667959	508.1231348	6.38186403	130.186403
29-04-0.25-18:00:00	0.04289704	30.32177734	6.900765039	538.0423384	6.38186403	130.186403
29-04-0.25-19:00:00	0.03713043	30.89773315	6.937538147	540.167636	6.38186403	130.186403
29-04-0.25-20:00:00	0.01216276	33.7421148	6.968607298	542.3920077	6.38186403	130.186403
29-04-0.25-21:00:00	0.05417509	32.8172142	7.23225051	630.2966309	6.06270884	128.015039
29-04-0.25-22:00:00	53.2055389	32.51397552	7.360449751	631.277771	6.115937862	132.7509155
29-04-0.25-23:00:00	52.6207785	32.0377855	7.38951845	635.8073187	6.38186403	130.186403
29-04-0.25-00:00:00	52.99113083	32.0595726	7.397495651	630.3296509	6.08630635	173.920959
29-04-0.25-01:00:00	52.13495101	32.04517044	6.938556519	593.382095	6.16734004	167.034004
29-04-0.25-02:00:00	52.1389781	32.3007981	7.39886889	629.361918	6.31998181	150.491404
29-04-0.25-03:00:00	52.40072381	32.1963887	7.38951845	630.8073187	6.38186403	130.186403
29-04-0.25-04:00:00	52.6780584	32.0919654	6.926515625	636.851625	6.38186403	130.186403
29-04-0.25-05:00:00	52.7524849	32.0919654	7.37592157	624.719849	5.86222552	146.926244
29-04-0.25-06:00:00	52.0204547	32.0204547	7.37407407	622.520472	5.97388077	155.888077
29-04-0.25-07:00:00	52.8790543	31.8032483	6.92048296	620.482826	5.79849155	127.086018
29-04-0.25-08:00:00	53.0114512	32.0202934	7.34454948	638.335252	5.77034214	121.394589
29-04-0.25-09:00:00	53.2105726	32.0213285	7.36313335	636.1238143	5.47962113	131.220211
29-04-0.25-10:00:00	0.12096408	32.0452774	7.37940967	634.074087	6.45009847	140.920947
29-04-0.25-11:00:00	0.11247731	32.0570555	6.902365918	630.2465918	6.3400285	134.597735
29-04-0.25-12:00:00	0.05150559	32.050559	7.076830387	634.245163	6.11240546	127.086018
29-04-0.25-13:00:00	0.08824521	32.06387097	7.06387097	636.523887	6.25217029	125.237029
29-04-0.25-14:00:00	0.12054547	32.054547	7.37407407	636.523887	6.25217029	125.237029
29-04-0.25-15:00:00	0.06714334	32.054547	7.076830387	634.245163	6.11240546	127.086018
29-04-0.25-16:00:00	0.06119336	32.116551399	6.84149383	647.193518	6.41512444	151.512444
29-04-0.25-17:00:00	0.06119336	32.116551399	6.84149383	647.193518	6.41512444	151.512444
29-04-0.25-18:00:00	0.05804896	36.74459593	7.008662224	522.3079529	6.35109385	135.0993805
29-04-0.25-19:00:00	0.062613502	34.60866328	7.01059183	527.380425	6.3204621	132.082621
29-04-0.25-20:00:00	0.04904862	32.04904862	7.04904862	527.380425	6.3204621	132.082621
29-04-0.25-21:00:00	51.91414277	33.1596145	7.38951845	630.8073187	6.38186403	130.186403
29-04-0.25-22:00:00	52.0230448	33.08871097	7.38951845	630.8073187	6.38186403	130.186403
29-04-0.25-23:00:00	51.7827794	32.0871408	7.42062464	542.128711	7.18218831	171.219887
29-04-0.25-00:00:00	51.89311208	32.0919654	7.397407407	542.128711	7.18218831	171.219887
29-04-0.25-01:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-02:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-03:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-04:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-05:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-06:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-07:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-08:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-09:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-10:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-11:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-12:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-13:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-14:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-15:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-16:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-17:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-18:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-19:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-20:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-21:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-22:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-23:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-00:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-01:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-02:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-03:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-04:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-05:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-06:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-07:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-08:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-09:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-10:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-11:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428
29-04-0.25-12:00:00	52.7394481	32.7994451	7.37841481	547.9517822	7.07707762	127.287428

May 2025

*Remark
Copy to clipboard with value.

Time	100MBACF001K001.PV	100MBACF001K001.PV	100MBACF001K001.PV	100MBACF001K001.PV	100MBACF001K001.PV	100MBACF001K001.PV	100MBACF001K001.PV
	WASTE WATER FLOW T/Hr	WASTE WATER TEMP DEG C	WASTE WATER PH	WASTE WATER CONDUCTIVITY uS/cm	WASTE WATER D.O. mg/L	Raw water inlet flow T/Hr	
06.M.25.05.00.00	51.90	30.56	7.42	708.44	6.41	139.58	132.72
06.M.25.06.00.00	52.16	30.36	7.42	708.44	6.41	146.67	137.63
06.M.25.07.00.00	51.25	30.52	7.27	705.20	5.59	146.67	138.19
06.M.25.08.00.00	0.05	31.21	6.74	139.06		136.72	136.17
06.M.25.09.00.00	0.05	31.88	6.74	139.06		151.72	135.40
06.M.25.10.00.00	0.05	32.25	6.74	139.06		137.24	139.93
06.M.25.11.00.00	0.05	32.72	6.74	139.06		134.63	138.80
06.M.25.12.00.00	0.05	33.20	6.74	135.01		140.61	139.38
06.M.25.13.00.00	0.05	33.72	6.72	134.00		134.87	134.80
06.M.25.14.00.00	0.05	34.20	6.70	132.99		135.33	139.89
06.M.25.15.00.00	0.05	34.70	6.70	133.84		132.84	138.50
06.M.25.16.00.00	0.05	35.20	6.69	132.15		128.66	131.71
06.M.25.17.00.00	0.05	35.70	6.68	131.86		139.05	135.05
06.M.25.18.00.00	0.05	36.20	6.68	131.57		141.00	131.00
06.M.25.19.00.00	0.05	36.70	6.69	132.52		142.53	134.60
06.M.25.20.00.00	0.05	37.20	6.70	130.99		142.07	142.89
06.M.25.21.00.00	0.04	37.70	7.19	566.76	5.24	154.09	136.26
06.M.25.22.00.00	0.04	38.20	7.21	566.76	5.24	132.08	136.78
06.M.25.23.00.00	53.80	32.71	7.36	535.53	5.91	140.74	134.23
06.M.25.24.00.00	53.34	32.70	7.41	535.81	6.57	136.97	132.45
06.M.25.25.00.00	54.96	32.61	7.40	536.10	6.68	129.99	134.00
06.M.25.26.00.00	54.83	32.52	7.39	536.18	6.60	133.23	133.99
06.M.25.27.00.00	55.34	32.43	7.38	536.87	6.52	120.95	132.64
06.M.25.28.00.00	55.89	32.34	7.38	536.95	6.53	142.08	134.99
06.M.25.29.00.00	56.40	32.25	7.37	537.23	6.54	141.36	133.84
06.M.25.30.00.00	56.92	32.16	7.36	537.52	6.58	134.37	134.47
06.M.25.31.00.00	56.43	32.07	7.35	537.83	6.45	141.73	140.21
06.M.25.32.00.00	0.07	32.45	6.71	137.93		131.26	141.63
06.M.25.33.00.00	0.07	33.50	6.71	131.93		138.06	138.06
06.M.25.34.00.00	0.07	35.22	6.71	131.78		131.26	135.97
06.M.25.35.00.00	0.06	36.44	6.71	131.44		132.08	132.12
06.M.25.36.00.00	0.06	38.48	6.71	131.48		131.89	131.89
06.M.25.37.00.00	0.06	40.70	6.70	131.33		139.35	139.35
06.M.25.38.00.00	0.05	43.20	6.70	130.75		132.48	132.48
06.M.25.39.00.00	0.05	45.70	6.71	130.08		139.26	139.26
06.M.25.40.00.00	0.04	48.20	6.69	130.89		135.44	135.44
06.M.25.41.00.00	0.04	50.70	6.70	131.47		138.47	138.47
06.M.25.42.00.00	0.04	53.20	6.68	131.15		136.09	136.09
06.M.25.43.00.00	0.03	55.70	6.67	131.45		136.47	136.47
06.M.25.44.00.00	51.76	32.42	7.31	620.22	5.76	130.38	130.38
06.M.25.45.00.00	51.84	32.34	7.39	629.49	6.04	146.68	146.68
06.M.25.46.00.00	52.30	32.27	7.42	638.75	6.04	134.14	134.14
06.M.25.47.00.00	52.23	32.19	7.43	640.62	6.02	156.66	156.66
06.M.25.48.00.00	53.17	32.10	7.42	640.57	6.02	140.00	140.00
06.M.25.49.00.00	54.09	32.06	7.40	640.72	5.91	142.52	142.52
06.M.25.50.00.00	54.71	31.98	7.41	640.87	5.96	139.49	139.49
06.M.25.51.00.00	55.36	31.91	7.40	641.03	5.97	132.76	132.76
06.M.25.52.00.00	55.36	31.76	7.39	641.33	5.95	135.93	135.93
06.M.25.53.00.00	55.32	31.75	7.39	641.38	5.95	132.30	132.30
06.M.25.54.00.00	55.19	31.69	7.39	641.40	5.92	135.50	135.50
06.M.25.55.00.00	0.22	36.39	6.81	139.45		134.85	134.85
06.M.25.56.00.00	0.20	32.50	6.85	141.55	2.60	127.39	127.39
06.M.25.57.00.00	0.17	32.70	6.85	141.45	2.60	135.06	135.06
06.M.25.58.00.00	0.14	33.00	6.71	130.37	2.26	130.66	130.66
06.M.25.59.00.00	0.13	33.50	6.71	130.49	2.14	145.27	145.27
06.M.25.60.00.00	0.12	34.00	6.70	130.88		139.43	139.43
06.M.25.61.00.00	0.08	34.50	6.67	130.73		130.39	130.39
06.M.25.62.00.00	0.07	35.00	6.67	130.84		135.22	135.22
06.M.25.63.00.00	0.07	35.50	6.67	130.86		136.22	136.22
06.M.25.64.00.00	0.06	36.39	6.66	130.87		135.97	135.97
06.M.25.65.00.00	0.06	37.28	6.65	136.73		134.58	134.58
06.M.25.66.00.00	0.05	38.17	6.64	140.72	5.53	140.61	140.61
06.M.25.67.00.00	53.58	32.13	7.62	593.07	6.41	141.77	141.77
06.M.25.68.00.00	53.19	32.13	7.62	593.07	6.41	141.77	141.77
06.M.25.69.00.00	54.27	32.05	7.63	597.81	6.50	132.75	132.75
06.M.25.70.00.00	54.63	32.77	7.52	600.33	6.45	139.59	139.59
06.M.25.71.00.00	55.00	32.65	7.52	600.33	6.45	141.54	141.54
06.M.25.72.00.00	55.37	32.58	7.51	600.33	6.45	131.13	131.13
06.M.25.73.00.00	55.74	32.50	7.50	600.33	6.45	128.28	128.28
06.M.25.74.00.00	56.11	32.42	7.50	600.33	6.45	128.18	128.18
06.M.25.75.00.00	56.48	32.34	7.50	600.33	6.45	135.73	135.73
06.M.25.76.00.00	56.85	32.26	7.50	600.33	6.45	135.73	135.73
06.M.25.77.00.00	57.22	32.18	7.50	600.33	6.45	135.73	135.73
06.M.25.78.00.00	57.59	32.10	7.50	600.33	6.45	135.73	135.73
06.M.25.79.00.00	57.96	32.02	7.50	600.33	6.45	135.73	135.73
06.M.25.80.00.00	58.33	31.94	7.50	600.33	6.45	135.73	135.73
06.M.25.81.00.00	58.70	31.86	7.50	600.33	6.45	135.73	135.73
06.M.25.82.00.00	59.07	31.78	7.50	600.33	6.45	135.73	135.73
06.M.25.83.00.00	59.44	31.70	7.50	600.33	6.45	135.73	135.73
06.M.25.84.00.00	59.81	31.62	7.50	600.33	6.45	135.73	135.73
06.M.25.85.00.00	60.18	31.54	7.50	600.33	6.45	135.73	135.73
06.M.25.86.00.00	60.55	31.46	7.50	600.33	6.45	135.73	135.73
06.M.25.87.00.00	60.92	31.38	7.50	600.33	6.45	135.73	135.73
06.M.25.88.00.00	61.29	31.30	7.50	600.33	6.45	135.73	135.73
06.M.25.89.00.00	61.66	31.22	7.50	600.33	6.45	135.73	135.73
06.M.25.90.00.00	62.03	31.14	7.50	600.33	6.45	135.73	135.73
06.M.25.91.00.00	62.40	31.06	7.50	600.33	6.45	135.73	135.73
06.M.25.92.00.00	62.77	30.98	7.50	600.33	6.45	135.73	135.73
06.M.25.93.00.00	63.14	30.90	7.50	600.33	6.45	135.73	135.73
06.M.25.94.00.00	63.51	30.82	7.50	600.33	6.45	135.73	135.73
06.M.25.95.00.00	63.88	30.74	7.50	600.33	6.45	135.73	135.73
06.M.25.96.00.00	64.25	30.66	7.50	600.33	6.45	135.73	135.73
06.M.25.97.00.00	64.62	30.58	7.50	600.33	6.45	135.73	135.73
06.M.25.98.00.00	64.99	30.50	7.50	600.33	6.45	135.73	135.73
06.M.25.99.00.00	65.36	30.42	7.50	600.33	6.45	135.73	135.73
06.M.26.00.00.00	65.73	30.34	7.50	600.33	6.45	135.73	135.73
06.M.26.01.00.00	66.10	30.26	7.50	600.33	6.45	135.73	135.73
06.M.26.02.00.00	66.47	30.18	7.50	600.33	6.45	135.73	135.73
06.M.26.03.00.00	66.84	30.10	7.50	600.33	6.45	135.73	135.73
06.M.26.04.00.00	67.21	30.02	7.50	600.33	6.45	135.73	135.73
06.M.26.05.00.00	67.58	29.94	7.50	600.33	6.45	135.73	135.73
06.M.26.06.00.00	67.95	29.86	7.50	600.33	6.45	135.73	135.73
06.M.26.07.00.00	68.32	29.78	7.50	600.33	6.45	135.73	135.73
06.M.26.08.00.00	68.69	29.70	7.50	600.33	6.45	135.73	135.73
06.M.26.09.00.00	69.06	29.62	7.50	600.33	6.45	135.73	135.73
06.M.26.10.00.00	69.43	29.54	7.50	600.33	6.45	135.73	135.73
06.M.26.11.00.00	69.80	29.46	7.50	600.33	6.45	135.73	135.73
06.M.26.12.00.00	70.17	29.38	7.50	600.33	6.45	135.73	135.73
06.M.26.13.00.00	70.54	29.30	7.50	600.33	6.45	135.73	135.73
06.M.26.14.00.00	70.91	29.22	7.50	600.33	6.45	135.73	135.73
06.M.26.15.00.00	71.28	29.14	7.50	600.33	6.45	135.73	135.73
06.M.26.16.00.00	71.65	29.06	7.50	600.33	6.45	135.73	135.73
06.M.26.17.00.00	72.02	28.98	7.50	600.33	6.45	135.73	135.73
06.M.26.18.00.00	72.39	28.90	7.50	600.33	6.45	135.73	135.73
06.M.26.19.00.00	72.76	28.82	7.50	600.33	6.45	135.73	135.73
06.M.26.20.00.00	73.13	28.74	7.50	600.33	6.45	135.73	135.73
06.M.26.21.00.00	73.50	28.66	7.50	600.33	6.45	135.73	135.73
06.M.26.22.00.00	73.87	28.58	7.50	600.33	6.45	135.73	135.73
06.M.26.23.00.00	74.24	28.50	7.50	600.33	6.45	135.73	135.73
06.M.26.24.00.00	74.61	28.42	7.50	600.33	6.45	135.73	135.73
06.M.26.25.00.00	74.98	28.34	7.50	600.33	6.45	135.73	135.73
06.M.26.26.00.00	75.35	28.26	7.50	600.33	6.45	135.73	135.73
06.M.26.27.00.00	75.72	28.18	7.50	600.33	6.45	135.73	135.73
06.M.26.28.00.00	76.09	28.10	7.50	600.33	6.45	135.73	135.73
06.M.26.29.00.00	76.46	28.02	7.50	600.33	6.45	135.73	135.73
06.M.26.30.00.00	76.83	27.94	7.50	600.33	6.45	135.73	135.73
06.M.26.31.00.00	77.20	27.86	7.50	600.33	6.45	135.73	135.73
06.M.26.32.00.00	77.57	27.78	7.50	600.33	6.45	135.73	135.73
06.M.26.33.00.00	77.94	27.70	7.50	600.33	6.45</		

