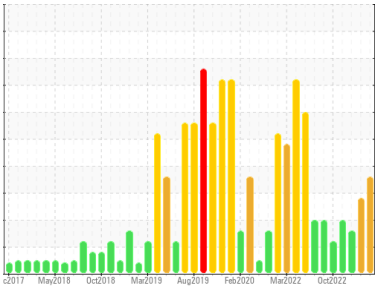
PROBLEM SUMMARY

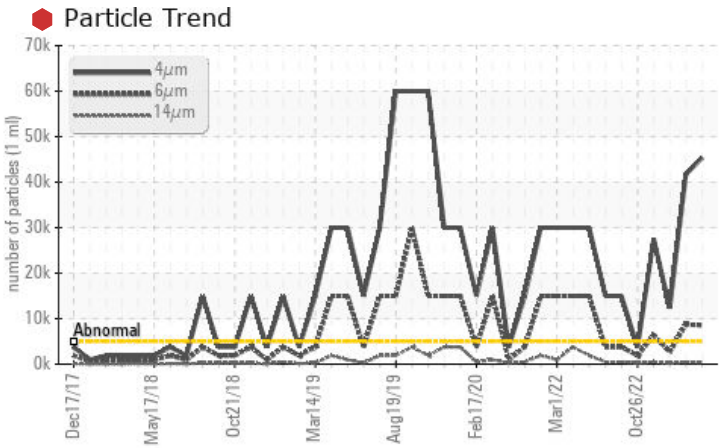
Sample Rating Trend

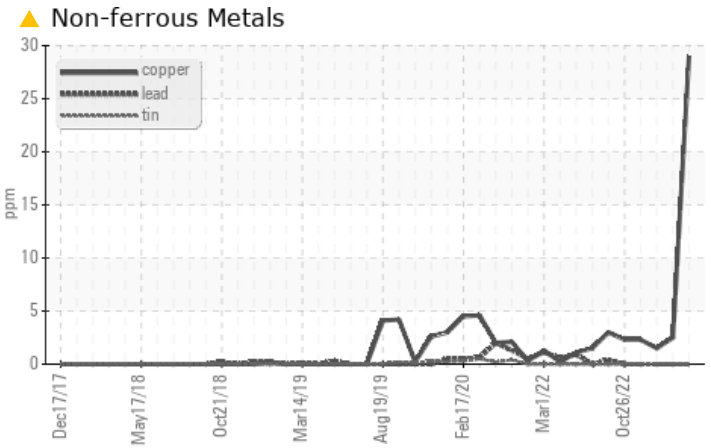


WEAR

Area
RHOB/HYDRAULICS
Machine Id
E - 2 Hydraulics Repair Car
Component
Tank Hydraulic System
Fluid
FIRE-RESISTANT FLUID ISO 46 (132 GAL)

COMPONENT CONDITION SUMMARY





RECOMMENDATION

We advise that you check all areas where contaminants 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. Resample in 30-45 days to monitor this situation. Please specify the brand, type, and viscosity of the oil on your next sample.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	SEVERE	ABNORMAL
Copper	ppm	ASTM D5185(m)	>20	▲ **29**	2	2
Particles >4µm		ASTM D7647	>5000	⬢ **45370**	⬢ 41721	▲ 12357
Particles >6µm		ASTM D7647	>1300	▲ **8512**	▲ 8740	▲ 2631
Particles >14µm		ASTM D7647	>160	▲ **376**	▲ 437	▲ 198
Particles >21µm		ASTM D7647	>40	▲ **85**	▲ 99	54
Oil Cleanliness		ISO 4406 (c)	>19/17/14	⬢ **23/20/16**	⬢ 23/20/16	▲ 21/19/15

Customer Id: LEWBOSC
Sample No.: WC0824387
Lab Number: 02561062
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	MISSED	Jun 23 2023	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.
Resample	MISSED	Jun 23 2023	?	Resample in 30-45 days to monitor this situation.
Information Required	MISSED	Jun 23 2023	?	Please specify the brand, type, and viscosity of the oil on your next sample.
Check Breathers	MISSED	Jun 23 2023	?	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	MISSED	Jun 23 2023	?	We advise that you check all areas where contaminants can enter the system.
Filter Fluid	MISSED	Jun 23 2023	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.

