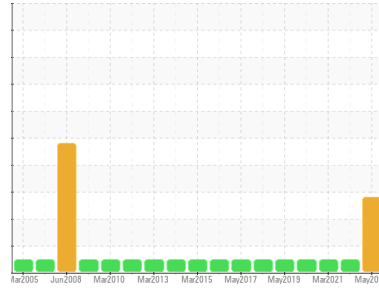




# PROBLEM SUMMARY

Sample Rating Trend



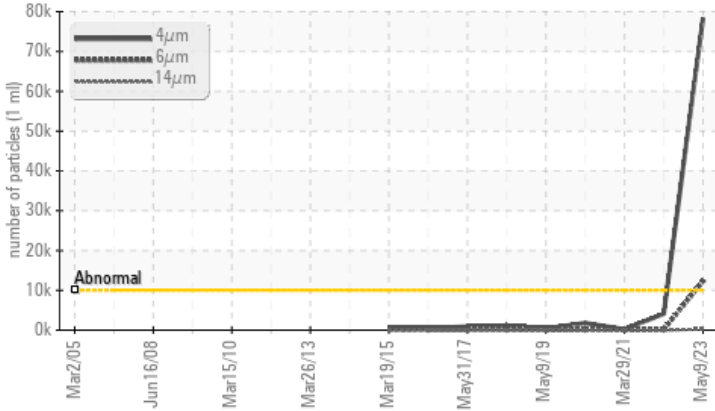
VISUAL METAL



Area  
**MANITOU FALLS GS**  
 Machine Id  
**FP2G2**  
 Component  
**Thrust Bearing**  
 Fluid  
**ESSO TERESSO ISO 46 (--- GAL)**

## COMPONENT CONDITION SUMMARY

▲ Particle Trend



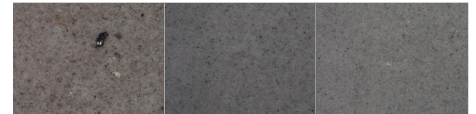
## RECOMMENDATION

We advise that you check for visible metal particles in the oil. 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	NORMAL	NORMAL
Particles >4µm	ASTM D7647	>10000	▲ 78377	4112	203
Particles >6µm	ASTM D7647	>2500	▲ 12309	146	32
Particles >14µm	ASTM D7647	>160	▲ 266	5	4
Oil Cleanliness	ISO 4406 (c)	>20/18/14	▲ 23/21/15	19/14/10	15/12/9
White Metal	scalar	Visual*	▲ LIGHT	NONE	NONE

PrtFilter



Customer Id: ONTKEE  
 Sample No.: WC0806464  
 Lab Number: 02558993  
 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](mailto:Kevin.Marson@wearcheck.com)

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

## RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We recommend you service the filters on this component.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Information Required	---	---	?	NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.
Check For Visual Metal	---	---	?	We advise that you check for visible metal particles in the oil.

## HISTORICAL DIAGNOSIS

### 11 Jul 2022 Diag: Kevin Marson

NORMAL



Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



### 29 Mar 2021 Diag: Kevin Marson

NORMAL



Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. Resample at the next service interval to monitor. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) R&O OIL ISO 46. Please confirm. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



### 08 Jul 2020 Diag: Kevin Marson

NORMAL



Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



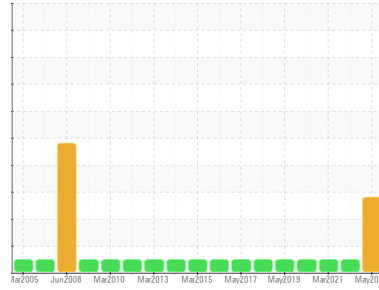


# OIL ANALYSIS REPORT

Sample Rating Trend

VISUAL METAL

Area  
**MANITOU FALLS GS**  
 Machine Id  
**FP2G2**  
 Component  
**Thrust Bearing**  
 Fluid  
**ESSO TERESSO ISO 46 (--- GAL)**



## DIAGNOSIS

### Recommendation

We advise that you check for visible metal particles in the oil. 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

Light concentration of visible metal present. Bearing wear is indicated.

