

EMERALD BOILER AND PRESSURE VESSEL INSPECTIONS INC.
PRESSURE VESSEL INSPECTION REPORT

COMPANY DATA			
COMPANY	Lightstream Resources	DATE	February 12 2014
FACILITY	North Handsworth	LSD	05-05-11-07 W2M
COMPANY TANK IDENTIFICATION #			

VESSEL DATA											
DESCRIPTION	Vertical treater					MANUFACTURER	Natco				
MFG. DATE	1982					NB#/A#/S#	A#191798				
SERIAL #	L-6-251					CRN#	D781.21				
DIAMETER	6'					LENGTH	27'				
UNIT NUMBER						INSP. METHOD					
MAWP SHELL	50 <input type="checkbox"/> kpa	<input checked="" type="checkbox"/> psi	@ Temp 200	<input type="checkbox"/> C	<input checked="" type="checkbox"/> F	MDMT	<input type="checkbox"/> C <input type="checkbox"/> F	@	<input type="checkbox"/> kpa <input type="checkbox"/> psi		
MAWP TUBE	<input type="checkbox"/> kpa	<input type="checkbox"/> psi	@ Temp	<input type="checkbox"/> C	<input type="checkbox"/> F						
PSV INFORMATION <input type="checkbox"/> N/A 2ND PSV <input type="checkbox"/> N/A											
MANUFACTURER			LOCATION			MANUFACTURER			LOCATION		
SERIAL #			CRN #			SERIAL #			CRN #		
MODEL #			PSV #			MODEL #			PSV #		
SET PRESSURE			CAPACITY			SET PRESSURE			CAPACITY		
INLET SIZE			OUTLET SIZE			INLET SIZE			OUTLET SIZE		
LAST SERVICE			SERVICE INTERVAL			LAST SERVICE			SERVICE INTERVAL		
CO. IDENT. #						CO. IDENT. #					
VESSEL MATERIAL AND THICKNESS <input type="checkbox"/> N/A											
HEAD THICKNESS	0.3125"	MATERIAL	A 285C	C.A.	n/s	<input type="checkbox"/> None	<input type="checkbox"/> N/A				
HEAD THICKNESS	0.3125"	MATERIAL	A 285C	R.T.	2	<input type="checkbox"/> None	<input type="checkbox"/> N/A				
SHELL THICKNESS	0.250"	MATERIAL	A 285C	HT	no	<input type="checkbox"/> None	<input type="checkbox"/> N/A				
IS VESSEL GROUNDED	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N	<input type="checkbox"/> N/A	INTERNAL INTERVAL <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> ____							
IS VESSEL SECURED/BOLTED DOWN	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N	<input type="checkbox"/> N/A								
NAMEPLATE SECURE	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N	<input type="checkbox"/> N/A	EXTERNAL INTERVAL <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> ____							
NAMEPLATE LEGIBLE	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N	<input type="checkbox"/> N/A								
LADDERS/HANDRAIL/WALKWAY DAMAGE	<input type="checkbox"/> Y	<input type="checkbox"/> N	<input checked="" type="checkbox"/> N/A	INSPECTION METHOD <input checked="" type="checkbox"/> VI <input checked="" type="checkbox"/> VE <input checked="" type="checkbox"/> UT <input type="checkbox"/> mpi							
VESSEL FIT FOR SERVICE	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N	<input type="checkbox"/> N/A								
VESSEL REQUIRES REPAIR	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N	<input type="checkbox"/> N/A	SIGN OFF:				DATE:			
FUTURE ACTION REQUIRED	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N	<input type="checkbox"/> N/A								
INSPECTION REQUESTED BY: Shawn Bryce						INSPECTION PERFORMED BY: Neil Pinkney					

