MECHANICAL SEAL FINDING REPORT

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Project:	UZGTL	Location:	Kashkadarya Region, Guzar District
Unit:	UNIT 45 - PWU Unit	Equipment:	145-PC-026A TUNGSTEN CARBIDE COATING PUMP
OEM:	DONGYANG CHEMICAL PUMP	Equipment type/Model:	TSB

Service data: : TUNGSTEN CARBIDE COATING PUMP

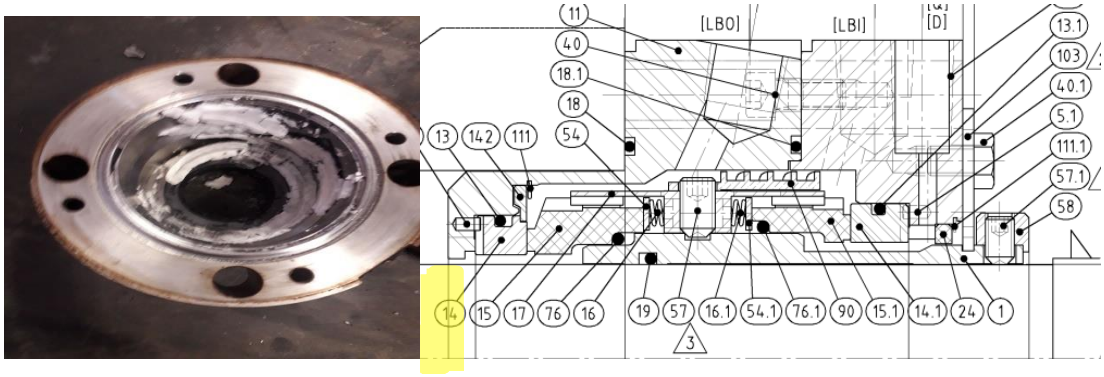
Service fluid	WAX WITH SOLIDS		Design Code	API 610 11th Edition	
	Rated/Nom	Max		Rated/Nom	Max
Suction Pressure [Barg]	9.7	22.9	Operating Temperature [°C]	120/166	185
Discharge Pressure [Barg]	17		Flow rate/Norm [m3/h]	30.8+0.7 (*)	28.0+0.7 (*)
Differential head [m]	109		Vapor pressure [Bara]	10.5	10.5
Direction of rotation	CCW		Driver Rated Power [kw]/rpm	15.86/2945	

Seal Information	Original Seal Manufacturer:		FKSM	
	Project Seal Drawing:	UZGTL-DYP-MEC-38-45-0-2605	Manufacturer Drawing:	D00397011REVA
	Seal API Code:	C2A3A0253B61	Cartridge No:	
	Seal Configuration:	3CW-BB	Seal Size:	2.375/2.625
	Seal API Plan	02/53A/61	Seal Plan Manufacturer:	FKSM
	Project seal plan drawing:	UZGTL-DYP-MEC-38-45-0-2605	Manufacturer seal plan Drawing:	D00396192REVA
	Barrier Fluid pressure – [Barg]:	28 TO 34	Barrier Fluid:	Duraclear 32

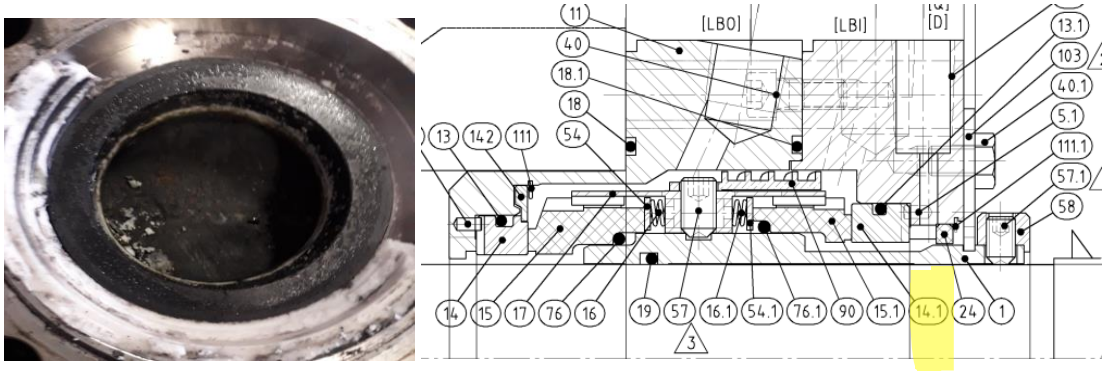
General Findings	Mechanical Seal	
Seal failure findings to determiine the potential hd Root Cause	The pump was stopped and the mechanical seal was removed, the number of leaks on the outer part of the seal exceeded the permissible value.	
Contamination	When the seal was opened, it was found that there were wax and sand inside.	
	Inboard seal	Outboard seal
Stationary face	Running marks	Running marks and coking
Rotating face	Running marks and coking	Running marks and coking
Item 4 Dual Deflector	Good condition	Good condition
Seal sleeve	Good condition	Good condition
Stationary metal GLAND	Good condition	Good condition
Snap ring and Retainers	Good condition	Good condition
PERFLUOROELASTOMER gaskets	cannot be reused	cannot be reused

