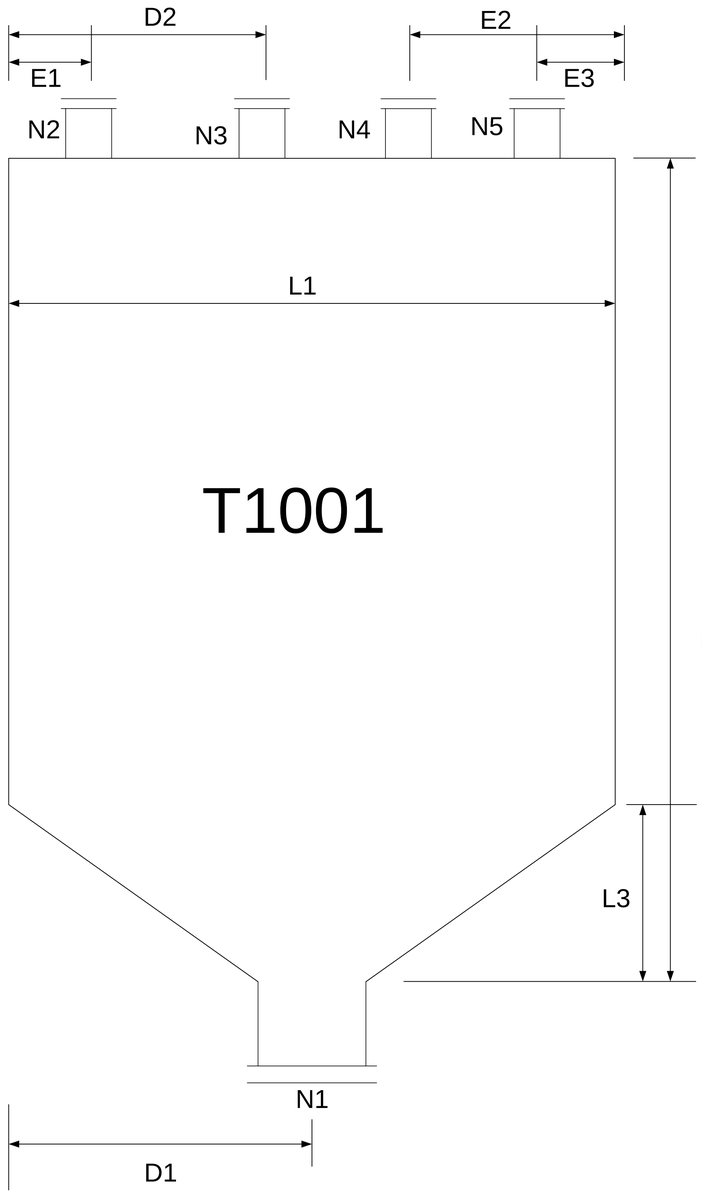
DO NOT SCALE! | PROJECTION | IF IN DOUBT, ASK



DESCRIPTION	Waste Oil Storage & Feed Tank T1001 for the Uranium Contaminated Waste Oil Plasma Gasification (CWOPG) Demonstration Facility is used to store and feed the waste oil into the system that is supplied by the waste oil IBC T1008.
LOCATION	Oil Waste PlasGas Demonstration Facility - Process area inside Laboratory-150, Building V-H2.
SAFETY CLASSIFICATION	SC-3 (N) and SC-2 (C)
QUALITY CLASSIFICATION	QC-3 (N) and QC-2 (C)

FLUID PROPERTIES

FLUID	Uranium contaminated waste oil [a]		
FLUID STATE	Liquid	SOLIDS CONTENT	Trace < 1% mass
MASS FLOW RATE IN/OUT (kg/h)	10		
DENSITY (kg/m^3)	993.25 @ 25°C ; 925.8 @ 40°C		
VISCOSITY (Pa.s)	N/A		
THERMAL CONDUCTIVITY (W/mK)	N/A		
SPECIFIC HEAT CAPACITY (kJ/kgK)	N/A		

CORROSIVE DUE TO	N/A		
MASS EMPTY (kg)	Supplier to advise	**CORROSION ALLOWANCE (mm)**	N/A
CAPACITY OF VESSEL (m^3)	0,6	**VOLUME OF FLUID (m^3)**	0,48

PRESSURE (kPa (a))		**TEMPERATURE (°C)**	
DESIGN	130.5	DESIGN	40
OPERATING	(atmospheric = 87 KPa)	OPERATING	25
MINIMUM	(atmospheric = 87 KPa)	MINIMUM	0
TEST	N/A	TEST	N/A

TYPE OF PRESSURE TEST	PNEUMATIC	N/A	HYDROSTATIC	NO
DESIGN CODE	SANS 347			
SPECIFICATION	N/A			
LAGGING	N/A			

AGITATOR REQUIREMENTS		**COOLING/HEATING REQUIREMENTS**	
AGITATOR REQUIRED	N/A	COOLING/HEATING REQUIRED	N/A
AGITATOR SPECIFICATIONS / DATASHEET NO.	N/A	COOLING/HEATING SPECIFICATIONS / DATASHEET NO.	