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Time	10GAMB0C001X001.PV	10GAMB0C001X001.PV	10GAMB0C001X001.PV	10GAMB0C001X001.PV	10GAMB0C001X001.PV	10GAMB0C001X001.PV	10GAC0C001X001.PV
	WASTE WATER OUTFLOW T/NHR	WASTE WATER TEMP DEG C	WASTE WATER PH	WASTE WATER CONDUCTIVITY uS/CM	WASTE WATER D.O. mg/L	Raw water inlet flow T/NHR	
29 M. -25 21:00:00	0.060808113	32.34760006	6.960843139	538.8690186	5.483263707	10.38857079	
29 M. -25 22:00:00	54.06401842	32.00021842	7.00021842	535.0187428	5.984178428	1.661249428	
29 M. -25 23:00:00	53.6586647	32.4090521	7.05171588	537.6578797	6.57358511	0.57358511	
30 M. -25 00:00:00	53.11616047	32.31623614	7.097176075	539.6925659	6.494254589	0.57206473	
30 M. -25 01:00:00	53.0313988	32.2215216	7.142610945	542.0029797	6.62904249	0.57053845	
30 M. -25 02:00:00	53.53845798	32.12971437	7.162007187	544.5129783	6.691709518	0.569001797	
30 M. -25 03:00:00	53.85958565	32.0368058	7.17647028	546.6226572	6.76026746	0.56748359	
30 M. -25 04:00:00	54.00522099	31.9436264	7.190849021	548.394021	6.74774545	0.565949221	
30 M. -25 05:00:00	53.96458052	31.85045052	7.205218806	551.2448884	6.814846517	0.570821268	
30 M. -25 06:00:00	53.88049849	31.75727463	7.219670783	551.7255859	6.90277405	0.567502098	
30 M. -25 07:00:00	53.8123258	31.66249325	7.248396855	551.6629585	6.956277163	1.570763495	
30 M. -25 08:00:00	54.07669127	31.68486927	7.248396855	551.6629585	6.956277163	0.17893713	
30 M. -25 09:00:00	54.13451385	31.6841507	7.26274638	551.5375366	6.979395829	0.36577314	
30 M. -25 10:00:00	54.27	31.67	7.27	551.47	6.97	0.36	
30 M. -25 11:00:00	54.94	31.66	7.28	551.45	7.05	0.36	
30 M. -25 12:00:00	0.36	31.66	6.76	138.81	0.35	0.09	
30 M. -25 13:00:00	0.54	34.89	7.30	132.13	0.09		
30 M. -25 14:00:00	0.12	36.55	6.68	172.16	0.08		
30 M. -25 15:00:00	0.11	36.45	6.89	127.74	0.16		
30 M. -25 16:00:00	0.39	36.3	6.64	178.06	0.27		
30 M. -25 17:00:00	0.07	34.79	6.65	129.50	0.01		
30 M. -25 18:00:00	0.05	30.86	6.05	128.64	0.02		
30 M. -25 19:00:00	0.03	29.09	6.65	127.79	0.08		
30 M. -25 20:00:00	0.03	28.45	6.65	126.93	0.17		
30 M. -25 21:00:00	0.04	31.57	7.26	542.75	7.00	0.13	
30 M. -25 22:00:00	54.11	32.20	7.37	543.93	7.33	0.01	
30 M. -25 23:00:00	53.56	32.07	7.37	545.11	7.40	0.46	
31 M. -25 00:00:00	52.83	32.00	7.38	546.29	7.35	0.13	
31 M. -25 01:00:00	53.92	31.92	7.39	547.47	7.39	0.16	
31 M. -25 02:00:00	53.47	31.83	7.40	548.05	7.42	0.07	
31 M. -25 03:00:00	53.77	31.71	7.41	549.23	7.45	0.17	
31 M. -25 04:00:00	53.68	31.70	7.41	551.01	7.47	0.05	
31 M. -25 05:00:00	53.94	31.62	7.42	551.06	7.48	0.23	
31 M. -25 06:00:00	53.07	31.54	7.43	550.89	7.51	0.01	
31 M. -25 07:00:00	53.94	31.56	7.45	550.48	7.54	0.19	
31 M. -25 08:00:00	53.89	31.59	7.49	550.37	7.52	0.17	
31 M. -25 09:00:00	0.10	31.84	7.50	136.95	0.26	0.18	
31 M. -25 10:00:00	0.04	31.27	6.89	131.25	0.05	0.05	
31 M. -25 11:00:00	0.08	32.33	6.67	131.40	0.06		
31 M. -25 12:00:00	0.07	31.37	6.66	131.56	0.35		
31 M. -25 13:00:00	0.07	30.46	6.00	131.71	0.11		
31 M. -25 14:00:00	0.06	29.34	6.65	131.87	0.01		
31 M. -25 15:00:00	0.05	28.68	6.66	154.51	2.20	283.38	
31 M. -25 16:00:00	0.06	27.68	6.66	128.60	2.06	284.95	
31 M. -25 17:00:00	0.04	30.79	6.93	599.08	5.65	284.78	
31 M. -25 18:00:00	54.52	30.69	6.92	595.60	5.95	284.58	
31 M. -25 19:00:00	52.76	30.59	6.96	606.29	6.25	284.63	
31 M. -25 20:00:00	53.23	30.49	6.99	636.91	6.30	285.08	

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Time	10GAMB0C001X001.PV	10GAMB0C001X001.PV	10GAMB0C001X001.PV	10GAMB0C001X001.PV	10GAMB0C001X001.PV	10GAC0C001X001.PV
	WASTE WATER OUTFLOW T/NHR	WASTE WATER TEMP DEG C	WASTE WATER PH	WASTE WATER CONDUCTIVITY uS/CM	WASTE WATER D.O. mg/L	Raw water inlet flow T/NHR
01 M. -25 00:00:00	53.54	30.39	7.03	617.43	6.42	284.03
01 M. -25 01:00:00	53.74	30.29	7.06	617.96	6.48	284.08
01 M. -25 02:00:00	53.87	30.29	7.10	639.48	6.47	284.03
01 M. -25 03:00:00	54.19	30.09	7.13	639.00	6.64	283.38
01 M. -25 04:00:00	54.38	29.99	7.17	639.00	6.69	283.68
01 M. -25 05:00:00	53.94	29.99	7.20	640.04	6.73	284.14
01 M. -25 06:00:00	53.97	29.80	7.21	634.04	6.73	283.18
01 M. -25 07:00:00	54.20	29.70	7.23	625.39	6.74	283.41
01 M. -25 08:00:00	54.20	29.90	7.24	616.74	6.68	282.82
01 M. -25 09:00:00	54.30	30.12	7.26	609.09	6.64	282.69
01 M. -25 10:00:00	54.15	31.02	7.37	537.54	6.82	283.33
01 M. -25 11:00:00	54.75	31.40	7.27	528.10	6.98	282.88
01 M. -25 12:00:00	0.18	32.56	6.75	121.47	0.34	381.51
01 M. -25 13:00:00	0.17	34.18	6.69	129.79	0.27	281.78
01 M. -25 14:00:00	0.11	36.06	6.61	130.84	0.28	281.88
01 M. -25 15:00:00	0.12	37.79	6.59	141.89	0.28	281.84
01 M. -25 16:00:00	0.11	38.63	6.57	135.36	0.24	135.51
01 M. -25 17:00:00	0.09	37.50	6.56	129.66	0.64	164
01 M. -25 18:00:00	0.07	36.26	6.57	127.66	0.64	0.64
01 M. -25 19:00:00	0.05	34.53	6.57	126.26	0.57	
01 M. -25 20:00:00	0.05	32.37	6.58	134.56	0.49	
01 M. -25 21:00:00	0.04	31.30	6.93	519.26	5.20	0.40
01 M. -25 22:00:00	53.80	31.85	7.23	519.51	6.83	0.34
01 M. -25 23:00:00	53.53	31.89	7.31	519.76	7.06	0.27
02 M. -25 00:00:00	52.56	31.88	7.30	520.00	7.14	0.20
02 M. -25 01:00:00	52.85	31.87	7.35	520.25	7.22	0.12
02 M. -25 02:00:00	53.94	31.86	7.37	520.50	7.29	0.24
02 M. -25 03:00:00	53.44	31.86	7.38	520.74	7.32	0.43
02 M. -25 04:00:00	53.49	31.85	7.40	520.99	7.33	0.67
02 M. -25 05:00:00	53.11	31.88	7.42	521.19	7.35	0.61
02 M. -25 06:00:00	53.52	31.91	7.44	520.74	7.37	1.20
02 M. -25 07:00:00	53.35	31.94	7.45	520.39	7.39	1.10
02 M. -25 08:00:00	53.47	31.91	7.45	520.70	7.40	-0.13
02 M. -25 09:00:00	53.75	32.00	7.45	519.68	7.42	-0.11
02 M. -25 10:00:00	0.12	32.83	6.81	139.59	0.10	-0.09
02 M. -25 11:00:00	0.11	36.27	6.73	131.78	0.09	-0.09
02 M. -25 12:00:00	0.11	38.61	6.64	131.59	2.38	0.08
02 M. -25 13:00:00	0.09	37.50	6.67	130.75	2.12	-0.07
02 M. -25 14:00:00	0.09	36.68	6.68	129.92	0.06	-0.06
02 M. -25 15:00:00	0.05	34.63	6.69	129.09	0.05	-0.05
02 M. -25 16:00:00	0.08	38.96	6.68	128.25	0.25	
02 M. -25 17:00:00	0.07	35.87	6.66	127.42	0.25	
02 M. -25 18:00:00	0.06	29.80	6.64	126.58	2.38	-1.38
02 M. -25 19:00:00	0.06	26.04	6.63	125.75	0.15	0.15
02 M. -25 20:00:00	0.05	25.76	6.61	124.05	0.21	
02 M. -25 21:00:00	0.05	31.66	6.77	539.60	5.43	-0.23
02 M. -25 22:00:00	52.48	31.72	7.44	539.71	7.54	-0.27
02 M. -25 23:00:00	53.34	31.75	7.47	539.79	5.97	-0.09
02 M. -25 00:00:00	52.43	31.71	7.20	552.87	6.10	0.50
02 M. -25 01:00:00	52.41	31.66	7.22	552.84	6.28	0.28
02 M. -25 02:00:00	53.26	31.58	7.29	550.02	6.29	0.02
02 M. -25 03:00:00	53.72	31.58	7.29	550.10	6.33	0.30
02 M. -25 04:00:00	53.78	31.59	7.32	551.18	6.40	0.80
02 M. -25 05:00:00	53.94	31.56	7.36	550.50	6.43	0.63
02 M. -25 06:00:00	53.92	31.60	7.35	556.35	6.33	0.30
02 M. -25 07:00:00	54.07	31.61	7.35	557.77	6.17	0.67
02 M. -25 08:00:00	53.63	31.63	7.41	551.19	6.01	0.25
02 M. -25 09:00:00	54.36	31.62	7.34	548.61	5.99	0.67
02 M. -25 10:00:00	54.29	31.63	7.33	546.02	5.98	0.04
02 M. -25 11:00:00	0.18	31.38	6.70	131.26	285.03	
02 M. -25 12:00:00	0.05	36.03	6.67	130.25	284.17	
02 M. -25 13:00:00	0.04	38.38	6.65	129.23	284.54	
02 M. -25 14:00:00	0.04	39.21	6.67	128.23	284.12	
02 M. -25 15:00:00	0.03	6.60	6.60	127.21	284.10	
02 M. -25 16:00:00	0.03	6.60	6.60	126.19	284.22	
02 M. -25 17:00:00	0.02	6.58	6.58	125.18	284.32	
02 M. -25 18:00:00	0.02	35.37	6.57	124.17	283.81	
02 M. -25 19:00:00	0.03	33.37	6.56	123.31	283.63	
02 M. -25 20:00:00	0.05	31.83	6.55	122.62	283.79	
02 M. -25 21:00:00	0.05	32.73	6.53	120.04	6.07	283.31
02 M. -25 22:00:00	53.35	33.00	590.29	6.87	282.79	
02 M. -25 23:00:00	52.74	33.06	7.41	510.35	6.99	283.07
03 M. -25 00:00:00	52.51	32.99	7.43	512.40	7.05	282.83
03 M. -25 01:00:00	52.71	32.92	7.44	516.46	7.11	282.54

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Time	10GAMB0C001X001.PV	10GAMB0C001X001.PV	10GAMB0C001X001.PV	10GAMB0C001X001.PV	10GAMB0C001X001.PV	10GAMB0C001X001.PV	10GAC0C001X001.PV
	WASTE WATER OUTFLOW FLOW T/NR	WASTE WATER TEMP DEG C	WASTE WATER PH	WASTE WATER CONDUCTIVITY uS/CM	WASTE WATER D.O. mg/L	Raw water inlet flow T/NR	
04 M. -25 02:00:00	52.91	32.85	7.46	516.51	7.14	282.47	
04 M. -25 03:00:00	53.16	32.77	7.48	518.57	7.17	282.79	
04 M. -25 04:00:00	53.33	32.70	7.50	520.63	7.20	282.10	
04 M. -25 05:00:00	53.33	32.63	7.51	520.25	7.23	281.76	
04 M. -25 06:00:00	53.29	32.56	7.50	516.48	7.23	282.21	
04 M. -25 07:00:00	0.01	31.86	6.80	131.43	282.44		
04 M. -25 08:00:00	0.01	31.27	6.72	128.93	281.2		
04 M. -25 09:00:00	0.02	32.53	6.71	126.43	281.5		
04 M. -25 10:00:00	0.02	33.35	6.73	153.75	5.34	282.07	
04 M. -25 11:00:00	0.03	37.04	6.75	121.52	3.65	281.9	
04 M. -25 12:00:00	0.03	33.00	7.12	509.59	5.36	281.0	
04 M. -25 13:00:00	0.04	37.48	6.79	121.58	2.69	281.0	
04 M. -25 14:00:00	0.04	37.48	6.75	122.03	2.34	281.0	
04 M. -25 15:00:00	0.04	6.71	122.48	2.26	281.0		
04 M. -25 16:00:00	0.04	6.68	122.93	2.17	281.0		
04 M. -25 17:00:00	0.04	123.38	2.08	281.0			
04 M. -25 18:00:00	0.04	6.70	123.83	1.4	281.0		
04 M. -25 19:00:00	0.04	38.12	6.67	124.28	2.06	281.0	
04 M. -25 20:00:00	0.04	36.31	6.63	124.73	1.67	281.0	
04 M. -25 21:00:00	0.04	34.59	7.06	124.26	0.70	281.0	
04 M. -25 22:00:00	0.04	32.81	6.93	526.55	5.03	281.0	
04 M. -25 23:00:00	52.88	32.88	7.21	525.62	5.85	281.0	
05 M. -25 00:00:00	52.95	32.93	7.27	527.74	6.26	281.0	
05 M. -25 01:00:00	52.73	32.80	7.31	529.86	6.40	281.0	
05 M. -25 02:00:00	52.88	32.68	7.33	531.08	6.50	281.0	
05 M. -25 03:00:00	53.27	32.55	7.34	534.11	6.58	281.0	
05 M. -25 04:00:00	53.51	32.43	7.36	536.23	6.64	281.0	
05 M. -25 05:00:00	53.29	32.30	7.38	538.35	6.68	281.0	
05 M. -25 06:00:00	53.44	32.10	7.40	540.13	6.72	281.0	
05 M. -25 07:00:00	53.70	32.08	7.41	538.38	6.73	281.0	
05 M. -25 08:00:00	53.61	32.02	7.41	536.62	6.76	281.0	
05 M. -25 09:00:00	0.15	31.47	6.78	133.64	281.0		
05 M. -25 10:00:00	0.14	35.83	7.24	133.76	281.0		
05 M. -25 11:00:00	0.13	38.83	6.73	133.73	281.0		
05 M. -25 12:00:00	0.11	37.21	6.72	133.71	281.0		
05 M. -25 13:00:00	0.10	6.71	133.69	281.0			
05 M. -25 14:00:00	0.07	6.70	133.67	281.0			
05 M. -25 15:00:00	0.09	6.69	133.65	281.0			
05 M. -25 16:00:00	0.06	6.68	133.63	281.0			
05 M. -25 17:00:00	0.05	6.68	133.61	281.0			
05 M. -25 18:00:00	0.05	39.26	6.76	133.67	281.0		
05 M. -25 19:00:00	0.05	37.42	6.66	132.97	281.0		
05 M. -25 20:00:00	0.05	35.62	6.65	124.16	281.0		
05 M. -25 21:00:00	0.05	34.24	6.64	124.40	281.0		
05 M. -25 22:00:00	0.05	32.56	7.08	526.00	5.73	281.0	
05 M. -25 23:00:00	53.48	33.24	7.49	545.18	7.24	284.0	
06 M. -25 00:00:00	53.06	33.18	7.58	551.19	7.49	284.0	
06 M. -25 01:00:00	52.24	33.12	7.57	557.19	7.47	284.0	
06 M. -25 02:00:00	52.54	32.58	7.59	563.20	7.48	284.0	
06 M. -25 03:00:00	52.38	32.51	7.60	569.20	7.49	284.0	
06 M. -25 04:00:00	52.46	32.46	7.60	571.21	7.50	284.0	
06 M. -25 05:00:00	52.88	32.39	7.60	578.21	7.51	283.0	
06 M. -25 06:00:00	52.92	32.29	7.60	581.28	7.53	283.0	
06 M. -25 07:00:00	52.14	32.32	7.61	581.17	7.54	283.0	
06 M. -25 08:00:00	52.99	32.14	7.61	581.07	7.54	283.0	
06 M. -25 09:00:00	53.37	32.61	7.61	580.96	7.57	282.0	
06 M. -25 10:00:00	53.12	32.54	7.61	580.86	7.59	282.0	
06 M. -25 11:00:00	0.16	35.60	6.81	133.27	282.0		
06 M. -25 12:00:00	0.14	37.68	6.80	128.01	282.0		
06 M. -25 13:00:00	0.12	39.11	6.79	124.40	282.0		
06 M. -25 14:00:00	0.11	37.48	6.81	124.41	281.0		
06 M. -25 15:00:00	0.09	6.81	124.42	282.0			
06 M. -25 16:00:00	0.07	6.81	124.43	281.0			
06 M. -25 17:00:00	0.07	38.72	6.82	124.44	281.0		
06 M. -25 18:00:00	0.03	37.49	6.81	124.45	281.0		
06 M. -25 19:00:00	0.03	36.04	7.12	124.46	282.0		
06 M. -25 20:00:00	0.03	34.47	6.68	124.47	282.0		
06 M. -25 21:00:00	0.04	32.65	6.74	546.62	5.83	0.0	
06 M. -25 22:00:00	53.46	32.63	7.29	543.65	6.21	0.0	
06 M. -25 23:00:00	53.47	32.61	7.31	549.25	6.29	0.0	
07 M. -25 00:00:00	52.77	32.53	7.26	554.85	6.40	0.0	
07 M. -25 01:00:00	53.25	32.55	7.35	560.45	6.43	0.0	
07 M. -25 02:00:00	53.73	32.47	7.36	566.05	6.57	0.0	
07 M. -25 03:00:00	53.85	32.39	7.35	571.64	6.55	0.0	

