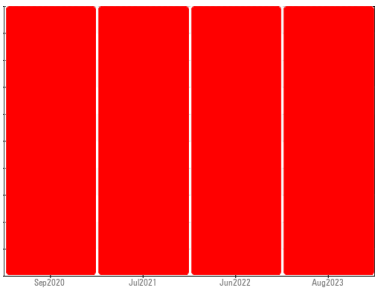
PROBLEM SUMMARY

Sample Rating Trend

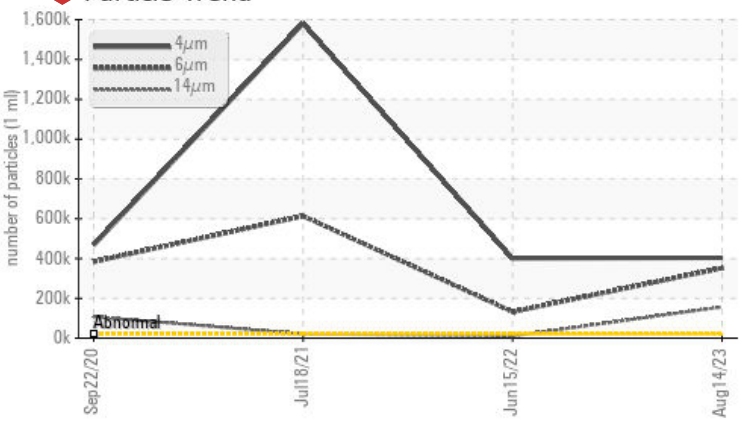


ISO

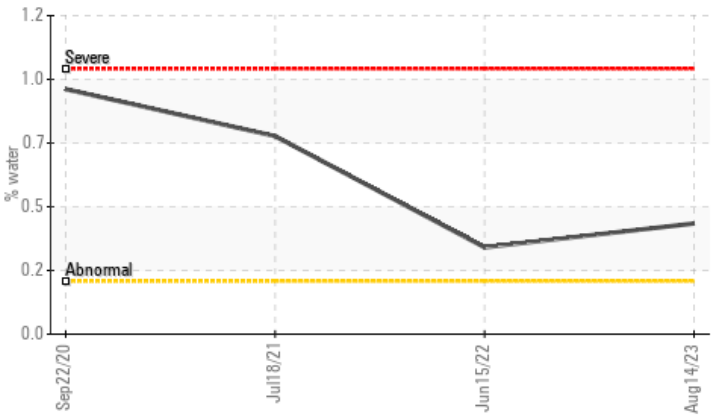
Machine Id
SAB1MONTROSEGATEEAST
Component
Gearbox
Fluid
ESSO TERESSTIC SHP 460 (--- GAL)

COMPONENT CONDITION SUMMARY

Particle Trend



Water



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 advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. We advise that you follow the water drain-off procedure for this component. 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. We suspect that the abnormal contaminant(s) is the result of incorrect sampling technique. DISCLAIMER: Interpretation of results is based on the sample as received from the customer. The condition of the sample and the method of sampling cannot be verified.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	SEVERE
Water	%	ASTM D6304*	>0.2	**0.417**	0.327	0.746
ppm Water	ppm	ASTM D6304*	>2000	**4170.5**	3273.1	7464.4
Particles >4µm		ASTM D7647	>20000	**403637**	400850	1580322
Particles >6µm		ASTM D7647	>5000	**352074**	131978	613272
Particles >14µm		ASTM D7647	>640	**156568**	10395	21249
Particles >21µm		ASTM D7647	>160	**66993**	2766	2575
Particles >38µm		ASTM D7647	>40	**2921**	164	42
Particles >71µm		ASTM D7647	>10	**126**	5	2
Oil Cleanliness		ISO 4406 (c)	>21/19/16	**26/26/24**	26/24/21	28/26/22
Debris	scalar	Visual*	NONE	**MODER**	NONE	VLITE
Appearance	scalar	Visual*	NORML	**LAYRD**	LAYRD	NORML
Emulsified Water	scalar	Visual*	>0.2	**1%**	1%	.5%
Free Water	scalar	Visual*		**>10%**	>10%	>10%

Customer Id: ONTQUE
Sample No.: WC926117
Lab Number: 02576283
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 advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.
Water Drain-off	---	---	?	We advise that you follow the water drain-off procedure for this component.
Resample	---	---	?	Resample in 30-45 days to monitor this situation.
Alert	---	---	?	We suspect that the abnormal contaminant(s) is the result of incorrect sampling technique. DISCLAIMER: Interpretation of results is based on the sample as received from the customer. The condition of the sample and the method of sampling cannot be verified.
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 Seals	---	---	?	Check seals and/or filters for points of contaminant entry.
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