NOTES AND REFERENCES

REFERENCES:
[1] ENS-OWPVR-PID-24002 – Waste Oil Feed System - Uranium Contaminated Waste Oil Plasma Gasification
[2] ENS-OWPVR-CLC-25002 – Tanks & Vessels Calculations - Uranium Contaminated Waste Oil Plasma Gasification.

NOTES:
[a] Waste Oil:3,22% Toluene (C7H8); 7,95% Hexadecane (C16H34); 16,61% Heptadecane (C17H38); 53,34% Nonadecane (C19H40); 0,11% Elemental Uranium (U); 0,000002% Elemental Sulphur (S); 0,04% Hydrogen Fluoride (HF); 0,21% Hydrogen Chloride (HCl).
[b] The storage and feed tank must have welded support legs or a stand, ensuring a total tank height of **3m** to accommodate a process connection with Nozzle N1. The support structure must not affect the tank's overall diameter.
[c] The Storage & Feed tank must have lifting lugs attached to be used for handling.

MATERIAL

CYLINDER	FLANGES	HEADS	PIPE NOZZLES
304/304L Stainless Steel	Refer to Nozzle Schedule	304/304L Stainless Steel	Refer to Nozzle Schedule (SCH 40)
SUPPORTS	**GASKETS**	**INNER LINING**	**PIPE NOZZLE LENGTH**
YES [b]	SS/PTFE Spiral wound	N/A	150 mm (Supplier to advise)

NOZZLE SCHEDULE

MARK	NB	RATING AND FACING	MATERIAL	DESCRIPTION
N1	15	Socket Weld Flange, RF, Class 150	SS, ASTM A182-F304/304L, ASME B16.5	Outlet nozzle for waste oil from the feed tank T1001.
N2	15	Socket Weld Flange, RF, Class 150	SS, ASTM A182-F304/304L, ASME B16.5	Inlet nozzle for waste oil from the Waste Oil IBC T1008.
N3	100	Socket Weld Flange, RF, Class 150	SS, ASTM A182-F304/304L, ASME B16.5	Nozzle for Level Transmitter (LT 1001A).
N4	15	Socket Weld Flange, RF, Class 150	SS, ASTM A182-F304/304L, ASME B16.5	Outlet nozzle for vent from T1001 to Scrubber.
N5	15	Socket Weld Flange, RF, Class 150	SS, ASTM A182-F304/304L, ASME B16.5	Inlet nozzle for waste oil from oil circulation pump P1010.

DIMENSIONS

MARK	PARAMETERS	UNITS	VALUES
L1	DIAMETER	mm	620
L2	TOTAL HEIGHT [b]	mm	2300
L3	CONE HEIGHT	mm	400
-	CYLINDER HEIGHT	mm	1900
-	THICKNESS	mm	1,5 (Supplier to advise)

OTHER DIMENSIONS

MARK	UNITS	VALUE	DESCRIPTION
D1	mm	310	Nozzle N1 position for outlet of waste oil from tank.
D2	mm	310	Nozzle N3 position for level transmitter (LT 1001A).
E	Supplier to advise on the Dimensions of all denoted by E.		

NON DESTRUCTIVE TESTING (NDT)		**FABRICATION**	
DYE-PENETRANT	Y	CHEMICAL CLEANING	N
HALIED	N	HEAT TREATMENT	N
MAGNETIC PARTICLE TESTING	N	HELIUM LEAK TESTING	N
ULTRA-SONIC	N	ALLOWABLE LEAK RATE	N
HARDNESS TESTING	N	SURFACE FINISH INTERNAL	Y
X-RAY	N	MATERIAL CERTIFICATES	Y
QUALITY CONTROL BLOCK	N	VESSEL TO BE DRIED	N

Prepared	Mechanical Engineer	MP Mokgohloa		
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Reviewed	Chief C&I. Engineer	G Manuel		
Reviewed	Chief Electrical. Engineer	W. Van Den Berg		
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REVISION HISTORY

Revision	Description	By	Date
1	First issue	MP MOKGOHLOA	19/03/2025

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PROJECT	URANIUM CONTAMINATED WASTE OIL PLASMA GASIFICATION
TITLE	WASTE OIL STORAGE & FEED TANK T1001
Document No.	ENS-OWPVR-SPE-25021

DESTROY ALL PREVIOUS PRINTS

1 Revision