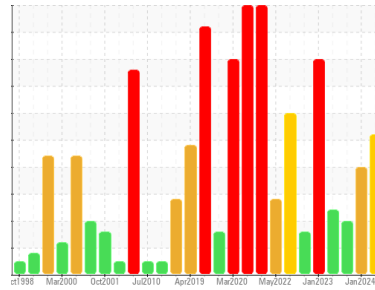




# PROBLEM SUMMARY

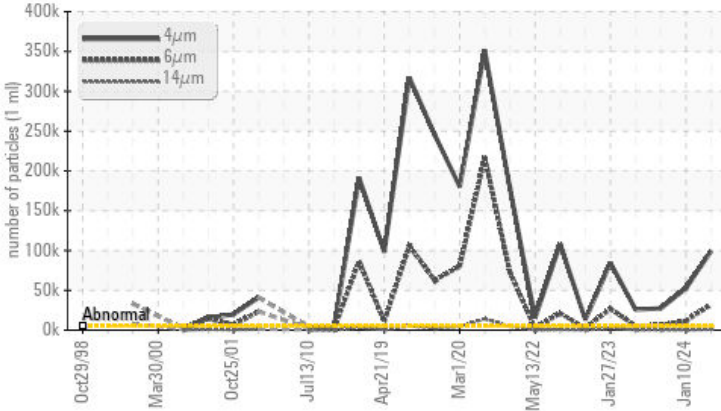
Area  
**PUMPHOUSE/HOOD COOLING PUMPS**  
 Machine Id  
**C - Hood Cooling 1 Electric Pump OB**  
 Component  
**Lube System**  
 Fluid  
**PETRO CANADA HYDREX AW 100 (1 GAL)**

Sample Rating Trend

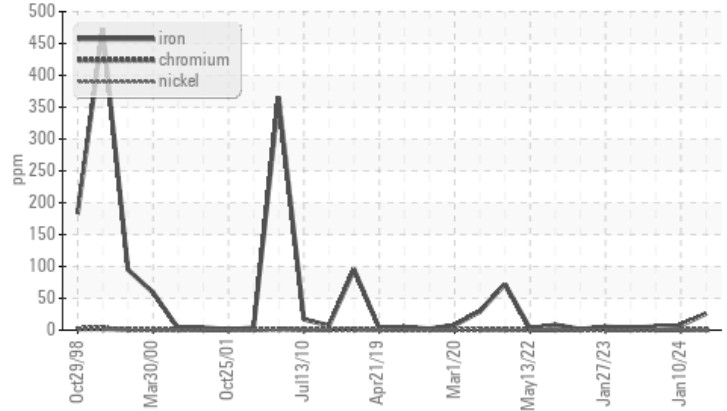


## COMPONENT CONDITION SUMMARY

▲ Particle Trend



● Ferrous Alloys



## 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.

## PROBLEMATIC TEST RESULTS

Sample Status			SEVERE	SEVERE	ABNORMAL
Particles >4µm	ASTM D7647	>5000	▲ 99233	▲ 52490	▲ 27319
Particles >6µm	ASTM D7647	>1300	▲ 31916	▲ 11572	▲ 6016
Particles >14µm	ASTM D7647	>160	▲ 851	● 185	▲ 390
Particles >21µm	ASTM D7647	>40	▲ 172	32	▲ 102
Oil Cleanliness	ISO 4406 (c)	>19/17/14	▲ 24/22/17	▲ 23/21/15	▲ 22/20/16

Customer Id: LEWBOSC  
 Sample No.: WC0968452  
 Lab Number: 02648440  
 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](mailto:Kevin.Marson@wearcheck.com)

To change component or sample information:  
 Gloria Gonzalez +1 (289)291-4643 x4643  
[gloria.gonzalez@wearcheck.com](mailto: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.
Resample	---	---	?	Resample in 30-45 days to monitor this situation.
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.
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 Jan 2024 Diag: Wes Davis

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 recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code. 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



