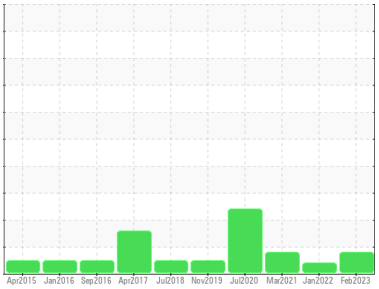
PROBLEM SUMMARY

Area
4
Machine Id
HANSEN WTG-403 (S/N EH806A-003-LM0035)
Component
Wind Turbine Gearbox
Fluid
SHELL OMALA S4 GX 320 (340 LTR)

Sample Rating Trend



SEDIMENT

COMPONENT CONDITION SUMMARY

No relevant graphs to display

RECOMMENDATION

We recommend you service the filters on this component. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	ATTENTION	ABNORMAL
Silt	scalar	*Visual	NONE	▲ **HEAVY**	NONE	▲ MODER

Customer Id: ENEFRA
Sample No.: WC0804471
Lab Number: 05857930
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Don Baldridge +1
don.b505@comcast.net

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We recommend you service the filters on this component.
Alert	---	---	?	We were unable to perform a particle count due to a high concentration of particles present in this sample.

HISTORICAL DIAGNOSIS

26 Jan 2022 Diag: Don Baldridge

ISO

The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

02 Mar 2021 Diag: Jonathan Hester

SEDIMENT

We recommend you service the filters on this component. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.All component wear rates are normal. There is a moderate amount of visible silt present in the sample. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

25 Jul 2020 Diag: Doug Bogart

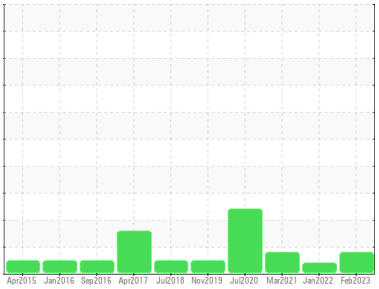
WATER

No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. There is a trace of moisture present in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



SEDIMENT

Area
4
Machine Id
HANSEN WTG-403 (S/N EH806A-003-LM0035)
Component
Wind Turbine Gearbox
Fluid
SHELL OMALA S4 GX 320 (340 LTR)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

Wear

All component wear rates are normal.

Contamination

There is a high amount of visible silt present in the sample.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0804471**	WC05504512	WC0547155
Sample Date		Client Info		**28 Feb 2023**	26 Jan 2022	02 Mar 2021
Machine Age	yrs	Client Info		**100**	0	72
Oil Age	yrs	Client Info		**100**	0	76
Oil Changed		Client Info		**Not Changd**	N/A	N/A
Sample Status				**ABNORMAL**	ATTENTION	ABNORMAL

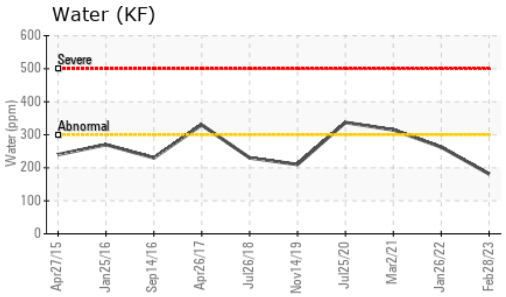
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184	>50	**21**	14	21
Iron	ppm	ASTM D5185m	>65	**23**	29	22
Chromium	ppm	ASTM D5185m	>3	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>3	**0**	0	0
Titanium	ppm	ASTM D5185m	>10	**0**	0	0
Silver	ppm	ASTM D5185m		**0**	<1	0
Aluminum	ppm	ASTM D5185m	>10	**<1**	0	0
Lead	ppm	ASTM D5185m	>5	**0**	<1	2
Copper	ppm	ASTM D5185m	>10	**0**	<1	<1
Tin	ppm	ASTM D5185m	>10	**0**	0	0
Antimony	ppm	ASTM D5185m	>5	**---**	---	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

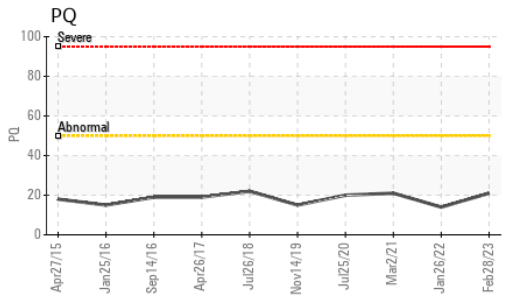
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**2**	0	4
Barium	ppm	ASTM D5185m		**0**	0	<1
Molybdenum	ppm	ASTM D5185m		**<1**	<1	<1
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m		**2**	0	<1
Calcium	ppm	ASTM D5185m		**4**	3	4
Phosphorus	ppm	ASTM D5185m		**316**	376	311
Zinc	ppm	ASTM D5185m		**52**	60	43
Sulfur	ppm	ASTM D5185m		**5909**	4695	4783

