



Equip. No. \_\_\_\_\_ Prov. Reg. No. 2842374 C.R.N. H-1645.231 Serial No. 3784 Yr. Inst. \_\_\_\_\_  
 Code/Div. ASME VIII, DIV1 Size: 6ft x 20ft Manufacturer: PENFABCO Yr. Bit. 1993  
 C. Stamp: U Service: SOUR PWHT: NIL Radiography: NIL Insulated: NO

**Design & Materials Data**

**HEAD:**  
 Top Mat'l. SA 516 70 Top Nom. 12.4mm Top C.A. 1.6mm  
 Btm. Mat'l. \_\_\_\_\_ Btm. Nom. \_\_\_\_\_ Btm. C.A. \_\_\_\_\_  
**CHANNEL:**  
 Material: \_\_\_\_\_ Nominal: \_\_\_\_\_ C.A. \_\_\_\_\_  
**BOOT**  
 Head Mat'l. \_\_\_\_\_ Head Nom. \_\_\_\_\_ Head C.A. \_\_\_\_\_  
 Shell Mat'l. \_\_\_\_\_ Shell Nom. \_\_\_\_\_ Shell C.A. \_\_\_\_\_  
**SHELL**  
 Material: SA 106 B Nominal: 9.5mm C.A. 1.6mm  
 MAWP Shell Side: 517 kPa @ Temp. 93°C  
 MAWP Tube Side: \_\_\_\_\_ @ Temp. \_\_\_\_\_

CLIENT	CANADIAN NATURAL RESOURCES	
FACILITY	FLAT ROCK COMPRESSOR STATION LSD 05-02-85-17 W6M	
ITEM	HEAT TREATER	
BY: KB	DATE: 02/2011	DWG.# 2

# UTS DATA

**CLIENT:** CANADIAN NATURAL RESOURCES LTD  
**EQUIPMENT:** HEAT TREATER  
**CRN#:** H-1645.231  
**PROV REG:** A 2842374  
**TESTED ON STREAM**

**FACILITY:** FLATROCK COMPRESSOR STATION  
**SERVICE:** SOUR  
**LOCATION:** 05-02-85-17 W6M  
**RTD JOB #:** 105.01610  
**REFER TO DRAWING:** 2

Test Point	THICKNESS DATA				Flag	T-Min	C.A.	Nom.	Short Term	Long Term	Ave. mm/py	Retirement Date
<b>205</b>												
Description:	LOWER HEAD											
	2011 2											
Min. Thick.	12.6				10.80		1.6	12.40			0	0
Average:	12.7											
Analysis:												
<b>210</b>												
Description:	LOWER SHELL											
	2011 2											
Min. Thick.	9.8				7.90		1.6	9.50			0	0
Average:	9.9											
Analysis:												
<b>215</b>												
Description:	LOWER SHELL											
	2011 2											
Min. Thick.	10				7.90		1.6	9.50			0	0
Average:	10.1											
Analysis:												
<b>220</b>												
Description:	MID SHELL											
	2011 2											
Min. Thick.	10				7.90		1.6	9.50			0	0
Average:	10.1											
Analysis:												
<b>225</b>												
Description:	BOTTOM SHELL											
	2011 2											
Min. Thick.	9.8				7.90		1.6	9.50			0	0
Average:	9.9											
Analysis:												
<b>230</b>												
Description:	BOTTOM SHELL											
	2011 2											
Min. Thick.	9.9				7.90		1.6	9.50			0	0
Average:	10											
Analysis:												

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**RTD JOB #:** 105.01610  
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Test Point	THICKNESS DATA				Flag	T-Min	C.A.	Nom.	Short Term	Long Term	Ave. mm/yr	Retirement Date
235												
Description:	UPPER SHELL											
	2011 2											
Min. Thick.	10				7.90		1.6	9.50				
Average:	10.1								0	0		
Analysis:												
240												
Description:	LOWER HEAD											
	2011 2											
Min. Thick.	12.5				10.80		1.6	12.40				
Average:	12.6								0	0		
Analysis:												

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**CRN#:**  
**PROV REG:**  
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**FACILITY:** FLATROCK COMPRESSOR STATION  
**SERVICE:** SOUR  
**LOCATION:** 05-02-85-17 W6M  
**RTD JOB #:** 105.01610  
**REFER TO DRAWING:** 2