### Contamination

There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

### Fluid Condition

The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

## SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>WC0806464</b>	WC0686278	WC0560627
Sample Date	Client Info	<b>09 May 2023</b>	11 Jul 2022	29 Mar 2021
Machine Age	hrs	<b>0</b>	0	0
Oil Age	hrs	<b>0</b>	0	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>ABNORMAL</b>	NORMAL	NORMAL

## CONTAMINATION

method	limit/base	current	history1	history2
Water	WC Method >2	<b>NEG</b>	NEG	NEG

## WEAR METALS

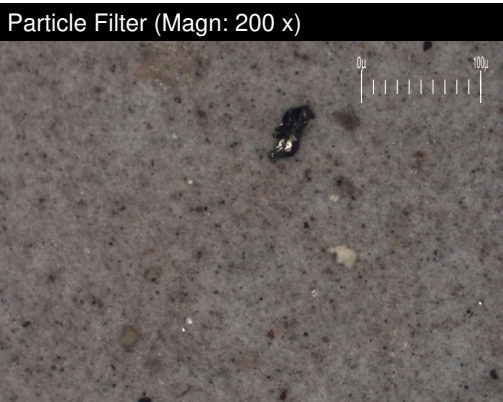
method	limit/base	current	history1	history2
PQ	ASTM D8184*	<b>0</b>	---	---
Iron	ppm ASTM D5185(m) >85	<b>11</b>	1	3
Chromium	ppm ASTM D5185(m) >20	<b>0</b>	0	0
Nickel	ppm ASTM D5185(m) >20	<b>0</b>	0	0
Titanium	ppm ASTM D5185(m)	<b>0</b>	0	0
Silver	ppm ASTM D5185(m)	<b>0</b>	0	<1
Aluminum	ppm ASTM D5185(m) >40	<b>0</b>	<1	<1
Lead	ppm ASTM D5185(m) >60	<b>0</b>	0	<1
Copper	ppm ASTM D5185(m) >7	<b>&lt;1</b>	0	<1
Tin	ppm ASTM D5185(m) >40	<b>&lt;1</b>	0	<1
Antimony	ppm ASTM D5185(m)	<b>0</b>	0	0
Vanadium	ppm ASTM D5185(m)	<b>0</b>	0	0
Beryllium	ppm ASTM D5185(m)	<b>0</b>	0	0
Cadmium	ppm ASTM D5185(m)	<b>0</b>	0	0

## ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185(m) 0	<b>0</b>	<1	<1
Barium	ppm ASTM D5185(m)	<b>0</b>	0	0
Molybdenum	ppm ASTM D5185(m) 0	<b>0</b>	0	0
Manganese	ppm ASTM D5185(m)	<b>0</b>	0	0
Magnesium	ppm ASTM D5185(m) 0	<b>0</b>	0	0
Calcium	ppm ASTM D5185(m) 0	<b>0</b>	0	<1
Phosphorus	ppm ASTM D5185(m) 2.4	<b>1</b>	2	3
Zinc	ppm ASTM D5185(m) 0	<b>&lt;1</b>	<1	<1
Sulfur	ppm ASTM D5185(m)	<b>1668</b>	1656	1643
Lithium	ppm ASTM D5185(m)	<b>&lt;1</b>	<1	<1

