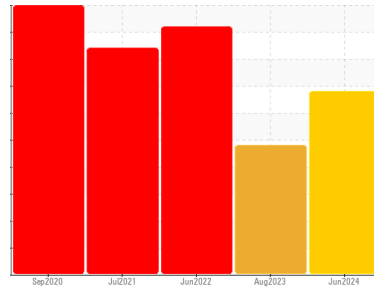




PROBLEM SUMMARY

Sample Rating Trend



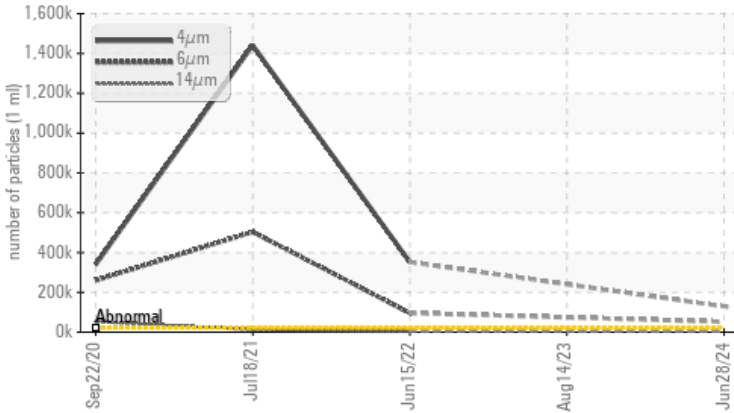
ISO



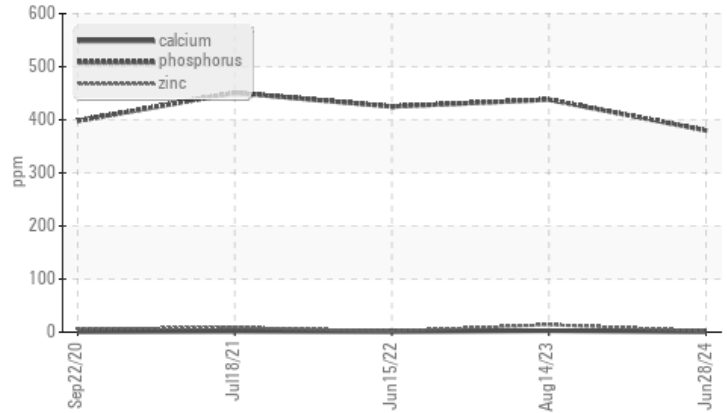
Area
[6221846-09]
 Machine Id
SAB1MONTROSEGATEWEST
 Component
Gearbox
 Fluid
ESSO TERESSTIC SHP 460 (--- GAL)

COMPONENT CONDITION SUMMARY

▲ Particle Trend



Additives



RECOMMENDATION

Check seals and/or filters for points of contaminant entry. We advise that you check all areas where contaminants can enter the system. 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 either performing an oil change or oil filtration. We cannot recommend specific action as we have limited information with regards to reservoir capacity and/or lubricant type. We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

PROBLEMATIC TEST RESULTS

Sample Status			SEVERE	ABNORMAL	SEVERE
Particles >4µm	ASTM D7647	>20000	▲ 129022	---	▲ 352087
Particles >6µm	ASTM D7647	>5000	▲ 51954	---	▲ 95988
Particles >14µm	ASTM D7647	>640	▲ 4557	---	▲ 5415
Particles >21µm	ASTM D7647	>160	▲ 1205	---	▲ 1245
Particles >38µm	ASTM D7647	>40	▲ 86	---	● 70
Oil Cleanliness	ISO 4406 (c)	>21/19/16	▲ 24/23/19	---	▲ 26/24/20
Appearance	scalar	Visual*	▲ WGOIL	▲ LAYRD	NORML
Free Water	scalar	Visual*	▲ 5%	▲ >10%	▲ >10%

Customer Id: ONTQUE
 Sample No.: PP
 Lab Number: 02645655
 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	---	---	?	We recommend you service the filters on this component.
Resample	---	---	?	Resample in 30-45 days to monitor this situation.
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 contaminants can enter the system.
Check Fluid Source	---	---	?	Confirm the source of the lubricant being utilized for top-up/fill.
Check Seals	---	---	?	Check seals and/or filters for points of contaminant entry.
Filter Fluid	---	---	?	We recommend either performing an oil change or oil filtration. We cannot recommend specific action as we have limited information with regards to reservoir capacity and/or lubricant type.

