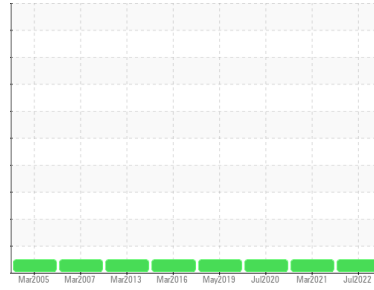




# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Area  
**MANITOU FALLS GS**  
 Machine Id  
**FP2G2**  
 Component  
**Governor System**  
 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.

### Wear

All component wear rates are normal.

### Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

### 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>WC0686280</b>	WC0560638	WC0481711
Sample Date	Client Info			<b>11 Jul 2022</b>	29 Mar 2021	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		>0.1	<b>NEG</b>	NEG	NEG

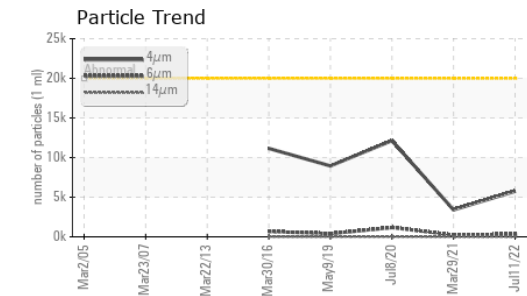
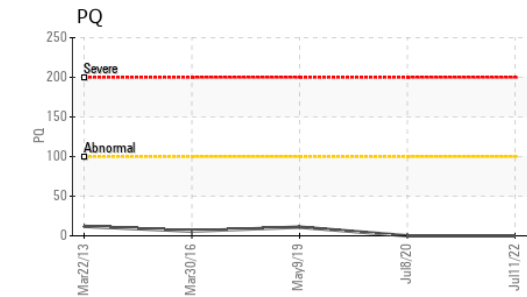
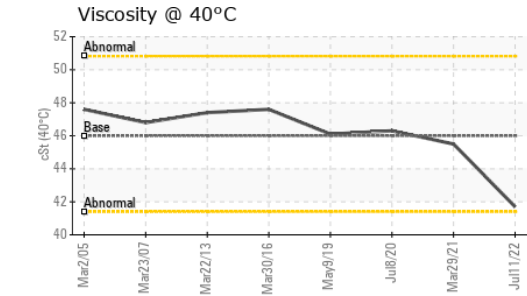
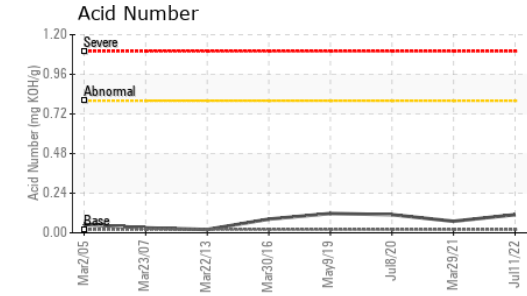
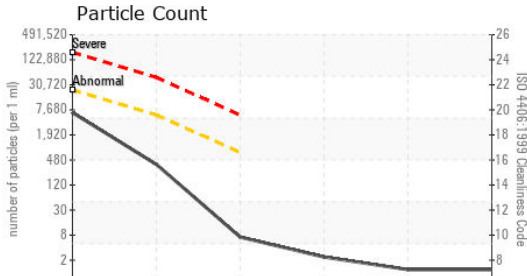
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		<b>0</b>	---	0
Iron	ppm	ASTM D5185(m)	>50	<b>2</b>	2	2
Chromium	ppm	ASTM D5185(m)		<b>0</b>	<1	0
Nickel	ppm	ASTM D5185(m)		<b>0</b>	<1	0
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>3	<b>&lt;1</b>	<1	<1
Lead	ppm	ASTM D5185(m)	>75	<b>&lt;1</b>	<1	<1
Copper	ppm	ASTM D5185(m)	>15	<b>0</b>	<1	0
Tin	ppm	ASTM D5185(m)	>55	<b>0</b>	<1	0
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>	<1	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>	<1	<1
Calcium	ppm	ASTM D5185(m)	0	<b>&lt;1</b>	<1	<1
Phosphorus	ppm	ASTM D5185(m)	2.4	<b>2</b>	4	2
Zinc	ppm	ASTM D5185(m)	0	<b>1</b>	1	1
Sulfur	ppm	ASTM D5185(m)		<b>1900</b>	1909	1936
Lithium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>8	<b>&lt;1</b>	1	<1
Sodium	ppm	ASTM D5185(m)		<b>0</b>	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	<b>0</b>	<1	1



# OIL ANALYSIS REPORT



FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	<b>5748</b>	3404	12139
Particles >6µm	ASTM D7647	>5000	<b>332</b>	228	1174
Particles >14µm	ASTM D7647	>640	<b>6</b>	5	18
Particles >21µm	ASTM D7647	>160	<b>2</b>	0	4
Particles >38µm	ASTM D7647	>40	<b>1</b>	0	0
Particles >71µm	ASTM D7647	>10	<b>1</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>21/19/16	<b>20/16/10</b>	19/15/10	21/17/11

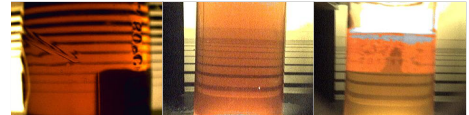
FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g ASTM D974*	0.02	<b>0.11</b>	0.07	0.11

VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	<b>NEG</b>	NEG
Free Water	scalar	Visual*		<b>NEG</b>	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt ASTM D7279(m)	46	<b>41.7</b>	45.5	46.3

SAMPLE IMAGES	method	limit/base	current	history1	history2
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Color



Bottom



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0686280  
**Lab Number** : 02499193  
**Unique Number** : 5424153  
**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

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.