Aspire Energy Resources Ltd.
4304 39139 Highway 2A, Red Deer, AB T4S 2A8
Phone: (403) 314-5422, Fax: (403) 314-1823

Date:	09/07/2012	Rev:	0
Client:	**Aspire Energy Resources Limited**		
Project Number:	4188		
Drawing Number:	CA-4665-03		
A Number:	228554	**Approved:**	
CRN:	F-7938.2		
Serial Number:	L4-583	**Date:**	

Design in accordance with ASME Section VIII, Division 1:
Edition: 1983
Addenda: 1985
The higher stress values allowed by the 1999 Code Addenda have NOT been applied to this design.

Inside Diameter Calculations

Design Data

Design Pressure	P	50	PSIG	
Minimum Design Temperature		-20	F	
Maximum Design Temperature		199	F	Stress Values Are Affected by Temps Over 100 F!
Flange MAWP	Pf	285	PSIG	Flange MAWP Is Affected by Temps Over 100 F!
Inside Diameter	D	48	in	
Inside Radius	R	24	in	
Corrosion Allowance	c	0.125	in	
Shell Material Stress Value	S	17,500	PSI	SA-106-B, Smls - 15,000 SA-516-70 - 17,500
Head Material Stress Value	S	17,500	PSI	SA-234-WPB - 15,000 SA-516-70 - 17,500
Joint Efficiency (Type 1 Joint)	E	0.85		Full / Partial Radiography: 1.0 or
				Spot Radiography: Pipe - 1.0, Plate - 0.85 or
				No Radiography: Pipe - 0.85, Plate - 0.70

Shell Minimum Thickness

Shell tr = PR / (SE - 0.6P) = (50 * (24 + 0.125)) / ((17500 * 0.85) - (0.6 * 50))
Minimum shell thickness tr = 0.0813 in
tr + c = **0.2063** in

Actual shell thickness UT 0.3060 in
MAWP based on actual thk **111.10** PSIG

Head Minimum Thickness

Head tr = PD / (2SE - 0.2P) = (50 * (48 + 0.125 + 0.125)) / ((2 * 17500 * 0.85) - (0.2 * 50))
Minimum head thickness tr = 0.0811 in
tr + c = **0.2061** in

Actual head thickness UT 0.4490 in
MAWP based on actual thk **199.50** PSIG

MAWP of Vessel: **111.10** PSIG Design Limited by the Shell