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 >21µm are severely high. Particles >6µm are severely high. Oil Cleanliness are severely high. Particles >4µm are severely high. Particles >4µm are severely high.. ppm Water and water, water and water contamination levels are abnormal. Particles >38µm are abnormally high. There is a moderate concentration of water present in the oil. Excessive free water present. The white residue present in the sample is oil additive precipitate. 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 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. 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 >21µm are severely high. Particles >6µm are severely high. Particles >4µm are severely high. Particles >4µm are severely high.. ppm Water and water contamination levels are abnormal. 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

ISO

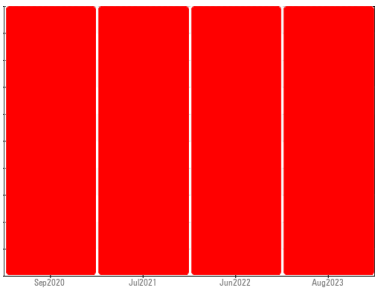
22 Sep 2020 Diag: Kevin Marson

Check seals and/or filters for points of contaminant entry. We advise that you check all areas where contaminants can enter the system. We advise that you follow the water drain-off procedure for this component, 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. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. NOTE: Test values may be askew due high concentration of free water present in sample.All component wear rates are normal. Particles >14µm are severely high. Particles >21µm are severely high. Particles >38µm are severely high. Particles >6µm are severely high. Particles >4µm are severely high. Particles >4µm are severely high.. Particles >4µm are severely high... ppm Water and water and water contamination levels are abnormal. Particles >71µm are abnormally high. There is a high concentration of water present in the oil. The AN level is acceptable for this fluid.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Machine Id
SAB1MONTROSEGATEEAST
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 advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. We advise that you follow the water drain-off procedure for this component. 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. We suspect that the abnormal contaminant(s) is the result of incorrect sampling technique. DISCLAIMER: Interpretation of results is based on the sample as received from the customer. The condition of the sample and the method of sampling cannot be verified.

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. There is a moderate concentration of water present in the oil. Excessive free water present. Moderate concentration of visible dirt/debris present in the oil.

Fluid Condition

The AN level is acceptable for this fluid.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC926117**	WC	WC0320640
Sample Date		Client Info		**14 Aug 2023**	15 Jun 2022	18 Jul 2021
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**	SEVERE	SEVERE

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		**15**	---	---
Iron	ppm	ASTM D5185(m)	>200	**30**	7	28
Chromium	ppm	ASTM D5185(m)	>15	**0**	0	0
Nickel	ppm	ASTM D5185(m)	>15	**<1**	<1	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**0**	0	<1
Aluminum	ppm	ASTM D5185(m)	>25	**1**	0	<1
Lead	ppm	ASTM D5185(m)	>100	**31**	6	41
Copper	ppm	ASTM D5185(m)	>200	**19**	2	25
Tin	ppm	ASTM D5185(m)	>25	**2**	<1	2
Antimony	ppm	ASTM D5185(m)	>5	**0**	0	<1
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

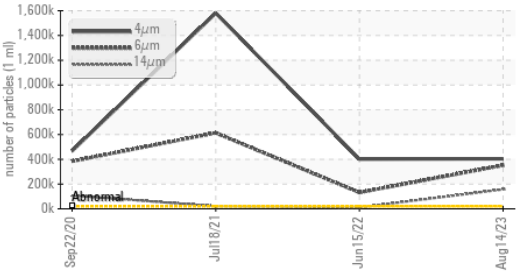
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	**<1**	2	2
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	0	**0**	0	<1
Manganese	ppm	ASTM D5185(m)		**<1**	0	<1
Magnesium	ppm	ASTM D5185(m)	0	**1**	0	<1
Calcium	ppm	ASTM D5185(m)	0	**1**	<1	<1
Phosphorus	ppm	ASTM D5185(m)	600	**433**	430	448
Zinc	ppm	ASTM D5185(m)	0	**11**	3	15
Sulfur	ppm	ASTM D5185(m)	0	**259**	151	703
Lithium	ppm	ASTM D5185(m)		**<1**	0	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>50	**18**	10	17
Sodium	ppm	ASTM D5185(m)		**<1**	0	0
Potassium	ppm	ASTM D5185(m)	>20	**<1**	0	<1
Water	%	ASTM D6304*	>0.2	▲ **0.417**	▲ 0.327	▲ 0.746
ppm Water	ppm	ASTM D6304*	>2000	▲ **4170.5**	▲ 3273.1	▲ 7464.4

