



VESSEL INSPECTION SUMMARY

CA1246-VIS-46
Date: 06-Mar-18
Page 1 of 8
IRISNDT #: CGE1700097

Client: SECURE ENERGY (ONSITE SERVICES) INC.	District: Southern Alberta	Field: Chamberlain
Facility: CHFST	Unit / Skid #: SES-PKG-0069	LSD: SE-31-052-23W4M
Jurisdiction #: A0451115	Equip Tag #:	Serial #: 980577-1
CRN #: N8753.2	Nat'l Bd #:	Year Built: 1999
Manufacturer: Superior Fabrication Inc.	Equipment Description: Horizontal treator	
Status: In Service - Shutdown	Date Removed From Service:	Service:
MAWP Shell: 75 Psi @ 350 °F	Height/Length:	Code Stamp: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
MAWP Tube: @	Size/Diameter:	Insulated: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
MDMT: -20 °F RT: RT-4	Volume:	PWHT: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Support Type: Saddles		Manway: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
C.A.:	Coated: <input type="checkbox"/> Y <input type="checkbox"/> N	Clad: <input type="checkbox"/> Y <input type="checkbox"/> N
	J.E.:	Remote Access: <input type="checkbox"/>

Component	Material	Nominal Thk	Diameter	OD/ID	Tube Side	Shell Side
East - Head					<input type="checkbox"/>	<input checked="" type="checkbox"/>
West - Head					<input type="checkbox"/>	<input checked="" type="checkbox"/>
- Shell					<input type="checkbox"/>	<input checked="" type="checkbox"/>
-					<input type="checkbox"/>	<input type="checkbox"/>
-					<input type="checkbox"/>	<input type="checkbox"/>

Comments:

The data plate is legible and firmly attached but contained limited information. The A# stamping is located on the Data Plate.

PSV Static Data

PSV - 1 Tag #: SES-PSV-0213	Serial #: 55321	CRN: OG2606.5C
Model #: 9161J611778L	Capacity: 349 GPM	Set Pressure: 75 Psi
Manufacturer: Mercer		Service Company: Unified Valve Group LTD.
Inlet Size & Type: 3 in. <input type="checkbox"/> Threaded		Last Service Date: 22-Sep-15
Outlet Size & Type: 3 in. <input type="checkbox"/> Threaded	Block Value: <input type="checkbox"/>	<input type="checkbox"/>
Carseal Intact: Yes		Code Stamp: Yes
Shell Side / Tube Side: Shell Side		Location of PSV: On Vessel
PSV - 2 Tag #: _____	Serial #: _____	CRN: _____
Model #: _____	Capacity: _____	Set Pressure: _____
Manufacturer: _____		Service Company: _____
Inlet Size & Type: _____ <input type="checkbox"/>		Last Service Date: _____
Outlet Size & Type: _____ <input type="checkbox"/>	Block Value: _____ <input type="checkbox"/>	<input type="checkbox"/>
Carseal Intact: _____		Code Stamp: _____
Shell Side / Tube Side: _____		Location of PSV: _____

PSV Comments:

The PSV data plate, service tag and equipment tag are legible and secure.
The PSV appears to be secure, supported and set the same as the MAWP of the equipment it protects.
Tag # SES-PSV-0213 was attached with A 16 gauge wire.



