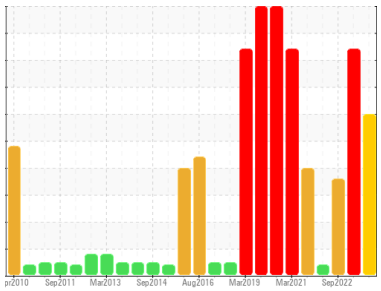
PROBLEM SUMMARY

Sample Rating Trend

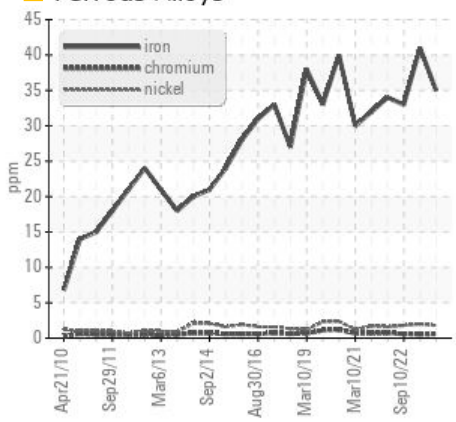


WATER

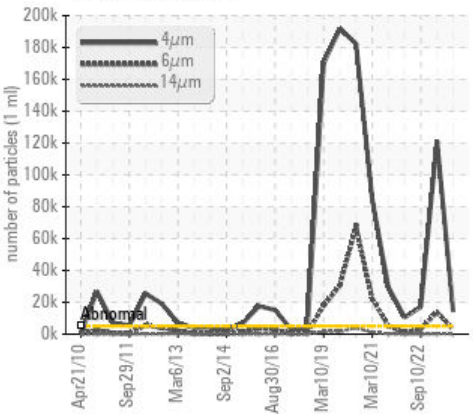
Area
Curing Department
Machine Id
PHB04
Component
Hydraulic System
Fluid
ISO 68 (200 GAL)

COMPONENT CONDITION SUMMARY

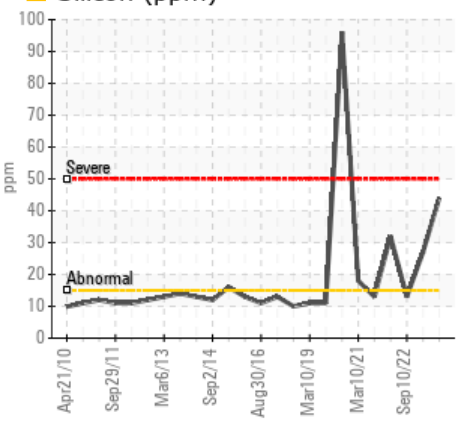
Ferrous Alloys



Particle Trend



Silicon (ppm)



RECOMMENDATION

We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. We advise that you check all areas where dirt 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 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. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	SEVERE	ABNORMAL
Iron	ppm	ASTM D5185(m)	>20	▲ **35**	▲ 41	33
Silicon	ppm	ASTM D5185(m)	>15	▲ **44**	27	13
Particles >4µm		ASTM D7647	>5000	▲ **14511**	⬢ 121136	▲ 17109
Particles >6µm		ASTM D7647	>1300	▲ **2984**	⬢ 13865	▲ 3081
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ **21/19/14**	⬢ 24/21/15	▲ 21/19/14
Appearance	scalar	Visual*	NORML	▲ **WGOIL**	▲ LAYRD	▲ LAYRD
Free Water	scalar	Visual*		▲ **1%**	▲ >10%	▲ >10%

Customer Id: GOONAP
Sample No.: WC0851358
Lab Number: 02590994
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
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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	---	---	?	We recommend an early resample to monitor this condition.
Information Required	---	---	?	Please specify the brand, type, and viscosity of the oil on your 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.
Check Water Access	---	---	?	We advise that you check for the source of water entry.
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

10 Mar 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 advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. Please specify the brand, type, and viscosity of the oil on your next sample.Iron ppm levels are abnormal. Aluminum ppm levels are marginal. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion. There is a high amount of silt (particulates < 14 microns in size) present in the oil. There is a moderate concentration of water present in the oil. Excessive free water present. The AN level is acceptable for this fluid.

view report

WATER

10 Sep 2022 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 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 recommend you service the filters on this component. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.All component wear rates are normal. Particles >4µm are abnormally high. Particles >6µm and oil cleanliness are abnormally high. There is a moderate concentration of water present in the oil. Excessive 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

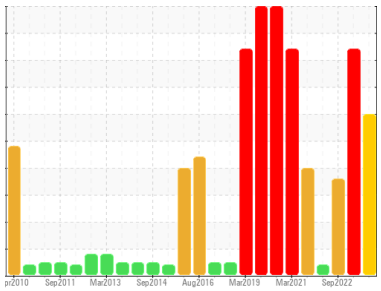
10 Mar 2022 Diag: Wes Davis

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.All component wear rates are normal. Particles >4µm are abnormally high. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



WATER

Area
Curing Department
Machine Id
PHB04
Component
Hydraulic System
Fluid
ISO 68 (200 GAL)

DIAGNOSIS

Recommendation

We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. We advise that you check all areas where dirt 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 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. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

Iron ppm levels are abnormal. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion.