HISTORICAL DIAGNOSIS

ISO

28 Feb 2023 Diag: Kevin Marson

We advise that you check all areas where contaminants 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. Resample in 30-45 days to monitor this situation. Please specify the brand, type, and viscosity of the oil on your next sample.All component wear rates are normal. Oil Cleanliness are severely high. Particles >4µm are severely high. Particles >4µm are severely high.. Particles >6µm are abnormally high. Particles >14µm are abnormally high. Particles >21µm are abnormally high. The AN level is acceptable for this fluid. The pH level of this fluid is within the acceptable limits. The reserve alkalinity of this fluid is acceptable. The water concentration 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

24 Jan 2023 Diag: Kevin Marson

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. Oil Cleanliness are abnormally high. Particles >4µm are abnormally high. Particles >6µm are abnormally high. Particles >14µm are notably high. The AN level is acceptable for this fluid. The pH level of this fluid is within the acceptable limits. The reserve alkalinity of this fluid is acceptable. The water concentration 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

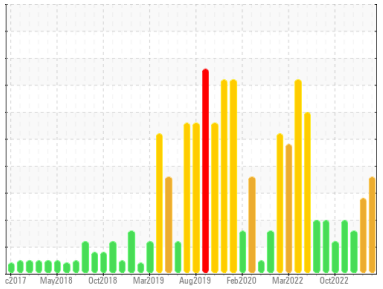
13 Dec 2022 Diag: Kevin Marson

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.All component wear rates are normal. Oil Cleanliness are abnormally high. Particles >14µm are abnormally high. Particles >21µm are abnormally high. Particles >4µm are abnormally high. Particles >6µm are abnormally high. The AN level is acceptable for this fluid. The pH level of this fluid is within the acceptable limits. The reserve alkalinity of this fluid is acceptable. The water concentration 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



WEAR

Area
RHOB/HYDRAULICS
Machine Id
E - 2 Hydraulics Repair Car
Component
Tank Hydraulic System
Fluid
FIRE-RESISTANT FLUID ISO 46 (132 GAL)

DIAGNOSIS

Recommendation

We advise that you check all areas where contaminants 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. Resample in 30-45 days to monitor this situation. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

Copper ppm levels are abnormal. A sharp increase in the copper level is noted. Oil cooler core leaching or motor piston wear is indicated.

Contamination

There is a high amount of particulates (2 to 100 microns in size) present in the oil.

Fluid Condition

The AN level is acceptable for this fluid. The pH level of this fluid is within the acceptable limits. The reserve alkalinity of this fluid is acceptable. The water concentration 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		**WC0824387**	WC0796864	WC0782111
Sample Date		Client Info		**31 May 2023**	28 Feb 2023	24 Jan 2023
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	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*	>99999	**5**	0	1
Iron	ppm	ASTM D5185(m)	>20	**<1**	3	<1
Chromium	ppm	ASTM D5185(m)	>20	**1**	1	<1
Nickel	ppm	ASTM D5185(m)	>20	**0**	0	0
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**0**	1	0
Aluminum	ppm	ASTM D5185(m)	>20	**<1**	<1	0
Lead	ppm	ASTM D5185(m)	>20	**0**	0	0
Copper	ppm	ASTM D5185(m)	>20	▲ **29**	2	2
Tin	ppm	ASTM D5185(m)	>20	**0**	0	0
Antimony	ppm	ASTM D5185(m)		**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

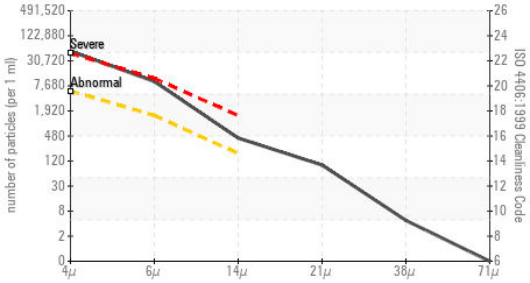
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	5	**<1**	1	0
Barium	ppm	ASTM D5185(m)	5	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	5	**<1**	<1	<1
Manganese	ppm	ASTM D5185(m)		**0**	0	0
Magnesium	ppm	ASTM D5185(m)	5	**<1**	2	<1
Calcium	ppm	ASTM D5185(m)	50	**1**	5	<1
Phosphorus	ppm	ASTM D5185(m)	175	**2**	2	4
Zinc	ppm	ASTM D5185(m)	62	**0**	2	0
Sulfur	ppm	ASTM D5185(m)	500	**11**	17	1
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**<1**	2	0
Sodium	ppm	ASTM D5185(m)		**225**	235	201
Potassium	ppm	ASTM D5185(m)	>20	**27**	29	9
Water	%	ASTM D6304*	>55	**36.7**	37.84	41.98
ppm Water	ppm	ASTM D6304*	>55000	**367000**	378415.3	419817.8