Jun 2025

*Remark
Copy to clipboard or print table value

Time	100MMB40C001X001.PV WASTE WATER OUTFLOW Flow T/MH	100MMB40C001X001.PV WASTE WATER TEMP DEG.C	100MMB40C001X001.PV WASTE WATER PH	100MMB40C001X001.PV WASTE WATER CONDUCTIVITY dS/M	100MMB40C001X001.PV WASTE WATER D.O. mg/L	100MMB40C001X001.PV Raw water inlet flow T/MH
10.6.0.0.25.06.00.00	53.88996124	32.1390313	7.609174058	628.9400716	7.420045497	1.33723712
10.6.0.0.25.06.00.00	53.93745884	32.1430264	7.613986842	628.6267425	7.429383251	1.33148589
10.6.0.0.25.06.00.00	53.89876508	32.14062108	7.628361084	628.3611084	7.438243005	1.33122233
10.6.0.0.25.06.00.00	0.97054083	32.79095352	7.60027955	147.527582	7.41462794	0.14627994
10.6.0.0.25.06.00.00	0.07134919	32.68321547	7.608215427	127.7975693	7.331064144	0.08958813
10.6.0.0.25.06.00.00	36.17307468	32.67307468	7.608215427	126.0004293	7.331064144	0.08958813
10.6.0.0.25.12.00.00	0.06068079	30.94128952	7.623174893	121.081382	7.238975509	0.13127422
10.6.0.0.25.12.00.00	0.05577759	32.79064077	7.62801368	123.281868	7.296679506	0.179225534
10.6.0.0.25.14.00.00	0.05058239	32.76134302	7.610482547	124.882547	7.210917807	0.20445135
10.6.0.0.25.15.00.00	0.04519318	32.76538081	7.604391518	126.4208453	7.15566388	0.270781849
10.6.0.0.25.16.00.00	0.04020438	32.73648894	7.613832861	123.3383261	7.050213337	0.31800514
10.6.0.0.25.17.00.00	0.03766688	32.73247004	7.635533714	129.6882626	7.248542124	0.367833614
10.6.0.0.25.18.00.00	0.04000502	32.76381068	7.61312865	121.284018	7.15309993	0.2862330
10.6.0.0.25.19.00.00	0.04354502	32.65006995	7.640017414	131.3374529	7.04134068	0.30143069
10.6.0.0.25.20.00.00	0.04483694	32.12466191	7.642259021	130.2641896	7.237501521	0.76328474
10.6.0.0.25.21.00.00	0.06443493	32.74570084	7.648011114	127.5874437	7.463710328	0.337810328
10.6.0.0.25.22.00.00	0.73594292	32.73594292	7.648011114	624.0580442	7.458912633	0.33897925
10.6.0.0.25.23.00.00	53.13684644	32.71938464	7.648982561	615.0934862	7.619781888	0.314893788
10.6.0.0.25.24.00.00	53.64173889	32.7063615	7.612726902	616.1464484	7.650135059	0.23634474
10.6.0.0.25.01.00.00	52.96023048	32.76304662	7.611990129	617.1990129	7.611990129	0.28602923
11.6.0.0.0.25.02.00.00	53.10305405	32.63483658	7.65178151	618.2562845	7.648909144	0.28619537
11.6.0.0.0.25.03.00.00	53.66773117	32.3748436	7.651798153	619.3056641	7.648303843	0.19684605
11.6.0.0.0.25.04.00.00	53.67172836	32.75589267	7.651786978	620.3702172	7.615513852	0.24107265
11.6.0.0.0.25.05.00.00	53.4890744	32.13681793	7.751941204	624.1535955	7.650052643	0.10403903
11.6.0.0.0.25.06.00.00	53.71372709	32.07807021	7.625033206	627.9407349	7.638536719	0.18759862
11.6.0.0.0.25.07.00.00	53.8821741	31.89879277	7.62508472	631.7260132	7.620289829	0.28742985
11.6.0.0.0.25.08.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.09.00.00	54.16086951	31.76648475	7.625142429	639.2569688	7.621786075	0.367753778
11.6.0.0.0.25.10.00.00	54.044429	31.76349933	7.625127447	643.081481	7.621971786	0.28727925
11.6.0.0.0.25.11.00.00	53.14170858	31.76349933	7.625127447	646.8071265	7.621971786	0.328917378
11.6.0.0.0.25.12.00.00	53.10299439	32.33080883	7.630208803	134.236557	7.61242005	0.35804272
11.6.0.0.0.25.13.00.00	0.93890509	32.99854232	7.625083802	133.6803131	7.646371876	0.285781026
11.6.0.0.0.25.14.00.00	0.04842033	32.75589267	7.651786978	126.1240094	7.615513852	0.328917378
11.6.0.0.0.25.15.00.00	0.07578658	36.8975138	7.625075253	132.567253	7.281095735	0.35593827
11.6.0.0.0.25.16.00.00	0.06674929	35.78871658	7.625045153	132.0115967	7.319964313	0.38596604
11.6.0.0.0.25.17.00.00	0.05771304	34.8611908	7.625016749	131.4533258	7.285809644	0.38596604
11.6.0.0.0.25.18.00.00	0.04867488	33.86366051	7.625073667	130.8910889	7.286073667	0.38596604
11.6.0.0.0.25.19.00.00	0.03940480	32.8810052	7.625137661	130.342865	7.251348027	0.38596604
11.6.0.0.0.25.20.00.00	0.06413056	32.0350202	7.625168179	118.1916504	7.626399288	0.28510744
11.6.0.0.0.25.21.00.00	53.28811326	32.13681793	7.625137661	631.5211129	7.625137661	0.328917378
11.6.0.0.0.25.22.00.00	53.7647186	32.75272962	7.632729621	620.071163	7.408120632	0.28435734
11.6.0.0.0.25.23.00.00	53.05365516	32.44937515	7.632726085	621.0071188	7.405232883	0.28435734
11.6.0.0.0.25.24.00.00	53.0289761	32.9289761	7.632726085	621.5622123	7.405232883	0.28435734
11.6.0.0.0.25.01.00.00	53.31193512	32.31638336	7.625247633	622.8917236	7.401369436	0.28435734
11.6.0.0.0.25.02.00.00	53.38490677	32.48885568	7.625232959	623.4555608	7.401369436	0.28435734
11.6.0.0.0.25.03.00.00	53.74014282	32.18337876	7.625247633	624.771798	7.401369436	0.28435734
11.6.0.0.0.25.04.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.05.00.00	54.36487373	32.04711533	7.62508546	634.520874	7.401313169	0.28435734
11.6.0.0.0.25.06.00.00	53.963662	31.86286529	7.625096742	632.8676147	7.401313169	0.28435734
11.6.0.0.0.25.07.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.08.00.00	54.01089604	32.51089604	7.625083802	622.2415652	7.401313169	0.28435734
11.6.0.0.0.25.09.00.00	54.19083636	32.01836014	7.625083802	621.7942041	7.401313169	0.28435734
11.6.0.0.0.25.10.00.00	54.34498368	32.19586037	7.625083802	624.771798	7.401313169	0.28435734
11.6.0.0.0.25.11.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.12.00.00	0.07224000	36.06868456	7.62508546	128.7867432	7.255045721	0.367753778
11.6.0.0.0.25.13.00.00	0.0024966	36.1824903	7.62554417	128.3371887	7.293673088	0.367753778
11.6.0.0.0.25.14.00.00	0.06614056	32.75272962	7.632729621	127.8017665	7.408120632	0.28435734
11.6.0.0.0.25.15.00.00	0.063307167	32.75272962	7.632729621	127.8017665	7.408120632	0.28435734
11.6.0.0.0.25.16.00.00	0.063307167	32.75272962	7.632729621	127.8017665	7.408120632	0.28435734
11.6.0.0.0.25.17.00.00	0.063307167	32.75272962	7.632729621	127.8017665	7.408120632	0.28435734
11.6.0.0.0.25.18.00.00	0.063307167	32.75272962	7.632729621	127.8017665	7.408120632	0.28435734
11.6.0.0.0.25.19.00.00	0.063307167	32.75272962	7.632729621	127.8017665	7.408120632	0.28435734
11.6.0.0.0.25.20.00.00	0.063307167	32.75272962	7.632729621	127.8017665	7.408120632	0.28435734
11.6.0.0.0.25.21.00.00	0.063307167	32.75272962	7.632729621	127.8017665	7.408120632	0.28435734
11.6.0.0.0.25.22.00.00	0.063307167	32.75272962	7.632729621	127.8017665	7.408120632	0.28435734
11.6.0.0.0.25.23.00.00	0.063307167	32.75272962	7.632729621	127.8017665	7.408120632	0.28435734
11.6.0.0.0.25.24.00.00	0.063307167	32.75272962	7.632729621	127.8017665	7.408120632	0.28435734
11.6.0.0.0.25.01.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.02.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.03.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.04.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.05.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.06.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.07.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.08.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.09.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.10.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.11.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.12.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.13.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.14.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.15.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.16.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.17.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.18.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.19.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.20.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.21.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.22.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.23.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.24.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.01.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.02.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.03.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.04.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.05.00.00	53.07951748	31.79717334	7.625176893	635.5137953	7.616847101	0.328917378
11.6.0.0.0.25.06.00.00	53.07951748					

Jun 25

*Remark
Copy 3 column's PI and 3 column's value.

Time	100M6BCC001K0201.PV WASTE WATER OUTLET FLOW	100M6BCC001K0201.PV WASTE WATER TEMP	100M6BCC001K0201.PV WASTE WATER PH	100M6BCC002K0201.PV WASTE WATER CONDUCTIVITY	100M6BCC003K0201.PV WASTE WATER D.O.	100M6BCC004K0201.PV Raw water inlet flow
	l/min	DEG.C	µM	µS/cm	mg/L	T/MH
22.6.6-25.14.00:00	0.058617233	36.96892193	7.470118523	132.3051741		-0.130008177
22.6.6-25.15:00:00	0.053487532	38.149097	7.284984732	131.7342987		-0.063702688
22.6.6-25.16:00:00	0.05399931	37.433892473	7.311624273	131.1624273		-0.062456173
22.6.6-25.17:00:00	0.043137505	35.2442337	7.18421238	130.5201478		-0.033523217
22.6.6-25.18:00:00	0.03937978	35.7288317	7.17380387	130.0102724		-0.01847718
22.6.6-25.19:00:00	0.029390881	32.6930027	7.126930085	129.4060127		-0.003001086
22.6.6-25.20:00:00	0.027658088	26.55808919	7.17154026	128.8789388		0.01167118
22.6.6-25.21:00:00	0.029260882	26.04167557	7.170984759	128.3076163		0.026748305
22.6.6-25.22:00:00	0.034947239	25.48937608	7.48937608	146.199826	0.505007744	0.001421354
22.6.6-25.23:00:00	0.18871863	31.88737587	7.188147133	650.3769864	0.003717054	0.001860662
22.6.6-25.00:00:00	0.539382863	31.11031852	7.57379688	644.7744141	0.046592303	0.004932303
22.6.6-25.01:00:00	0.523858802	30.94960602	7.599205971	644.0916748	0.040167551	0.004016755
22.6.6-25.02:00:00	0.523920263	30.79024551	7.642408952	642.4089952	0.032782127	0.003278127
22.6.6-25.03:00:00	0.531485413	30.78212166	7.600525856	642.7652353	7.365279217	0.023718049
22.6.6-25.04:00:00	0.534013971	30.75501373	7.601186275	642.0433396	7.246725559	0.020893298
22.6.6-25.05:00:00	0.542555237	30.72761629	7.601846628	641.8068687	7.286839888	0.021408549
22.6.6-25.06:00:00	0.531544856	30.70389486	7.602506638	638.446228	7.271073734	0.008843797
22.6.6-25.07:00:00	0.515643616	30.68198023	7.55208447	145.5974274	3.21538496	-0.003293399
22.6.6-25.08:00:00	0.106819071	30.4085434	7.3244023	31.8274994	3.015128492	-0.02439459
22.6.6-25.09:00:00	0.097194513	31.06270853	7.183247348	127.7443848	0.148675638	-0.04548578
22.6.6-25.10:00:00	0.088769847	33.03170395	7.165506383	132.748642	0.312755201	-0.06659697
22.6.6-25.11:00:00	0.079745452	35.0687294	6.89943892	130.0750489	0.334897983	-0.08798162
22.6.6-25.12:00:00	0.07770996	33.94274202	6.98742104	127.4021012	0.724050067	-0.073784807
22.6.6-25.13:00:00	0.06196354	36.1697066	6.953905187	127.592437	3.612937171	-0.568409383
22.6.6-25.14:00:00	0.052671809	38.18113327	6.927475234	127.307037	3.382466555	-0.698210765
22.6.6-25.15:00:00	0.046370489	37.71238154	6.92670993	128.2129998	3.066634444	-0.006616134
22.6.6-25.16:00:00	0.047175509	37.60017318	6.937386432	128.5867932	0.094796719	-0.02963129
22.6.6-25.17:00:00	0.049180649	36.46688843	6.895484447	128.8510515	0.008270777	-0.00179641
22.6.6-25.18:00:00	0.05058739	34.62769138	6.898044979	129.166275	1.944948568	0.000498568
22.6.6-25.19:00:00	0.05233376	32.333376	7.18931963	129.4310486	0.402211212	0.001711212
22.6.6-25.20:00:00	0.05339923	30.24240685	6.88454081	129.7980609	0.122742581	0.003779559
22.6.6-25.21:00:00	0.054801013	29.34296608	6.883788109	129.0010529	0.552438498	0.002731259
22.6.6-25.22:00:00	0.053763449	30.76623495	7.18802198	130.8664794	5.33235687	-0.045236209
22.6.6-25.23:00:00	0.531761388	31.74713898	7.53839852	651.1967163	6.391380787	0.023797936
22.6.6-25.00:00:00	0.527957068	31.8316038	8.39245147	663.7886353	6.828955081	0.028355081
22.6.6-25.01:00:00	0.531188051	31.4744666	8.26413841	668.7808838	7.028417797	0.004611338
22.6.6-25.02:00:00	0.512594889	31.12310861	8.06233064	669.3996751	7.134910583	-0.618326027
22.6.6-25.03:00:00	0.53783784	31.1537953	8.21657288	670.8180632	-0.09235923	-0.00235923
22.6.6-25.04:00:00	0.53765062	30.9935454	8.146772385	670.6366477	7.823159313	0.276187629
22.6.6-25.05:00:00	0.538613179	30.89213589	8.04723589	671.2512489	7.122543885	0.001254388
22.6.6-25.06:00:00	0.149592099	30.8666251	7.962621122	149.0732117	4.906837483	9.321492195
22.6.6-25.07:00:00	0.135711461	30.80464005	7.903693384	137.349823	3.880553396	0.530977912
22.6.6-25.08:00:00	0.051470016	31.53318636	7.95246882	135.2468827	3.058930249	0.305930249
22.6.6-25.09:00:00	0.107301739	31.8250076	7.931109055	133.1439514	3.035240327	0.045362807
22.6.6-25.10:00:00	0.052989534	35.2544663	7.31167984	131.0410156	3.26864624	0.029410156
22.6.6-25.11:00:00	0.078748897	36.9853996	7.24395818	128.9380798	3.244299352	0.04068271
22.6.6-25.12:00:00	0.046582122	39.1235276	6.858271384	128.85921384	1.885927585	-0.00808885
22.6.6-25.13:00:00	0.050507611	37.06640215	7.106834205	130.0750321	0.301859405	-0.047637964
22.6.6-25.14:00:00	0.041597361	38.58821887	7.139139175	129.1932326	2.847419058	-0.00695811
22.6.6-25.15:00:00	0.052355082	37.25502867	7.080238623	129.4310486	0.002231823	-0.002231823
22.6.6-25.16:00:00	0.050286742	38.2605665	6.904515206	129.4255887	2.510324548	-0.055849511
22.6.6-25.17:00:00	0.054931436	36.45031343	6.887329502	129.5471344	0.929170489	-0.029170489
22.6.6-25.18:00:00	0.059476126	35.2396431	6.881142616	129.6953001	6.884215252	0.000618248
22.6.6-25.19:00:00	0.060656512	33.40017318	6.986706531	129.8869313	3.885338652	0.003788652
22.6.6-25.20:00:00	0.060656512	31.95030399	7.351003099	735.7650881	3.838995965	285.1265209
22.6.6-25.21:00:00	0.07713102	31.90580429	7.282519797	793.1851196	5.793243885	285.2613525
22.6.6-25.22:00:00	0.549810951	31.84170951	7.618666777	696.8801952	6.885115212	0.001851521
22.6.6-25.23:00:00	0.539749756	31.8552937	7.375167847	796.148292	6.858343124	284.438866
22.6.6-25.00:00:00	0.532866747	31.76877033	7.471788916	795.4105225	7.107435074	284.5303733
22.6.6-25.01:00:00	0.549616988	31.49619988	7.841701818	794.6710918	7.154870637	0.001701818
22.6.6-25.02:00:00	0.531847435	31.95604455	7.501831055	793.9329224	7.205017567	0.384084412
22.6.6-25.03:00:00	0.537176431	31.5096302	7.544651214	788.4761817	7.226624489	284.0556849
22.6.6-25.04:00:00	0.530677136	31.42211296	7.548019126	783.8342041	7.313342041	0.003783420
22.6.6-25.05:00:00	0.541097119	31.33679962	7.595570097	773.633667	7.209970741	283.4833679
22.6.6-25.06:00:00	0.541706032	31.33139587	7.603315857	762.2140664	7.263518972	0.001218964
22.6.6-25.07:00:00	0.54123436	31.13417892	7.611101151	758.7957153	7.448349377	284.1130173
22.6.6-25.08:00:00	0.541061197	31.13697791	7.618666777	754.8247147	7.467113887	282.714688
22.6.6-25.09:00:00	0.546213807	31.36439076	7.626322134	754.1109796	7.355075154	283.0881042
22.6.6-25.10:00:00	0.54555439	31.64670753	7.634397864	748.5560913	7.388832092	282.98127
22.6.6-25.11:00:00	0.547310207	31.51802071	7.645615621	748.5560913	7.464515621	283.1381036
22.6.6-25.12:00:00	0.53191432	35.39708252	7.391460866	139.5349426	282.0956116	-0.002956116
22.6.6-25.13:00:00	0.169828936	38.57821655	7.231070518	136.073828	3.36173828	0.685877988
22.6.6-25.14:00:00	0.148466453	37.283705	7.096410139	132.3998383	3.12726921	0.280998048
22.6.6-25.15:00:00	0.127103969	37.04189867	7.04189867	130.4737954	2.81342698	0.121790083

Jun 25

*Remark
Copy 3 column's PI and 3 column's value.