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External Visual Inspection

Item	Y	N	N/A	Condition	Comment	NCR	Action Item	Priority
Nameplate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A	Legible and firmly attached; A# stamping located on the Data Plate.		<input type="checkbox"/>	
Foundation and Supports	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R	Slidding saddle end is secure. Req'd to be double nutted loose.		<input checked="" type="checkbox"/>	0
Anchor Bolts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R	Slidding saddle end is secure. Req'd to be double nutted loose.		<input checked="" type="checkbox"/>	0
Grounding	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A	Ground secured to skid. No other ground located (snow covered).		<input checked="" type="checkbox"/>	0
Insulation Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R	Sealant deterioration, missing sealant and insulation throughout.		<input checked="" type="checkbox"/>	0
PSV	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A	Secured to the top east shell. Last serviced 09/22/2015.		<input checked="" type="checkbox"/>	0
Shell & Heads	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	A	Fully insulated. Corrosion visible through inspection cut-out.		<input type="checkbox"/>	
Metal Surfaces (Paint)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	A	Fully insulated, chipping paint and corrosion in exposed areas.		<input type="checkbox"/>	
Aux Equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	N/A			<input type="checkbox"/>	
Cathodic Protection	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	N/A			<input type="checkbox"/>	
Alignment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A	Appears aligned, level and secure.		<input type="checkbox"/>	
Flange Connections	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A	Surface corrosion, bolting secure, full engagement.		<input type="checkbox"/>	
Pressure Gauge	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A	Clear, legible, no visible damage.		<input type="checkbox"/>	
Piping from Vessel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A	No medium, loose support, appears aligned and level.		<input checked="" type="checkbox"/>	0
Temperature Gauge	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A	Electronically controlled. Temp gauges are secure.		<input type="checkbox"/>	
Sight Glass	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A	Burner sight glass is clear. Liquid level is not clear but legible.		<input type="checkbox"/>	
Leaks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	A	No visible leaks observed.		<input type="checkbox"/>	
Current UT Survey	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A	Baseline UT performed		UT Company :	IRISNDT
Previous UT Survey	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A	No previous information provided by client		UT Company :	

LEGEND:

Priority 0 - General Recommendations.

Priority 1 - Goal date is 30 days from the activity date.

Priority 2 - Goal date is 90 days from the activity date.

Priority 3 - Goal date is 1 Year from the activity date.

Priority 4 - Goal date is 5 Years from the activity date.

External Visual Observations:

Manual Review Required By Customer Representative:

A visual external installation inspection was performed on A0451115 Horizontal Treator at the Secure Energy Chamberlain CHFST plant site to aid in an integrity assessment, and to help determine the suitability for service. The results are as follows:

-The Treator is in service but currently shut down, it is partially located inside a building, the west head and north shell protrude through the building walls, it is insulated, horizontal in orientation and supported by saddles anchored to a skid welded to pilings.

-The west sliding saddle end is single nutted securely with lock washers. It is recommended to double nut the anchor bolts on the sliding saddle end loose with washers to allow for expansion and contraction. The treator appears to be aligned level and secure.

-Sealant deterioration, missing sealant, missing insulation, and/or insulation damage was found on the shell and heads, attached piping, around cladding penetrating points, and at the building wall interfaces, allowing environmental ingress. Biological growth observed in the west bottom head inspection port indicative of environmental ingress.

-Paint deterioration and corrosion was found on the exposed/uninsulated areas of the shell, heads, piping, flanges, nozzles, manways, nuts, bolts and supports. The more significant corrosion was located on the bottom nozzles, nuts and bolts (buffing required to determine severity).

-There is no medium between the bolt-on supports and the O.D. of the piping, and the burner inlet pipe supports are loose, no medium and the supports are contacting the adjacent piping. The associated piping appears to be aligned and level, and full engagement was found on all exposed bolting.

-The site and foundation were snow covered, limiting access to the skid, supports, site and foundation.

-The liquid level gauge is not clear but remains legible. The associated pressure gauges are free of visible defects, clear and legible.

-A grounding wire was securely attached to the north-west skid with no visible corrosion. No other grounding connections were found; the site and foundation is snow covered, limiting visual access.

-The data plate is secure and legible and the A# stamping was located on the Data Plate; Tag # SES-PKG-0069 was attached to the west door with a 16 gauge wire.

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Internal Visual Inspection

Item	Y	N	N/A	Condition	Comment	NCR	Action Item	Priority
Shell	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	
Heads	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	
Manway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	
Gasket Surfaces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	
Insulation Condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	
Welds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	
Refractory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	
Heating Coils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	
Demister Pad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	
Vane Pack	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	
Baffles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	
Trays	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	
Filter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	
Internal Coating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	
Tubesheet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	
Tube Bundle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	

LEGEND:

Priority 0 - General Recommendations.

Priority 1 - Goal date is 30 days from the activity date.

Priority 2 - Goal date is 90 days from the activity date.

