



GE Inspection Services

GEIS Job #: JXID0105

API-653 Aboveground Storage Tank Examination Evaluation Summary

Company:	Water Recovery Inc.	Location:	Jacksonville, Florida
Equipment Title:	Oil Tank 1P	Equipment No.:	1P
Department:	Water/Oil Separation	Service Component #:	N/A
Evaluation By:	J. Carr	Evaluation Date:	7/30/2010

INSPECTION HISTORY (Date of Examinations)

<u>(Date of Current Examinations)</u>			
Formal External Visual Examination :	<u>7/29/2010</u>	Internal Examination :	<u>7/29/2010</u>
External UT Thickness Examination :	<u>7/29/2010</u>		
<u>(Date of Previous Examinations)</u>			
Formal External Visual Examination :	<u>N/A</u>	Previous Shell Life:	<u>N/A</u> Years
External UT Thickness Examination :	<u>N/A</u>	Previous Floor Life:	<u>N/A</u> Years
Internal Examination :	<u>N/A</u>		

Notable Visual Examination Findings

External Examination
No issues.
Internal Examination
Shell has early stages of corrosion with minimal metal loss. Floor has random areas of corrosion concentrated near floor to shell area. Corrosion is approximately 1" to 3" in diameter with a maximum measured depth of 0.100"

Summary

In Compliance With Code For Continued Operation Under Current Conditions:				
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Could not be determined		
Maximum Corrosion R	0.005	Estimated Remaining Life:	5.0	Years (FLOOR)
★	Next API Inspection:	7/29/2015	★	
The next formal <u>external</u> visual inspection should be scheduled within			5.0	years.
The next <u>external</u> UT thickness inspection should be scheduled within			15.0	years.
The next <u>internal</u> or <u>on-stream</u> inspection should be scheduled within			5.0	years.

Required Action Items:

None

Recommended Action Items:

None

External Visual: 7/29/2015
 External UT Thickness: 7/28/2025
 Internal Visual: 7/29/2015



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API 653 Minimum Acceptable Thickness Calculations

TANK DATA:

Equipment Title: Oil Tank 1P
 Equipment No.: 1P
 Department: Water/Oil Separation
 Design Code: API 650
 Contents/Product: Oil
 Outside Diameter (ft): 12
 Inspector: J. Carr

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 Inspection Date: 1/24/2006
 Max. Liquid Level (ft): 27
 Joint Efficiency: 0.70
 Specific Gravity: 0.90
 Shell Material: Unknown
 Date of Service: 01/01/85
 Evaluation Date: 7/30/2010

FORMULA'S)

$$t_{\min} (\text{in}) = 2.6D(H)G/Sx E$$

Ref. - API 653, Dec. 1995, 2.3.3.1

$$\text{Corrosion Rate (in/yr)} = ("t" \text{ Nom.} - "t" \text{ Meas.}) / \text{Years in Operation (Estimated)}$$

$$\text{Estimated RCA} = ("t" \text{ Meas.} - "t" \text{ Min.})$$

$$\text{Remaining Life} = \text{RCA} / \text{Corr. Rate}$$

STRESS CALCS	TENSILE	k	S1	YIELD	k	S2	S
1st & 2nd COURSE	55000	0.429	23595	30000	0.80	24000	23595
ALL OTHER COURSES	55000	0.472	25960	30000	0.88	26400	25960

*NOTE: UTILIZE THE SMALLER OF THE TWO "S" VALUES FOR MINIMUM WALL CALCULATIONS.

SHELL PLATES

Using Previous Shell UT Thickness? NO (YES or NO)

Elevation (ft)	Course	Height	S	API T Minimum	Previous T (in)	Governing T (in)	Estimated Corr. Rate	Estimated RCA
0.25	1	26.75	23595	0.100	0.437	0.396	0.002	0.296
2.00	1	25.00	23595	0.100	0.437	0.389	0.002	0.289
4.00	1	23.00	23595	0.100	0.437	0.386	0.002	0.286
6.00	1	21.00	23595	0.100	0.437	0.392	0.002	0.292
8.00	1	19.00	23595	0.100	0.375	0.341	0.001	0.241
10.00	2	17.00	23595	0.100	0.250	0.214	0.001	0.114
12.00	2	15.00	23595	0.100	0.250	0.219	0.001	0.119
14.00	2	13.00	23595	0.100	0.250	0.229	0.001	0.129
16.00	2	11.00	23595	0.100	0.250	0.232	0.001	0.132
18.00	2	9.00	23595	0.100	0.250	0.231	0.001	0.131
20.00	3	7.00	25960	0.100	0.250	0.244	0.000	0.144
22.00	3	5.00	25960	0.100	0.250	0.249	0.000	0.149
24.00	3	3.00	25960	0.100	0.250	0.249	0.000	0.149
26.00	3	1.00	25960	0.100	0.250	0.249	0.000	0.149
27.00	3	0.00	25960	0.100	0.250	0.249	0.000	0.149

The lowest (governing) remaining corrosion allowance for the shell is: **0.114 in.**
 Anticipated remaining life of the shell is: **81.0 yrs.**

ROOF PLATES

UT Thickness Readings over 100 sq. in. grid (or single lowest t over 0.090")

0.219	0.223	0.228	0.229	0.231
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Roof Nominal T = **0.250 in.**

Average thickness of grid: **0.226 in.**

Corresponding RCA for the roof is: **0.129 in.** Roof Remaining Life = **106.5 yr(s).**

FLOOR PLATES

Does tank design provide means for detection and containment of a bottom leak? **NO**

Does tank incorporate a reinforced bottom lining, >0.05 in. thick **NO**

Using Previous Floor UT Thickness for nominal thickness? **NO**

Minimum acceptable bottom plate thickness: **0.100 in.**

Nominal t = **0.250 in** Lowest t = **0.125 in** Corrosion Rate = **0.005** RCA = **0.025**

Anticipated remaining life of floor plate is: **5.0 yr(s).**