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EXTERNAL VISUAL INSPECTION

ACCESS & COVERAGE				SUPPORTS			
MANWAY/ACCESS SIZE		16" <input type="checkbox"/> N/A		VESSEL HAS		<input checked="" type="checkbox"/> Skirt <input type="checkbox"/> Legs <input type="checkbox"/> N/A	
COATING		<input checked="" type="checkbox"/> Disbonded <input type="checkbox"/> Blistered		<input checked="" type="checkbox"/> Good Condition <input type="checkbox"/> Cracked <input type="checkbox"/> Distorted <input type="checkbox"/> Broken <input type="checkbox"/> Bolts Missing/Loose/Damaged <input type="checkbox"/> Support Ring Damage <input type="checkbox"/> Skirt Access <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
<input type="checkbox"/> N/A <input type="checkbox"/> Poor Cleaning <input checked="" type="checkbox"/> Adequately Clean <input type="checkbox"/> Peeling/U.V. Damage							
SHELL				NOZZLES			
<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good Condition <input type="checkbox"/> External Corrosion <input type="checkbox"/> Pitted – Light <input type="checkbox"/> Pitted – External		<input checked="" type="checkbox"/> Insulated/Cladd <input type="checkbox"/> Good <input checked="" type="checkbox"/> Poor <input type="checkbox"/> Scaled – Light <input type="checkbox"/> Scaled – Severe <input checked="" type="checkbox"/> Blistered <input checked="" type="checkbox"/> See Comments		<input type="checkbox"/> N/A <input type="checkbox"/> Good Condition <input type="checkbox"/> Scaled <input type="checkbox"/> Poor Welding <input checked="" type="checkbox"/> Seal Face Corrosion <input type="checkbox"/> Internal Corrosion		<input type="checkbox"/> Cracked <input type="checkbox"/> Plugged <input type="checkbox"/> Leaking <input type="checkbox"/> Bolts Missing/Loose/Damaged	
HEAD				HEAD			
<input type="checkbox"/> Top <input type="checkbox"/> North <input type="checkbox"/> West <input checked="" type="checkbox"/> N/A				<input type="checkbox"/> Bottom <input type="checkbox"/> South <input type="checkbox"/> East <input checked="" type="checkbox"/> N/A			
<input type="checkbox"/> Good Condition <input type="checkbox"/> Pitted – Light <input type="checkbox"/> Scaled – Light <input type="checkbox"/> External Coating		<input type="checkbox"/> External Corrosion <input type="checkbox"/> Pitted – Severe <input type="checkbox"/> Scaled – Heavy <input type="checkbox"/> Insulated/Clad <input type="checkbox"/> Good <input type="checkbox"/> Poor		<input type="checkbox"/> Good Condition <input type="checkbox"/> Pitted – Light <input type="checkbox"/> Scaled – Light <input type="checkbox"/> External Coating		<input type="checkbox"/> External Corrosion <input type="checkbox"/> Pitted – Severe <input type="checkbox"/> Scaled – Heavy <input type="checkbox"/> Insulated/Clad <input type="checkbox"/> Good <input type="checkbox"/> Poor	
EXTERNAL PIPING							
External Piping	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Good Condition	<input type="checkbox"/> Leaks	<input checked="" type="checkbox"/> Corrosion	<input type="checkbox"/> See Comments		
Cladding/Insulation	<input type="checkbox"/> N/A	<input type="checkbox"/> Good Condition	<input type="checkbox"/> Dents/Holes	<input type="checkbox"/> Missing	<input type="checkbox"/> See Comments		
Supports	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Good Condition	<input type="checkbox"/> Missing/Stress	<input type="checkbox"/> Corrosion	<input type="checkbox"/> See Comments		
Coating	<input type="checkbox"/> N/A	<input type="checkbox"/> Good Condition	<input checked="" type="checkbox"/> Chipped/Missing	<input type="checkbox"/> Corrosion	<input type="checkbox"/> See Comments		
FIRETUBE BURNER				FIRETUBE STACK			
<input type="checkbox"/> N/A				<input type="checkbox"/> N/A			
<input type="checkbox"/> Misalignment <input type="checkbox"/> Missing <input type="checkbox"/> Not Fired <input type="checkbox"/> Requires Repair/Replacement/Combustion Analysis <input type="checkbox"/> Firetube Failure				<input type="checkbox"/> Corrosion/Holes <input type="checkbox"/> Poor Welding <input type="checkbox"/> Cracked <input type="checkbox"/> Requires Repair/Replacement <input type="checkbox"/> Missing			