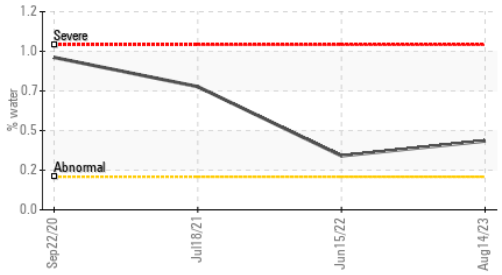
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	**403637**	400850	1580322
Particles >6µm		ASTM D7647	>5000	**352074**	131978	613272
Particles >14µm		ASTM D7647	>640	**156568**	10395	21249
Particles >21µm		ASTM D7647	>160	**66993**	2766	2575
Particles >38µm		ASTM D7647	>40	**2921**	▲ 164	42
Particles >71µm		ASTM D7647	>10	**126**	5	2
Oil Cleanliness		ISO 4406 (c)	>21/19/16	**26/26/24**	26/24/21	28/26/22

OIL ANALYSIS REPORT

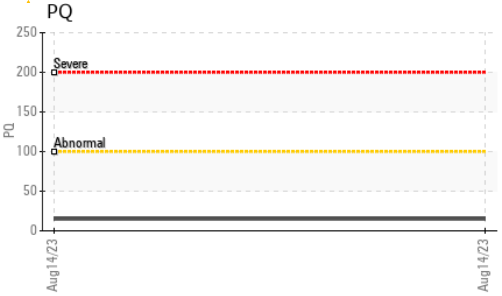
Particle Trend



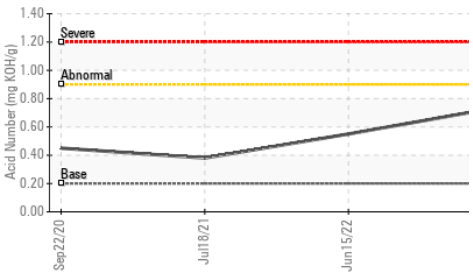
Water



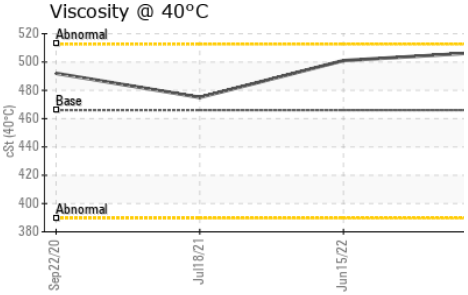
PQ



Acid Number



Viscosity @ 40°C



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.2	**0.73**	0.55	0.38

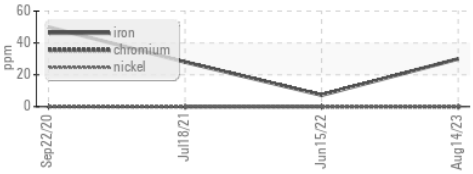
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**VLITE**	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Precipitate	scalar	Visual*	NONE	**NONE**	▲ MODER	NONE
Silt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Debris	scalar	Visual*	NONE	▲ **MODER**	NONE	VLITE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

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	466	**507**	501	475

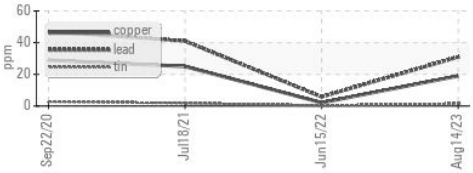
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

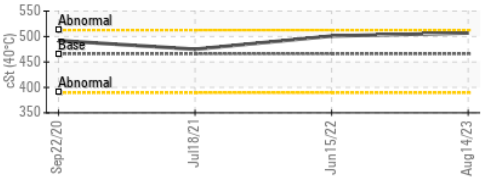
Ferrous Alloys



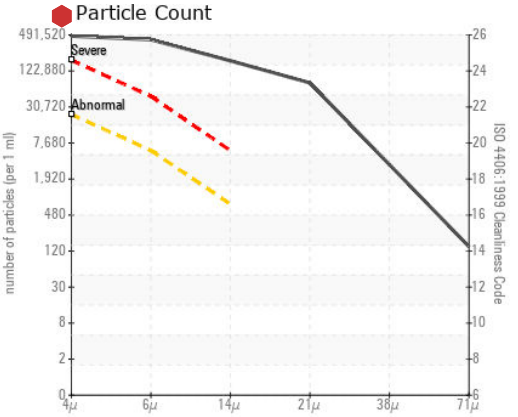
Non-ferrous Metals



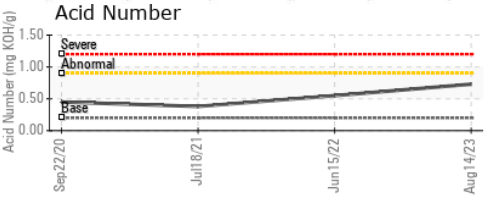
Viscosity @ 40°C



Particle Count



Acid Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC926117 **Received** : 16 Aug 2023
Lab Number : 02576283 **Diagnosed** : 18 Aug 2023
Unique Number : 5629343 **Diagnostician** : Kevin Marson
Test Package : IND 2 (Additional Tests: Bottom, KF, PQ, PrtCount, TAN Man)

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.

Ontario Power Generation
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