Time	100M6BCC001K0201.PV	100M6BCC001K0201.PV	100M6BCC001K0201.PV	100M6BCC002K0201.PV	100M6BCC003K0201.PV	100M6BCC004K0201.PV	100M6BCC005K0201.PV
	WASTE WATER FLOW	WASTE WATER TEMP	WASTE WATER PH	WASTE WATER CONDUCTIVITY	WASTE WATER D.O.	Raw water inlet flow	
	l/min	DEG.C	µM	µS/cm	mg/L	T/MH	
25.6.6-25.16:00:00	0.105144864	37.7873832	7.0084831	130.4554736	2.634958506	281.3691731	
25.6.6-25.17:00:00	0.084379602	35.87806397	7.05061893	130.4739425	2.881293525	281.1931095	
25.6.6-25.18:00:00	0.063706073	29.7939687	6.996193788	130.1662567	2.793446899	279.7446899	
25.6.6-25.19:00:00	0.045160602	31.3957107	7.00117923	130.4020996	2.80179657	280.179657	
25.6.6-25.20:00:00	0.052617382	30.39570236	6.99875927	130.3407574	2.881255774	280.1555774	
25.6.6-25.21:00:00	0.033706073	29.7939687	6.996193788	130.1662567	2.793446899	279.7446899	
25.6.6-25.22:00:00	82.65393066	32.1055397	7.430585887	616.9517969	6.608376593	5.102613092	
25.6.6-25.23:00:00	53.79683597	33.79683597	7.59601788	711.2272949	7.038089807	0.988089807	
25.6.6-25.00:00:00	53.34177377	31.89414251	7.28273146	711.4644178	7.401761522	0.460041522	
25.6.6-25.01:00:00	53.09723863	31.78848433	7.64180662	711.4817017	7.487403118	0.40147804	
25.6.6-25.02:00:00	53.3411404	31.6871452	7.694118423	711.3088745	7.544874668	0.342501505	
25.6.6-25.03:00:00	53.32148743	31.46939158	7.656430244	712.1363084	7.588701933	0.284522773	
25.6.6-25.04:00:00	53.25180500	30.71687689	7.123282127	128.1556664	0.553438653	0.023709868	
25.6.6-25.05:00:00	28.6769001	34.92955742	0.133785071	137.8805071	0.00725868	-0.00725868	
25.6.6-25.06:00:00	0.103894885	26.72031021	7.372556686	136.5872883	0.108622605	-0.108622605	
25.6.6-25.07:00:00	0.026989271	26.56939304	7.312317631	135.2929525	0.050899485	-0.050899485	
25.6.6-25.08:00:00	0.08288345	27.4210345	7.251758575	133.9886327	0.067938847	-0.067938847	
25.6.6-25.09:00:00	0.072786028	29.96476996	7.19135952	132.7042999	2.071923449	-0.091269926	
25.6.6-25.10:00:00	0.062904007	34.0124169	7.33096466	131.4099731	2.018378115	-0.009119486	
25.6.6-25.11:00:00	0.0625191	37.07051868	7.10051868	129.0048024	4.429698884	-0.004296988	
25.6.6-25.12:00:00	0.040782024	37.48682034	7.040567504	129.7468338	3.733932954	0.8857697	
25.6.6-25.13:00:00	0.044346958	37.45644708	7.155194893	129.5893707	3.658216	0.088724584	
25.6.6-25.14:00:00	0.041001893	39.2349472	6.998922388	129.0604024	3.00	0.000000000	
25.6.6-25.15:00:00	0.038456827	38.44451719	6.96448831	129.089107	3.1912473	0.20324002	
25.6.6-25.16:00:00	0.03515172	36.5327629	6.98247048	130.235661	2.64848997	-1.18117917	
25.6.6-25.17:00:00	0.02356169	30.92366848	6.77783342	128.288288	2.4998024	-0.00355118	
25.6.6-25.18:00:00	0.029621629	25.7460627	5.96700254	130.6032495	2.87786066	-1.17565157	
25.6.6-25.19:00:00	0.026676564	25.44313817	6.93682138	130.877638	2.7132864	-0.09574319	
25.6.6-25.20:00:00	0.04307147	26.94307147	7.123282127	128.1556664	0.553438653	0.023709868	
25.6.6-25.21:00:00	53.14751238	31.34175682	7.36881296	628.4361062	6.484767281	-0.83448908	
25.6.6-25.22:00:00	53.3879509	31.72657384	7.372785508	623.188943	6.344216824	-0.00505703	
25.6.6-25.23:00:00	52.8274005	31.83117868	7.27783342	617.585455	6.29064467	-0.00742009	
25.6.6-25.00:00:00	52.4760776	31.78848433	7.31593647	619.359587	6.31958055	-2.115823984	
25.6.6-25.01:00:00	52.81897882	31.60625081	7.38537971	613.7937549	6.218518328	-0.54130083	
25.6.6-25.02:00:00	52.81897882	31.60625081	7.38537971	613.7937549	6.218518328	-0.54130083	
25.6.6-25.03:00:00	53.5242233	31.05291148	7.39305891	618.809209	6.7631149	-0.59399116	
25.6.6-25.04:00:00	53.44378881	30.89787236	7.388010254	618.3405024	6.76018841	-0.54048803	
25.6.6-25.05:00:00	53.7470207	30.80451211	7.39512205	619.814547	6.72746883	-0.00027883	
25.6.6-25.06:00:00	54.0091087	30.69718212	7.39512205	619.814547	6.72746883	-0.00027883	
25.6.6-25.07:00:00	54.4151937	30.88264315	7.37049736	623.734134	6.68786238	-0.67363841	
25.6.6-25.08:00:00	54.02126954	30.60212683	7.30221863	627.875795	6.64451818	-0.01270284	
25.6.6-25.09:00:00	54.5379098	30.60212683	7.30221863	627.875795	6.64451818	-0.01270284	
25.6.6-25.10:00:00	54.1790222	30.96923828	7.33995894	621.605584	6.62682814	-0.22229293	
25.6.6-25.11:00:00	54.47188568	31.179398	7.32890138	620.584768	6.61722717	-0.34174318	
25.6.6-25.12:00:00	54.1581286	31.179398	7.32890138	620.584768	6.61722717	-0.34174318	
25.6.6-25.13:00:00	54.19317217	31.52956298	7.30221863	618.4225126	6.55216782	-0.13053863	
25.6.6-25.14:00:00	54.3739883	31.6963051	7.28421025	617.342041	6.471595287	-0.02615302	
25.6.6-25.15:00:00	54.0478913	31.6963051	7.28421025	617.342041	6.471595287	-0.02615302	
25.6.6-25.16:00:00	55.052325	30.90713966	6.90013966	131.2951201	3.33411455	-0.45633945	
25.6.6-25.17:00:00	0.05578149	28.58971161	6.89716885	130.712555	3.27956442	-0.060770893	
25.6.6-25.18:00:00	0.050974748	25.4792689	6.84645056	130.477475	3.19788874	-0.07675489	
25.6.6-25.19:00:00	0.058472787	25.08337487	6.84645056	130.477475	3.19788874	-0.07675489	
25.6.6-25.20:00:00	0.06767134	25.0527548	7.02587605	129.7315422	3.29710425	-0.56710245	
25.6.6-25.21:00:00	0.07168145	30.785883	7.27181053	595.89821	5.8123609	-0.97544884	
25.6.6-25.22:00:00	0.07168145	30.785883	7.27181053	595.89821	5.8123609	-0.97544884	
25.6.6-25.23:00:00	53.7231713	34.5132828	7.34513288	594.239902	6.41957988	-1.33864666	
25.6.6-25.00:00:00	53.3209152	30.0298274	7.37142623	596.370363	6.43703613	-0.47835609	
25.6.6-25.01:00:00	53.3209152	30.0298274	7.37142623	596.370363	6.43703613	-0.47835609	
25.6.6-25.02:00:00	53.0807101	30.7935762	7.38117351	600.645026	6.50481394	-1.009579244	
25.6.6-25.03:00:00	53.07471803	30.7037906	7.39318076	603.376287	6.416139352	-0.483958824	
25.6.6-25.04:00:00	53.07471803	30.7037906	7.39318076	603.376287	6.416139352	-0.483958824	
25.6.6-25.05:00:00	53.57728577	30.19925308	7.41713317	609.572173	6.82685875	-1.42545058	
25.6.6-25.06:00:00	53.8247513	30.2037904	7.42584848	612.701048	6.89454078	-0.60348662	
25.6.6-25.07:00:00	53.58150999	30.2037904	7.41977018	615.80985	6.894111356	-0.60647437	
25.6.6-25.08:00:00	54.081474	30.2037904	7.41977018	615.80985	6.894111356	-0.60647437	
25.6.6-25.09:00:00	54.1784514	30.2154662	7.60656563	613.810493	7.02046167	-0.04021186	
25.6.6-25.10:00:00	53.77886526	30.5294533	7.31669131	630.870013	7.020779495	-0.208751704	
25.6.6-25.11:00:00	53.2449752	30.2459752	7.31669131	630.870013	7.020779495	-0.208751704	
25.6.6-25.12:00:00	0.18901895	34.25977334	6.96718806	130.794229	3.43531559	-0.286135824	
25.6.6-25.13:00:00	0.14366668	35.29267475	6.92967475	130.794229	3.43531559	-0.286135824	
25.6.6-25.14:00:00	0.131717883	35.29267475	6.92967475	130.794229	3.43531559	-0.286135824	
25.6.6-25.15:00:00	0.11163087	34.6886273	6.85876793	128.304371	3.87269505	-0.28673915	
25.6.6-25.16:00:00	0.0851151	34.8827348	6.8233428	128.526794	3.63344973	-0.8540333	
25.6.6-25.17:00:00	0.05078466	34.8827348	6.8233428	128.526794	3.63344973	-0.8540333	

ภาคผนวก ข-14

ผลการตรวจวัดอุณหภูมิของน้ำทิ้งที่ผ่านหอหล่อเย็น
ก่อนระบายลงสู่ระบบท่อบรรณน้ำเสีย

GULF		Daily Plant Log Sheet CCR										Plant: GNC	
												Date: 31/1/25	
TAG NO	DESCRIPTION	UNIT	Min	Max	Time						Incase of abnormal, Please Issue Notic.		
					01:00	05:00	09:00	13:00	17:00	21:00			
GR-1005 Deaerator and Storage Section													
10LA30CT004XQ01	FW STORAGE TANK TEMP	°C	80	120			108.01					105.66	
10LA30CP001XQ01	DEAERATOR PRESS	bar	0	0.5			0.30				0.32		
10LA30CL900XQ01	DEAERATOR STORAGE LVL	mm	-200	150			-30.2				-42.2		
10LA30CT003XQ01	CPH OUTLET WATER TEMP	°C	55	80			60.02				60.62		
10LAB25CP001XQ01	BFW HP COMMON DISC PRESS	bar	91	149			96.62				95.91		
10LAB17CP001XQ01	BFW LP COMMON DISC PRESS	bar	31	50			33.35				32.66		
10LCA32CF001XQ01	CONDENSATE FLOW TO DE-AER	T/HR	0	100			69.5				70.2		
10LCA32CT001XQ01	TEMP CONDENSATE TO DE-AER	°C	40	65			48.36				48.54		
10LCA32CP001XQ01	P CONDENSATE TO DEAER	bar	1.5	4			2.02				2.03		
GR-1006 Cooling Water / Main And Auxiliary													
10PAD91AN001XQ03	CT FAN 1 Ampere	A	0	135			130.2				129.74		
10PAD91CY302XQ01	CT FAN 1 VIB	mm/s	0	5			2.02				1.45		
10PAD92AN001XQ03	CT FAN 2 Ampere	A	0	135			5				119.0		
10PAD92CY302XQ01	CT FAN 2 VIB	mm/s	0	5			5				1.42		
10PAD93AN001XQ03	CT FAN 3 Ampere	A	0	135			5				118.0		
10PAD93CY302XQ01	CT FAN 3 VIB	mm/s	0	5			5				1.99		
10PCB40CT001XQ01	ACW Return Temp	°C	0	40			38.48				39.76		
10PAB40CT001XQ01	MCW Return Temp at Condenser	°C	0	45			38.26				39.62		
10PAB40CT002XQ01	MCW RETURN TEMP AT BASIN	°C	0	45			38.07				39.55		
10PAB10CL900XQ01	CT BASIN LEVEL	mm	3000	3300			3201				3199		
10PAB11CL001HL01	DL MCWP#1 STOPLOCK	mm	-200	50			-3				5		
10PAB12CL001HL01	DL MCWP#2 STOPLOCK	mm	-200	50			4				6		
10PAC11AP001XQ03	MCW PUMP 1 Ampere	A	0	30			22.82				21.52		
10PAC12AP001XQ03	MCW PUMP 2 Ampere	A	0	30			21.31				21.54		
10PAB35CT001XQ01	MCW SUPPLY TEMP	°C	0	37			36.97				29.32		
10PAB35CP001XQ01	MCW SUPPLY PRESS	bar	0.5	2			0.920				0.924		
10PAB35CQ001XQ01	MCW PH	pH	6.8	8			7.88				7.21		
10PAB35CQ002XQ01	MCW Conductivity	us/cm	0	1600			280				274		
10PAB31CF001XQ01	CW BLOWDOWN FLOW	T/HR	0	25			13.10				12.66		
GR-1007 Close Cooling Water System & Aux Cooling Water System													
10PGC11AP001XQ03	CCW PMP 1 Amperes	A	0	215			206.4				206.4		
10PGC11CT001XQ01	CCW PMP 1 TEMP Phase 1	°C	0	90			51.2				52.5		
10PGC11CT002XQ01	CCW PMP 1 TEMP Phase 2	°C	0	90			50.2				52.4		
10PGC11CT003XQ01	CCW PMP 1 TEMP Phase 3	°C	0	90			50.7				50.4		
10PGC12AP001XQ03	CCW PMP 2 Amperes	A	0	215			1				50		
10PGC12CT001XQ01	CCW PMP 2 TEMP Phase 1	°C	0	90			50				50		
10PGC12CT002XQ01	CCW PMP 2 TEMP Phase 2	°C	0	90			50				50		
10PGC12CT003XQ01	CCW PMP 2 TEMP Phase 3	°C	0	90			50				50		
10PGA11CP010XQ01	PRESS AFTER CCW PUMPS	bar	2.5	4.5			3.09				3.00		
10PGB08CL001XQ01	CCW EXPANSION TANK LEVEL	%	35	95			82.7				80.5		
10PGB09CT001XQ01	CCW TEMP AFTER HEAT EXCH	°C	0	40			39.833				39.722		
10PGB70CT001XQ01	CCW TEMP BEFORE HEAT EXCH	°C	0	40			30.622				30.201		
10PCB11CP001XQ01	DP ACW PUMP 1 STRAINER	bar	-1	0.35			5				50		
10PCC11AP001XQ03	ACW PUMP 1 Ampere	A	0	200			0.190				0.222		
10PCB12CP001XQ01	DP ACW PUMP 2 STRAINER	bar	-1	0.35			103.3				100.2		
10PCC12AP001XQ03	ACW PUMP 2 Ampere	A	0	200			2.60				2.64		
10PCB30CP001XQ01	PRESS AFTER AUX CW PUMPS	bar	2.2	4.5									
GNC GR-1009 WATER TREATMENT SYS (1/2) UF													
10GBB40CP001XQ01	UF Feed Pressure	bar	1.5	3			2.067				1.916		
10GBB50CP001	UF#1 Flow	m3/H	0	60			51.9				54.0		
10GBB50CP001	UF#1 Diff pressure	bar	0	0.5			0.290				0.23		
10GBB51CP001	UF#1 Outlet pressure	bar	1	1.5			1.214				1.085		
10GBB60CP001	UF#2 Flow	m3/H	0	60			50.9				54.0		
10GBB60CP001	UF#2 Diff pressure	bar	0	0.5			0.290				0.23		
10GBB61CP001	UF#2 Outlet pressure	bar	1	1.5			1.214				1.085		
10GBB70CP001	UF#3 Flow	m3/H	0	60			50.9				54.0		
10GBB70CP001	UF#3 Diff pressure	bar	0	0.5			0.290				0.23		
10GBB71CP001	UF#3 Outlet pressure	bar	1	1.5			1.214				1.085		

