



- NOTES**
- 1) EXISTING INSTALLATION ONLY FOR INFORMATION. FOR FURTHER DETAILS, SEE DOC. N° S-PR030 AND S-PR196.
  - 2) INDICATED SCENARIO CONSIDERING THE MAXIMUM VOC EMISSION (15 kg/h) AND MINIMUM LEL VALUE OF POSSIBLE COMPOUNDS (WHICH IS TOLUENE). MAXIMUM ALLOWABLE LEL IN MIXTURE 18% (<20%v DUE TO AROMATIC NATURE OF TOLUENE).
  - 3) RESIDENCE TIME VESSEL VOLUME IS CONSIDERING 3s: 1s OF LEL DETECTION + 2s OF 3-WAY VALVE CLOSING.
  - 4) DILUTION VALVE SHALL BE SET WITH A MINIMUM OPENING IN ORDER TO PROTECT THE MAIN FAN IN CASE OF MINIMUM FLOW. IF DESIRED, IT CAN BE INCLUDED A FLOW TRANSMITTER IN SUCTION OF FAN. TO BE DISCUSSED.
  - 5) BYPASS SHALL BE USED AND LEAD THE PROCESS AIR TO SAFE LOCATION IN CASE:
    - THE BOILER COMBUSTION FAN IS STOPPED.
    - THE LEL VALUE DETECTS HIGHER VALUE THAN 20%v. OF LEL.
  - 6) SAACKE SCOPE INCLUDES THE RELOCATION OF EXISTING VALVES/PIPING, NEW VALVE AND CONNECTION TO EXISTING COMBUSTION AIR FAN.
  - 7) FLAME ARRESTERS WILL BE INSTALLED HORIZONTALLY

Streams		1	2	3	4	5	6	7
Fluid		Waste gas	Dilution Air	Waste gas	Waste gas	Waste gas	Waste gas	Waste gas
Phase	G/L/S	G	G	G	G	G	G	G
Mass flow	kg/h	141	2211	2352	2352	1176	1176	2352
Temperature	°C	40	30	31	31	31	31	31
Pressure	mbarg	-5,0	-5,0	-7,0	77,0	77,0	77,0	10,0
Vol. Flow	Nm3/h	105	1740	1845	1845	922	922	1845
N2	%v.	69,9%	78,2%	75,9%	75,9%	75,9%	75,9%	75,9%
O2	%v.	18,6%	20,8%	20,2%	20,2%	20,2%	20,2%	20,2%
H2O	%v.	8,0%	3,4%	3,7%	3,7%	3,7%	3,7%	3,7%
VOC	%v.	3,5%	-	0,2%	0,2%	0,2%	0,2%	0,2%
VOC conc.	g/Nm3	143	0	8,1	8,1	8,1	8,1	8,1

02	28/07/2023	Execute Phase - IFA: Issue for Approval	D.M	J.P.M	J.M.G
01	08/05/2023	IFA: Issue for Approval	D.M	J.P.M	J.M.G
00	21/04/2023	IFA: Issue for Approval	D.M	J.P.M	J.M.G
REV	DATE	REVISION DESCRIPTION	EDITED	CHECKED	APPROVED

PROJECT TITLE: VOC Injection to steam boilers

DRAWING TITLE: PFD - VOC injection to steam boilers

CLIENT: TRADEBE (UK)

**TECAM**

DRAWING N° A113.P.D.001

SCALE: N/A

SHEET N° 1 of 1

REV 02

This document contains confidential information property of Tecam Soluciones Medioambientales, S.L.