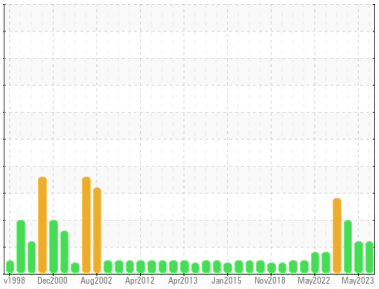
PROBLEM SUMMARY

Sample Rating Trend

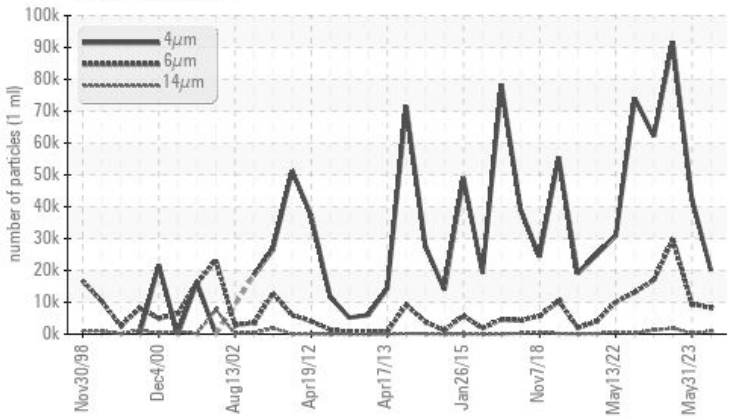


ISO

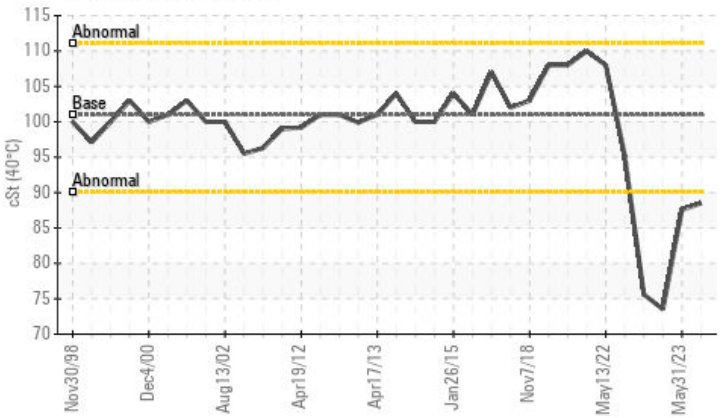
Area
PUMPHOUSE/BOOSTER RAW WATER PUMPS
Machine Id
C - Booster Raw Water Turbine IB
Component
Lube System
Fluid
PETRO CANADA HYDREX AW 100 (1 GAL)

COMPONENT CONDITION SUMMARY

Particle Trend



Viscosity @ 40°C



RECOMMENDATION

We recommend you service the filters on this component. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status				ATTENTION	ABNORMAL	ABNORMAL
Particles >6µm		ASTM D7647	>5000	▲ **8276**	▲ 9439	▲ 29810
Particles >14µm		ASTM D7647	>640	▲ **864**	315	▲ 1817
Oil Cleanliness		ISO 4406 (c)	>--/19/16	▲ **21/20/17**	▲ 23/20/15	▲ 24/22/18

Customer Id: LEWBOSC
Sample No.: WC0866307
Lab Number: 02586755
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.

HISTORICAL DIAGNOSIS

31 May 2023 Diag: Bill Quesnel

VISCOSITY

We recommend you service the filters on this component. Resample at the next service interval to monitor.All component wear rates are normal. There is a light amount of silt (particulates < 14 microns in size) present in the oil. The oil viscosity is lower than typical, possibly indicating the addition of lighter grade oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

---

27 Jan 2023 Diag: Kevin Marson

VISCOSITY

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.All component wear rates are normal. Particles >14µm are abnormally high. Particles >21µm are abnormally high. Particles >6µm and oil cleanliness are abnormally high. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. Viscosity of sample indicates oil is within ISO 68 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. 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