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INTERNAL VISUAL INSPECTION

INTERNAL PROTECTION		ANODES	
<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good Condition <input type="checkbox"/> Blistered – Light <input type="checkbox"/> Disbonded <input type="checkbox"/> Mechanical Damage <input type="checkbox"/> Coating Mils ____	<input checked="" type="checkbox"/> Coating <input type="checkbox"/> Holidays <input type="checkbox"/> Blistered – Severe <input type="checkbox"/> Chipped/Peeling <input type="checkbox"/> Mechanically Removed or Sandblasted	<input type="checkbox"/> N/A <input type="checkbox"/> Dirty <input type="checkbox"/> New/Replaced <input type="checkbox"/> Bonding Cable Attached	<input type="checkbox"/> Good Condition <input type="checkbox"/> Consumed ____% <input type="checkbox"/> Missing
DEMISTER SCREEN/PAD		MANWAY	
<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Dislodged <input type="checkbox"/> Missing	<input type="checkbox"/> Good Condition <input type="checkbox"/> Broken <input type="checkbox"/> Fowed ____%	<input type="checkbox"/> N/A <input type="checkbox"/> Coating Damage <input type="checkbox"/> Mechanical Damage <input type="checkbox"/> Bolts Missing/Loose	<input checked="" type="checkbox"/> Good Condition <input type="checkbox"/> Internal Corrosion <input type="checkbox"/> Seal Face Corrosion <input type="checkbox"/> Correct Bolting/Size/Type
FIRETUBES		TRAYS	
<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Good Condition <input type="checkbox"/> Cracked <input type="checkbox"/> Corrosion	<input type="checkbox"/> Scaled <input type="checkbox"/> Heat Impinged <input type="checkbox"/> Coated <input type="checkbox"/> Wear	<input type="checkbox"/> N/A <input type="checkbox"/> Collapsed <input type="checkbox"/> Loose <input type="checkbox"/> Wear <input type="checkbox"/> Poor	<input type="checkbox"/> Good <input type="checkbox"/> Distorted <input type="checkbox"/> Missing <input checked="" type="checkbox"/> Corrosion <input type="checkbox"/> Holes/Short Circuiting
<input type="checkbox"/> Burner Misalignment <input type="checkbox"/> MPI/UT <input type="checkbox"/> To Follow			
SHELL		VESSEL INTERNALS	
<input type="checkbox"/> N/A <input type="checkbox"/> Good Condition <input type="checkbox"/> Pitted – Light <input type="checkbox"/> Scaled – Light	<input type="checkbox"/> Internal Corrosion <input type="checkbox"/> Pitted – Severe <input type="checkbox"/> Scaled – Heavy <input type="checkbox"/> Blistered	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Weir/Baffle/Divider Damage <input type="checkbox"/> Downcomer Corrosion <input type="checkbox"/> Spray Nozzle Damaged/Missing <input type="checkbox"/> See Comments	
<input type="checkbox"/> MPI/UT <input type="checkbox"/> To Follow			
HEAD		HEAD	
<input type="checkbox"/> Top <input type="checkbox"/> North <input type="checkbox"/> West <input checked="" type="checkbox"/> N/A		<input checked="" type="checkbox"/> Bottom <input type="checkbox"/> South <input type="checkbox"/> East <input type="checkbox"/> N/A	
<input type="checkbox"/> Good Condition <input type="checkbox"/> Pitted – Light <input type="checkbox"/> Scaled – Light <input type="checkbox"/> Internal Coating	<input type="checkbox"/> Internal Corrosion <input type="checkbox"/> Pitted – Severe <input type="checkbox"/> Scaled – Heavy	<input type="checkbox"/> Good Condition <input type="checkbox"/> Pitted – Light <input type="checkbox"/> Scaled – Light <input checked="" type="checkbox"/> Internal Coating	<input type="checkbox"/> Internal Corrosion <input type="checkbox"/> Pitted – Severe <input type="checkbox"/> Scaled – Heavy
INTERNAL PIPING			
INTERNAL PIPING	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good Condition <input type="checkbox"/> Corrosion <input type="checkbox"/> Missing/Dents <input type="checkbox"/> Supports <input type="checkbox"/> See Comments		

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INTERNAL VISUAL INSPECTION

DETAILED OBSERVATION (INSPECTIONS NOTES)

☐ N/A

An internal/external inspection was completed on a bulged section of the shell in the water section along the building interface. This inspection was completed due to operator noticing this bulge and not remembering it being there before. Treater was clean for inspection.

Water/firetube Section:

Section has been coated; coating is in good condition with no signs of failure. At the bulged areas there is no signs of coating cracking or peeling.

Shell shows no visible defects.

UT completed by myself and Sonar inspections shows no signs of laminations or hydrogen blisters in this area of concern.

Bulge was caused by weld repairs conducted at the last turnaround on this treater before internal coating.

Externally the paint is burnt at the lacewelded areas. No visible cracks noted on the shell at the affected bulged area.

RECOMMENDATIONS

☐ N/A

EXTERNAL VISUAL INSPECTION

DETAILED OBSERVATIONS (INSPECTION NOTES)

☐ N/A

Bulged lower shell was the paint is burnt off shows no visible defects and was caused by weld repairs conducted in the past.

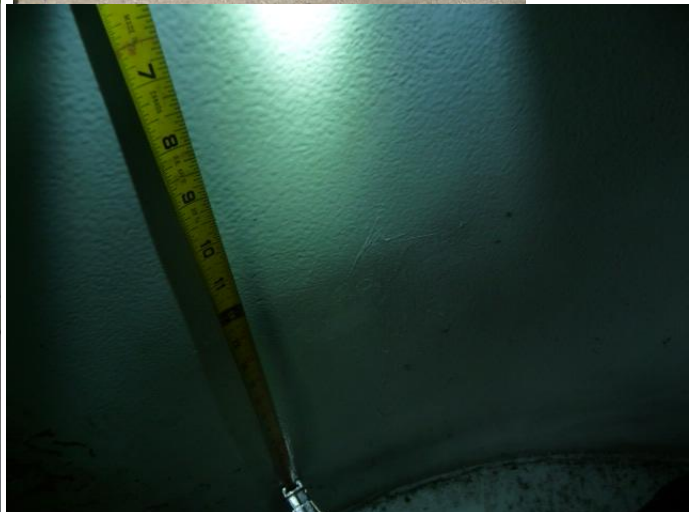
RECOMMENDATIONS

☐ N/A

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