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Report No: UTT01  
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Correlation No: N/A

## Ultrasonic Thickness Inspection Report

<b>Client:</b>	Vause Oil Production Services Ltd.			<b>Location:</b>	Lion Nathan Brewery, Auckland City		
<b>Project:</b>	Air Receiver at Lion Nathan Brewery			<b>Order No:</b>	5191 dtd 26-Nov-10		
<b>Plant Name:</b>	Air Receiver at Lion Nathan Brewery			<b>Activity No:</b>	Not Applicable		
<b>Equipment Name:</b>	Air Receiver (Eqpt official no. 78284)			<b>Item Tested:</b>	Vessel wall thickness		
<b>Job Description:</b>	Thickness assessment of bottom of Air Receiver						
<b>Inspection Spec:</b>	N/A			<b>Acceptance Criteria:</b>	Report Findings		
<b>SGS Procedure:</b>	ITP402			<b>Welding Process:</b>	N/A		
<b>Surface Condition:</b>	Painted			<b>Heat Treatment:</b>	Not Specified		
<b>Material Type:</b>	Carbon Steel			<b>Equipment:</b>	DMS 2 S/N:AKL00YHF8		
<b>Nominal Thickness:</b>	Not Specified			<b>Test Blocks:</b>	Stepw edge		
<b>Technique:</b>	Single Spot - Single Measurement (SS)			<b>Couplant:</b>	Ultragel		
<b>Calibration:</b>	2 to 20 mm at velocity 5920 m/sec			<b>Order Of Accuracy:</b>	± 0.5 mm		
<b>Test Restrictions:</b>	Paint flake surface, Limited access			<b>Date of Test:</b>	30-Nov-10		
<b>Ultrasonic Scan</b>	<b>Probe</b>	<b>Type</b>	<b>Size (mm)</b>	<b>Angle (°)</b>	<b>Freq. (Mhz)</b>	<b>Reading Achieved</b>	<b>Eval (dB)</b>
Parent metal	FH2E	Tw in	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		DNC	DOES NOT COMPLY	C	COMPLIES	KE	EDGE CRACK	LP	INCOMPLETE ROOT PENETRATION
SRC	ROOT CAVITY	SSP	SPATTER	SMH	HAMMER MARK	KC	CRATER CRACK	GP	GAS PORE
SGI	INCOMPLETELY FILLED GROOVE	SED	EXCESSIVE DRESSING	STS	TORN SURFACE	LS	LACK OF SIDE FUSION	PU	UNIFORM POROSITY
SGS	SHRINKAGE GROOVE	SMC	GRINDING MARK	KL	LONGITUDINAL CRACK	KT	TRANSVERSE CRACK	LR	LACK OF ROOT FUSION
SXP	EXCESS PENETRATION HEAD	SUC	UNDERCUT	SMT	TOOL MARK	CP	CRATER PIPE	BT	BURN-THROUGH
PG	LOCALISED POROSITY	PL	LINEAR POROSITY	WH	WORK WELD				

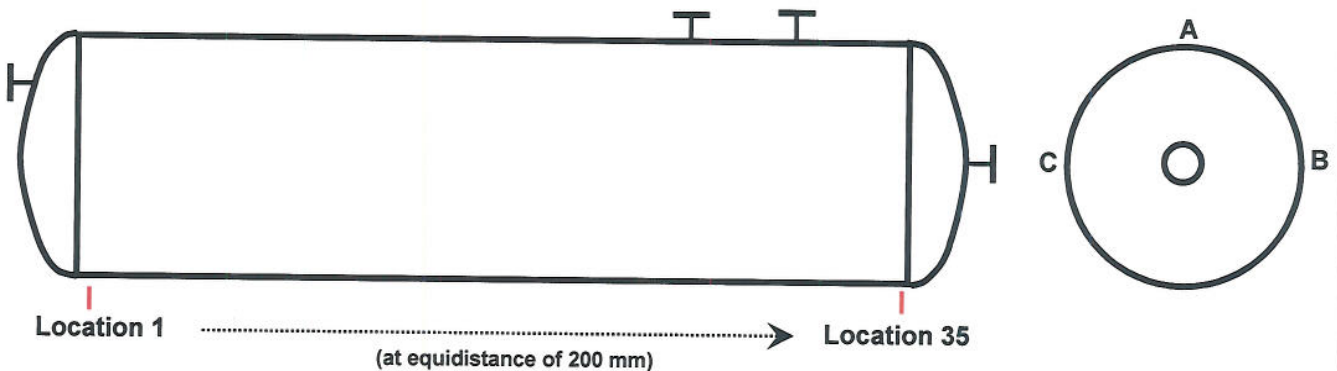
Technician: Milan Mehta AINDT UTT Report printed on 30/11/2010 IANZ Signatory: Quan Zhang (AINDT-UT2)

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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.....

