

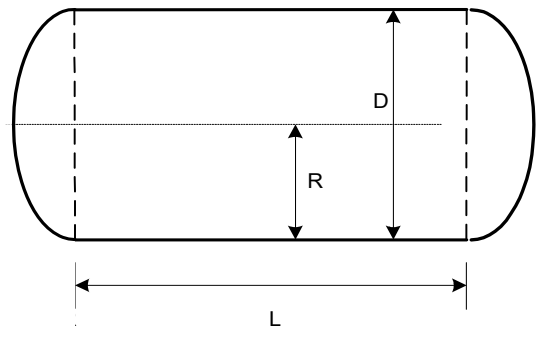
DATA INPUT			
Project Data			
Prepared by	S. Hall	Client	Client Name
Date	1-May-18	W.O.	1234
◦ English	• SI	Unit	WFI
		Area	CUB
General Data			
Project Description	Sample Storage Tank		
Tank or Vessel Identification	VE-201		
Name for Saved Case (must be unique)	Example Horizontal Storage Tank		
Tank Parameters			
<b>Orientation</b>	◦ Vertical	• Horizontal	
<b>Shell</b>	• Cylindrical	◦ Elliptical	
Shell Length, tangent-to-tangent, L	4,200.0 mm		
Shell Inside Diameter, D	1,800.0 mm		
<b>Heads</b>	• Both the Same	◦ Different	
Hint: 2:1 elliptical head extension = 450.0 mm	Note: both heads are identical		◦ Flat
Head Extension (tangent-to-end), a	533.4 mm		• Ellipsoidal
			◦ Spherical
			◦ Torispherical
			◦ Conical
Fill Height, h	1,400.0 mm		◦ Guppy
Calculation Results			
Volume of Tank, completely full	12,497 liters		
Volume to Fill Height	10,501 liters		
Fill Height Corresponding to Specific Volume			
Desired Volume	7,500.0 liters		
Corresponding Fill Height	1,038.6 mm		

**TANK VOLUME CALCULATIONS**

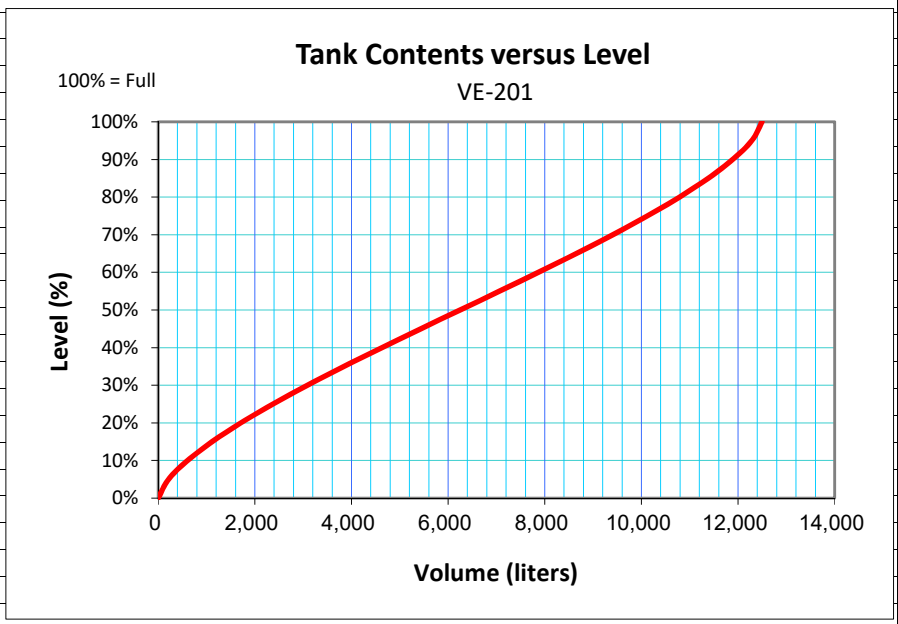
				CLIENT		TANK ID	
				Client Name		VE-201	
REV	PREPARED BY	DATE	APPROVAL	W.O.		REQUISITION NO.	SPECIFICATION NO.
0	S. Hall	01-May-2018		1234			
1				UNIT	AREA	PROCURED BY	INSTALLED BY
2				WFI	CUB		