Contamination

There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. Free water present. There is a moderate concentration of dirt present in the oil. High amount of ingressed dirt has caused abrasive wear to the component.

Fluid Condition

The AN level is acceptable for this fluid.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0851358**	WC0794147	WC0736511
Sample Date		Client Info		**09 Oct 2023**	10 Mar 2023	10 Sep 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				**ABNORMAL**	SEVERE	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		**0**	0	---
Iron	ppm	ASTM D5185(m)	>20	▲ **35**	▲ 41	33
Chromium	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Nickel	ppm	ASTM D5185(m)	>20	**2**	2	2
Titanium	ppm	ASTM D5185(m)		**0**	<1	<1
Silver	ppm	ASTM D5185(m)		**<1**	<1	0
Aluminum	ppm	ASTM D5185(m)	>20	**6**	▲ 9	2
Lead	ppm	ASTM D5185(m)	>20	**15**	23	18
Copper	ppm	ASTM D5185(m)	>20	**118**	136	149
Tin	ppm	ASTM D5185(m)	>20	**0**	<1	<1
Antimony	ppm	ASTM D5185(m)		**0**	<1	<1
Vanadium	ppm	ASTM D5185(m)		**0**	<1	<1
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	1	<1

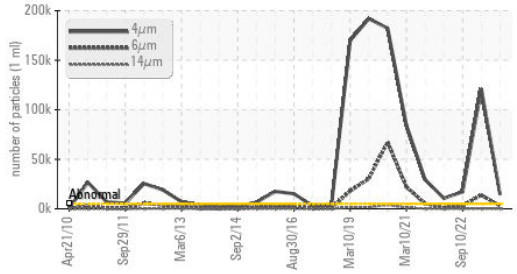
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**<1**	<1	<1
Barium	ppm	ASTM D5185(m)		**<1**	<1	<1
Molybdenum	ppm	ASTM D5185(m)		**0**	0	0
Manganese	ppm	ASTM D5185(m)		**<1**	<1	<1
Magnesium	ppm	ASTM D5185(m)		**42**	29	32
Calcium	ppm	ASTM D5185(m)		**67**	62	51
Phosphorus	ppm	ASTM D5185(m)		**684**	798	712
Zinc	ppm	ASTM D5185(m)		**588**	637	548
Sulfur	ppm	ASTM D5185(m)		**2149**	2437	2166
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	▲ **44**	27	13
Sodium	ppm	ASTM D5185(m)		**3**	2	3
Potassium	ppm	ASTM D5185(m)	>20	**0**	2	0
Water	%	ASTM D6304*	>0.05	**0.036**	---	---
ppm Water	ppm	ASTM D6304*	>500	**365.9**	---	---

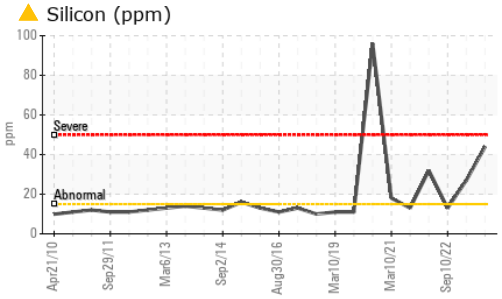
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	▲ **14511**	⬢ 121136	▲ 17109
Particles >6µm		ASTM D7647	>1300	▲ **2984**	⬢ 13865	▲ 3081
Particles >14µm		ASTM D7647	>160	**137**	▲ 257	120
Particles >21µm		ASTM D7647	>40	**24**	▲ 66	32
Particles >38µm		ASTM D7647	>10	**2**	6	1
Particles >71µm		ASTM D7647	>3	**1**	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ **21/19/14**	⬢ 24/21/15	▲ 21/19/14