### 16 Aug 2023 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. All component wear rates are normal. There is a moderate amount of particulates (2 to 100 microns in size) present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. The oil viscosity is higher than typical. 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



VISCOSITY



### 31 May 2023 Diag: Bill Quesnel

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. The viscosity of the oil is higher than normal, possibly indicating the addition of a heavier grade of oil. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

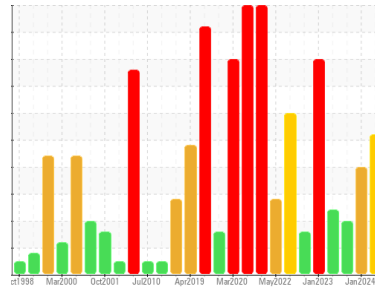
view report





# OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area  
**PUMPHOUSE/HOOD COOLING PUMPS**  
 Machine Id  
**C - Hood Cooling 1 Electric Pump OB**  
 Component  
**Lube System**  
 Fluid  
**PETRO CANADA HYDREX AW 100 (1 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.

### Wear

Iron ppm levels are noted. A sharp increase in the iron level is noted. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion. All other component wear rates are normal.

### Contamination

There is a high amount of particulates (2 to 100 microns in size) present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code.

### Fluid Condition

The AN 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		<b>WC0968452</b>	WC0898659	WC0850126
Sample Date	Client Info		<b>17 Jul 2024</b>	10 Jan 2024	16 Aug 2023
Machine Age	hrs	Client Info	<b>0</b>	0	0
Oil Age	hrs	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>SEVERE</b>	SEVERE	ABNORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>5	<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184*	>DFLT	<b>0</b>	0	0
Iron	ppm	ASTM D5185(m) >20	<b>26</b>	7	6
Chromium	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	0	0
Nickel	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	0	<1
Titanium	ppm	ASTM D5185(m)	<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185(m)	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185(m) >20	<b>0</b>	<1	<1
Lead	ppm	ASTM D5185(m) >20	<b>0</b>	2	1
Copper	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	2	2
Tin	ppm	ASTM D5185(m) >20	<b>0</b>	0	0
Antimony	ppm	ASTM D5185(m)	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Beryllium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185(m)	<b>0</b>	0	0

## ADDITIVES

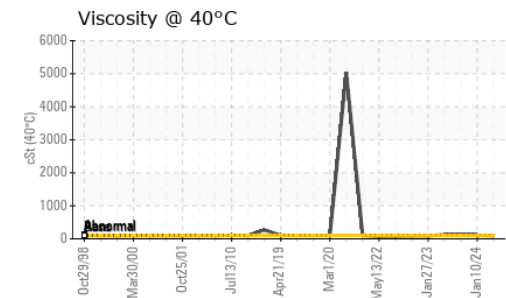
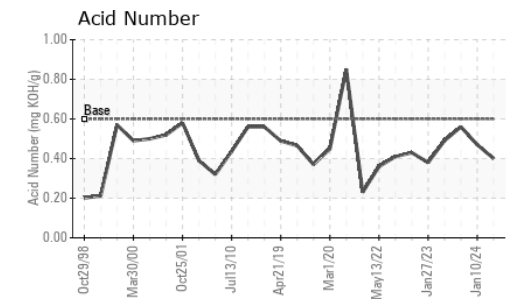
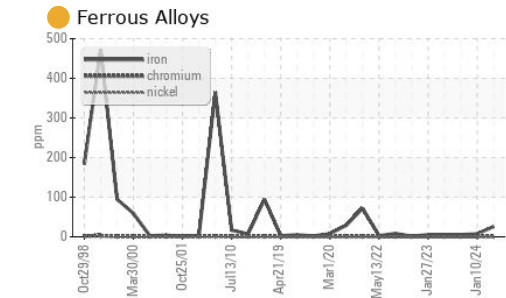
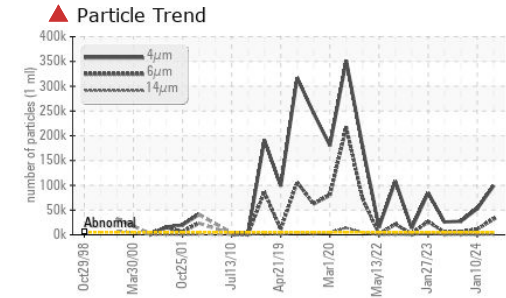
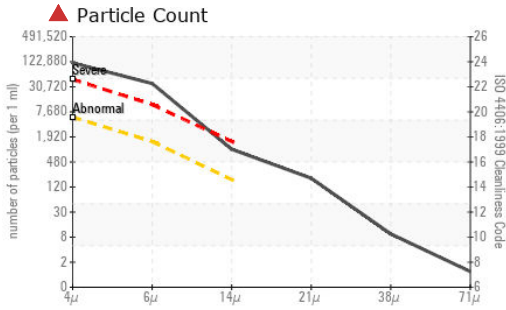
	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m) 0	<b>&lt;1</b>	1	2
Barium	ppm	ASTM D5185(m) 0	<b>4</b>	11	14
Molybdenum	ppm	ASTM D5185(m) 0	<b>0</b>	0	0
Manganese	ppm	ASTM D5185(m) 0	<b>0</b>	0	0
Magnesium	ppm	ASTM D5185(m) 0	<b>0</b>	<1	<1
Calcium	ppm	ASTM D5185(m) 50	<b>49</b>	35	32
Phosphorus	ppm	ASTM D5185(m) 330	<b>340</b>	316	330
Zinc	ppm	ASTM D5185(m) 430	<b>417</b>	349	337
Sulfur	ppm	ASTM D5185(m) 760	<b>2686</b>	3245	3281
Lithium	ppm	ASTM D5185(m)	<b>2</b>	2	2