HISTORICAL DIAGNOSIS

WATER



14 Aug 2023 Diag: Kevin Marson

We advise that you check for the source of water 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 follow the water drain-off procedure for 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. Lead ppm levels are abnormal. Bearing and/or bushing wear is indicated. There is a moderate concentration of water present in the oil. Excessive free water present. The oil viscosity is higher than typical. 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



ISO



15 Jun 2022 Diag: Kevin Marson

Check seals and/or filters for points of contaminant entry. We advise that you check all areas where contaminants can enter the system. 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 that you drain the oil from the component if this has not already been done. 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 >14µm are severely high. Particles >6µm are severely high. Particles >4µm are severely high. Oil Cleanliness are severely high. Oil Cleanliness are severely high.. Particles >21µm are abnormally high. Particles >38µm are notably high. Excessive free water present. The AN level is acceptable for this fluid. The oil is no longer serviceable due to the presence of contaminants.

view report



ISO



18 Jul 2021 Diag: Kevin Marson

Check seals and/or filters for points of contaminant entry. We advise that you check all areas where contaminants can enter the system. 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 use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. 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 >14µm are severely high. Particles >6µm are severely high. Particles >4µm are severely high. Particles >4µm are severely high.. ppm Water and water and water contamination levels are abnormal. Particles >21µm are abnormally high. There is a moderate concentration of water present in the oil. Free water present. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

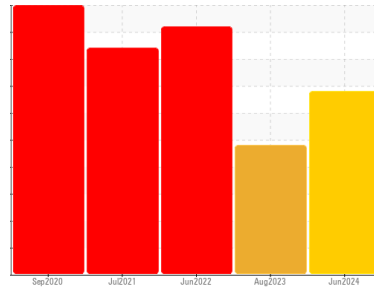
view report





OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area

[6221846-09]

Machine Id

SAB1MONTROSEGATEWEST

Component

Gearbox

Fluid

ESSO TERESSTIC SHP 460 (--- GAL)

DIAGNOSIS

Recommendation

Check seals and/or filters for points of contaminant entry. We advise that you check all areas where contaminants can enter the system. 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 either performing an oil change or oil filtration. We cannot recommend specific action as we have limited information with regards to reservoir capacity and/or lubricant type. We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. Resample in 30-45 days to monitor this situation. 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 high amount of particulates (2 to 100 microns in size) present in the oil. Free water present.

Fluid Condition

Additive levels indicate the addition of a different brand, or type of oil. The AN level is acceptable for this fluid.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		PP	WC926113	WC760619
Sample Date	Client Info		28 Jun 2024	14 Aug 2023	15 Jun 2022
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			SEVERE	ABNORMAL	SEVERE

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184*		0	70	---
Iron	ppm	ASTM D5185(m) >200	3	57	6
Chromium	ppm	ASTM D5185(m) >15	0	0	0
Nickel	ppm	ASTM D5185(m) >15	<1	<1	<1
Titanium	ppm	ASTM D5185(m)	0	<1	0
Silver	ppm	ASTM D5185(m)	0	0	0
Aluminum	ppm	ASTM D5185(m) >25	<1	1	<1
Lead	ppm	ASTM D5185(m) >100	5	▲ 129	8
Copper	ppm	ASTM D5185(m) >200	<1	47	2
Tin	ppm	ASTM D5185(m) >25	0	4	<1
Antimony	ppm	ASTM D5185(m) >5	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	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m) 0	<1	1	2
Barium	ppm	ASTM D5185(m) 0	0	<1	0
Molybdenum	ppm	ASTM D5185(m) 0	0	<1	0
Manganese	ppm	ASTM D5185(m)	0	<1	0
Magnesium	ppm	ASTM D5185(m) 0	0	2	0
Calcium	ppm	ASTM D5185(m) 0	<1	2	<1
Phosphorus	ppm	ASTM D5185(m) 600	380	438	425
Zinc	ppm	ASTM D5185(m) 0	2	14	1
Sulfur	ppm	ASTM D5185(m) 0	240	299	203
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