---

14 Dec 2022 Diag: Kevin Marson

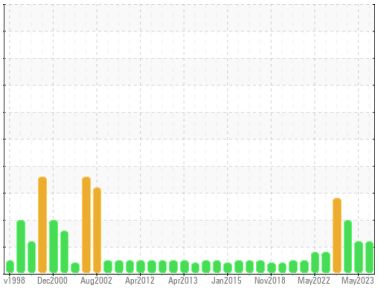
CONTAMINANT

We advise that you check all areas where contaminants can enter the system. We recommend that you drain the oil from the component if this has not already been done. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.All component wear rates are normal. Particles >6µm and oil cleanliness are abnormally high. Particles >14µm are notably high. Particles >21µm are notably high. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. The sample contained a visible layer of foreign fluid contaminant, the origin and/or type of fluid is unknown. Viscosity of sample indicates oil is within SAE 30 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for this fluid. The oil is no longer serviceable due to the presence of contaminants.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
PUMPHOUSE/BOOSTER RAW WATER PUMPS
Machine Id
C - Booster Raw Water Turbine IB
Component
Lube System
Fluid
PETRO CANADA HYDREX AW 100 (1 GAL)

DIAGNOSIS

Recommendation
We recommend you service the filters on this component. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

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

Fluid Condition
The oil viscosity is lower than typical, possibly indicating the addition of lighter grade oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0866307**	WC0824394	WC0785658
Sample Date		Client Info		**04 Oct 2023**	31 May 2023	27 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				**ATTENTION**	ABNORMAL	ABNORMAL

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

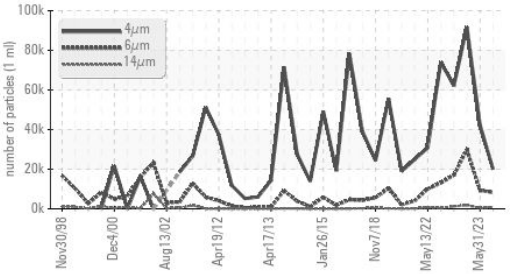
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	**<1**	0	<1
Barium	ppm	ASTM D5185(m)	0	**11**	13	40
Molybdenum	ppm	ASTM D5185(m)	0	**0**	0	0
Manganese	ppm	ASTM D5185(m)	0	**0**	0	0
Magnesium	ppm	ASTM D5185(m)	0	**0**	0	0
Calcium	ppm	ASTM D5185(m)	50	**51**	52	61
Phosphorus	ppm	ASTM D5185(m)	330	**299**	331	295
Zinc	ppm	ASTM D5185(m)	430	**387**	378	343
Sulfur	ppm	ASTM D5185(m)	760	**2505**	2514	2178
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**2**	2	2
Sodium	ppm	ASTM D5185(m)		**1**	<1	2
Potassium	ppm	ASTM D5185(m)	>20	**0**	<1	<1

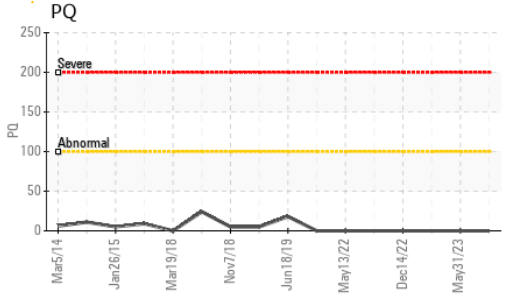
FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		**19976**	42409	91713
Particles >6µm	ASTM D7647	>5000	▲ **8276**	▲ 9439	▲ 29810
Particles >14µm	ASTM D7647	>640	▲ **864**	315	▲ 1817
Particles >21µm	ASTM D7647	>160	**169**	47	▲ 401
Particles >38µm	ASTM D7647	>40	**4**	1	6
Particles >71µm	ASTM D7647	>10	**1**	0	0
Oil Cleanliness	ISO 4406 (c)	>--/19/16	▲ **21/20/17**	▲ 23/20/15	▲ 24/22/18