GULF		Daily Plant Log Sheet CCR										Plant: GNC	
												Date: 08/02/2023	
TAG NO	DESCRIPTION	UNIT	Min	Max	Time						Incase of abnormal, Please issue Notic.		
					01:00	05:00	09:00	13:00	17:00	21:00			
GR-1005 Deaerator and Storage Section													
10LAA30CT004XQ01	FW STORAGE TANK TEMP	°C	80	120			108.21			107.84			
10LAA30CP001XQ01	DEAERATOR PRESS	bar	0	0.5			0.30			0.52			
10LAA30CL900XQ01	DEAERATOR STORAGE LVL	mm	-200	150			-50.3			-37.3			
10LAA30CT003XQ01	CPH OUTLET WATER TEMP	°C	55	80			63.53			62.79			
10LAB25CP001XQ01	BFW HP COMMON DISC PRESS	bar	91	149			96.43			97.01			
10LAB17CP001XQ01	BFW LP COMMON DISC PRESS	bar	31	50			33.53			32.94			
10LCA32CF001XQ01	CONDENSATE FLOW TO DE-AER	T/HR	0	100			65.1			64.1			
10LCA32CT001XQ01	TEMP CONDENSATE TO DE-AER	°C	40	65			48.13			48.15			
10LCA32CP001XQ01	P CONDENSATE TO DEAER	bar	1.9	4			2.34			2.30			
GR-1006 Cooling Water / Main And Auxiliary													
10PAD91AN001XQ03	CT FAN 1 Ampere	A	0	135			134.7			129.4			
10PAD91CY302XQ01	CT FAN 1 VIB	mm/s	0	5			1.80			1.83			
10PAD92AN001XQ03	CT FAN 2 Ampere	A	0	135			117.7			118.0			
10PAD92CY302XQ01	CT FAN 2 VIB	mm/s	0	5			1.28			1.55			
10PAD93AN001XQ03	CT FAN 3 Ampere	A	0	135			50			115.2			
10PAD93CY302XQ01	CT FAN 3 VIB	mm/s	0	5			50			2.28			
10PCB40CT001XQ01	ACW Return Temp	°C	0	40			36.64			34.50			
10PAB40CT001XQ01	MCW Return Temp at Condenser	°C	0	45			38.98			38.13			
10PAB40CT002XQ01	MCW RETURN TEMP AT BASIN	°C	0	45			38.76			38.88			
10PAB10CL900XQ01	CT BASIN LEVEL	mm	3000	3300			3194			3202			
10PAB11CL001HL01	DL MCWP#1 STOPLOCK	mm	-200	50			9			-8			
10PAB12CL001HL01	DL MCWP#2 STOPLOCK	mm	-200	50			-76			-52			
10PAC11AP001XQ03	MCW PUMP 1 Ampere	A	0	30			22.57			22.43			
10PAC12AP001XQ03	MCW PUMP 2 Ampere	A	0	30			21.79			21.82			
10PAB35CT001XQ01	MCW SUPPLY TEMP	°C	0	37			33.33			33.63			
10PAB35CP001XQ01	MCW SUPPLY PRESS	bar	0.5	2			0.956			0.953			
10PAB35CQ001XQ01	MCW PH	pH	6.8	8			7.43			7.46			
10PAB35CQ002XQ01	MCW Conductivity	us/cm	0	1600			1267			1270			
10PAB31CF001XQ01	CW BLOWDOWN FLOW	T/HR	0	25			24.90			24.29			
GR-1007 Close Cooling Water System & Aux Cooling Water System													
10PGC11AP001XQ03	CCW PMP 1 Amperes	A	0	215			7			-			
10PGC11CT001XQ01	CCW PMP 1 TEMP Phase 1	°C	0	90			50			50			
10PGC11CT002XQ01	CCW PMP 1 TEMP Phase 2	°C	0	90			50			50			
10PGC11CT003XQ01	CCW PMP 1 TEMP Phase 3	°C	0	90			50			50			
10PGC12AP001XQ03	CCW PMP 2 Amperes	A	0	215			205.1			205.2			
10PGC12CT001XQ01	CCW PMP 2 TEMP Phase 1	°C	0	90			54.4			53.5			
10PGC12CT002XQ01	CCW PMP 2 TEMP Phase 2	°C	0	90			55.0			56.3			
10PGC12CT003XQ01	CCW PMP 2 TEMP Phase 3	°C	0	90			54.1			55.3			
10PGA11CP010XQ01	PRESS AFTER CCW PUMPS	bar	2.5	4.5			3.43			3.08			
10PGB08CL001XQ01	CCW EXPANSION TANK LEVEL	%	35	95			81.9			86.5			
10PGB09CT001XQ01	CCW TEMP AFTER HEAT EXCH	°C	0	40			32.370			34.535			
10PGB70CT001XQ01	CCW TEMP BEFORE HEAT EXCH	°C	0	40			26.467			37.792			
10PCB11CP001XQ01	DP ACW PUMP 1 STRAINER	bar	-1	0.35			50			50			
10PCC11AP001XQ03	ACW PUMP 1 Ampere	A	0	200			0.246			0.246			
10PCB12CP001XQ01	DP ACW PUMP 2 STRAINER	bar	-1	0.35			125.4			125.4			
10PCC12AP001XQ03	ACW PUMP 2 Ampere	A	0	200			2.43			2.49			
10PCB30CP001XQ01	PRESS AFTER AUX CW PUMPS	bar	2.2	4.5									
GNC GR-1009 WATER TREATMENT SYS (1/2) UF													
10GBB40CP001XQ01	UF Feed Pressure	bar	1.5	3			1.692	2.03					
10GBB50CP001	UF#1 Flow	m3/H	0	60			59.3	62.9					
10GBB50CP001	UF#1 Diff pressure	bar	0	0.5			0.205	0.215					
10GBB51CP001	UF#1 Outlet pressure	bar	1	1.5			1.014	1.25					
10GBB60CP001	UF#2 Flow	m3/H	0	60			50	50					
10GBB60CP001	UF#2 Diff pressure	bar	0	0.5			0.205	0.215					
10GBB61CP001	UF#2 Outlet pressure	bar	1	1.5			1.014	1.25					
10GBB70CP001	UF#3 Flow	m3/H	0	60			50	50					
10GBB70CP001	UF#3 Diff pressure	bar	0	0.5			0.205	0.215					
10GBB71CP001	UF#3 Outlet pressure	bar	1	1.5			1.014	1.25					

GULF Daily Plant Log Sheet CCR											Plant: SNC
											Date: 01/10/25
TAG NO	DESCRIPTION	UNIT	Min	Max	Time						Incase of abnormal, Please issue Notic.
					01:00	05:00	09:00	13:00	17:00	21:00	
GR-1005 Deaerator and Storage Section											
10LAA30CT004XQ01	FW STORAGE TANK TEMP	°C	80	120			107.49			107.17	
10LAA30CP001XQ01	DEAERATOR PRESS	bar	0	0.5			0.31			0.31	
10LAA30CL900XQ01	DEAERATOR STORAGE LVL	mm	-200	150			-121.9			-61.1	
10LAA30CT003XQ01	CPH OUTLET WATER TEMP	°C	55	80			66.24			67.20	
10LAB25CP001XQ01	BFW HP COMMON DISC PRESS	bar	91	149			97.47			96.42	
10LAB17CP001XQ01	BFW LP COMMON DISC PRESS	bar	31	50			33.51			32.21	
10LCA32CP001XQ01	CONDENSATE FLOW TO DE-AER	T/Hr	0	100			127.3			121.6	
10LCA32CT001XQ01	TEMP CONDENSATE TO DE-AER	°C	40	65			49.83			41.06	
10LCA32CP001XQ01	P CONDENSATE TO DEAER	bar	1.9	4			0.07			0.10	
GR-1006 Cooling Water / Main And Auxiliary											
10PAD91AN001XQ03	CT FAN 1 Ampere	A	0	135			128.0			121.7	
10PAD91CY002XQ01	CT FAN 1 VIB	mm/s	0	5			1.52			1.84	
10PAD92AN001XQ03	CT FAN 2 Ampere	A	0	135			117.6			119.3	
10PAD92CY002XQ01	CT FAN 2 VIB	mm/s	0	5			1.33			1.46	
10PAD93AN001XQ03	CT FAN 3 Ampere	A	0	135			133.3			130.7	
10PAD93CY002XQ01	CT FAN 3 VIB	mm/s	0	5			2.08			2.07	
10PCB40CT001XQ01	ACW Return Temp	°C	0	40			37.93			37.41	
10PAB40CT001XQ01	MCW Return Temp at Condenser	°C	0	45			42.99			44.06	
10PAB40CT002XQ01	MCW RETURN TEMP AT BASIN	°C	0	45			42.51			44	
10PAB10CL000XQ01	CT BASIN LEVEL	mm	3000	3300			3202			3202	
10PAB11CL001HL01	DL MCWP#1 STOPLOCK	mm	-200	50			-7			-10	
10PAB12CL001HL01	DL MCWP#2 STOPLOCK	mm	-200	50			-76			-50	
10PAC11AP001XQ03	MCW PUMP 1 Ampere	A	0	30			22.50			22.07	
10PAC12AP001XQ03	MCW PUMP 2 Ampere	A	0	30			21.80			21.77	
10PAB35CT001XQ01	MCW SUPPLY TEMP	°C	0	37			31.92			32.24	
10PAB35CP001XQ01	MCW SUPPLY PRESS	bar	0.5	2			0.978			0.970	
10PAB35CQ001XQ01	MCW PH	pH	6.8	8			7.48			7.33	
10PAB35CQ002XQ01	MCW Conductivity	us/cm	0	1600			1129			1102	
10PAB31CF001XQ01	CW BLOWDOWN FLOW	T/Hr	0	25			26.22			24.72	
GR-1007 Close Cooling Water System & Aux Cooling Water System											
10PGC11AP001XQ03	CCW PMP 1 Ampere	A	0	215			204.9			201.2	
10PGC11CT001XQ01	CCW PMP 1 TEMP Phase 1	°C	0	90			59.2			62.3	
10PGC11CT002XQ01	CCW PMP 1 TEMP Phase 2	°C	0	90			59.5			62.6	
10PGC11CT003XQ01	CCW PMP 1 TEMP Phase 3	°C	0	90			58.1			62.7	
10PGC12AP001XQ03	CCW PMP 2 Ampere	A	0	215			204.9			201.2	
10PGC12CT001XQ01	CCW PMP 2 TEMP Phase 1	°C	0	90			59.2			62.3	
10PGC12CT002XQ01	CCW PMP 2 TEMP Phase 2	°C	0	90			59.5			62.6	
10PGC12CT003XQ01	CCW PMP 2 TEMP Phase 3	°C	0	90			58.1			62.7	
10PGA11CP010XQ01	PRESS AFTER CCW PUMPS	bar	2.5	4.5			3.02			3.02	
10PGB80CL001XQ01	CCW EXPANSION TANK LEVEL	%	35	95			83.3			81.2	
10PGB80CT001XQ01	CCW TEMP AFTER HEAT EXCH	°C	0	40			32.923			32.41	
10PGB70CT001XQ01	CCW TEMP BEFORE HEAT EXCH	°C	0	40			37.591			39.23	
10PCB11CP001XQ01	DP ACW PUMP 1 STRAINER	bar	-1	0.35			0.130			0.220	
10PCC11AP001XQ03	ACW PUMP 1 Ampere	A	0	200			146.9			140	
10PCB12CP001XQ01	DP ACW PUMP 2 STRAINER	bar	-1	0.35			0.130			0.220	
10PCC12AP001XQ03	ACW PUMP 2 Ampere	A	0	200			146.9			140	
10PCB30CP001XQ01	PRESS AFTER AUX CW PUMPS	bar	2.2	4.5			2.47			2.46	
GNC GR-1009 WATER TREATMENT SYS (1/2) UF											
10GBB40CP001XQ01	UF Feed Pressure	bar	1.5	3			2.12			2.01	
10GBB50CP001	UF#1 Flow	m3/H	0	60			19.7			19.7	
10GBB50CP001	UF#1 Diff pressure	bar	0	0.5			0.156			0.160	
10GBB51CP001	UF#1 Outlet pressure	bar	1	1.5			0.950			0.961	
10GBB60CP001	UF#2 Flow	m3/H	0	60			19.7			19.7	
10GBB60CP001	UF#2 Diff pressure	bar	0	0.5			0.156			0.160	
10GBB61CP001	UF#2 Outlet pressure	bar	1	1.5			0.950			0.961	
10GBB70CP001	UF#3 Flow	m3/H	0	60			19.7			19.7	
10GBB70CP001	UF#3 Diff pressure	bar	0	0.5			0.156			0.160	
10GBB71CP001	UF#3 Outlet pressure	bar	1	1.5			0.950			0.961	


GULF					Daily Plant Log Sheet CCR							Plant: SNC	
												Date: 01/04/2025	
TAG NO	DESCRIPTION	UNIT	Min	Max	Time						Incase of abnormal, Please issue Notic.		
					01:00	05:00	09:00	13:00	17:00	21:00			
GR-1005 Deaerator and Storage Section													
10LAA30CT004XQ01	FW STORAGE TANK TEMP	°C	80	120			107.29				107.87		
10LAA30CP001XQ01	DEAERATOR PRESS	bar	0	0.5			0.32				0.32		
10LAA30CL900XQ01	DEAERATOR STORAGE LVL	mm	-200	150			-61.2				-50.6		
10LAA30CT003XQ01	CPH OUTLET WATER TEMP	°C	55	80			108.13				108.87		
10LAB25CP001XQ01	BFW HP COMMON DISC PRESS	bar	91	149			101.36				96.01		
10LAB17CP001XQ01	BFW LP COMMON DISC PRESS	bar	31	50			39.42				39.83		
10LCA32CF001XQ01	CONDENSATE FLOW TO DE-AER	T/Hr	0	100			127.5				129.5		
10LCA32CT001XQ01	TEMP CONDENSATE TO DE-AER	°C	40	65			45.82				50.80		
10LCA32CP001XQ01	P CONDENSATE TO DEAER	bar	1.9	4			0.07				0.13		
GR-1006 Cooling Water / Main And Auxiliary													
10PAD91AN001XQ03	CT FAN 1 Ampere	A	0	135			129.1				128.40		
10PAD91CY002XQ01	CT FAN 1 VIB	mm/s	0	5			1.22				1.72		
10PAD92AN001XQ03	CT FAN 2 Ampere	A	0	135			117.4				115.5		
10PAD92CY002XQ01	CT FAN 2 VIB	mm/s	0	5			1.38				1.60		
10PAD93AN001XQ03	CT FAN 3 Ampere	A	0	135			115.8				113.5		
10PAD93CY002XQ01	CT FAN 3 VIB	mm/s	0	5			2.11				2.24		
10PCB40CT001XQ01	ACW Return Temp	°C	0	40			34.30				38.00		
10PAB40CT001XQ01	MCW Return Temp at Condenser	°C	0	45			39.20				40.82		
10PAB40CT002XQ01	MCW RETURN TEMP AT BASIN	°C	0	45			39.69				40.80		
10PAB10CL900XQ01	CT BASIN LEVEL	mm	3000	3300			3155				3202		
10PAB11CL001HL01	DL MCWP#1 STOPLOCK	mm	-200	50			-76.0				-21		
10PAB12CL001HL01	DL MCWP#2 STOPLOCK	mm	-200	50			-54				-53		
10PAC11AP001XQ03	MCW PUMP 1 Ampere	A	0	30			22.34				22.35		
10PAC12AP001XQ03	MCW PUMP 2 Ampere	A	0	30			21.67				21.92		
10PAB35CT001XQ01	MCW SUPPLY TEMP	°C	0	37			31.52				32.09		
10PAB35CP001XQ01	MCW SUPPLY PRESS	bar	0.5	2			0.934				0.923		
10PAB35CQ001XQ01	MCW PH	pH	6.8	8			7.52				7.29		
10PAB35CQ002XQ01	MCW Conductivity	us/cm	0	1600			1145				653		
10PAB31CF001XQ01	CW BLOWDOWN FLOW	T/Hr	0	25			30.19				30.80		
GR-1007 Close Cooling Water System & Aux Cooling Water System													
10PGC11AP001XQ03	CCW PMP 1 Ampere	A	0	215			204.9				201.2		
10PGC11CT001XQ01	CCW PMP 1 TEMP Phase 1	°C	0	90			59.2				62.3		
10PGC11CT002XQ01	CCW PMP 1 TEMP Phase 2	°C	0	90			59.5				62.6		
10PGC11CT003XQ01	CCW PMP 1 TEMP Phase 3	°C	0	90			58.1				62.7		
10PGC12AP001XQ03	CCW PMP 2 Ampere	A	0	215			204.9				201.2		
10PGC12CT001XQ01	CCW PMP 2 TEMP Phase 1	°C	0	90			59.2				62.3		
10PGC12CT002XQ01	CCW PMP 2 TEMP Phase 2	°C	0	90			59.5				62.6		
10PGC12CT003XQ01	CCW PMP 2 TEMP Phase 3	°C	0	90			58.1				62.7		
10PGA11CP010XQ01	PRESS AFTER CCW PUMPS	bar	2.5	4.5			3.04				3.05		
10PGB80CL001XQ01	CCW EXPANSION TANK LEVEL	%	35	95			81.9				82.5		
10PGB80CT001XQ01	CCW TEMP AFTER HEAT EXCH	°C	0	40			33.85				36.01		
10PGB70CT001XQ01	CCW TEMP BEFORE HEAT EXCH	°C	0	40			36.47				39.39		
10PCB11CP001XQ01	DP ACW PUMP 1 STRAINER	bar	-1	0.35			0.057				0.261		
10PCC11AP001XQ03	ACW PUMP 1 Ampere	A	0	200			147.8				146.1		
10PCB12CP001XQ01	DP ACW PUMP 2 STRAINER	bar	-1	0.35			0.05				0.26		
10PCC12AP001XQ03	ACW PUMP 2 Ampere	A	0	200			147.8				146.1		
10PCB30CP001XQ01	PRESS AFTER AUX CW PUMPS	bar	2.2	4.5			2.47				2.46		
GNC GR-1009 WATER TREATMENT SYS (1/2) UF													
10GBB40CP001XQ01	UF Feed Pressure	bar	1.5	3			2.312				1.512		
10GBB50CP001	UF#1 Flow	m3/H	0	60			19.7				19.7		
10GBB50CP001	UF#1 Diff pressure	bar	0	0.5			0.156				0.160		
10GBB51CP001	UF#1 Outlet pressure	bar	1	1.5			0.950				0.961		
10GBB60CP001	UF#2 Flow	m3/H	0	60			19.7				19.7		
10GBB60CP001	UF#2 Diff pressure	bar	0	0.5			0.168				0.162		
10GBB61CP001	UF#2 Outlet pressure	bar	1	1.5			1.025				1.012		
10GBB70CP001	UF#3 Flow	m3/H	0	60			19.7				19.7		
10GBB70CP001	UF#3 Diff pressure	bar	0	0.5			0.156				0.160		
10GBB71CP001	UF#3 Outlet pressure	bar	1	1.5			0.950				0.961		