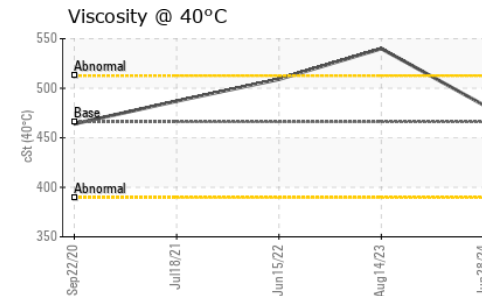
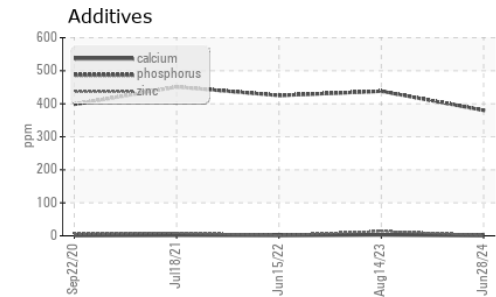
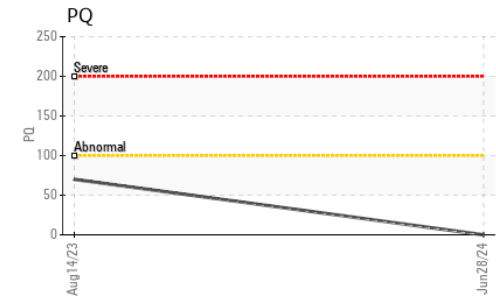
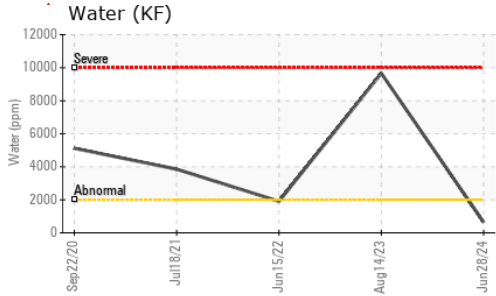
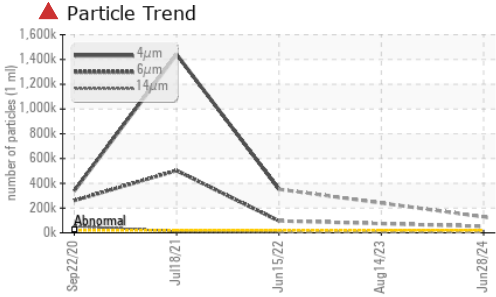
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >50	9	44	14
Sodium	ppm	ASTM D5185(m)	0	2	<1
Potassium	ppm	ASTM D5185(m) >20	<1	<1	0
Water	%	ASTM D6304* >0.2	0.064	▲ 0.966	0.190
ppm Water	ppm	ASTM D6304* >2000	640	▲ 9661.1	1908.7

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	▲ 129022	---	▲ 352087
Particles >6µm	ASTM D7647	>5000	▲ 51954	---	▲ 95988
Particles >14µm	ASTM D7647	>640	▲ 4557	---	▲ 5415
Particles >21µm	ASTM D7647	>160	▲ 1205	---	▲ 1245
Particles >38µm	ASTM D7647	>40	▲ 86	---	● 70
Particles >71µm	ASTM D7647	>10	8	---	4
Oil Cleanliness	ISO 4406 (c)	>21/19/16	▲ 26/23/19	---	▲ 26/24/20