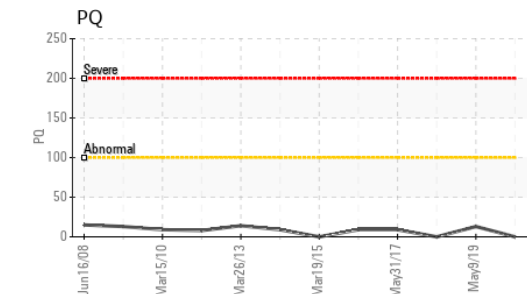
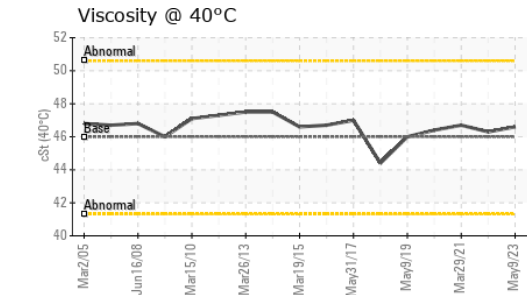
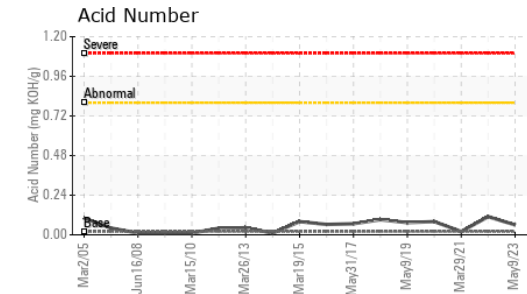
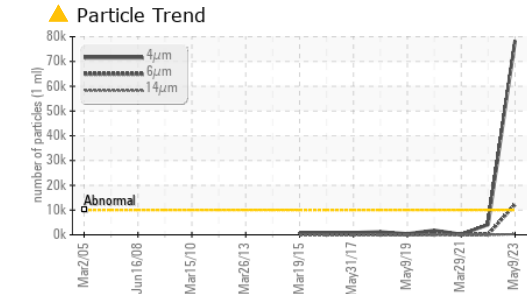
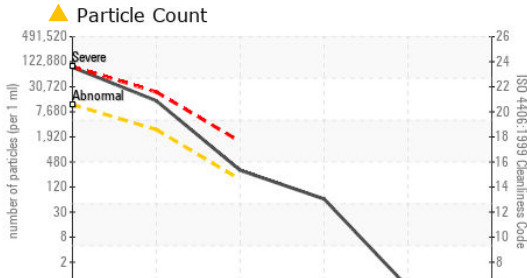
## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >20	<b>14</b>	1	14
Sodium	ppm ASTM D5185(m)	<b>0</b>	0	<1
Potassium	ppm ASTM D5185(m) >20	<b>0</b>	0	<1





# OIL ANALYSIS REPORT



FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>10000	▲ <b>78377</b>	4112	203
Particles >6µm	ASTM D7647	>2500	▲ <b>12309</b>	146	32
Particles >14µm	ASTM D7647	>160	▲ <b>266</b>	5	4
Particles >21µm	ASTM D7647	>40	<b>55</b>	2	1
Particles >38µm	ASTM D7647	>10	<b>0</b>	1	0
Particles >71µm	ASTM D7647	>3	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>20/18/14	▲ <b>23/21/15</b>	19/14/10	15/12/9

FLUID DEGRADATION	method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D974*	0.02	<b>0.06</b>	0.11	0.02

VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	Visual*	NONE	▲ <b>LIGHT</b>	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	<b>LIGHT</b>	NONE	NONE
Appearance	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>2	<b>NEG</b>	NEG	NEG
Free Water	scalar	Visual*		<b>NEG</b>	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 40°C	cSt	ASTM D7279(m)	46	<b>46.6</b>	46.3	46.7

SAMPLE IMAGES	method	limit/base	current	history1	history2
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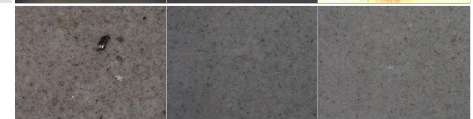
Color



Bottom



PrtFilter



**Laboratory Sample No.** : WC0806464  
**Lab Number** : 02558993  
**Unique Number** : 5580033  
**Test Package** : IND 2 ( Additional Tests: BottomAnalysis, FilterPatch, PrtCount, PrtFilter, TAN Man )

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Received** : 23 May 2023  
**Diagnosed** : 24 May 2023  
**Diagnostician** : Kevin Marson

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

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.

T:  
F: