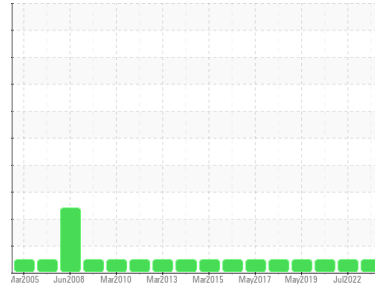




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Area  
**MANITOU FALLS GS**  
 Machine Id  
**FP2G5**  
 Component  
**Thrust Bearing**  
 Fluid  
**ESSO TERESSO ISO 46 (--- GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. NOTE: Not enough sample submitted to perform particle count, therefore fluid cleanliness levels were not determined.

### Wear

All component wear rates are normal.

### Contamination

Insufficient sample was received to conduct all the routine laboratory tests. There is no indication of any contamination in the component(unconfirmed).

### 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			<b>WC0806472</b>	WC0686287	WC0481718
Sample Date	Client Info			<b>09 May 2023</b>	11 Jul 2022	08 Jul 2020
Machine Age	hrs	Client Info		<b>0</b>	0	0
Oil Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed	Client Info			<b>N/A</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

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

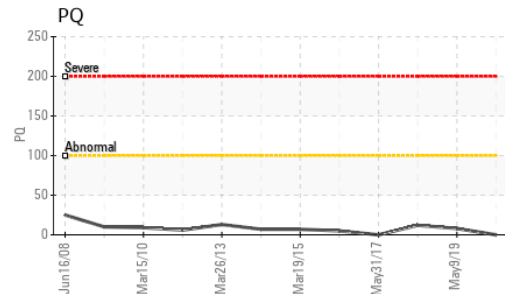
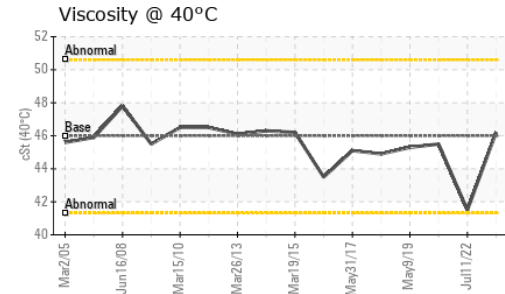
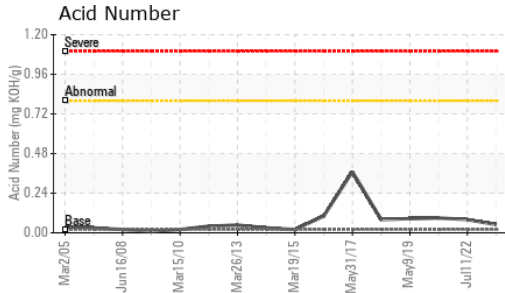
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		<b>0</b>	---	---
Iron	ppm	ASTM D5185(m)	>85	<b>2</b>	<1	3
Chromium	ppm	ASTM D5185(m)	>20	<b>0</b>	0	0
Nickel	ppm	ASTM D5185(m)	>20	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>40	<b>&lt;1</b>	0	0
Lead	ppm	ASTM D5185(m)	>60	<b>0</b>	<1	<1
Copper	ppm	ASTM D5185(m)	>7	<b>2</b>	0	<1
Tin	ppm	ASTM D5185(m)	>40	<b>0</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>	0	<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>&lt;1</b>	0	0
Magnesium	ppm	ASTM D5185(m)	0	<b>0</b>	0	<1
Calcium	ppm	ASTM D5185(m)	0	<b>0</b>	0	<1
Phosphorus	ppm	ASTM D5185(m)	2.4	<b>2</b>	4	<1
Zinc	ppm	ASTM D5185(m)	0	<b>2</b>	2	<1
Sulfur	ppm	ASTM D5185(m)		<b>670</b>	643	1798
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>7</b>	0	2
Sodium	ppm	ASTM D5185(m)		<b>&lt;1</b>	0	<1
Potassium	ppm	ASTM D5185(m)	>20	<b>0</b>	0	<1



# OIL ANALYSIS REPORT



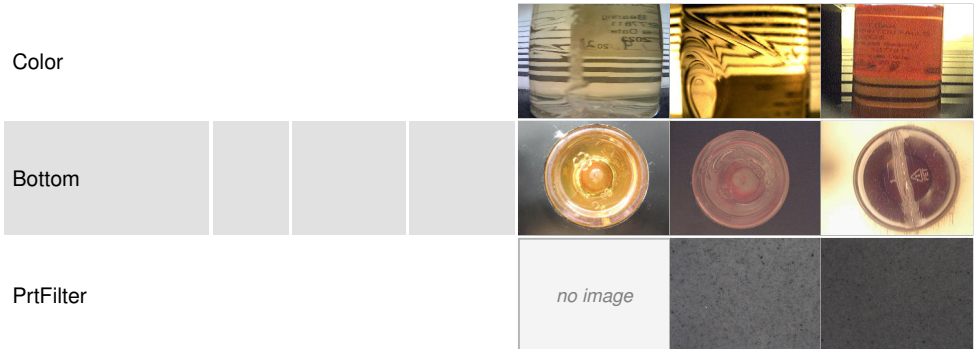
FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>10000	---	2388	892
Particles >6µm	ASTM D7647	>2500	---	60	140
Particles >14µm	ASTM D7647	>160	---	2	11
Particles >21µm	ASTM D7647	>40	---	1	3
Particles >38µm	ASTM D7647	>10	---	0	0
Particles >71µm	ASTM D7647	>3	---	0	0
Oil Cleanliness	ISO 4406 (c)	>20/18/14	---	18/13/9	17/14/11

FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g ASTM D974*	0.02	<b>0.05</b>	0.08	0.09

VISUAL	method	limit/base	current	history1	history2
White Metal	scalar Visual*	NONE	<b>NONE</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>NONE</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>46.2</b>	41.5	45.5

SAMPLE IMAGES	method	limit/base	current	history1	history2
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**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0806472 **Received** : 23 May 2023  
**Lab Number** : **02559012** **Diagnosed** : 24 May 2023  
**Unique Number** : 5580052 **Diagnostician** : Kevin Marson  
**Test Package** : IND 2 ( Additional Tests: BottomAnalysis, FilterPatch, 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

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.