

Aspire Energy Resources Ltd.

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Date:

06/27/12

Rev:

1

Client:

Aspire Energy Resources Limited

Project Number:

4143

Drawing Number:

D-03-05-07204-03

A Number:

2622628

Approved:

CRN:

K4469.2

Serial Number:

90-1303C

Date:

Design in accordance with ASME Section VIII, Division 1:

Edition: 1989

Addenda: 1989

The higher stress values allowed by the 1999 Code Addenda have NOT been applied to this design.

Outside Diameter Calculations

Design Data

Design Pressure	P	50	PSIG	
Minimum Design Temperature		-20	F	
Maximum Design Temperature		100	F	
Flange MAWP	Pf	50	PSIG	150# Flange - 285, 300# Flange - 740, 600# Flange - 1480
Outside Diameter	D	72	in	
Outside Radius	R	36	in	
Corrosion Allowance	c	0	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	1.00		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

$$\text{Shell tr} = \frac{PR}{SE + 0.4P} = \frac{(50 * 36)}{((17500 * 1) + (0.4 * 50))}$$

Minimum shell thickness tr = 0.1027 in

tr + c = 0.1027 in

Actual shell thickness

UT 0.1580 in

MAWP based on actual thk

76.94 PSIG

Head Minimum Thickness

$$\text{Head tr} = \frac{PD}{2SE + 1.8P} = \frac{(50 * 72)}{((2 * 17500 * 1) + (1.8 * 50))}$$

Minimum head thickness tr = 0.1026 in

tr + c = 0.1026 in

Actual head thickness

UT 0.2380 in

MAWP based on actual thk

116.39 PSIG

MAWP of Vessel:

50.00 PSIG

Design Limited by the Flange