



MECHANICAL SYSTEMS DATA SHEET: VESSEL

PLANT ITEM No.
24590-HLW-MV-RLD-VSL-00002

R10845596

Project	RPP-WTP	P&ID	24590-HLW-M6-RLD-00014	ISSUED BY RPP-WTP PDC
Project No	24590	Process Data Sheet	24590-HLW-MVD-RLD-00003	
Project Site	Hanford	Vessel Drawing	24590-HLW-MV-RLD-00002	
		Calculation	24590-HLW-M6C-RLD-00004	
Description	HLW Offgas Drains Collection Vessel RLD-VSL-00002			

Reference Data

Charge Vessels (Tag Numbers)	None
Pulsejet Mixers / Agitators (Tag Numbers)	None
RFDs/Pumps (Tag Numbers)	None

Design Data

Quality Level	CM	Fabrication Specs	24590-WTP-3PS-MV00-T0001		
Seismic Category	SC-III	Design Code	ASME VIII Div 1		
Service/Contents	Radioactive Liquid	Code Stamp	Yes		
Design Specific Gravity	1.0	NB Registration	Yes		
Operating Volume	gal 260	Weights (lbs)	Empty	Operating	Test
Total Volume	gal 334	Estimated	1,200	3,700	4,060
Environmental Qualification	NIA				

Inside Diameter	inch	42			Wind Design	Not Required
Length/Height (TL-TL)	inch	48			Snow Design	Not Required
		Vessel Operating	Vessel Design	Coil/Jacket Design	Seismic Design	24590-WTP-3PS-MV00-T0002 24590-WTP-3PS-FB01-T0001
Internal Pressure	psig	0	15		Mounting Elevation	-21' (Relative to Grade)
External Pressure	psig	0	FV		Postweld Heat Treat	Not Required
Temperature	°F	141	167		Corrosion Allowance	Inch 0.04
Min. Design Metal Temp.	°F	40				

Materials of Construction

Component	Material	Minimum Thickness / Size	Containment
Top Head	SA 240 316 Note 1	See Drawing	Auxiliary (see Note 2)
Shell	SA 240 316 Note 1	See Drawing	Primary (see Note 2)
Bottom Head	SA 240 316 Note 1	See Drawing	Primary (see Note 2)
Support	SA 240 / SA 276 304 Note 1	See Drawing	NIA
Jacket/Coils/Half-Pipe Jacket	NIA	NIA	NIA
Internals	SA 240 316 Note 1	See Drawing	Thermocouples Primary (see Note 2)
Pipe	SA 312 TP316 Note 1	See Drawing	See Note 2
Forgings/ Bar stock	SA 182 F316 Note 1	See Drawing	NIA
Gaskets	NIA	NIA	NIA
Bolting	NIA	NIA	NIA

Miscellaneous Data

Orientation	Vertical	Support Type	Legs
Insulation Function	Not Applicable	Insulation Material	Not Applicable
Insulation Thickness (inch)	Not Applicable	Internal Finish	Welds de-scaled as laid
		External Finish	Welds de-scaled as laid



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Remarks

Note 1: Max. Carbon content 0.030% for welded components.

Note 2: All welds forming part of the primary and auxiliary containment including nozzle attachment welds shall be subjected to 100% volumetric examination.

Note 3: Tank volumes are approximates and do not account for manufacturing tolerances, nozzles, and displacement of internals.

Note 4: The vessel has 40 years life cycle.

Note 5: This vessel is in a Black Cell.

Note 6: Contents of this document are Dangerous Waste Permit affecting.

Note 7: Refer to 24590-WTP-3PS-MV00-T0001 (Pressure Vessel Design and Fabrication) - Appendix A, for nozzle loads.



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Equipment Cyclic Data Sheet

Component Plant Item Number:	24590-HLW-MV-RLD-VSL-00002
Component Description	HLW Offgas Drains Collection Vessel RLD-VSL-00002

The information below is provisional and envelopes operational duty for fatigue assessment. It is not to be used as operational data.

Materials of Construction	316 SST (see Materials of Construction table, page 1)
Design Life	40 Years
Component Function and Life Cycle Description	RLD-VSL-00002 is a condensate collection vessel. It collects non-routine low point drain condensate from the PJV header and the offgas piping downstream of the HEME. RLD-VSL-00002 maintains a vapor separation between the lines feeding it through use of dip-legs. The collected condensate is transferred out of RLD-VSL-00002 through use of steam ejectors as needed. Occasional internal washdown is provided through an internal wash ring located near the top of the vessel.

Load Type		Min	Max	Number of Cycles	Comment
Design Pressure	psig	FV	15	10	
Operating Pressure	psig	-0.05	0	480	
Operating Temperature	°F	59	141	NIA	
Contents Specific Gravity		1	1	480	
Contents Level	inch	6	40	480	
Localized Features					
Nozzles		N08	Design pressure for spray ring is 135 PSIG.		
Supports					

Notes

- **Cycle increase: The Seller must increase the numbers of operational cycles given above by 10% to account for commissioning duty unless otherwise noted.**
- **Cycles and loads per calculation 24590-HLW-MVC-30-00001.** 

Safety Screening / Evaluation required? If yes per 24590-WTP-GPP-SREG-002, ENS signature required below. Yes No 

Approval

Rev	Description	System Engr	Vessel Engr	Checked	MET	E&NS	Approved	Date
0	Issued for Purchase	M. Grindel	Mohan A	C. Slater	N/A	N/A	M. Hoffmann	1/28/04
1	Added Black Cell Requirements	M. Grindel	M. Balakrishnan	C. Slater	N/A	N/A	C. Morley for M. Hoffmann	2/5/04
2	Revised operating temp. from 115 to 141	M. Grindel	M. Balakrishnan	T. Galioto & D. Adler	N/A	N/A	M. Hoffmann	6/26/04
3	Reissued for bid. Added cyclic data, Env. Qual. field, Note 7, updated vessel operating volume & total vol.	R.Tometczak	W. Wilcox	N. Johnson	D. Adler	C. Meng	J. Julyk	4/16/07
4	Updated support type, Fixed Safety Screen, added elevation. Iss for procurement.	R.Tometczak <i>R. Tometczak</i>	W. Wilcox <i>W. Wilcox</i>	S. Jain <i>SJ</i>	D. Adler <i>DA</i>	RJT 10-26-07 B. Dubier <i>CM</i>	J. Julyk <i>J. Julyk</i>	10/26/07