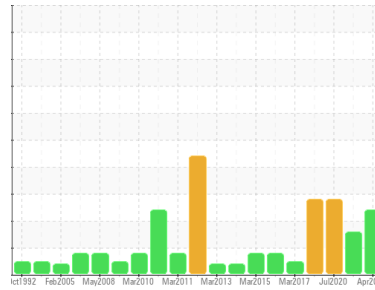




# PROBLEM SUMMARY

Sample Rating Trend



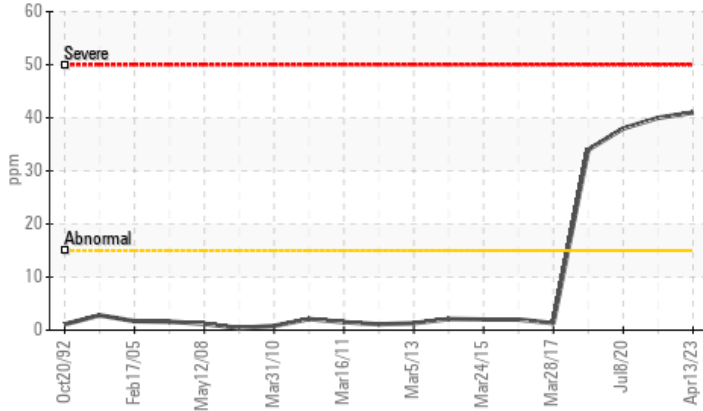
DIRT



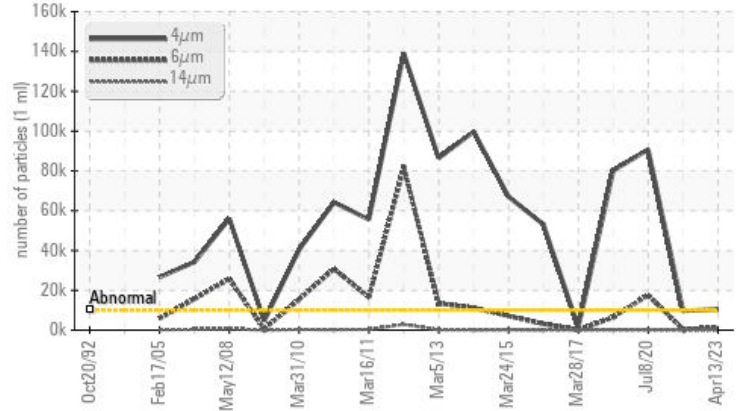
Area  
**WHITEDOG FALLS GS**  
 Machine Id  
**FP3G3**  
 Component  
**Turbine Bearing**  
 Fluid  
**ESSO TERESSO ISO 46 (--- GAL)**

## COMPONENT CONDITION SUMMARY

▲ Silicon (ppm)



▲ Particle Trend



## RECOMMENDATION

We advise that you check all areas where dirt can enter the system. 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.

## PROBLEMATIC TEST RESULTS

Sample Status			ABNORMAL	ABNORMAL	SEVERE
Silicon	ppm	ASTM D5185(m) >15	▲ 41	▲ 40	▲ 38
Particles >4µm		ASTM D7647 >10000	▲ 10439	9738	● 90738
Oil Cleanliness		ISO 4406 (c) >20/18/14	▲ 21/17/13	20/16/10	● 24/21/13

Customer Id: ONTKEE  
 Sample No.: WC0806491  
 Lab Number: 02558996  
 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 advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.
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 Breathers	---	---	?	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.
Check Dirt Access	---	---	?	We advise that you check all areas where dirt can enter the system.
Filter Fluid	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.

## HISTORICAL DIAGNOSIS

### 11 Jul 2022 Diag: Kevin Marson

DIRT



Check seals and/or filters for points of contaminant entry. 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. Elemental level of silicon (Si) above normal indicating ingress of seal material. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report



### 08 Jul 2020 Diag: Kevin Marson

DIRT



Check seals and/or filters for points of contaminant entry. 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 advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. Resample in 30-45 days to monitor this situation. 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 severely high. Silicon ppm levels are abnormally high. Particles >6µm are abnormally high. Elemental level of silicon (Si) above normal indicating ingress of seal material. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

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. 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 advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. All component wear rates are normal. Particles >4µm are severely high. Silicon ppm levels are abnormally high. Particles >6µm are abnormally high. The AN level is acceptable for this fluid.

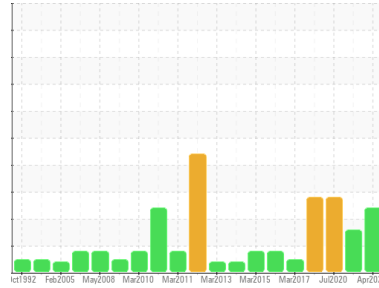
view report





# OIL ANALYSIS REPORT

Sample Rating Trend



**DIRT**



Area  
**WHITEDOG FALLS GS**  
 Machine Id  
**FP3G3**  
 Component  
**Turbine Bearing**  
 Fluid  
**ESSO TERESSO ISO 46 (--- GAL)**

## DIAGNOSIS

### Recommendation

We advise that you check all areas where dirt can enter the system. 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.