DETAIL FINDINGS

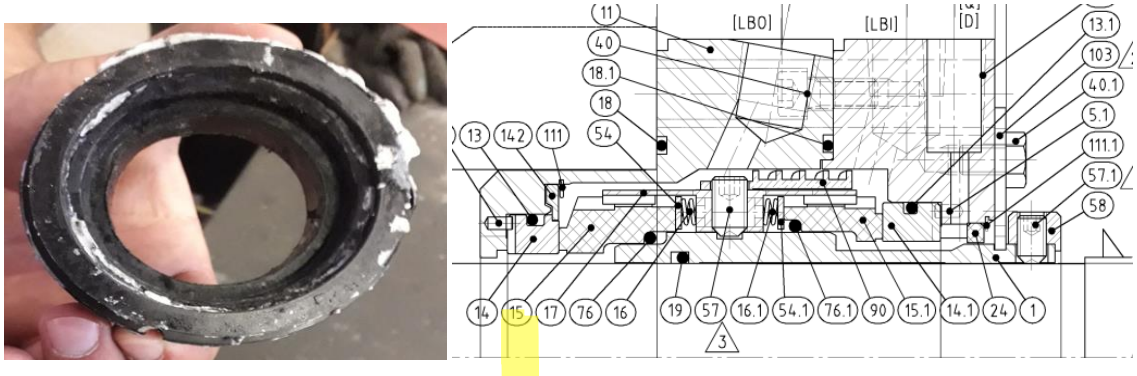
1. Inboard Stationary face item 14 : A broken was detected from the lower part of the stationary face



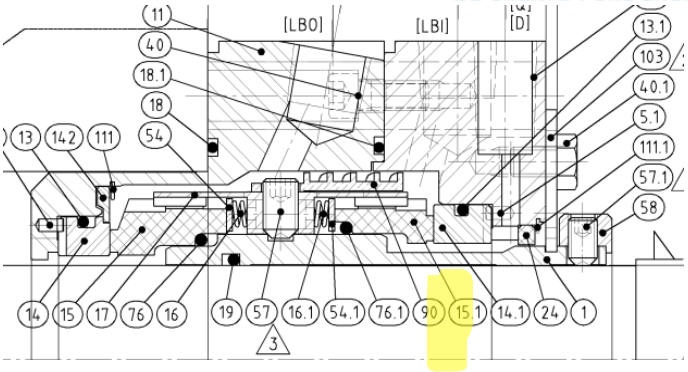
2. Outboard Stationary face item 14.1 : Marks and coking normal wearing off while operation



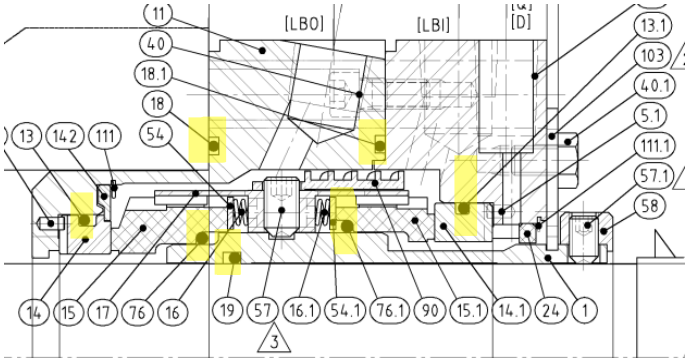
3. Inboard rotating face item 15 : Marks and coking normal wearing off while operation



4.Outboard rotating face item 15.1: Running marks normal wearing off while operation



5. PERFLUOROELASTOMER gaskets



Conclusion

- The seal was visual inspected, no available monochromatic light to determine the seal faces flatness.

RCA – Root Cause Analysis : Pump liquid can damage the internal parts of the mechanical seal. If we don't actually diagnose the real root cause of a problem we'll likely have the same exact problem over and over.

Recommendations: Seal shall be reassembled with repair kit and eventually tested as per API 682 at a pressure of 1.8 Barg.