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >15	<b>3</b>	2	2
Sodium	ppm	ASTM D5185(m)	<b>&lt;1</b>	<1	<1
Potassium	ppm	ASTM D5185(m) >20	<b>0</b>	<1	0



# OIL ANALYSIS REPORT



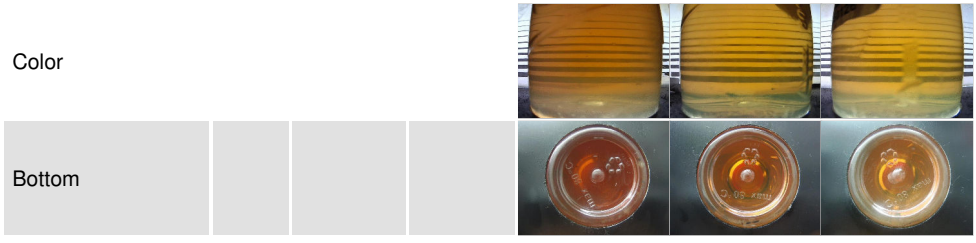
FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	▲ 99233	▲ 52490	▲ 27319
Particles >6µm	ASTM D7647	>1300	▲ 31916	▲ 11572	▲ 6016
Particles >14µm	ASTM D7647	>160	▲ 851	● 185	▲ 390
Particles >21µm	ASTM D7647	>40	▲ 172	32	▲ 102
Particles >38µm	ASTM D7647	>10	8	1	2
Particles >71µm	ASTM D7647	>3	1	0	1
Oil Cleanliness	ISO 4406 (c)	>19/17/14	▲ 24/22/17	▲ 23/21/15	▲ 22/20/16

FLUID DEGRADATION	method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D974*	0.60	0.40	0.47	0.56

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	VLITE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	VLITE	NONE	VLITE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	VLITE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>5	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	95.4	109	113

SAMPLE IMAGES	method	limit/base	current	history1	history2
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**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0968452  
**Lab Number** : 02648440  
**Unique Number** : 5813992  
**Test Package** : IND 2 ( Additional Tests: Bottom, PQ )  
**Received** : 17 Jul 2024  
**Tested** : 18 Jul 2024  
**Diagnosed** : 18 Jul 2024 - Kevin Marson

**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

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.