DOC NUMBER: **569-DB7A-PRO-500-003**	CLIENT NUMBER: **PRD-PRO-MDE-006**
CLIENT: **TAKEDA**	
PROJECT **BURITI EPCMV**	

INDUSTRIAL WATER DISTRIBUTION SYSTEM DESCRIPTION REPORT

0	13AUG2021	ISSUED FOR CONSTRUCTION	JRM	LFF	MSS
A	17JUN2021	90% DD ISSUE	MSN	CCO	MSS
RE	DATE	DESCRIPTION	EXEC	CHECK	APPROV

1. REVISION HISTORY

Rev	Reason For Change
A	90% DD ISSUE
0	UPDATED ACCORDING TO CALCULATION REPORT, REVISION 0

2. PURPOSE

This document is intended to describe the process characteristics for the Industrial Water Distribution System, Building 7A – Final Drug Product, intended to Buriti Project, located at Hemobrás site in Goiania – Pernambuco state, Brazil.

3. REFERENCE

The following documents were used as reference:

Item	Number	Title
01	PRD-MEC-CLC-007	INDUSTRIAL WATER DISTRIBUTION SYSTEM CALCULATION REPORT
02	7A-M-0-5-41	P&I DIAGRAM DRUG PRODUCT INDUSTRIAL WATER – DISTRIBUTION SYSTEM

4. PROCESS DESCRIPTION

The Industrial Water Distribution System for the Building 7A.

The existing pressurized distribution system for industrial use will provide industrial water through the Tie-in located near at the Building 7B. The initial point to Building 7A is located at Second Floor (El. 18,8 m). At the entrance of the Building 7A, there is a manual battery limit valve with a diameter of 4” (line 4"-DW-610018-PP1-NI). The industrial water at this 3.67 barG and an ambient temperature.

On the second floor, after the manual battery limit valve, there is a pressure reducing station, composed of one pressure reducing valve (PCV-610001) and two pressure indicators: upstream (PI-610001) and downstream (PI-610002).

After the pressure reducing station, there is a pressure safety valve (PSV-610001) that is sized for a relief pressure of 2.8 barG, preserving the distribution system lines. The relief of this valve should be directed to the drain.

The industrial water system is monitored via BMS through a magnetic flow meter (FIT-610001) installed on line 4”-DW-610019-PP1-NI downstream of PSV-610001.

The PCV-610001 is a pilot-operated valve and it was sized for the following condition:

TAG	Vol. Flow Rate (lpm)	P in (barG)	P out (barG)	ΔP (bar)
PCV-610001	778.33	3.26	1.90	1.36

For this distribution, the consumers below are being supply with their respective operating conditions available:

EQUIPMENT	TAG	VOLUMETRIC FLOWRATE		PRESSURE AVAILABLE
		(m³/h)	(lpm)	(barG)
Liquid Nitrogen Area	-	1.5	25	2.72
Blowdown	BDT-7C-1	6	100	2.81
Softened Water Treatment	WS-6000-1/ 2	12	200	2.92
Reverse Osmosis	RO-6301	1.8	30	2.87
Emergency Eye Wash Shower	EWS-7A-1	4.65	77.5	3.0 - 4.0
Emergency Eye Wash Shower	EWS-7A-2	4.65	77.5	3.0 - 4.0
Emergency Eye Wash Shower	EWS-7A-3	4.65	77.5	2.9 - 3.9
Emergency Eye Wash Shower	EWS-7A-4	4.65	77.5	2.2 - 3.1
Emergency Eye Wash Shower	EWS-7A-5	4.65	77.5	2.2 - 3.1
Vacuum Skid	SV-1106	2.28	38	1.74
Vacuum Skid	SV-1105	2.28	38	1.84
Autoclave	AT-9001	1.5	25	1.62
Autoclave	AT-9002	1.5	25	1.76
Cooling Tower - Make-up	CT-7A-1/ 2/ 3	11.772	196.2	1.57
Expansion Tank (HVAC) - Make-up	TK-7A-1	4.02	67	1.31
Buffer tank - Make-up	BT-7A-1	9	150	1.32
Re-heated Water System - Make-up	HX-7A-1	4.02	67	1.61
TOTAL		**80.9**	**1,348.7**	**-**

Upstream of each point of use there is a manual block valve to ensure partial blocking of the systems in case of maintenance.

The header that serves the emergency eyewash and safety showers originates upstream of two check valves (CV-610001 and CV-610015) thus ensuring that there is no back flow at the points of use of the showers and eye washers.

In addition to the two check valves on line 4”-DW-610019-PP1-NI, there is a manual valve downstream (HV-610016) for manually blocking consumers of the system in the event of maintenance, thus keeping showers and eyewash from emergency in operation.