OIL ANALYSIS REPORT

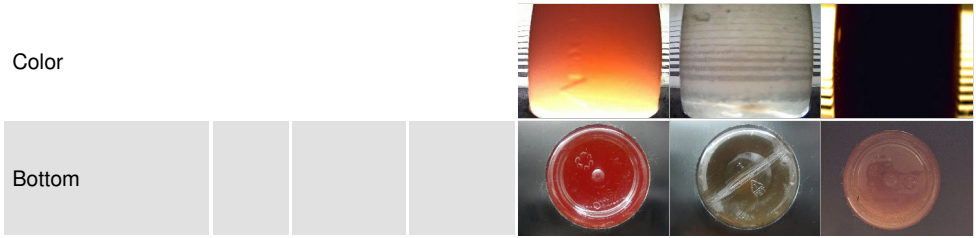


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.2	0.53	0.85	0.52

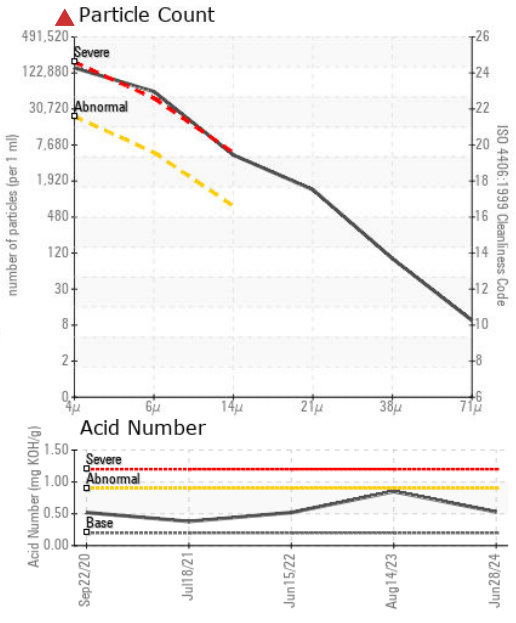
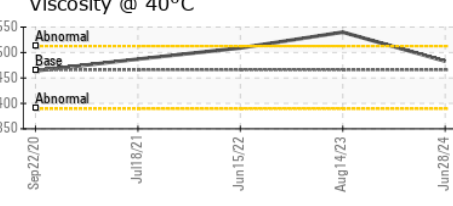
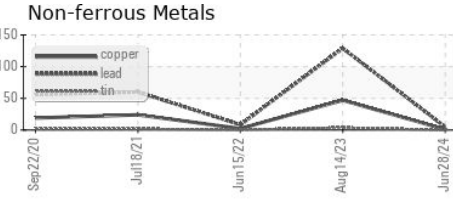
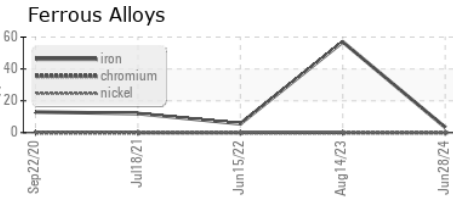
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	VLITE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE	▲ LIGHT
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	VLITE	LIGHT	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	▲ WGOIL	▲ LAYRD	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	1%	▲ 1%	1%
Free Water	scalar	Visual*		▲ 5%	▲ >10%	▲ >10%

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	466	483	540	509

SAMPLE IMAGES		method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PP
Lab Number : 02645655
Unique Number : 5803194
Test Package : IND 2 (Additional Tests: KF, PQ, PrtCount, TAN Man)
Received : 04 Jul 2024
Tested : 10 Jul 2024
Diagnosed : 10 Jul 2024 - Kevin Marson

Ontario Power Generation
 NIAGARA PLANT GROUP, 14000 NIAGARA PKWY
 NIAGARA ON THE LAKE, ON
 CA LOS 1J0
 Contact: Michael Brochu
 mike.brochu@opg.com
 T: (905)357-0322
 F: (905)374-5466

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.