Priority 3 - Goal date is 1 Year from the activity date.

Priority 4 - Goal date is 5 years from the activity date.

Internal Visual Observations:

Manual Review Required By Customer Representative:

No internal inspection was performed or required.

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Attached to Vessel Inspection Report # _____

Additional Attachment # of Pages 3 Specify Baseline UT performed and report attached to equipment inspection file

NDE:

Performed: UT MT PT ET RT OTHER

NDE Report #: _____

Item Raised: NCR: _____ Operational Action Item Yes Repair Action Item Yes Deferred Action Item _____

Action Items / Recommendations :

- Double nut the west saddle support loose to allow for expansion and contraction.
- Determine if the PSV is overdue for servicing.
- Ensure the burner piping is supported correctly, aligned, level, secure and not making contact with the adjacent burner piping.
- Install/repair the sealant and insulation as required to prevent future environmental ingress.
- Monitor the corrosion for future growth.
- Inspection the site, foundation and grounding once the snow melts.


Actions Corrected at Time of Inspection: (If actions were corrected at the time of inspection - note the corrected actions here.)

No actions were corrected at the time of the inspection.

Regulatory VE Inspection
Action Items #1 - Correct saddle bolting to allow for expansion.

Next VE Inspection in 5 yrs

Glen Phillips - Chief Inspector
API-510, ABSA ISPV



Meets Code Criteria:

Re-Inspection Required:

Recommended Inspection Intervals: N/A - Not applicable to this inspection

VE Inspect.	Last Inspection:	<input type="checkbox"/>	Intervals (yrs):		Next Inspection:	<input type="checkbox"/>
VI Inspect.	Last Inspection:	<input type="checkbox"/>	Intervals (yrs):		Next Inspection:	<input type="checkbox"/>
UT Inspect.	Last Inspection:	<input type="checkbox"/>	Intervals (yrs):		Next Inspection:	<input type="checkbox"/>
PSV Service	Last Inspection:	<input type="checkbox"/>	Intervals (yrs):		Next Inspection:	<input type="checkbox"/>

Inspector:

Mike Dymchuk

(Print)

(Sign)

API 510 41789

Client Representative:

I am in full agreement with report contents

(Print)

(Sign)

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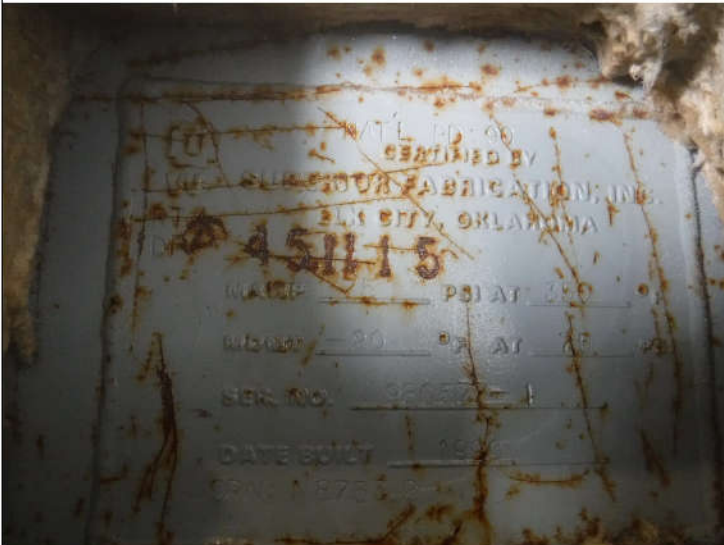
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01-A0451115 Horizontal Treater



02-Building Tag attached



03-A0451115 Horizontal Treater Data Plate



04-Corrosion on manway, nuts and bolts, no depth

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05-Typical sealant deterioration around penetrating points

06-Typical sealant deterioration at building interfaces



07-Missing insulation covers

08-Surface corrosion on head and biological growth

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09-The sliding saddle end is bolted securely



10-The sliding saddle end is bolted securely



11-Loose support in contact with adjacent burner pipe



12-Significant corrosion on bottom nozzles, nuts and bolts

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13-Level gauge is not clear but legible



14-PSV located on the top east shell

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