### Wear

All component wear rates are normal.

### Contamination

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

### Fluid Condition

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0806491</b>	WC0686306	WC0475109
Sample Date	Client Info		<b>13 Apr 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>ABNORMAL</b>	ABNORMAL	SEVERE

## 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) >20	<b>&lt;1</b>	<1	<1
Chromium	ppm	ASTM D5185(m) >20	<b>0</b>	0	0
Nickel	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	<1	<1
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) >20	<b>&lt;1</b>	0	<1
Lead	ppm	ASTM D5185(m) >20	<b>0</b>	0	0
Copper	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	0	<1
Tin	ppm	ASTM D5185(m) >20	<b>0</b>	0	0
Antimony	ppm	ASTM D5185(m)	<b>&lt;1</b>	0	<1
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	0
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	0
Phosphorus	ppm	ASTM D5185(m) 2.4	<b>0</b>	<1	0
Zinc	ppm	ASTM D5185(m) 0	<b>1</b>	<1	1
Sulfur	ppm	ASTM D5185(m)	<b>781</b>	731	743
Lithium	ppm	ASTM D5185(m)	<b>&lt;1</b>	<1	<1

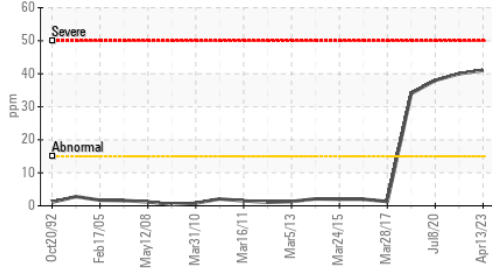
## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >15	<b>▲ 41</b>	▲ 40	▲ 38
Sodium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Potassium	ppm	ASTM D5185(m) >20	<b>0</b>	<1	0

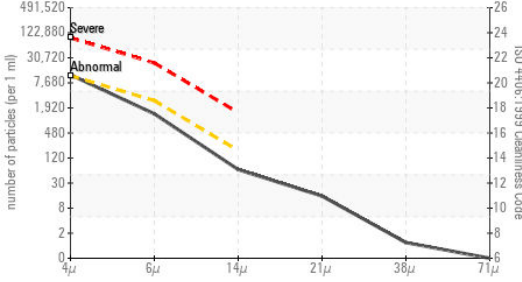


# OIL ANALYSIS REPORT

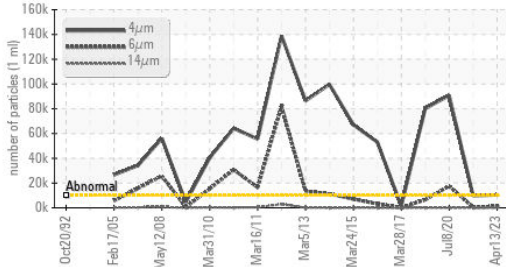
## ▲ Silicon (ppm)



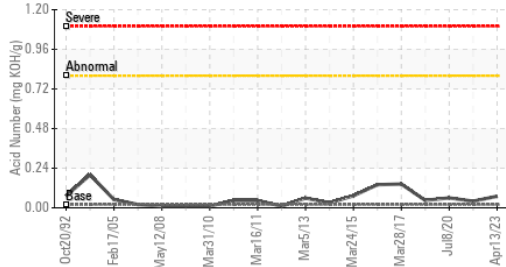
## ▲ Particle Count



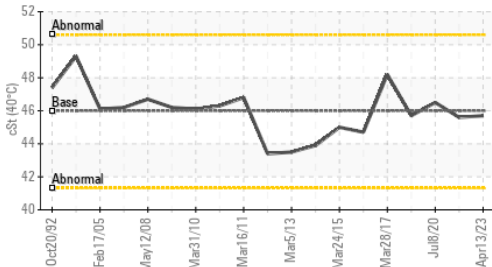
## ▲ Particle Trend



## Acid Number



## Viscosity @ 40°C



FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>10000	▲ 10439	9738	● 90738
Particles >6µm	ASTM D7647	>2500	1212	405	▲ 17540
Particles >14µm	ASTM D7647	>160	56	9	57
Particles >21µm	ASTM D7647	>40	13	3	9
Particles >38µm	ASTM D7647	>10	1	0	0
Particles >71µm	ASTM D7647	>3	0	0	0
Oil Cleanliness	ISO 4406 (c)	>20/18/14	▲ 21/17/13	20/16/10	● 24/21/13

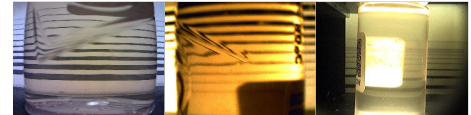
FLUID DEGRADATION	method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D974*	0.02	0.07	0.04	0.06

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	VLITE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>2	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	45.7	45.6	46.5

## SAMPLE IMAGES

Color



Bottom



ISO 17025:2017  
Accredited  
Laboratory

Laboratory

Sample No.

Lab Number

Unique Number

Test Package

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9

: WC0806491

: 02558996

: 5580036

: IND 2 ( Additional Tests: PrtCount, TAN Man )

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

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.