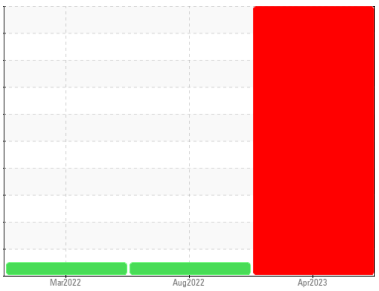
OIL ANALYSIS REPORT

Sample Rating Trend



WATER

Area
Scoop 6 Yard
Machine Id
LHD6027
Component
Front Right Wheel Hub
Fluid
PETRO CANADA TRAXON 80W90 (4 LTR)

DIAGNOSIS

Recommendation

We advise that you check for the source of water entry. We advise that you check all areas where dirt 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.

Wear

PQ levels are abnormal. Copper and iron, lead and titanium ppm levels are abnormal. Aluminum ppm levels are noted. Gear wear is indicated. Bearing and/or bushing wear is indicated. The high ferrous density (PQ) index indicates that abnormal wear is occurring.

Contamination

There is a high concentration of water present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. High amount of ingressed dirt has caused abrasive wear to the component.

Fluid Condition

Additive levels indicate the addition of a different brand, or type of oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history 1	history 2
Sample Number		Client Info		**PC0048008**	PC0048518	PC0046578
Sample Date		Client Info		**22 Apr 2023**	15 Aug 2022	25 Mar 2022
Machine Age	hrs	Client Info		**5260**	3697	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	Changed	N/A
Sample Status				**SEVERE**	NORMAL	NORMAL

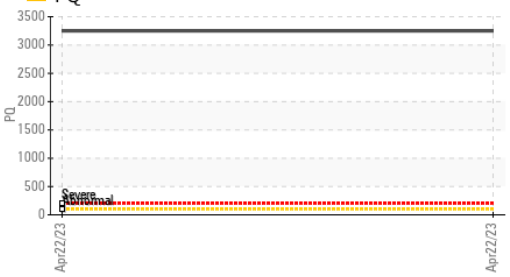
WEAR METALS		method	limit/base	current	history 1	history 2
PQ		ASTM D8184*		▲ **3249**	---	---
Iron	ppm	ASTM D5185(m)	>500	▲ **797**	60	135
Chromium	ppm	ASTM D5185(m)	>8	**6**	0	<1
Nickel	ppm	ASTM D5185(m)	>5	**2**	<1	<1
Titanium	ppm	ASTM D5185(m)		▲ **16**	<1	0
Silver	ppm	ASTM D5185(m)		**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>5	▲ **152**	1	1
Lead	ppm	ASTM D5185(m)	>5	▲ **9**	<1	<1
Copper	ppm	ASTM D5185(m)	>50	▲ **285**	15	20
Tin	ppm	ASTM D5185(m)		**8**	<1	<1
Antimony	ppm	ASTM D5185(m)	>5	**0**	<1	0
Vanadium	ppm	ASTM D5185(m)		**<1**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

ADDITIVES		method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185(m)	243	**6**	42	41
Barium	ppm	ASTM D5185(m)	1	**6**	0	<1
Molybdenum	ppm	ASTM D5185(m)		**<1**	<1	<1
Manganese	ppm	ASTM D5185(m)		**18**	1	2
Magnesium	ppm	ASTM D5185(m)	2	**65**	3	1
Calcium	ppm	ASTM D5185(m)	6	**283**	29	50
Phosphorus	ppm	ASTM D5185(m)	987	**406**	707	781
Zinc	ppm	ASTM D5185(m)	1	**135**	8	19
Sulfur	ppm	ASTM D5185(m)	21530	**21736**	23168	24034
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

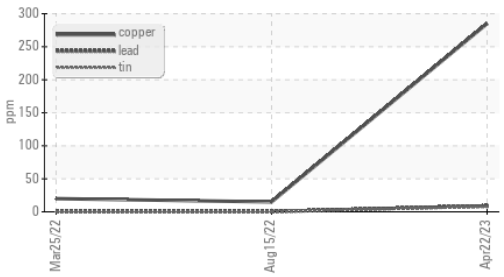
CONTAMINANTS		method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185(m)	>25	▲ **572**	4	6
Sodium	ppm	ASTM D5185(m)		**56**	<1	1
Potassium	ppm	ASTM D5185(m)	>20	**62**	<1	<1
Water	%	ASTM D6304*	>0.2	● **7.038**	---	---
ppm Water	ppm	ASTM D6304*	>2000	● **70388.6**	---	---

