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Ultrasonic Thickness Inspection Report

Client:	Vause Oil Production Services Ltd.	**Location:**	Lion Nathan Brewery, Auckland City
Project:	Air Receiver at Lion Nathan Brewery	**Order No:**	5191 dtd 26-Nov-10
Plant Name:	Air Receiver at Lion Nathan Brewery	**Activity No:**	Not Applicable
Equipment Name:	Air Receiver (Eqpt official no. 78284)	**Item Tested:**	Vessel wall thickness
Job Description:	Thickness assessment of bottom of Air Receiver		
Inspection Spec:	N/A	**Acceptance Criteria:**	Report Findings
SGS Procedure:	ITP402	**Welding Process:**	N/A
Surface Condition:	Painted	**Heat Treatment:**	Not Specified
Material Type:	Carbon Steel	**Equipment:**	DMS 2 S/N:AKL00YHF8
Nominal Thickness:	Not Specified	**Test Blocks:**	Stepw edge
Technique:	Single Spot - Single Measurement (SS)	**Couplant:**	Ultragel
Calibration:	2 to 20 mm at velocity 5920 m/sec	**Order Of Accuracy:**	± 0.5 mm
Test Restrictions:	Paint flake surface, Limited access	**Date of Test:**	30-Nov-10

Ultrasonic Scan	Probe	Type	Size (mm)	Angle (◦)	Freq. (Mhz)	Reading Achieved	Eval (dB)
Parent metal	FH2E	Twin	10	0	5	1st - 2nd BWE	60~70

Test Results:

Ultrasonic Thickness testing done to assess remaining thickness of Air Receiver (Equipment official no. 78284) on locations as detailed as below:

Continued...

LEGEND											
SRC	ROOT CAVITY	DNC	DOES NOT COMPLY	C	COMPLIES						
SGI	INCOMPLETELY FILLED GROOVE	SSP	SPATTER	SMH	HAMMER MARK	KE	EDGE CRACK	LP	INCOMPLETE ROOT PENETRATION		
SGS	SHRINKAGE GROOVE	SED	EXCESSIVE DRESSING	STS	TORN SURFACE	KC	CRATER CRACK	GP	GAS PORE		
SXP	EXCESS PENETRATION HEAD	SMG	GRINDING MARK	KL	LONGITUDINAL CRACK	LS	LACK OF SIDE FUSION	PU	UNIFORM POROSITY		
PG	LOCALISED POROSITY	SUC	UNDERCUT	SMT	TOOL MARK	KT	TRANSVERSE CRACK	LR	LACK OF ROOT FUSION		
		PL	LINEAR POROSITY	WH	WORM HOLE	CP	CRATER PIPE	BT	BURN-THROUGH		

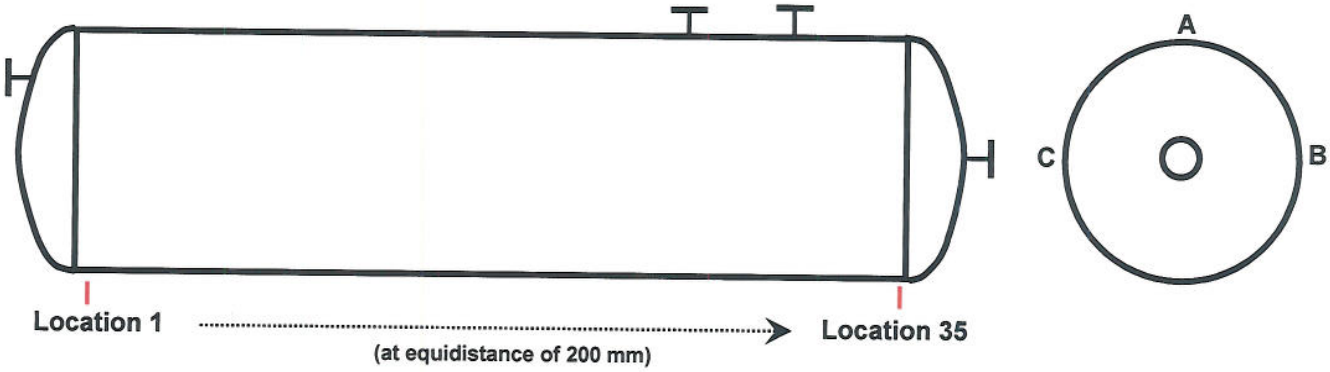
Technician: Milan Mehta AINDT UTT Report printed on 30/11/2010 IANZ Signatory: Quan Zhang (AINDT-UT2)