Daily Plant Log Sheet CCR												Plant: GNC
Date: 9/15/08												Date: 9/15/08
TAG NO	DESCRIPTION	UNIT	Min	Max	Time							Incase of abnormal, Please issue Notic.
					01:00	05:00	09:00	13:00	17:00	21:00		
GR-1005 Deaerator and Storage Section												
10LAA30CT004XQ01	FW STORAGE TANK TEMP	°C	80	120			106.72			106.53		
10LAA30CP001XQ01	DEAERATOR PRESS	bar	0	0.5			0.27			0.28		
10LAA30CL900XQ01	DEAERATOR STORAGE LVL	mm	-200	150			-87.4			-46.2		
10LAA30CT003XQ01	CPH OUTLET WATER TEMP	°C	55	80			66.06			65.03		
10LAB25CP001XQ01	BFW HP COMMON DISC PRESS	bar	91	140			97.99			97.31		
10LAB17CP001XQ01	BFW LP COMMON DISC PRESS	bar	31	50			37.07			38.52		
10LCA32CF001XQ01	CONDENSATE FLOW TO DE-AER	T/HR	0	100			122.1			120.1		
10LCA32CT001XQ01	TEMP CONDENSATE TO DE-AER	°C	40	65			64.4			67.94		
10LCA32CP001XQ01	P CONDENSATE TO DEAER	bar	1.9	4			3.0			2.98		
GR-1006 Cooling Water / Main And Auxiliary												
10PAD91AN001XQ03	CT FAN 1 Ampere	A	0	135			127.3			126.1		
10PAD91CY302XQ01	CT FAN 1 VIB	mm/s	0	5			1.77			1.79		
10PAD92AN001XQ03	CT FAN 2 Ampere	A	0	135			115.4			115.6		
10PAD92CY302XQ01	CT FAN 2 VIB	mm/s	0	5			1.46			1.44		
10PAD93AN001XQ03	CT FAN 3 Ampere	A	0	135			110.0			112.7		
10PAD93CY302XQ01	CT FAN 3 VIB	mm/s	0	5			2.16			1.94		
10PCB40CT001XQ01	ACW Return Temp	°C	0	40			35.80			33.73		
10PAB40CT001XQ01	MCW Return Temp at Condenser	°C	0	45			42.82			42.27		
10PAB40CT002XQ01	MCW RETURN TEMP AT BASIN	°C	0	45			43.53			42.05		
10PAB10CL900XQ01	CT BASIN LEVEL	mm	3000	3300			3200			3200		
10PAB11CL001XQ01	DL MCWP#1 STOPLOCK	mm	-200	50			-23			-23		
10PAB12CL001XQ01	DL MCWP#2 STOPLOCK	mm	-200	50			-109			-109		
10PAC11AP001XQ03	MCW PUMP 1 Ampere	A	0	30			28.25			28.25		
10PAC12AP001XQ03	MCW PUMP 2 Ampere	A	0	30			21.63			21.58		
10PAB35CT001XQ01	MCW SUPPLY TEMP	°C	0	37			33.23			31.90		
10PAB35CP001XQ01	MCW SUPPLY PRESS	bar	0.5	2			0.881			0.894		
10PAB35CQ001XQ01	MCW PH	pH	6.8	8			7.84			7.90		
10PAB35CQ002XQ01	MCW Conductivity	us/cm	0	1600			579			472		
10PAB31CF001XQ01	CW BLOWDOWN FLOW	T/HR	0	25			34.14			32.50		
GR-1007 Close Cooling Water System & Aux Cooling Water System												
10PGC11AP001XQ03	CCW PMP 1 Ampere	A	0	215			207.1			207.0		
10PGC11CT001XQ01	CCW PMP 1 TEMP Phase 1	°C	0	90			57.3			56.6		
10PGC11CT002XQ01	CCW PMP 1 TEMP Phase 2	°C	0	90			57.8			57.2		
10PGC11CT003XQ01	CCW PMP 1 TEMP Phase 3	°C	0	90			56.4			55.7		
10PGC12AP001XQ03	CCW PMP 2 Ampere	A	0	215			193			193		
10PGC12CT001XQ01	CCW PMP 2 TEMP Phase 1	°C	0	90			57.3			56.6		
10PGC12CT002XQ01	CCW PMP 2 TEMP Phase 2	°C	0	90			57.8			57.2		
10PGC12CT003XQ01	CCW PMP 2 TEMP Phase 3	°C	0	90			56.4			55.7		
10PGA11CP010XQ01	PRESS AFTER CCW PUMPS	bar	2.5	4.5			3.0			3.0		
10PGB08CL001XQ01	CCW EXPANSION TANK LEVEL	%	35	95			72.8			75.8		
10PGB90CT001XQ01	CCW TEMP AFTER HEAT EXCH	°C	0	40			35.990			35.780		
10PGB70CT001XQ01	CCW TEMP BEFORE HEAT EXCH	°C	0	40			38.157			36.453		
10PCB11CP001XQ01	DP ACW PUMP 1 STRAINER	bar	-1	0.35			0.271			0.260		
10PCC11AP001XQ03	ACW PUMP 1 Ampere	A	0	200			145.1			145.1		
10PCB12CP001XQ01	DP ACW PUMP 2 STRAINER	bar	-1	0.35			SB			SB		
10PCC12AP001XQ03	ACW PUMP 2 Ampere	A	0	200			SB			SB		
10PCB30CP001XQ01	PRESS AFTER AUX CW PUMPS	bar	2.2	4.5			2.98			2.46		
GNC GR-1009 WATER TREATMENT SYS (1/2) UF												
10GBB40CP001XQ01	UF Feed Pressure	bar	1.5	3			1.936			1.917		
10GBB50CP001	UF#1 Flow	m3/H	0	60			51.8			47.9		
10GBB50CP001	UF#1 Diff pressure	bar	0	0.5			0.150			0.149		
10GBB51CP001	UF#1 Outlet pressure	bar	1	1.5			0.964			0.941		
10GBB60CP001	UF#2 Flow	m3/H	0	60			T			T		
10GBB60CP001	UF#2 Diff pressure	bar	0	0.5			T			T		
10GBB61CP001	UF#2 Outlet pressure	bar	1	1.5			SB			SB		
10GBB70CP001	UF#3 Flow	m3/H	0	60			T			T		
10GBB70CP001	UF#3 Diff pressure	bar	0	0.5			T			T		
10GBB71CP001	UF#3 Outlet pressure	bar	1	1.5			T			T		

GULF		Daily Plant Log Sheet CCR										Plant: GNC
												Date: 27/11/2025
TAG NO	DESCRIPTION	UNIT	Min	Max	Time						Incase of abnormal, Please issue Notic.	
					01:00	05:00	09:00	13:00	17:00	21:00		
GR-1005 Deaerator and Storage Section												
10LAA30CT004XQ01	FW STORAGE TANK TEMP	°C	100	110			107.18				106.28	
10LAA30CP001XQ01	DEAERATOR PRESS	bar	0.04	0.5			0.27				0.28	
10LAA30CL900XQ01	DEAERATOR STORAGE LVL	mm	-200	150			-42.6				-13.0	
10LAA30CT003XQ01	CPH OUTLET WATER TEMP	°C	55	80			63.48				65.27	
10LAB25CP001XQ01	BFW HP COMMON DISC PRESS	bar	91	140			95.81				98.04	
10LAB17CP001XQ01	BFW LP COMMON DISC PRESS	bar	31	50			37.26				38.17	
10LCA32CF001XQ01	CONDENSATE FLOW TO DE-AER	T/HR	0	150			68.1				68.54	
10LCA32CT001XQ01	TEMP CONDENSATE TO DE-AER	°C	40	65			67.33				68.4	
10LCA32CP001XQ01	P CONDENSATE TO DEAER	bar	1.9	4			2.37				2.39	
GR-1006 Cooling Water / Main And Auxiliary												
10PAD91AN001XQ03	CT FAN 1 Ampere	A	0	134			128.4				128.3	
10PAD91CY302XQ01	CT FAN 1 VIB	mm/s	0	5			1.92				1.85	
10PAD92AN001XQ03	CT FAN 2 Ampere	A	0	135			117.1				116.2	
10PAD92CY302XQ01	CT FAN 2 VIB	mm/s	0	5			1.45				1.21	
10PAD93AN001XQ03	CT FAN 3 Ampere	A	0	135			116.0				116.0	
10PAD93CY302XQ01	CT FAN 3 VIB	mm/s	0	5			2.02				2.02	
10PCB40CT001XQ01	ACW Return Temp	°C	0	40			33.73				32.16	
10PAB40CT001XQ01	MCW Return Temp at Condenser	°C	0	45			41.20				41.73	
10PAB40CT002XQ01	MCW RETURN TEMP AT BASIN	°C	0	45			40.98				41.51	
10PAB10CL900XQ01	CT BASIN LEVEL	mm	3000	3300			3186				3157	
10PAB11CL001XQ01	L AFTER MCW PP1 STOPLOCK	mm	2950	3300			3133				3157	
10PAB12CL001XQ01	L AFTER MCW PP2 STOPLOCK	mm	2950	3300			3048				3086	
10PAC11AP001XQ03	MCW PUMP 1 Ampere	A	0	30			22.24				22.32	
10PAC12AP001XQ03	MCW PUMP 2 Ampere	A	0	30			21.74				21.57	
10PAB35CT001XQ01	MCW SUPPLY TEMP	°C	0	38			35.31				31.92	
10PAB35CP001XQ01	MCW SUPPLY PRESS	bar	0.5	2			0.903				0.903	
10PAB35CQ001XQ01	MCW PH	pH	7	8			7.85				7.87	
10PAB35CQ002XQ01	MCW Conductivity	us/cm	0	1600			624				548	
10PAB31CF001XQ01	CW BLOWDOWN FLOW	T/HR	0	35			26.23				26.21	
GR-1007 Close Cooling Water System & Aux Cooling Water System												
10PGC11AP001XQ03	CCW PMP 1 Ampere	A	0	215			207.0				207.3	
10PGC11CT001XQ01	CCW PMP 1 TEMP Phase 1	°C	0	90			57.3				56.6	
10PGC11CT002XQ01	CCW PMP 1 TEMP Phase 2	°C	0	90			57.8				57.2	
10PGC11CT003XQ01	CCW PMP 1 TEMP Phase 3	°C	0	90			56.4				55.7	
10PGC12AP001XQ03	CCW PMP 2 Ampere	A	0	215			193				193	
10PGC12CT001XQ01	CCW PMP 2 TEMP Phase 1	°C	0	90			57.3				56.6	
10PGC12CT002XQ01	CCW PMP 2 TEMP Phase 2	°C	0	90			57.8				57.2	
10PGC12CT003XQ01	CCW PMP 2 TEMP Phase 3	°C	0	90			56.4				55.7	
10PGA11CP010XQ01	PRESS AFTER CCW PUMPS	bar	2.8	4			3.19				3.02	
10PGB08CL001XQ01	CCW EXPANSION TANK LEVEL	%	34.6	90			68.3				69.7	
10PGB90CT001XQ01	CCW TEMP AFTER HEAT EXCH	°C	0	40			35.990				35.780	
10PGB70CT001XQ01	CCW TEMP BEFORE HEAT EXCH	°C	0	42			38.157				36.491	
10PCB11CP001XQ01	DP ACW PUMP 1 STRAINER	bar	0	0.3			0.138				0.203	
10PCC11AP001XQ03	ACW PUMP 1 Ampere	A	0	200			148.8				147.3	
10PCB12CP001XQ01	DP ACW PUMP 2 STRAINER	bar	0	0.3			SB				SB	
10PCC12AP001XQ03	ACW PUMP 2 Ampere	A	0	200			SB				SB	
10PCB30CP001XQ01	PRESS AFTER AUX CW PUMPS	bar	2.2	2.8			2.54				2.52	
GNC GR-1009 WATER TREATMENT SYS (1/2) UF												
10GBB40CP001XQ01	UF Feed Pressure	bar	1.5	4			1.846				1.846	
10GBB50CP001	UF#1 Flow	m3/H	0	150			51.8				47.9	
10GBB50CP001	UF#1 Diff pressure	bar	0	2.5			0.150				0.149	
10GBB51CP001	UF#1 Outlet pressure	bar	1	1.5			0.964				0.964	
10GBB60CP001	UF#2 Flow	m3/H	0	150			50.0				47.9	
10GBB60CP001	UF#2 Diff pressure	bar	0	2.5			0.18				0.18	
10GBB61CP001	UF#2 Outlet pressure	bar	1	1.5			0.987				0.987	
10GBB70CP001	UF#3 Flow	m3/H	0	150			51.8				47.9	
10GBB70CP001	UF#3 Diff pressure	bar	0	2.5			0.150				0.149	
10GBB71CP001	UF#3 Outlet pressure	bar	1	1.5			0.964				0.964	









ภาคผนวก ข-15


ระบบท่อระบายน้ำทิ้งลงสู่แหล่งน้ำสาธารณะ



Waste / Storm water discharge pipeline monthly inspections

20 1 2025



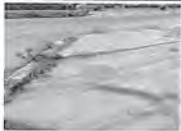













No.	Location Picture	Description	STATUS		Ab-Normal Please Detail
			Cover/weld lock	No water leak	
1		STA.0+225 Waste/Storm pipe vent valve Suan-pom conjunction	<div>Flange connection nut damage</div> <div> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO </div>	<div> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO </div>	มีน้ำรั่ว ปากท่อ
2		STA.0+300 Air box vent valve Suan-Pom conjunction	<div> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO </div>	<div> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO </div>	มีน้ำรั่ว ปากท่อ
3		STA. 0+942 Air box vent valve cross of Prachinburi Provincial of Skill Development Center	<div> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO </div>	<div> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO </div>	มีน้ำรั่ว ปากท่อ
4		STA. 1+012 Air box vent valve cross of Prachinburi Provincial of Skill Development Center	<div> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO </div>	<div> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO </div>	มีน้ำรั่ว ปากท่อ
5		STA. 1+195 Air box vent valve entrance Public water pond	<div> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO </div>	<div> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO </div>	มีน้ำรั่ว ปากท่อ
6		STA. 1+265 Air box vent valve entrance Public water pond	<div> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO </div>	<div> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO </div>	มีน้ำรั่ว ปากท่อ
7		STA. 1+671 Air box vent valve gate entrance SAHAPAT	<div> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO </div>	<div> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO </div>	มีน้ำรั่ว ปากท่อ
8		STA. 1+729 Air box vent valve gate entrance SAHAPAT	<div> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO </div>	<div> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO </div>	มีน้ำรั่ว ปากท่อ



Waste / Storm water discharge pipeline monthly inspections

30 1 2025

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No.	Location Picture	Description	STATUS		Ab-Normal Please Detail
			Cover/weld lock	No water leak	
9		STA. 2+500 Air box vent valve public road to PTT 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	มีน้ำปนสกปรก
10		STA. 2+750 Air box vent valve 33highway front of FIX pub 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
11		STA. 3+050 Air box vent valve 33highway front of Sra-doo school 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
12		STA. 3+450 Air box vent valve 33highway of H154E condominium 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
13		STA. 3+625 Air box vent valve 33highway front of deserted building 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	มีน้ำรั่ว ปากท่อ
14		STA. 3+900 Air box vent valve 33highway Cross of Perd-Jai prok grill 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	มีน้ำรั่ว ปากท่อ
15		STA. 4+300 Air box vent valve Nong-cian entrance road 	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	ไม่มีน้ำรั่ว ปากท่อ กลับทึบ
16		STA. 4+655 Air box vent valve public forest 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	

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Waste / Storm water discharge pipeline monthly inspections

30 / 1 / 2025

No.	Location Picture	Description	STATUS		Ab-Normal Please Detail
			Cover weld lock	No water leak	
17		STA. 5+005 Air box vent valve Nong-eian learning center	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
18		STA. 5+395 Air box vent valve Junction road Tod-yai-som 	<input checked="" type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	ถูกปิดอ้วว 444
19		Waste Discharge (Tod-Yai-Som)	Discharge pipe align <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Rip Rap not collapse <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	