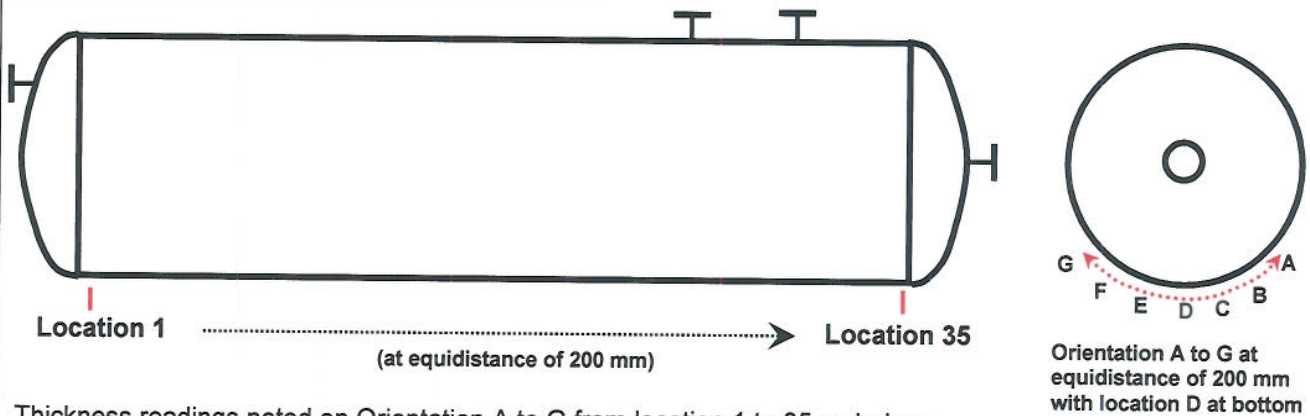


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**Test Results (continued)**

**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:



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.**

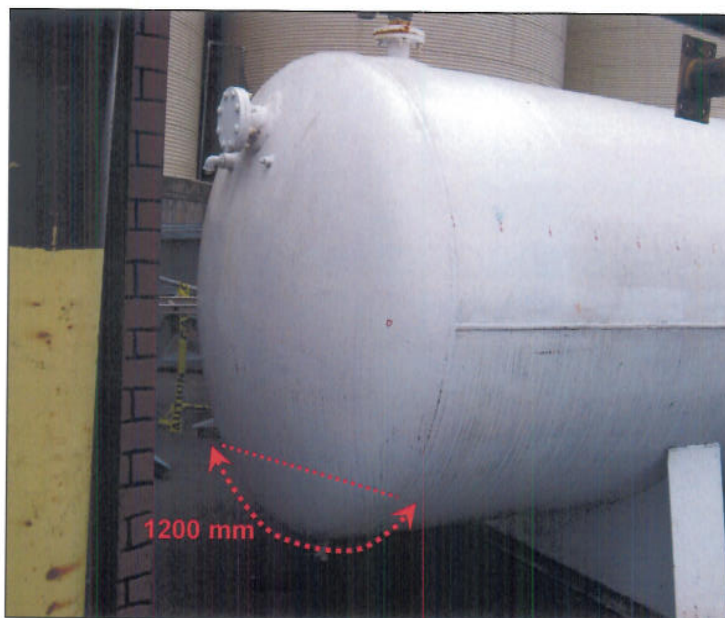
UTT scanning at random done at the bottom of domes in radial length of 1200 mm  
 Detail of area outlined as below:

RHS Dome



Thickness found between **16.1 to 16.5 mm**

LHS Dome



Thickness found between **16.1 to 16.7 mm**

--- End of the report ---