Test Results (continued)

Ultrasonic Thickness Inspection Report

Layout detail & Findings :

1. **Shell Thickness readings taken outlining following orientation and locations :**



Thickness readings noted on Orientation A, B & C from location 1 to 35 as below :

	1	2	3	4	5	6	7	8	9	10	11	12
A	12.8	12.8	12.5	12.8	12.5	12.8	12.8	12.8	12.9	12.6	12.8	12.8
B	13.5	13.0	13.4	13.0	13.0	12.4	13.1	13.0	13.0	13.0	12.8	12.6
C	13.0	13.0	13.0	13.0	13.0	13.5	13.0	13.1	13.1	13.1	12.7	13.1

	13	14	15	16	17	18	19	20	21	22	23	24
A	12.8	12.6	12.6	12.7	13.0	13.1	12.9	12.8	13.0	12.9	13.1	12.9
B	12.8	12.7	12.8	12.8	12.3	13.0	13.0	13.1	13.1	13.0	13.0	13.1
C	12.7	13.1	12.7	12.8	13.1	13.2	12.7	13.1	13.2	13.0	13.1	13.1

	25	26	27	28	29	30	31	32	33	34	35
A	13.2	12.6	12.5	12.5	12.7	12.6	12.6	12.6	12.7	12.5	12.8
B	13.0	12.4	13.2	**12.0**	12.6	12.6	12.7	12.7	12.8	12.4	12.2
C	13.1	12.7	13.2	12.5	12.8	12.5	12.5	12.8	12.9	12.9	12.6

Minimum observed thickness readings shown in Yellow shade.
Lowest found thickness shown in Blue shade

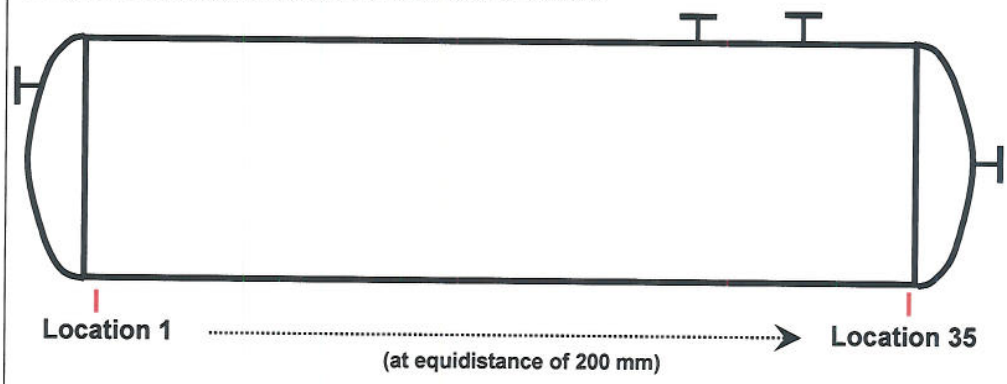
Continued.....

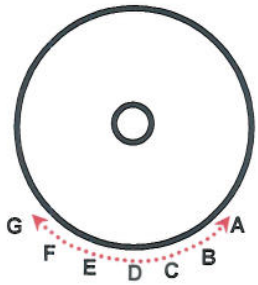
SGS New Zealand Ltd, NDT & Materials Services

Test Results (continued) **Ultrasonic Thickness Inspection Report**

2. Thickness assessment done on bottom band width of 1200 mm of the tank.

Detail of orientation & locations outlined as below:





Orientation A to G at equidistance of 200 mm with location D at bottom

Thickness readings noted on Orientation A to G from location 1 to 35 as below :