OIL ANALYSIS REPORT

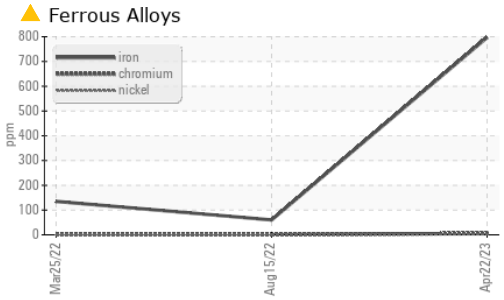
PQ



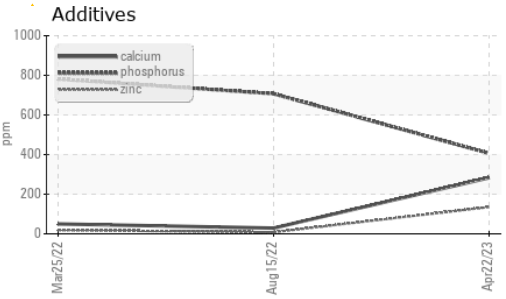
Non-ferrous Metals



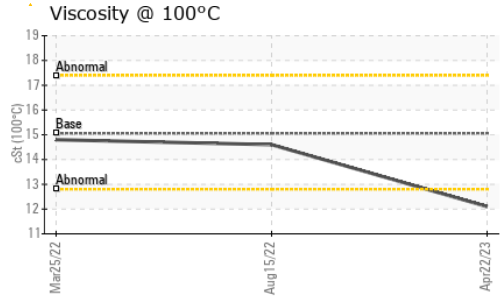
Ferrous Alloys



Additives

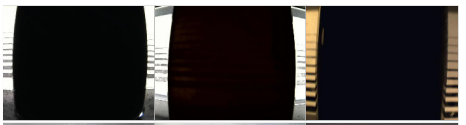


Viscosity @ 100°C



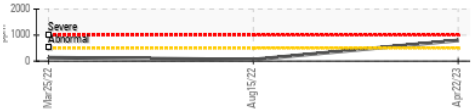
VISUAL		method	limit/base	current	history 1	history 2
White Metal	scalar	Visual*	NONE	**NONE**	VLITE	VLITE
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Precipitate	scalar	Visual*	NONE	**NONE**	NONE	NONE
Silt	scalar	Visual*	NONE	**NONE**	LIGHT	NONE
Debris	scalar	Visual*	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Appearance	scalar	Visual*	NORML	**NORML**	NORML	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	▲ **.2%**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history 1	history 2
Visc @ 40°C	cSt	ASTM D7279(m)	141.0	**146**	141	144
Visc @ 100°C	cSt	ASTM D7279(m)	15.06	**12.1**	14.6	14.8
Viscosity Index (VI)	Scale	ASTM D2270*	108	**61**	102	102

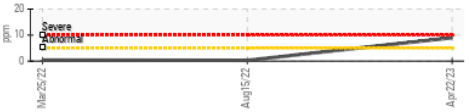
SAMPLE IMAGES	method	limit/base	current	history 1	history 2
Color					
Bottom					

GRAPHS

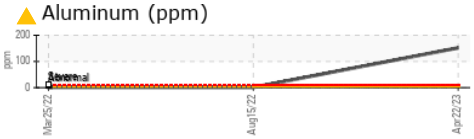
Iron (ppm)



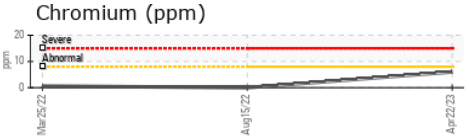
Lead (ppm)



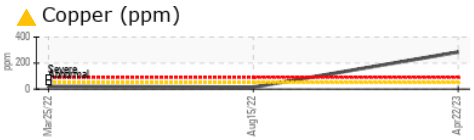
Aluminum (ppm)



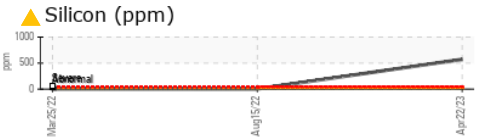
Chromium (ppm)



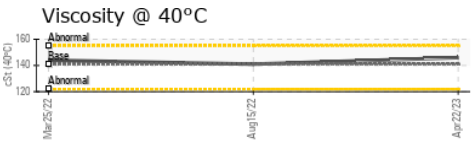
Copper (ppm)



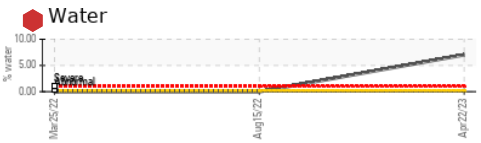
Silicon (ppm)



Viscosity @ 40°C



Water



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0048008 **Received** : 04 Jul 2023
Lab Number : 02567840 **Diagnosed** : 06 Jul 2023
Unique Number : 5604886 **Diagnostician** : Kevin Marson
Test Package : MOB 1 (Additional Tests: KF, KV100, PQ, VI)

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.

Lakeshore Gold Timmins West

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Report Id: LAKTIM [WCAMIS] 02567840 (Generated: 07/06/2023 08:40:40) Rev: 1

Submitted By: Luc Belanger