OIL ANALYSIS REPORT

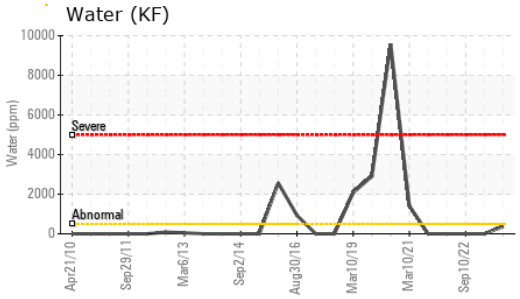
Particle Trend



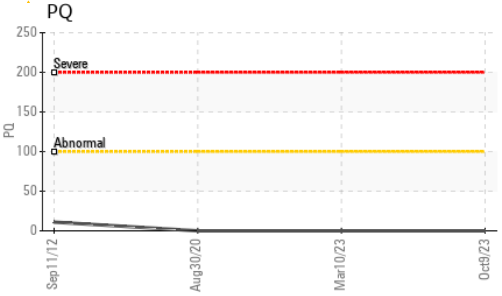
Silicon (ppm)



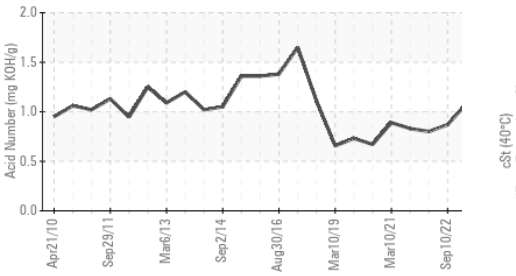
Water (KF)



PQ



Acid Number

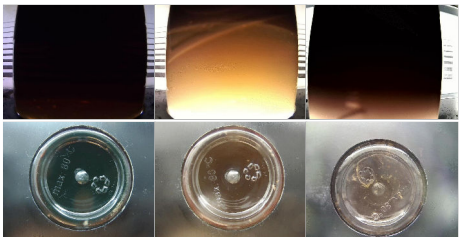


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		**0.88**	1.08	0.87

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Precipitate	scalar	Visual*	NONE	**VLITE**	NONE	NONE
Silt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Debris	scalar	Visual*	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Appearance	scalar	Visual*	NORML	▲ **WGOIL**	▲ LAYRD	▲ LAYRD
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.05	**.2%**	▲ .2%	▲ 1%
Free Water	scalar	Visual*		▲ **1%**	▲ >10%	▲ >10%

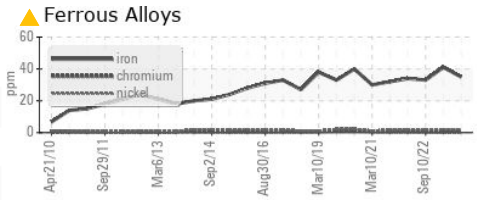
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	68.0	**65.1**	63.7	65.7

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

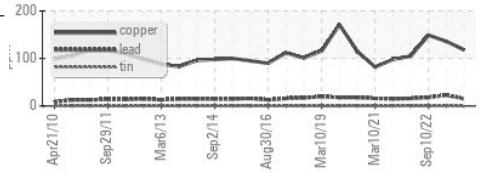


GRAPHS

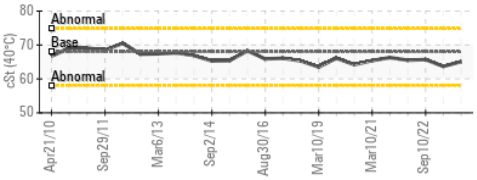
Ferrous Alloys



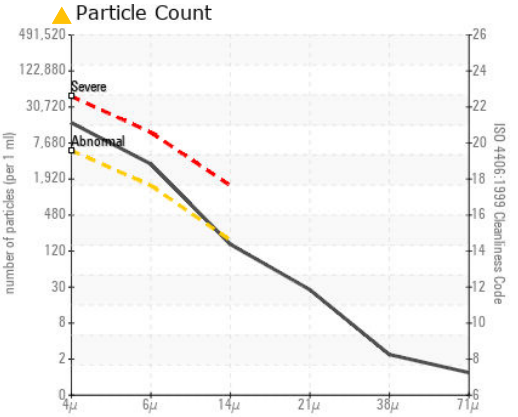
Non-ferrous Metals



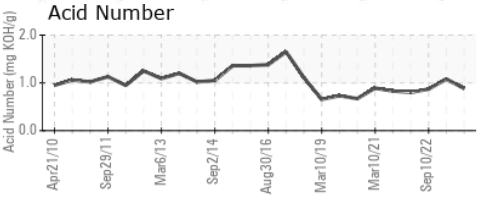
Viscosity @ 40°C



Particle Count



Acid Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0851358 **Received** : 23 Oct 2023
Lab Number : 02590994 **Diagnosed** : 25 Oct 2023
Unique Number : 5668073 **Diagnostician** : Kevin Marson
Test Package : IND 2 (Additional Tests: KF, PQ)

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.

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