	A	B	C	D	E	F	G
1	13.0	13.0	12.9	12.9	13.1	13.0	13.0
2	13.0	13.0	13.0	12.3	13.0	13.1	13.1
3	13.0	13.1	13.1	13.0	13.0	13.1	13.1
4	13.0	13.1	13.0	12.9	12.8	13.1	13.1
5	13.0	13.1	13.1	12.9	12.8	13.1	13.1
6	13.0	13.0	13.1	12.8	12.7	13.1	13.1
7	13.0	13.1	13.1	12.8	12.9	13.1	13.1
8	13.0	13.0	12.5	12.9	13.0	13.1	13.1
9	13.1	13.1	12.9	13.0	13.1	13.0	13.1
10	13.4	13.0	13.0	13.0	13.0	13.1	13.0
11	12.9	12.9	12.9	12.9	12.9	12.9	12.8
12	12.9	12.9	12.9	12.6	12.6	12.5	12.8
13	12.9	12.9	12.9	12.7	12.9	12.8	12.8
14	12.9	12.9	12.8	12.8	12.9	12.8	12.3
15	12.9	12.9	12.8	12.7	12.9	12.2	11.8
16	12.8	12.8	12.8	12.8	12.8	12.8	12.6
17	12.9	13.0	13.0	12.4	13.0	13.1	13.1

	A	B	C	D	E	F	G
18	13.0	13.0	13.0	13.0	12.9	13.1	13.1
19	13.1	13.0	13.0	13.0	13.1	13.2	13.2
20	13.1	13.0	13.0	12.1	13.1	13.2	13.1
21	13.1	12.6	13.1	13.0	13.1	13.1	13.1
22	13.1	13.0	13.0	13.1	13.1	13.1	13.2
23	13.1	13.0	13.1	13.1	13.1	13.2	13.2
24	13.1	12.4	13.1	13.0	13.0	13.2	13.2
25	13.1	12.5	12.1	13.0	13.1	13.2	12.8
26	12.6	12.7	13.2	12.7	12.8	12.8	12.8
27	12.5	12.5	13.2	12.1	12.9	12.9	12.9
28	12.6	12.6	12.7	12.7	12.3	12.9	12.9
29	12.6	12.5	12.7	12.8	12.9	12.9	12.9
30	12.6	12.7	12.4	12.8	12.9	12.9	12.9
31	12.7	12.6	12.3	12.8	12.9	12.8	12.7
32	12.8	12.8	12.7	12.8	13.0	12.6	12.9
33	12.7	12.8	12.8	12.9	12.4	13.4	13.0
34	12.7	12.8	12.8	12.9	13.0	13.0	13.0
35	12.7	12.8	12.8	12.8	13.0	13.0	13.0

Minimum observed thickness readings shown in Yellow shade.

Lowest found thickness shown in Blue shade

Continued.....

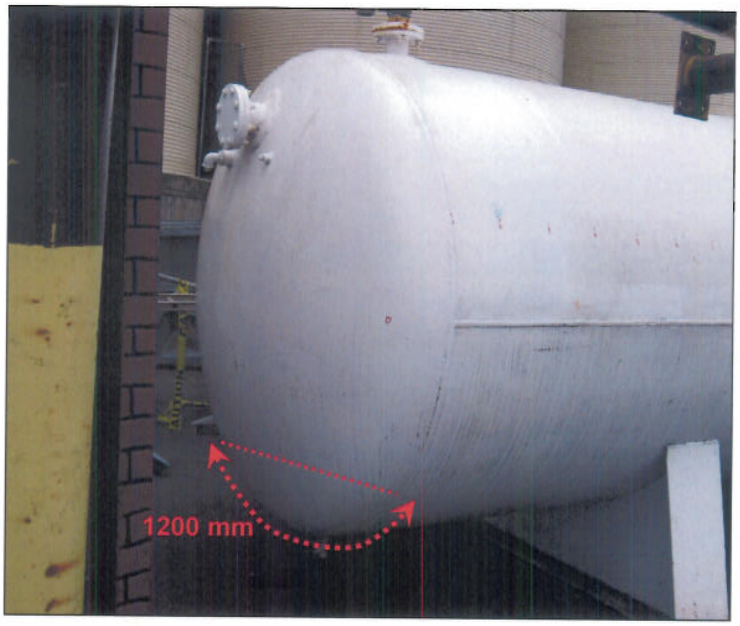
3. Thickness assessment done on bottom band width of side domes.

UTT scanning at random done at the bottom of domes in radial length of 1200 mm
Detail of area outlined as below:

RHS Dome

Thickness found between **16.1** to **16.5 mm**

LHS Dome



Thickness found between **16.1** to **16.7 mm**

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