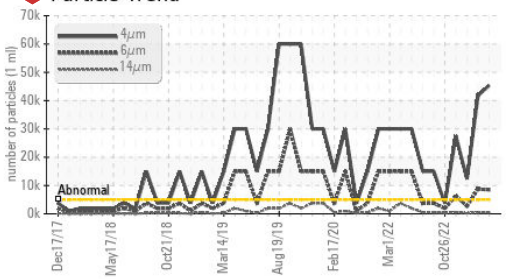
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	⬢ **45370**	⬢ 41721	▲ 12357
Particles >6µm		ASTM D7647	>1300	▲ **8512**	▲ 8740	▲ 2631
Particles >14µm		ASTM D7647	>160	▲ **376**	▲ 437	▲ 198
Particles >21µm		ASTM D7647	>40	▲ **85**	▲ 99	54
Particles >38µm		ASTM D7647	>10	**4**	6	8
Particles >71µm		ASTM D7647	>3	**0**	0	2
Oil Cleanliness		ISO 4406 (c)	>19/17/14	⬢ **23/20/16**	⬢ 23/20/16	▲ 21/19/15

OIL ANALYSIS REPORT

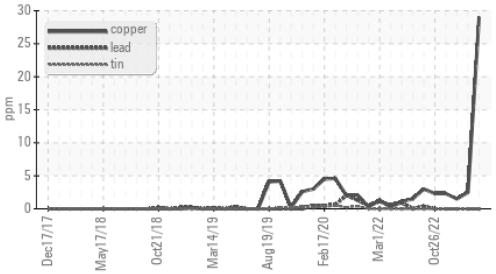
Particle Count



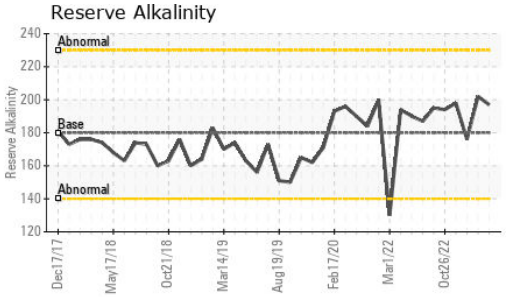
Particle Trend



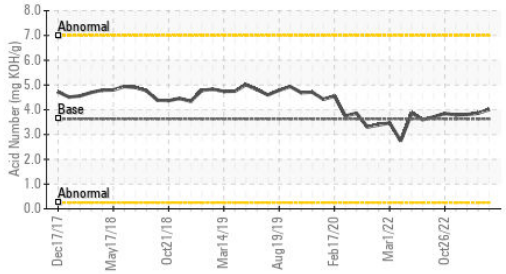
Non-ferrous Metals



Reserve Alkalinity



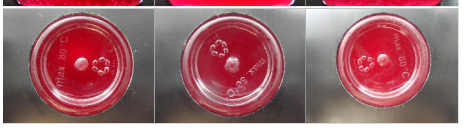
Acid Number



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	3.63	**4.01**	3.86	3.81
Alkiline Reserve (Oils)	ml KOH/g	ASTM D1121*		**197**	202	176

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	**NONE**	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	**FRGLY**	FRGLY	FRGLY
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>55	**>10%**	>10%	>10%
Free Water	scalar	Visual*		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
pH	Scale 0-14	ASTM D1287*		**9.42**	9.77	9.30
Visc @ 40°C	cSt	ASTM D7279(m)	46	**42.0**	42.7	43.8

SAMPLE IMAGES		method	limit/base	current	history1	history2
Color						
Bottom						

ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0824387
Lab Number : 02561062
Unique Number : 5590103
Test Package : IND 2 (Additional Tests: KF, pH, PQ, ReserveAlk, TAN Man)

Received : 31 May 2023
Diagnosed : 02 Jun 2023
Diagnostician : Kevin Marson

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.

STELCO - BOSC - Basic Oxygen Slab Caster
2330 Regional Road #3, Door: BOSC8
NANTICOKE, ON
CA N0A 1L0
Contact: Tom Walden
Thomas.Walden@stelco.com
T: (519)587-4541
F: (519)587-7702