Record By : จันทน์

Date : 30/1/2025

Approved By : อัมพร งามทอง

Date : 30/1/2025














FP-QPT-04-28 Rev.01






Page 1 of 3

Waste / Storm water discharge pipeline monthly inspections

20 / 02 / 68

No.	Location Picture	Description	STATUS		Ab-Normal Please Detail
			Cover weld lock	No water leak	
1		STA. 0+225 Waste/Storm pipe vent valve Suan-pom conjunction	Flange connection not damage <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
2		STA. 0+300 Air box vent valve Suan-Pom conjunction 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	มีน้ำรั่วจากท่อ
3		STA. 0+942 Air box vent valve cross of Prachinburi Provincial of Skill Development Center 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	มีน้ำรั่วจากท่อ
4		STA. 1-012 Air box vent valve cross of Prachinburi Provincial of Skill Development Center 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	มีน้ำรั่วจากท่อ
5		STA. 1+195 Air box vent valve entrance Public water pond 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	มีน้ำรั่วจากท่อ
6		STA. 1+265 Air box vent valve entrance Public water pond	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	มีน้ำรั่วจากท่อ
7		STA. 1+671 Air box vent valve gate entrance SAHAPAT	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	มีน้ำรั่วจากท่อ
8		STA. 1+729 Air box vent valve gate entrance SAHAPAT 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	มีน้ำรั่วจากท่อ

 Waste / Storm water discharge pipeline monthly inspections 20 02 68					
No.	Location Picture	Description	STATUS		Ab-Normal Please Detail
			Cover/weld lock	No water leak	
9		STA. 2+500 Air box vent valve public road to PTT 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	ดูปกติตามด้วยดิน แนวคัน
10		STA. 2+750 Air box vent valve 33highway front of FIX pub	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
11		STA. 3+050 Air box vent valve 33highway front of Sra-doo school	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
12		STA. 3+450 Air box vent valve 33highway at HOME condominium	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
13		STA. 3+625 Air box vent valve 33highway front of deserted building 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
14		STA. 3+900 Air box vent valve 33highway Cross of Penk-ai pruk grill 	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	มีกลิ่นในท่อที่ เกาะที่
15		STA. 4+300 Air box vent valve Nong-eran entrance road	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
16		STA. 4+655 Air box vent valve public forest 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	

 Waste / Storm water discharge pipeline monthly inspections 20 02 68					
No.	Location Picture	Description	STATUS		Ab-Normal Please Detail
			Cover/weld lock	No water leak	
17		STA. 5+005 Air box vent valve Nong-eran learning center	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
18		STA. 5+395 Air box vent valve Junction road Tod-Yai-som 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	ผิดปกติที่
19		Waste Discharge (Tod-Yai-Som)	Discharge pipe align <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Rip Rap not collapse <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	

Record By :










Date :










กชชช
20/02/68

Approved By :

Date :

กชชช
20/02/68

 Waste / Storm water discharge pipeline monthly inspections						20 03 68	
No.	Location Picture	Description	STATUS		Ab-Normal Please Detail		
			Cover weld lock	No water leak			
1		STA. 0+225 Waste/Storm pipe vent valve Suan-pom conjunction	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
2		STA. 0+300 Air box vent valve Suan-Pom conjunction	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	มีน้ำไหล		
3		STA. 0+942 Air box vent valve cross of Prachinburi Provincial of Skill Development Center	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	มีน้ำไหล		
4		STA. 1+012 Air box vent valve cross of Prachinburi Provincial of Skill Development Center	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	มีน้ำไหล		
5		STA. 1+195 Air box vent valve entrance Public water pond	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	มีน้ำไหล		
6		STA. 1+265 Air box vent valve entrance Public water pond	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	มีน้ำไหล		
7		STA. 1+671 Air box vent valve gate entrance SAHAPAT	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	มีน้ำไหล		
8		STA. 1+729 Air box vent valve gate entrance SAHAPAT	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	มีน้ำไหล		

 Waste / Storm water discharge pipeline monthly inspections						20 03 68	
No.	Location Picture	Description	STATUS		Ab-Normal Please Detail		
			Cover weld lock	No water leak			
9		STA. 2+500 Air box vent valve public road to PTT	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	อากาศร้อน น้ำขึ้น		
10		STA. 2+750 Air box vent valve 33highway front of FIX pub	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
11		STA. 3+050 Air box vent valve 33highway front of Sri-doo school	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
12		STA. 3+450 Air box vent valve 33highway @HOME condominium	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
13		STA. 3+625 Air box vent valve 33highway front of deserted building	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
14		STA. 3+900 Air box vent valve 33highway Cross of Perd-Jai prok grill	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	มีน้ำไหล		
15		STA. 4+300 Air box vent valve Nong-cian entrance road	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
16		STA. 4+655 Air box vent valve public forest	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			

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Waste / Storm water discharge pipeline monthly inspections

20 03 68

No.	Location Picture	Description	STATUS		Ab-Normal Please Detail
			Cover weld lock	No water leak	
17		STA. 5+005 Air box vent valve Nong-eian learning center	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
18		STA. 5+395 Air box vent valve Junction road Tod-yai-sorn	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	พิกัดบดกับแล้ว
19		Waste Discharge (Tod-Yai-Sorn)	Discharge pipe align <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Rip Rap not collapse <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	

Record By :
Date : 20 03 68

Approved By :
Date : 20/3/68














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Waste / Storm water discharge pipeline monthly inspections

21 4 2025

No.	Location Picture	Description	STATUS		Ab-Normal Please Detail
			Cover weld lock	No water leak	
1		STA. 0+225 Waste/Storm pipe vent valve Suan-pom conjunction	Flange connection not damage <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
2		STA. 0+300 Air box vent valve Suan-Pom conjunction	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
3		STA. 0+942 Air box vent valve cross of Prachinburi Provincial of Skill Development Center	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
4		STA. 1+012 Air box vent valve cross of Prachinburi Provincial of Skill Development Center	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
5		STA. 1+195 Air box vent valve entrance Public water pond	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
6		STA. 1+265 Air box vent valve entrance Public water pond	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
7		STA. 1+671 Air box vent valve gate entrance SAHAPAT	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
8		STA. 1+729 Air box vent valve gate entrance SAHAPAT	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	

 Waste / Storm water discharge pipeline monthly inspections					
No.	Location Picture	Description	STATUS		Ab-Normal Please Detail
			Cover weld lock	No water leak	
9		STA. 2+500 Air box vent valve public road to PTT 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	
10		STA. 2+750 Air box vent valve 33highway front of FOX pub	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
11		STA. 3+050 Air box vent valve 33highway front of Sr-doo school	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
12		STA. 3+450 Air box vent valve 33highway @ HOME condominium	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
13		STA. 3+625 Air box vent valve 33highway front of deserted building 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
14		STA. 3+900 Air box vent valve 33highway Cross of Perd-lar prok grill 	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<i>Not a prok grill</i>
15		STA. 4+300 Air box vent valve Nong-eian entrance road	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
16		STA. 4+655 Air box vent valve public forest 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	

 Waste / Storm water discharge pipeline monthly inspections					
No.	Location Picture	Description	STATUS		Ab-Normal Please Detail
			Cover weld lock	No water leak	
17		STA. 5+005 Air box vent valve Nong-eian learning center	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
18		STA. 5+395 Air box vent valve Junction road Tod-yai-sam 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<i>Not a junction road</i>
19		Waste Discharge (Tod-Yai-Sam)	Discharge pipe align <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Rip Rap not collapse <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	

Record By :










Date :

9/10/20
24/09/20










Approved By :

Date :

Drum
24/9/2020

 Waste / Storm water discharge pipeline monthly inspections					
No.	Location Picture	Description	STATUS		Ab-Normal Please Detail
			Cover weld lock	No water leak	
1		STA.0+225 Waste/Storm pipe vent valve Suan-pom conjunction	Flange connection no damage <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
2		STA.0+300 Air box vent valve Suan-Pom conjunction	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
3		STA. 0+942 Air box vent valve cross of Prachinburi Provincial of Skill Development Center	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
4		STA. 1+012 Air box vent valve cross of Prachinburi Provincial of Skill Development Center	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
5		STA. 1+195 Air box vent valve entrance Public water pond	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
6		STA. 1+265 Air box vent valve entrance Public water pond	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
7		STA. 1+671 Air box vent valve gate entrance SAHAPAT	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
8		STA. 1+729 Air box vent valve gate entrance SAHAPAT	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	

22 05 68

 Waste / Storm water discharge pipeline monthly inspections					
No.	Location Picture	Description	STATUS		Ab-Normal Please Detail
			Cover weld lock	No water leak	
9		STA. 2+500 Air box vent valve public road to PTT	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
10		STA. 2+750 Air box vent valve 33highway front of FIX pub	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
11		STA. 3+050 Air box vent valve 33highway front of Sra-doo school	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
12		STA. 3+450 Air box vent valve 33highway @HOME condominium	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
13		STA. 3+625 Air box vent valve 33highway front of deserted building	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
14		STA. 3+900 Air box vent valve 33highway Cross of Perd-Jai pork grill	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	มีน้ำท่วมบริเวณ
15		STA. 4+300 Air box vent valve Nong-ctan entrance road	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
16		STA. 4+655 Air box vent valve public forest	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	

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Gulf NC Waste / Storm water discharge pipeline monthly inspections 22 05 68

No.	Location Picture	Description	STATUS		Ab-Normal Please Detail
			Cover weld lock	No water leak	
11		STA. 5+005 Air box vent valve Nong-eian learning center	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
14		STA. 5+395 Air box vent valve Junction road Tod-yai-sorn 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	กล่องหักพัง
19		Waste Discharge (Tod-Yai-Sorn)	Discharge pipe align <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Rip Rap not collapse <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	

Record By: 08-56
Date: 22/05/68

Approved By: [Signature]
Date: 22/5/68

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Gulf NC Waste / Storm water discharge pipeline monthly inspections 30 06 2095

No.	Location Picture	Description	STATUS		Ab-Normal Please Detail
			Cover weld lock	No water leak	
1		STA. 0+225 Waste/Storm pipe vent valve Suan-pom conjunction	Flange connection not damage <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
2		STA. 0+300 Air box vent valve Suan-Pom conjunction 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
3		STA. 0+942 Air box vent valve cross of Prachinburi Provincial of Skill Development Center 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
4		STA. 1+012 Air box vent valve cross of Prachinburi Provincial of Skill Development Center 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
5		STA. 1+195 Air box vent valve entrance Public water pond 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
6		STA. 1+265 Air box vent valve entrance Public water pond	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
7		STA. 1+671 Air box vent valve gate entrance SAHAPAT	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
8		STA. 1+729 Air box vent valve gate entrance SAHAPAT 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	

Gulf NC		Waste / Storm water discharge pipeline monthly inspections		30 06 2025	
No.	Location Picture	Description	STATUS		Ab-Normal Please Detail
			Cover weld lock	No water leak	
9		STA. 2+500 Air box vent valve public road to PTT 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
10		STA. 2+750 Air box vent valve 33highway front of FIX pub	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
11		STA. 3+050 Air box vent valve 33highway front of Sri-doo school	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
12		STA. 3+450 Air box vent valve 33highway @ HOME condominium	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
13		STA. 3+625 Air box vent valve 33highway front of deserted building 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
14		STA. 3+900 Air box vent valve 33highwayCross of Perd-Jai prok grill 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	สีม่วงรถรางสาธารณะ
15		STA. 4+300 Air box vent valve Nong-eian entrance road	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
16		STA. 4+655 Air box vent valve public forest 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	

Gulf NC		Waste / Storm water discharge pipeline monthly inspections		30 06 2025	
No.	Location Picture	Description	STATUS		Ab-Normal Please Detail
			Cover weld lock	No water leak	
17		STA. 5+005 Air box vent valve Nong-eian learning center	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
18		STA. 5+395 Air box vent valve Junction road Tod-yai-som 	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	สีม่วงรถรางสาธารณะ
19		Waste Discharge (Tod-Yai-Som)	Discharge pipe align <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Rip Rap not collapse <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	

Record By :

Date :

นาย.
30/06/2025

Approved By :

Date :

นางสาว.
30/06/2025

ภาคผนวก ข-16

เอกสารการตรวจสอบการทำงานของถังแยกน้ำ-น้ำมัน (Oil Separator)


GULF								Oily pit_Sump and status drain valve spill containment		Plant ONC	
Item	KKS	Oily Pit	Drain valve (Auto)	P1 / Auto / P2 Selector	Panel (No Alarm)	Float switch (min < X < max)	Liquid level OK (min < X < max)	Pump Current (2.1-2.3 Amp)			
								P1	P2		
1	10GQA60GH001	Switch yard area	/	P1	/	/	/	2.2	-		
2	10GQC10GH001	Control building area	/	AUTO	/	/	/	2.3	2.3		
3	10GB850GH001	STG & Condenser area	/	AUTO	/	/	/	2.2	2.2		
4	11GQA70GH001	GT11 Power block area	/	P2	/	/	/	-	2.3		
5	12GQA70GH001	GT12 Power block area	/	AUTO	/	/	/	2.1	2.2		
6	10GB814GH001	Cooling Tower area	/	AUTO	/	/	/	2.2	2.2		
7	10GB841GH001	WTP Utility area	/	AUTO	/	/	/	2.1	2.2		
8	10GQC70GH001	Admin Building area	/	P1	/	/	/	2.3	-		
9	10GB980B001	Oily Water Separator	No Oil contaminate (OK = Not) = ON					Test on week 2nd of Month			
Item	KKS	Drain pump pit	Breaker On	NO water flooding	Remark						
1	10BLA17GQ001	22kV Cable Trench (swyd area)	/	/							
2	10BLA16GQ002	Pipe Trench Gas Metering	/	/							
3	10BLA14GQ001	Cable Trench SWYD (10BAT01)	/	/							
4	10BLA14GQ002	Cable Trench GT (GT11 PCM)	/	/							
5	10BLA15GQ002	Cable Trench (CCR cable area)	/	/							
6	10BLA16GQ001	Cable Trench (ST turbine area)	/	/							
7	10BLA15GQ001	Cable Trench (Aux Tr. area)	/	/							
Item	KKS	Drain valves pit	Valve status Close	NO water flooding	Remark						
1	10GQA60AA201	22kV Step down trans no.1	/	/							
2	10GQA60AA202	22kV Step down trans no.2	/	/							
3	10GQA60AA204	GTG11 Step up transformer	/	/							
4	10GQA60AA203	GTG12 Step up transformer	/	/							
5	10GQA60AA205	STG Step up transformer	/	/							
6	10GQA60AA207	6.6kV Unit Auxiliary trans no.1	/	/							
7	10GQA60AA208	6.6kV Unit Auxiliary trans no.2	/	/							
8	10GQA60AA209	Emergency diesel generator	/	/							
9	10GQA50AA201	STG lube oil containment	/	/							
10	10GQA50AA202	400 VAC Auxiliary trans no.1	/	/							
11	10GQA50AA203	400 VAC Auxiliary trans no.2	/	/							
12	10GQA50AA204	Boiler Feed water pump area	/	/							
13	10GQA50AA205	Condensate pump station	/	/							
14	11GQA70AA206	GTG11 LO aux. skid	/	/							
15	11GQA70AA203	GTG11 Inlet air heating pump	/	/							
16	12GQA70AA206	GTG12 LO aux. skid	/	/							
17	12GQA70AA203	GTG12 Inlet air heating pump	/	/							
18	10GB814AA201	Main cooling pump station	/	/							
19	10GB814AA202	AUX. CCW and Heat exchanger	/	/							
20	10GB842AA201	Air compressor station	/	/							
21	10GB842AA202	Diesel oil tank	/	/							
22	10GB842AA203	Fire water pump station	/	/							
23	10GB842AA204	Ro feed water pump station	/	/							
24	10GB842AA205	Demin and regen water pump	/	/							

Remark : / = OK = Equipment Status is really True x = No = Equipment status is really false

17th 1 SWITCH YARD AREA SWOP ONLY P1 TO AREA COOLING TOWER PUMP P1

Record by Amr M. Kado
Date 9/1/2025

Approved by Amr
Date 2/1/2025



Oily pit_Sump and status drain valve spill containment

13.02.68.