OIL ANALYSIS REPORT

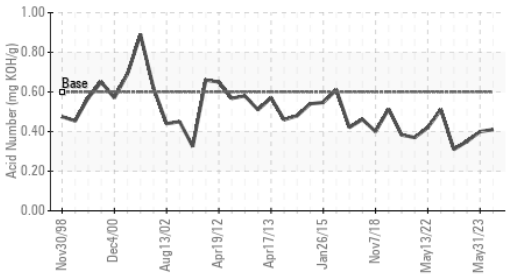
Particle Trend



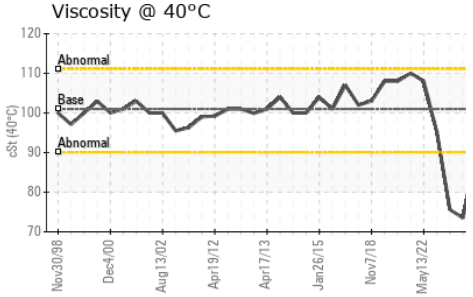
PQ



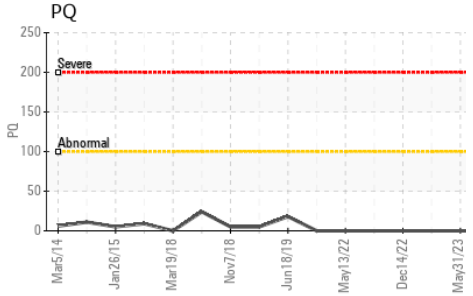
Acid Number



Viscosity @ 40°C



PQ

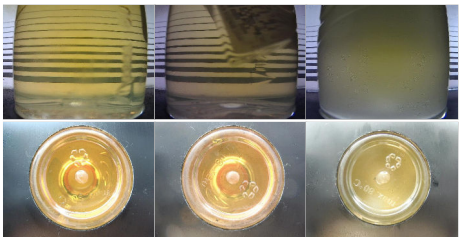


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.60	**0.41**	0.40	0.35

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**	VLITE	NONE
Appearance	scalar	Visual*	NORML	**NORML**	NORML	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>1	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

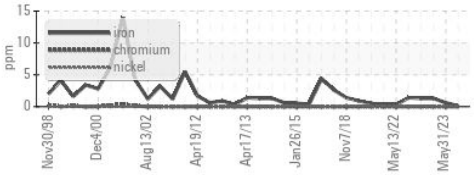
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	101	**88.5**	▲ 87.6	▲ 73.5

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

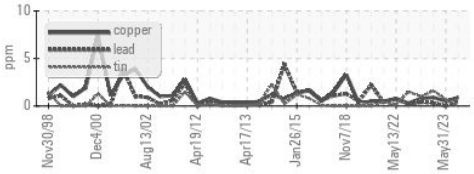


GRAPHS

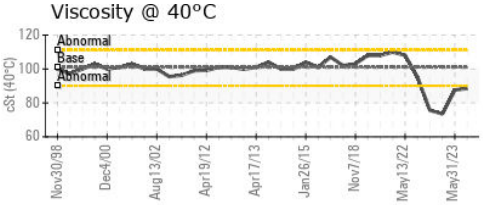
Ferrous Alloys



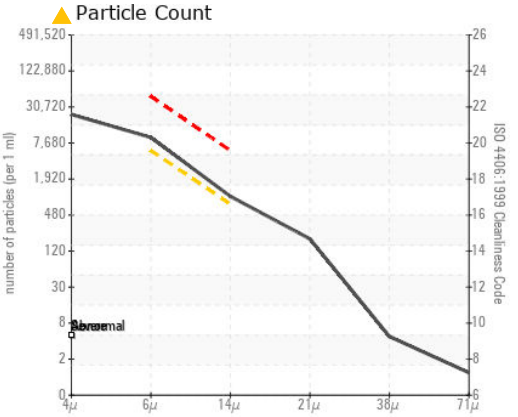
Non-ferrous Metals



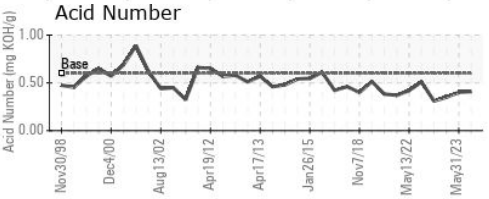
Viscosity @ 40°C



Particle Count



Acid Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **STELCO - BOSC - Basic Oxygen Slab Caster**
Sample No. : WC0866307 **Received** : 04 Oct 2023 2330 Regional Road #3, Door: BOSC8
Lab Number : 02586755 **Diagnosed** : 05 Oct 2023 NANTICOKE, ON
Unique Number : 5655821 **Diagnostician** : Kevin Marson CA N0A 1L0
Test Package : IND 2 (Additional Tests: PQ) Contact: Tom Walden

To discuss this sample report, contact Customer Service at 1-800-268-2131. Thomas.Walden@stelco.com
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T: (519)587-4541
Validity of results and interpretation are based on the sample and information as supplied. F: (519)587-7702