



F-3090.213

Equip. No. _____ Prov. Reg. No. **Ⓐ 505670** C.R.N. P-0431.213 Serial No. **03-4059-1** Yr. Inst. _____
 Code/Div. **ASME VIII, Div 1** Size: **42in x 12ft** Manufacturer: **OPSCO ENERGY IND.** Yr. Blt. **2004**
 C. Stamp: _____ Service: **SOUR** PWHT: **HT** Radiography: **100%** Insulated: **YES**

Design & Materials Data

HEAD:
 Top Mat'l. **SA 36** Top Nom. **7.9mm** Top C.A. **N/S**
 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 36** Nominal: **7.9mm** C.A. **N/S**
UBE A Shell Side: **34689 kPa** @ Temp. **93°C**
JBE B Tube Side: **9308 kPa** @ Temp. **93°C**

CLIENT	CANADIAN NATURAL RESOURCES LTD	
FACILITY	WOLVERINE	
	LSD d-66-D/93-P-02	
ITEM	LINE HEATER & PIPING	
BY: CW	DATE: 05/2014	DWG.# 2

UTS DATA

CLIENT: CANADIAN NATURAL RESOURCES
EQUIPMENT: LINE HEATER AND PIPING
CRN#: P-0431.213
PROV REG: A 505670

FACILITY: WOLVERINE d-66-D
SERVICE:
LOCATION: d-66-D/93-P-02
RTD JOB #: 10.114525

TESTED STREAM

REFER TO DRAWING: 2

Test Point	THICKNESS DATA				Flag	T-Min	C.A.	Nom.	Short Term	Long Term	Ave. mm/py	Retirement Date
210												
Description: 3" NOZZLE CIRC												
	2009	9	2011	10	2014	4						
Min. Thick.	14.8		14.6		14.6		12.00	3.2	15.20	0	.04	
Average:	15.2		15.1		15.1					0	.02	
Analysis:												
215												
Description: 3" NOZZLE CIRC												
	2009	9	2011	10	2014	4						
Min. Thick.	15.3		15.3		15.2		12.00	3.2	15.20	.04	.02	
Average:	15.8		15.8		15.6					.08	.04	
Analysis:												
230												
Description: 2" NOZZLE CIRC												
	2009	9	2011	10	2014	4						
Min. Thick.	8.7		8.5		8.5		5.50	3.2	8.70	0	.04	
Average:	9.2		9.1		9.1					0	.02	
Analysis: 2014/05 MIN SCAN @ 6:00 POSITION.												
235												
Description: 2" NOZZLE CIRC												
	2009	9	2011	10	2014	4						
Min. Thick.	9		8.7		8.7		5.50	3.2	8.70	0	.07	
Average:	9.3		9.1		9					.04	.07	
Analysis:												
255												
Description: SHELL												
	2009	9	2011	10	2014	4						
Min. Thick.	8.2		8.1		8.1		5.50	3.2	8.70	0	.02	
Average:	8.3		8.2		8.2					0	.02	
Analysis:												
260												
Description: SHELL												
	2009	9	2011	10	2014	4						
Min. Thick.	8.2		8.1		8.1		5.50	3.2	8.70	0	.02	
Average:	8.3		8.2		8.2					0	.02	
Analysis:												

UTS DATA

CLIENT: CANADIAN NATURAL RESOURCES
EQUIPMENT: LINE HEATER AND PIPING
CRN#:
PROV REG:
TESTED ON STREAM

FACILITY: WOLVERINE d-66-D
SERVICE:
LOCATION: d-66-D/93-P-02
RTD JOB #: 10.114525
REFER TO DRAWING: 2

Test Point	THICKNESS DATA				Flag	T-Min	C.A.	Nom.	Short Term	Long Term	Ave. mm/py	Retirement Date
205												
Description: 3" 90° ELBOW												
	2009	9	2011	10	2014	4						
Min. Thick.	14.7		14.5		14.5		13.30	1.9	15.20	0	.04	
Average:	15		15		15					0	0	
Analysis:												
220												
Description: 3" 90° ELBOW												
	2009	9	2011	10	2014	4						
Min. Thick.	14.9		14.7		14.7		13.30	1.9	15.20	0	.04	
Average:	15.2		15.1		15					.04	.04	
Analysis:												
225												
Description: 2" 90° ELBOW												
	2011	10	2014	4								
Min. Thick.	3.8		3.8				3.41	.5	3.90	0	0	
Average:	4		4							0	0	
Analysis:												
240												
Description: 2" 90° ELBOW												
	2014	4										
Min. Thick.	3.3						3.41	2.0	.5	3.90		
Average:	3.7									0	0	
Analysis:												
245												
Description: 3" 90° ELBOW												
	2009	9	2011	10	2014	4						
Min. Thick.	14.8		14.7		14.7		13.30	1.9	15.20	0	.02	
Average:	15.2		15.2		15.1					.04	.02	
Analysis:												
250												
Description: 3" 90° ELBOW												
	2009	9	2011	10	2014	4						
Min. Thick.	7.2		7.1		7.1		6.65	1	7.60	0	.02	
Average:	7.6		7.5		7.4					.04	.04	
Analysis:												