



Mechanical Seal Analysis (MSA)

Work Order	2155432	Failure Code	S1003
Pump House	TEC	Pump Position	2229
Date	2017-01-20	Seal Model	1030
MSA #	2017-003	Shaft Size	3.625
Inquiry #	I-17-0015	Drawing #	FSI-2209-B
Customer	Anchor Seals	Seal Serial #	01301-R01
Tag #	1317	Inboard Rotary Material	Silicon Carbide
End User	USS Clairton	Inboard Stationary Material	Tungsten Carbide
Contact	Jason DiBiase	Install Date	12/05/2015
Phone	412-327-5375	Removal Date	01/17/2017
		Days in Service	409 Days

General Seal Condition

From exterior seal appeared to be in okay condition. Clips were not returned, seal spun good, and had good compression.

Seal Face Conditions

Stationary: Tungsten Carbide – face showed signs of heat checking (Figure 1)

Rotary: Silicon Carbide – small chip by drive lug (Figure 2)

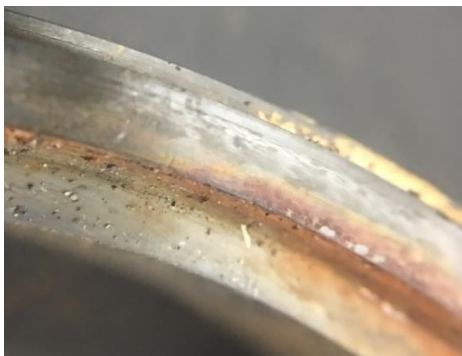


Figure 1: visible heat checking



Figure 2: small chip by drive lug

Elastomers

All o-rings appeared normal. No signs of thermal, mechanical, or chemical degradation.

Metal Components, Springs, Pins

All metal components are in good condition. Pins showed no signs of wear. Springs showed no signs of fatigue.

Failure Explanation

The heat checking on the face would suggest lack of lubrication between seal faces. This causes the seal face to become hot and lose its seal with the mating ring.

Recommendations / Inquires

Ensure flush lines are free of debris. Provide adequate continuous flush to seal faces to prevent heat checking.