1	<b>Shell</b>	Shell Length, tangent-to-tangent, L	4,200.0 mm
2		Shell Inside Diameter, D	1,800.0 mm
3			
4	<b>Heads</b>	Head Extension (tangent-to-end), a	533.4 mm
5			
6			
7	<b>Geometry</b>	The tank orientation is horizontal and the shell is cylindrical.	
8		Head types: elliptical (both heads are the same)	
9		Overall tank length	1,800.0 mm
10	<b>Volume</b>	Volume of tank completely full	12,497.5 liters

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Fill %	mm	liters
100%	1,800	12,497
95%	1,710	12,285
90%	1,620	11,891
85%	1,530	11,382
80%	1,440	10,788
75%	1,350	10,125
70%	1,260	9,410
65%	1,170	8,654
60%	1,080	7,868
55%	990	7,063
50%	900	6,249
45%	810	5,434
40%	720	4,629
35%	630	3,844
30%	540	3,088
25%	450	2,372
20%	360	1,710
15%	270	1,115
10%	180	607
5%	90	213
0%	0	0



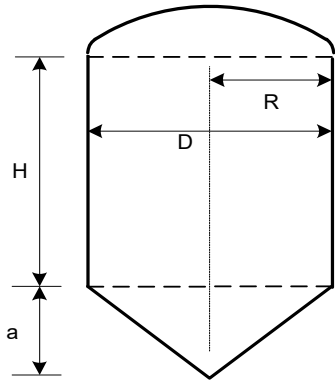
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DATA INPUT			
Project Data			
Prepared by	S. Hall		Client
Date	1-May-18		Client Name
• English	◦ SI		W.O.
			1234
			Unit
			WFI
			Area
			CUB
General Data			
Project Description		Sample Storage Tank	
Tank or Vessel Identification		VE-201	
Name for Saved Case (must be unique)		Example Vertical Storage Tank	
Tank Parameters			
<b>Orientation</b>	• Vertical	◦ Horizontal	
<b>Shell</b>	• Cylindrical	◦ Elliptical	
Shell Height, tangent-to-tangent, H		120.0 in	
Shell Inside Diameter, D		84.0 in	
		◦ Both the Same • Different	
<b>Heads</b>		◦ Flat	
Head Extension (tangent-to-end), a		60.0 in	◦ Ellipsoidal
			◦ Spherical
70.0 deg cone angle			◦ Torispherical
			• Conical
Fill Height, h		90.0 in	
<b>Top Head</b>		◦ Flat or Open	
Standard ASME F&D heads are f=1.0 and k=0.06		◦ Ellipsoidal	
		◦ Spherical	
Torispherical Parameters, f (dish)		0.8	• Torispherical
k (knuckle)		0.100	◦ Conical
a (extension)		18.946	
Calculation Results			
Volume of Tank, filled		3,640.6 gal	
Volume of Tank, to top tangent		3,358.6 gal	
Volume to Fill Height		1,199.5 gal	
Fill Height Corresponding to Specific Volume			
Desired Volume		1,981.3 gal	
Corresponding Fill Height		122.6 in	

**TANK VOLUME CALCULATIONS**

				CLIENT		TANK ID	
				Client Name		VE-201	
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0	S. Hall	01-May-2018		1234			
1				UNIT	AREA	PROCURED BY	INSTALLED BY
2				WFI	CUB		

1	<b>Shell</b>	Shell Height, tangent-to-tangent, H	120.0 in
2		Shell Inside Diameter, D	84.0 in
3			
4	<b>Heads</b>	Head Extension (tangent-to-end), a	60.0 in
5			
6			
7	<b>Geometry</b>	The tank orientation is vertical and the shell is cylindrical.	
8		Head types: conical bottom, torispherical (F&D top)	
9		Overall tank height	198.9 in
10	<b>Volume</b>	Volume of tank completely full	3,640.6 gal



70.0 deg cone angle

Fill %	in	gal
100%	180	3,359
95%	171	3,143
90%	162	2,927
85%	153	2,711
80%	144	2,495
75%	135	2,279
70%	126	2,063
65%	117	1,847
60%	108	1,631
55%	99	1,415
50%	90	1,200
45%	81	984
40%	72	768
35%	63	552
30%	54	350
25%	45	202
20%	36	104
15%	27	44
10%	18	13
5%	9	2
0%	0	0

