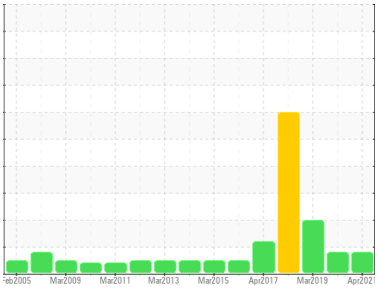
PROBLEM SUMMARY

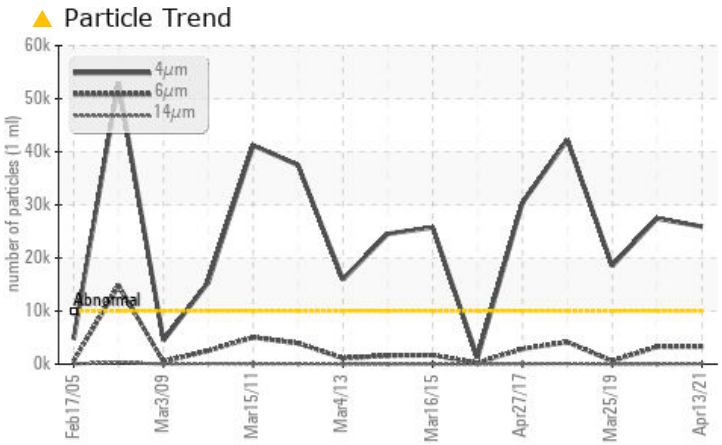
Sample Rating Trend



ISO

Area
CARIBOU FALLS GS
Machine Id
FP4G1
Component
Turbine Bearing
Fluid
ESSO TERESSO ISO 46 (--- GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL
Particles >4µm		ASTM D7647	>10000	▲ **25905**	▲ 27434	▲ 18514
Particles >6µm		ASTM D7647	>2500	▲ **3302**	▲ 3282	601
Oil Cleanliness		ISO 4406 (c)	>20/18/14	▲ **22/19/13**	▲ 22/19/12	▲ 21/16/10

Customer Id: ONTKEE
Sample No.: WC0560609
Lab Number: 02423524
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	MISSED	Jul 13 2022	?	We recommend you service the filters on this component.
Resample	MISSED	Jul 13 2022	?	We recommend an early resample to monitor this condition.
Information Required	MISSED	Jul 13 2022	?	NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

HISTORICAL DIAGNOSIS

28 May 2020 Diag: Kevin Marson

ISO

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.Component wear rates appear to be normal (unconfirmed). Particles >4µm are abnormally high. Particles >6µm are notably high. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

25 Mar 2019 Diag: Kevin Marson

DIRT

Check seals and/or filters for points of contaminant entry. Check seals and/or filters for points of contaminant entry. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. There is a light amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid.

view report

17 Jul 2018 Diag: Bill Quesnel

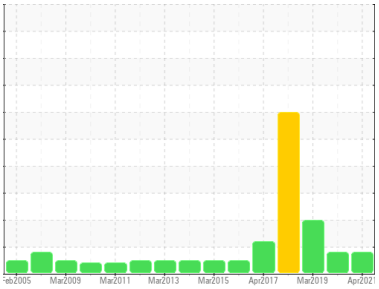
CONTAMINANT

We recommend that you perform vacuum distillation and/or air drying to attempt to remove any residual water and/or entrained gases from this oil that may be contributing to abnormal foaming and/or poor water separability. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. No other corrective action is recommended at this time. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.Wear particle analysis indicates that the ferrous corrosive particles are abnormal. Separability (Emulsion) % is abnormally high. Separability (Water) % is abnormally low. Particles >4µm are abnormally high. Particles >6µm are notably high. MPC Varnish Potential contamination levels are marginally high. MPC (Membrane Patch Calorimetery) test indicates a light concentration of varnish present. Water Separability results (ASTM D1401) are poor and indicate that the oil will form emulsions with water. The water content is negligible. Foaming Tendency (ASTM D892) results are abnormal indicating a tendency for oil foaming. The Air Release Value (ASTM D3427) indicates that the oil has good deaeration properties. Linear Sweep Voltammetry (RULER – ASTM D6971) testing indicates normal levels of anti-oxidants present in the oil. The Rotating Pressure Vessel Oxidation Test (RPVOT – ASTM D2272) result indicates suitable amounts of anti-oxidant(s) present in the oil. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
CARIBOU FALLS GS
Machine Id
FP4G1
Component
Turbine Bearing
Fluid
ESSO TERESSO ISO 46 (--- GAL)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

Wear

All component wear rates are normal.

Contamination

Particles >4µm are abnormally high. Particles >6µm are notably high.