Test Point	THICKNESS DATA	Flag	T-Min	C.A.	Nom.	Short Term	Long Term	Ave. mm/yr	Retirement Date
245	Description: 2" 90° ELBOW								
	2011 2								
Min. Thick.	4	4.81	1.6	.7	5.50				
Average:	4.2					0	0		
Analysis:	2011/02-RETIREMENT DATE: 2040								
250	Description: 2" CIRC BAND								
	2011 2								
Min. Thick.	3.8	4.81	1.6	.7	5.50				
Average:	4.1					0	0		
Analysis:	2011/02-RETIREMENT DATE: 2035								
255	Description: 3" CIRC BAND								
	2011 2								
Min. Thick.	2	4.81	1.6	.7	5.50				
Average:	3.2					0	0		
Analysis:	2011/02 GENERAL CORROSION PITTING THROUGHOUT 6:00 POSITON.RETIREMENT DATE: 2013.								
260	Description: 3" 90° ELBOW								
	2011 2								
Min. Thick.	6.5	6.65	1.6	1	7.60				
Average:	6.8					0	0		
Analysis:	2011/02-RETIREMENT DATE: 2091								
265	Description: 2" 90° ELBOW								
	2011 2								
Min. Thick.	4	4.81	1.6	.7	5.50				
Average:	4.2					0	0		
Analysis:	2011/02-RETIREMENT DATE: 2040								
267	Description: 3" CIRC BAND								
	2011 2								
Min. Thick.	2.7	2.63		.4	3.00				
Average:	3.5					0	0		
Analysis:	2011/02 GENERAL CORROSION PITTING THROUGHOUT 6:00 POSITION.								

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**FACILITY:** FLATROCK COMPRESSOR STATION  
**SERVICE:** SOUR  
**LOCATION:** 05-02-85-17 W6M  
**RTD JOB #:** 105.01610  
**REFER TO DRAWING:** 2

Test Point	THICKNESS DATA				Flag	T-Min	C.A.	Nom.	Short Term	Long Term	Ave. mm/py	Retirement Date
<b>270</b>												
Description: 2" 90° ELBOW												
2011 2												
Min. Thick.	3.8	4.81	1.6	.7	5.50				0	0		
Average:	3.9											
Analysis: 2011/02-RETIREMENT DATE: 2034												
<b>275</b>												
Description: 2" CIRC BAND												
2011 1												
Min. Thick.	3.8	4.81	1.6	.7	5.50				0	0		
Average:	3.9											
Analysis: 2011/02-RETIREMENT DATE: 2034												
<b>280</b>												
Description: 3" 90° ELBOW												
2011 2												
Min. Thick.	10.3	9.71		1.4	11.10				0	0		
Average:	10.6											
Analysis:												
<b>285</b>												
Description: 2" 90° ELBOW												
2011 2												
Min. Thick.	8	7.61		1.1	8.70				0	0		
Average:	8.4											
Analysis:												
<b>290</b>												
Description: 2" 90° ELBOW												
2011 2												
Min. Thick.	3.5	4.81	1.6	.7	5.50				0	0		
Average:	3.8											
Analysis: 2011/02-RETIREMENT DATE: 2028												
<b>291</b>												
Description: 3" 90° ELBOW												
2011 2												
Min. Thick.	5.5	4.81		.7	5.50				0	0		
Average:	5.6											
Analysis:												

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**RTD JOB #:**105.01610  
**REFER TO DRAWING: 2**

Test Point	THICKNESS DATA				Flag	T-Min	C.A.	Nom.	Short Term	Long Term	Ave. mm/py	Retirement Date
292												
Description:	2"90° ELBOW											
	2011 2											
Min. Thick.	4.3	4.81	1.6	.7	5.50							
Average:	4.5							0		0		
Analysis:	2011/02-RETIREMENT DATE: 2052											
293												
Description:	3" 90° ELBOW											
	2011 2											
Min. Thick.	4.4	4.81	1.6	.7	5.50							
Average:	4.7							0		0		
Analysis:	2011/02-RETIREMENT DATE: 2057											
294												
Description:	2"90° ELBOW											
	2011 2											
Min. Thick.	3.8	4.81	1.6	.7	5.50							
Average:	4.2							0		0		
Analysis:	2011/02 MIN SCAN AT MID BAND:MID APEX.RETIREMENT DATE: 2034											