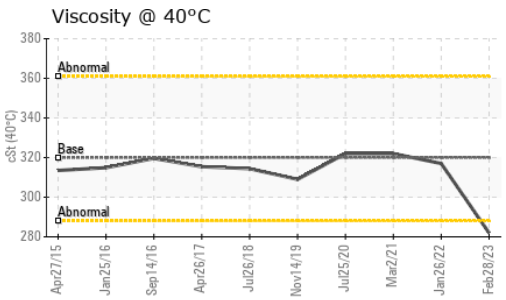
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	**<1**	<1	0
Sodium	ppm	ASTM D5185m		**5**	3	5
Potassium	ppm	ASTM D5185m	>20	**1**	0	<1
Water	%	ASTM D6304	>0.03	**0.018**	0.026	0.031
ppm Water	ppm	ASTM D6304	>300	**181.2**	262.7	314.8

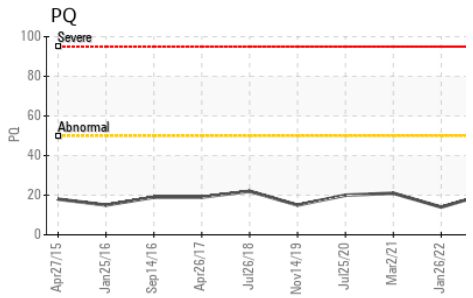
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**---**	127128	---
Particles >6µm		ASTM D7647	>5000	**---**	▲ 6517	---
Particles >14µm		ASTM D7647	>640	**---**	118	---
Particles >21µm		ASTM D7647	>160	**---**	4	---
Particles >38µm		ASTM D7647	>40	**---**	0	---
Particles >71µm		ASTM D7647	>10	**---**	0	---
Oil Cleanliness		ISO 4406 (c)	>--/19/16	**---**	▲ 24/20/14	---

OIL ANALYSIS REPORT





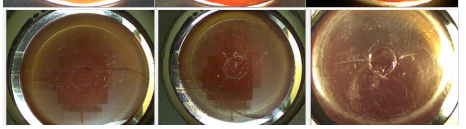




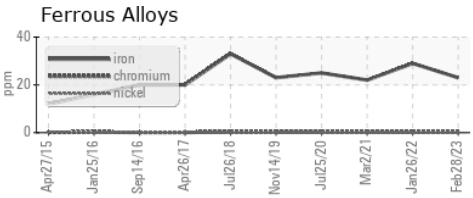
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**1.20**	1.37	1.188

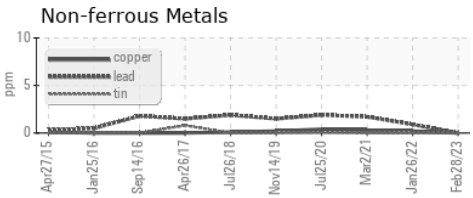
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	▲ **HEAVY**	NONE	▲ MODER
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.03	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

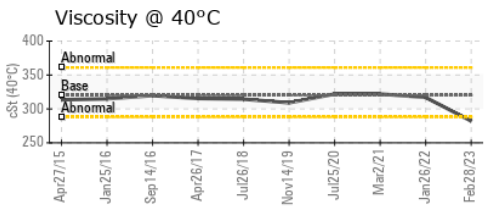
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	320	**282**	317	322

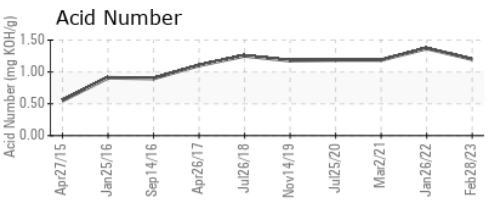
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS









Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0804471 **Received** : 26 May 2023
Lab Number : 05857930 **Diagnosed** : 30 May 2023
Unique Number : 10492395 **Diagnostician** : Don Baldridge
Test Package : IND 2 (Additional Tests: KF, PQ, PrtCount)

To discuss this sample report, contact Customer Service at 1-800-237-1369.
** - Denotes test methods that are outside of the ISO 17025 scope of accreditation.*
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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