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		**WC0560609**	WC0475094	WC0335076
Sample Date		Client Info		**13 Apr 2021**	28 May 2020	25 Mar 2019
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	**2**	<1	<1
Chromium	ppm	ASTM D5185(m)	>20	**0**	0	0
Nickel	ppm	ASTM D5185(m)	>20	**<1**	0	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**<1**	<1	0
Aluminum	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Lead	ppm	ASTM D5185(m)	>20	**<1**	<1	1
Copper	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Tin	ppm	ASTM D5185(m)	>20	**<1**	0	0
Antimony	ppm	ASTM D5185(m)		**0**	0	0
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	<1

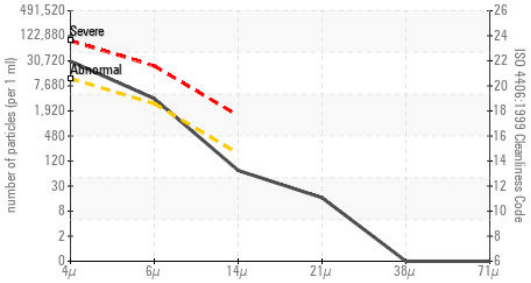
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	**<1**	0	0
Barium	ppm	ASTM D5185(m)		**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	0	**0**	0	0
Manganese	ppm	ASTM D5185(m)		**<1**	<1	<1
Magnesium	ppm	ASTM D5185(m)	0	**0**	0	<1
Calcium	ppm	ASTM D5185(m)	0	**<1**	0	1
Phosphorus	ppm	ASTM D5185(m)	2.4	**<1**	0	<1
Zinc	ppm	ASTM D5185(m)	0	**<1**	<1	1
Sulfur	ppm	ASTM D5185(m)		**2049**	2036	2068
Lithium	ppm	ASTM D5185(m)		**<1**	<1	0

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**<1**	<1	▲ 27
Sodium	ppm	ASTM D5185(m)		**<1**	0	0
Potassium	ppm	ASTM D5185(m)	>20	**<1**	1	<1

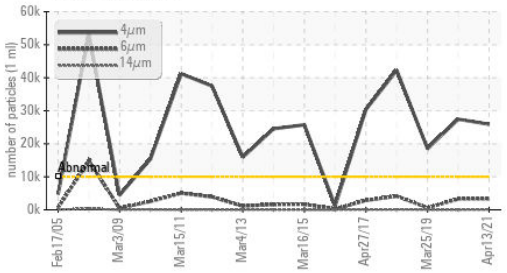
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>10000	▲ **25905**	▲ 27434	▲ 18514
Particles >6µm		ASTM D7647	>2500	▲ **3302**	▲ 3282	601
Particles >14µm		ASTM D7647	>160	**63**	33	8
Particles >21µm		ASTM D7647	>40	**14**	6	2
Particles >38µm		ASTM D7647	>10	**0**	0	0
Particles >71µm		ASTM D7647	>3	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>20/18/14	▲ **22/19/13**	▲ 22/19/12	▲ 21/16/10

OIL ANALYSIS REPORT

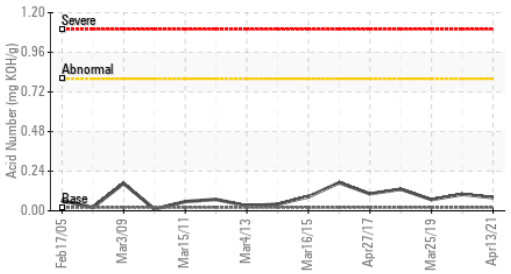
Particle Count



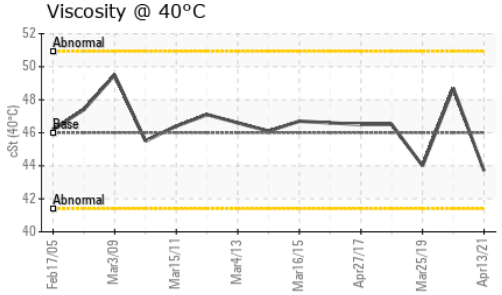
Particle Trend



Acid Number



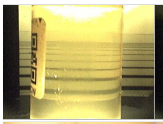
Viscosity @ 40°C



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.02	**0.08**	0.10	0.068

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	**NONE**	NONE	NONE
Debris	scalar	Visual*	NONE	**LIGHT**	NONE	VLITE
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*	>2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	46	**43.7**	48.7	44.0

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					*no image*
Bottom					*no image*
MPC			*no image*	*no image*	*no image*

ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0560609 **Received** : 26 May 2021
Lab Number : 02423524 **Diagnosed** : 27 May 2021
Unique Number : 5227024 **Diagnostician** : Kevin Marson
Test Package : IND 2 (Additional Tests: PrtCount, TAN Man)

Ontario Power Generation
KENORA PRODUCTION CENTRE, 200-60 FOURTEENTH ST N.
KENORA, ON
CA P9N 4M9
Contact: Josh Robinson
josh.robinson@opg.com
T:
F:

To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.