Item	KKS	Oily Pit	Panel select (Auto)	P1 / Auto / P2 Selector	Panel (No Alarm)	Float switch align, OK	Liquid level OK (min< X <max)	Pump Current (2.1-2.3 Amp)		
								P1	P2	
1	10GQA60GH001	Switch yard area	✓	P1	✓	OK	OK	2.2	-	
2	10GQC10GH001	Control building area	✓	AUTO	✓	OK	OK	2.3	2.3	
3	10GB850GH001	STG & Condenser area	✓	AUTO	✓	OK	OK	2.3	2.2	
4	11GQA70GH001	GT11 Power block area	✓	P2	✓	OK	OK	-	2.2	
5	12GQA70GH001	GT12 Power block area	✓	AUTO	✓	OK	OK	2.3	2.3	
6	10GB814GH001	Cooling Tower area	✓	AUTO	✓	OK	OK	2.1	2.2	
7	10GB841GH001	WTP Utility area	✓	AUTO	✓	OK	OK	2.1	2.1	
8	10GQC70GH001	Admin Building area	✓	P1	✓	OK	OK	2.3	-	
9	10GB980B001	Oily Water Separator	No Oil contaminate (OK = Not) = OK						Test on week 2nd of Month	
Item	KKS	Drain pump pit	Breaker On	Water not flood	Remark					
1	10BLA17GQ001	22kV Cable Trench (swyd area)	ON	✓						
2	10BLA16GQ002	Pipe Trench Gas Metering	ON	✓						
3	10BLA14GQ001	Cable Trench SWYD (10BAT01)	ON	✓						
4	10BLA14GQ002	Cable Trench GT (GT11 PCM)	OFF	✓						
5	10BLA15GQ002	Cable Trench (CCR cable area)	ON	✓						
6	10BLA16GQ001	Cable Trench (ST turbine area)	ON	✓						
7	10BLA15GQ001	Cable Trench (Aux Tr. area)	ON	✓						
Item	KKS	Drain valves pit	Status Open	Remark						
1	10GQA60AA201	22kV Step down trans no.1	✓							
2	10GQA60AA202	22kV Step down trans no.2	✓							
3	10GQA60AA204	GTG11 Step up transformer	✓							
4	10GQA60AA203	GTG12 Step up transformer	✓							
5	10GQA60AA205	STG Step up transformer	✓							
6	10GQA60AA207	6.6kV Unit Auxiliary trans no.1	✓							
7	10GQA60AA208	6.6kV Unit Auxiliary trans no.2	✓							
8	10GQA60AA209	Emergency diesel generator	✓							
9	10GQA50AA201	STG lube oil containment	✓							
10	10GQA50AA202	400 VAC Auxiliary trans no.1	✓							
11	10GQA50AA203	400 VAC Auxiliary trans no.2	✓							
12	10GQA50AA204	Boiler Feed water pump area	✓							
13	10GQA50AA205	Condensate pump station	✓							
14	11GQA70AA206	GTG11 LO aux. skid	✓							
15	11GQA70AA203	GTG11 Inlet air heating pump	✓							
16	12GQA70AA206	GTG12 LO aux. skid	✓							
17	12GQA70AA203	GTG12 Inlet air heating pump	✓							
18	10GB814AA201	Main cooling pump station	✓							
19	10GB814AA202	AUX. CCW and Heat exchanger	✓							
20	10GB842AA201	Air compressor station	✓							
21	10GB842AA202	Diesel oil tank	✓							
22	10GB842AA203	Fire water pump station	✓							
23	10GB842AA204	Ro feed water pump station	✓							
24	10GB842AA205	Demin and regen water pump	✓							

Remark : / = OK = Equipment Status is really True x = No = Equipment status is really false.

Record by Amr
Date 13/02/68.

Approved by Amr
Date 13/02/2025

GULF Oil pit_Sump and status drain valve spill containment Plant **GNC**

Item	KKS	Oil Pit	Panel select (Auto)	P1 Auto / P2 Selection	Pump (No Alarm)	Pump switch (Mgn OK)	Liquid level Oil (mm) (X max)	Pump Current (2.1-2.3 Amp)	
								P1	P2
1	10GQA60GH001	Switch yard area	/	P1	/	/	/	2.2	-
2	10GQC10GH001	Control building area	/	AUTO	/	/	/	2.2	2.3
3	10GB850GH001	STG & Condenser area	/	AUTO	/	/	/	2.3	2.2
4	11GQA70GH001	GT11 Power block area	/	P2	/	/	/	-	2.2
5	12GQA70GH001	GT12 Power block area	/	AUTO	/	/	/	2.3	2.3
6	10GQB14GH001	Cooling Tower area	/	AUTO	/	/	/	2.1	2.3
7	10GQB41GH001	WTP Utility area	/	AUTO	/	/	/	2.1	2.1
8	10GQC70GH001	Admin Building area	/	P1	/	/	/	2.3	-
9	10GQB90B001	Oil/Water Separator	No Oil contaminate (OK = Not) = OK.					Test on week 2nd of Month	

Item	KKS	Drain pump pit	Breaker On	NO water flooding	Remark
2	10BLA16GQ002	Pipe Trench Gas Metering	/	/	
3	10BLA14GQ001	Cable Trench SWYD (10BAT01)	/	/	
4	10BLA14GQ002	Cable Trench GT (GT11 PCM)	OFF	/	
5	10BLA15GQ002	Cable Trench (CCR cable area)	/	/	
6	10BLA16GQ001	Cable Trench (ST turbine area)	/	/	
7	10BLA15GQ001	Cable Trench (Aux Tr area)	/	/	

Item	KKS	Drain valves pit	Valve status Close	NO water flooding	Remark
2	10GQA60AA202	22kV Step down trans no 2	/	/	
3	10GQA60AA204	GTG11 Step up transformer	/	/	
4	10GQA60AA203	GTG12 Step up transformer	/	/	
5	10GQA60AA205	STG Step up transformer	/	/	
6	10GQA60AA207	6.6kV Unit Auxiliary trans no 1	/	/	
7	10GQA60AA208	6.6kV Unit Auxiliary trans no 2	/	/	
8	10GQA60AA209	Emergency diesel generator	/	/	
9	10GQA50AA201	STG lube oil containment	/	/	
10	10GQA50AA202	400 VAC Auxiliary trans no 1	/	/	
11	10GQA50AA203	400 VAC Auxiliary trans no 2	/	/	
12	10GQA50AA204	Boiler Feed water pump area	/	/	
13	10GQA50AA205	Condensate pump station	/	/	
14	11GQA70AA206	GTG11 LO aux skid	/	/	
15	11GQA70AA203	GTG11 Inlet air heating pump	/	/	
16	12GQA70AA206	GTG12 LO aux skid	/	/	
17	12GQA70AA203	GTG12 Inlet air heating pump	/	/	
18	10GQB14AA201	Main cooling pump station	/	/	
19	10GQB14AA202	AUX. CCW and Heat exchanger	/	/	
20	10GQB42AA201	Air compressor station	/	/	
21	10GQB42AA202	Diesel oil tank	/	/	
22	10GQB42AA203	Fire water pump station	/	/	
23	10GQB42AA204	Ro feed water pump station	/	/	
24	10GQB42AA205	Demin and regen water pump	/	/	

Remark: / = OK = Equipment Status is really True x = No = Equipment status is really false.

Record by: ADMS
Date: 12/03/18

Approved by: [Signature]
Date: 12/3/18

GULF Oil pit_Sump and status drain valve spill containment Plant **GNC**

Item	KKS	Oil Pit	Panel select (Auto)	P1 Auto / P2 Selection	Pump (No Alarm)	Pump switch (Mgn OK)	Liquid level Oil (mm) (X max)	Pump Current (2.1-2.3 Amp)	
								P1	P2
1	10GQA60GH001	Switch yard area	/	P1	/	/	/	2.28	-
2	10GQC10GH001	Control building area	/	AUTO	/	/	/	2.3	2.3
3	10GB850GH001	STG & Condenser area	/	AUTO	/	/	/	2.3	2.2
4	11GQA70GH001	GT11 Power block area	/	P2	/	/	/	-	2.29
5	12GQA70GH001	GT12 Power block area	/	AUTO	/	/	/	2.3	2.3
6	10GQB14GH001	Cooling Tower area	/	AUTO	/	/	/	2.21	2.3
7	10GQB41GH001	WTP Utility area	/	AUTO	/	/	/	1.97	2.06
8	10GQC70GH001	Admin Building area	/	P1	/	/	/	2.23	-
9	10GQB90B001	Oil/Water Separator	No Oil contaminate (OK = Not) = OK.					Test on week 2nd of Month	

Item	KKS	Drain pump pit	Breaker On	NO water flooding	Remark
2	10BLA16GQ002	Pipe Trench Gas Metering	/	/	
3	10BLA14GQ001	Cable Trench SWYD (10BAT01)	/	/	
4	10BLA14GQ002	Cable Trench GT (GT11 PCM)	OFF	/	
5	10BLA15GQ002	Cable Trench (CCR cable area)	/	/	
6	10BLA16GQ001	Cable Trench (ST turbine area)	/	/	
7	10BLA15GQ001	Cable Trench (Aux Tr area)	/	/	

Item	KKS	Drain valves pit	Valve status Close	NO water flooding	Remark
2	10GQA60AA202	22kV Step down trans no 2	/	/	
3	10GQA60AA204	GTG11 Step up transformer	/	/	
4	10GQA60AA203	GTG12 Step up transformer	/	/	
5	10GQA60AA205	STG Step up transformer	/	/	
6	10GQA60AA207	6.6kV Unit Auxiliary trans no 1	/	/	
7	10GQA60AA208	6.6kV Unit Auxiliary trans no 2	/	/	
8	10GQA60AA209	Emergency diesel generator	/	/	
9	10GQA50AA201	STG lube oil containment	/	/	
10	10GQA50AA202	400 VAC Auxiliary trans no 1	/	/	
11	10GQA50AA203	400 VAC Auxiliary trans no 2	/	/	
12	10GQA50AA204	Boiler Feed water pump area	/	/	
13	10GQA50AA205	Condensate pump station	/	/	
14	11GQA70AA206	GTG11 LO aux skid	/	/	
15	11GQA70AA203	GTG11 Inlet air heating pump	/	/	
16	12GQA70AA206	GTG12 LO aux skid	/	/	
17	12GQA70AA203	GTG12 Inlet air heating pump	/	/	
18	10GQB14AA201	Main cooling pump station	/	/	
19	10GQB14AA202	AUX. CCW and Heat exchanger	/	/	
20	10GQB42AA201	Air compressor station	/	/	
21	10GQB42AA202	Diesel oil tank	/	/	
22	10GQB42AA203	Fire water pump station	/	/	
23	10GQB42AA204	Ro feed water pump station	/	/	
24	10GQB42AA205	Demin and regen water pump	/	/	

Remark: / = OK = Equipment Status is really True x = No = Equipment status is really false.

Record by: ADMS
Date: 09/04/18

Approved by: [Signature]
Date: 9/4/2018



Oily pit_Sump and status drain valve spill containment

Plant GNC

Item	KKS	Oily Pit	Panel level (mm)	P1 / Auto / P2 Selector	Panel (No Alarm)	DCM switch (No Alarm)	Liquid level OK (min < X mm)	Pump Current (2 1-2.3 Amp)	P1	P2
1	10GQA60GH001	Switch yard area	✓	P1	✓	✓	✓	2.10	-	-
2	10GQC10GH001	Control building area	✓	AUTO	✓	✓	✓	2.11	2.11	-
3	10GQB50GH001	STG & Condenser area	✓	P1	✓	✓	✓	2.14	-	-
4	11GQA70GH001	GT11 Power block area	✓	P2	✓	✓	✓	-	2.13	-
5	12GQA70GH001	GT12 Power block area	✓	AUTO	✓	✓	✓	2.16	2.12	-
6	10GQB14GH001	Cooling Tower area	✓	AUTO	✓	✓	✓	2.18	2.10	-
7	10GQB41GH001	WTP Utility area	✓	P1	✓	✓	✓	2.15	-	-
8	10GQC70GH001	Admin Building area	✓	AUTO	✓	✓	✓	2.18	2.11	-
9	10GQB90B8001	Oily Water Separator	No Oil contaminate (OK = No) = <u>OK</u>					Test on week 2nd of Month		

Item	KKS	Drain pump pit	Breaker On	NO water flooding	Remark
1	10BLA17GQ001	22kV Cable Trench (swyd area)	✓	✓	
2	10BLA16GQ002	Pipe Trench Gas Metering	✓	✓	
3	10BLA14GQ001	Cable Trench SWYD (10BAT01)	✓	✓	
4	10BLA14GQ002	Cable Trench GT (GT11 PCM)	OFF	✓	
5	10BLA15GQ002	Cable Trench (CCR cable area)	✓	✓	
6	10BLA16GQ001	Cable Trench (ST turbine area)	✓	✓	
7	10BLA15GQ001	Cable Trench (Aux Tr. area)	✓	✓	

Item	KKS	Drain valves pit	Valve status Close	NO water flooding	Remark
1	10GQA60AA201	22kV Step down trans no 1	✓	✓	
2	10GQA60AA202	22kV Step down trans no 2	✓	✓	
3	10GQA60AA204	GTG11 Step up transformer	✓	✓	
4	10GQA60AA203	GTG12 Step up transformer	✓	✓	
5	10GQA60AA205	STG Step up transformer	✓	✓	
6	10GQA60AA207	6.6kV Unit Auxiliary trans no 1	✓	✓	
7	10GQA60AA208	6.6kV Unit Auxiliary trans no 2	✓	✓	
8	10GQA60AA209	Emergency diesel generator	✓	✓	
9	10GQA50AA201	STG tube oil containment	✓	✓	
10	10GQA50AA202	400 VAC Auxiliary trans no 1	✓	✓	
11	10GQA50AA203	400 VAC Auxiliary trans no 2	✓	✓	
12	10GQA50AA204	Boiler Feed water pump area	✓	✓	
13	10GQA50AA205	Consensate pump station	✓	✓	
14	11GQA70AA206	GTG11 LO aux skid	✓	✓	
15	11GQA70AA203	GTG11 Inlet air heating pump	✓	✓	
16	12GQA70AA206	GTG12 LO aux skid	✓	✓	
17	12GQA70AA203	GTG12 Inlet air heating pump	✓	✓	
18	10GQB14AA201	Main cooling pump station	✓	✓	
19	10GQB14AA202	AUX. CCW and Heat exchanger	✓	✓	
20	10GQB42AA201	Air compressor station	✓	✓	
21	10GQB42AA202	Diesel oil tank	✓	✓	
22	10GQB42AA203	Fire water pump station	✓	✓	
23	10GQB42AA204	Ro feed water pump station	✓	✓	
24	10GQB42AA205	Demin and regen water pump	✓	✓	

Remark : / = OK = Equipment Status is really True

x = No = Equipment status is really false.

Record by ADMS
Date 14/05/68Approved by ADMS
Date 14/05/2021

Oily pit_Sump and status drain valve spill containment

Plant GNC

Item	KKS	Oily Pit	Panel level (mm)	P1 / Auto / P2 Selector	Panel (No Alarm)	DCM switch (No Alarm)	Liquid level OK (min < X mm)	Pump Current (2 1-2.3 Amp)	P1	P2
1	10GQA60GH001	Switch yard area	✓	P1	✓	✓	✓	2.2	-	-
2	10GQC10GH001	Control building area	✓	AUTO	✓	✓	✓	2.1	2.1	-
3	10GQB50GH001	STG & Condenser area	✓	P1	✓	✓	✓	2.3	-	-
4	11GQA70GH001	GT11 Power block area	✓	P2	✓	✓	✓	-	2.3	-
5	12GQA70GH001	GT12 Power block area	✓	AUTO	✓	✓	✓	2.0	2.1	-
6	10GQB14GH001	Cooling Tower area	✓	AUTO	✓	✓	✓	2.2	2.3	-
7	10GQB41GH001	WTP Utility area	✓	P1	✓	✓	✓	2.1	-	-
8	10GQC70GH001	Admin Building area	✓	AUTO	✓	✓	✓	2.1	2.2	-
9	10GQB90B8001	Oily Water Separator	No Oil contaminate (OK = No) = <u>OK</u>					Test on week 2nd of Month		

Item	KKS	Drain pump pit	Breaker On	NO water flooding	Remark
1	10BLA17GQ001	22kV Cable Trench (swyd area)	✓	✓	
2	10BLA16GQ002	Pipe Trench Gas Metering	✓	✓	
3	10BLA14GQ001	Cable Trench SWYD (10BAT01)	✓	✓	
4	10BLA14GQ002	Cable Trench GT (GT11 PCM)	✓	✓	
5	10BLA15GQ002	Cable Trench (CCR cable area)	✓	✓	
6	10BLA16GQ001	Cable Trench (ST turbine area)	✓	✓	
7	10BLA15GQ001	Cable Trench (Aux Tr. area)	✓	✓	

Item	KKS	Drain valves pit	Valve status Close	NO water flooding	Remark
1	10GQA60AA201	22kV Step down trans no 1	✓	✓	
2	10GQA60AA202	22kV Step down trans no 2	✓	✓	
3	10GQA60AA204	GTG11 Step up transformer	✓	✓	
4	10GQA60AA203	GTG12 Step up transformer	✓	✓	
5	10GQA60AA205	STG Step up transformer	✓	✓	
6	10GQA60AA207	6.6kV Unit Auxiliary trans no 1	✓	✓	
7	10GQA60AA208	6.6kV Unit Auxiliary trans no 2	✓	✓	
8	10GQA60AA209	Emergency diesel generator	✓	✓	
9	10GQA50AA201	STG tube oil containment	✓	✓	
10	10GQA50AA202	400 VAC Auxiliary trans no 1	✓	✓	
11	10GQA50AA203	400 VAC Auxiliary trans no 2	✓	✓	
12	10GQA50AA204	Boiler Feed water pump area	✓	✓	
13	10GQA50AA205	Consensate pump station	✓	✓	
14	11GQA70AA206	GTG11 LO aux skid	✓	✓	
15	11GQA70AA203	GTG11 Inlet air heating pump	✓	✓	
16	12GQA70AA206	GTG12 LO aux skid	✓	✓	
17	12GQA70AA203	GTG12 Inlet air heating pump	✓	✓	
18	10GQB14AA201	Main cooling pump station	✓	✓	
19	10GQB14AA202	AUX. CCW and Heat exchanger	✓	✓	
20	10GQB42AA201	Air compressor station	✓	✓	
21	10GQB42AA202	Diesel oil tank	✓	✓	
22	10GQB42AA203	Fire water pump station	✓	✓	
23	10GQB42AA204	Ro feed water pump station	✓	✓	
24	10GQB42AA205	Demin and regen water pump	✓	✓	

Remark : / = OK = Equipment Status is really True

x = No = Equipment status is really false

Record by ADMS
Date 11/06/68Approved by ADMS
Date 11/06/68

ภาคผนวก ข-17

เอกสารตรวจสอบสภาพท่อน้ำและซ่อมแซมท่อน้ำ

