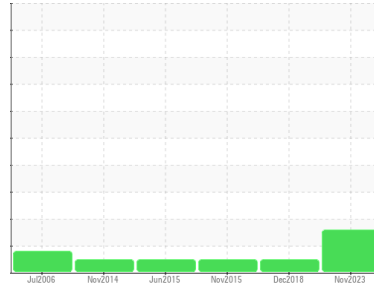


OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Area
CFR#41795 [6100224423]
Machine Id
06D0312076
Component
Diesel Engine
Fluid
SHELL 15W40 (--- LTR)

DIAGNOSIS

▲ Recommendation

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. The oil change at the time of sampling has been noted. We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

▲ Contamination

There is a moderate concentration of dirt present in the oil.

Fluid Condition

The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WA0020747	WC876389	WC791703
Sample Date	Client Info		28 Nov 2023	11 Dec 2018	19 Nov 2015
Machine Age	hrs	Client Info	0	822	814
Oil Age	hrs	Client Info	0	0	0
Oil Changed	Client Info		Changed	N/A	N/A
Sample Status			ABNORMAL	NORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>3.0	<1.0	<1.0	<1.0
Water	WC Method	>0.2	NEG	NEG	NEG
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>101	16	11	21
Chromium	ppm	ASTM D5185(m)	>16	<1	<1	<1
Nickel	ppm	ASTM D5185(m)	>6	<1	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	0	0	<1
Silver	ppm	ASTM D5185(m)	>2	<1	0	<1
Aluminum	ppm	ASTM D5185(m)	>21	<1	<1	2
Lead	ppm	ASTM D5185(m)	>41	12	4	9
Copper	ppm	ASTM D5185(m)	>21	22	34	53
Tin	ppm	ASTM D5185(m)	>13	3	3	7
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	<1	<1

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m)		10	22	55
Barium	ppm	ASTM D5185(m)		<1	0	<1
Molybdenum	ppm	ASTM D5185(m)		2	2	2
Manganese	ppm	ASTM D5185(m)		0	<1	<1
Magnesium	ppm	ASTM D5185(m)		50	46	81
Calcium	ppm	ASTM D5185(m)		1574	1580	2211
Phosphorus	ppm	ASTM D5185(m)		598	591	957
Zinc	ppm	ASTM D5185(m)		679	746	1119
Sulfur	ppm	ASTM D5185(m)		2227	2312	3664
Lithium	ppm	ASTM D5185(m)		<1	0	<1

CONTAMINANTS

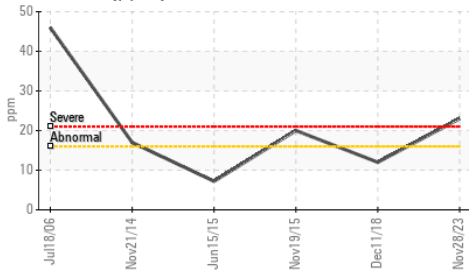
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>16	▲ 23	12	20
Sodium	ppm	ASTM D5185(m)	>150	11	8	15
Potassium	ppm	ASTM D5185(m)	>20	<1	1	2

INFRA-RED

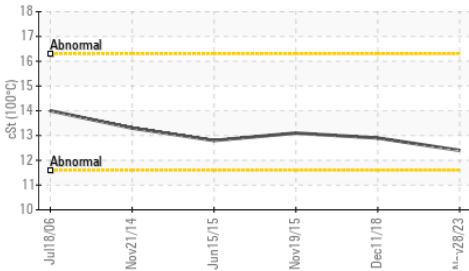
	method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844*	>0.8	0	0	0
Nitration	Abs/cm	ASTM D7624*	>20	3.6	4.0	4.9
Sulfation	Abs.1mm	ASTM D7415*	>30	14.6	15.3	18.6

OIL ANALYSIS REPORT

▲ Silicon (ppm)



Viscosity @ 100°C



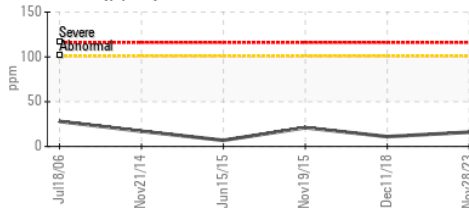
FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	ASTM D7414*	>25	8.9	9.7	12.4

VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	---
Yellow Metal	scalar	Visual*	NONE	NONE	---
Precipitate	scalar	Visual*	NONE	NONE	---
Silt	scalar	Visual*	NONE	NONE	---
Debris	scalar	Visual*	NONE	NONE	VLITE
Sand/Dirt	scalar	Visual*	NONE	NONE	---
Appearance	scalar	Visual*	NORML	NORML	---
Odor	scalar	Visual*	NORML	NORML	---
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG

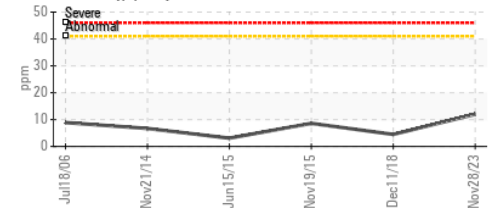
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	12.4	12.9	13.1

GRAPHS

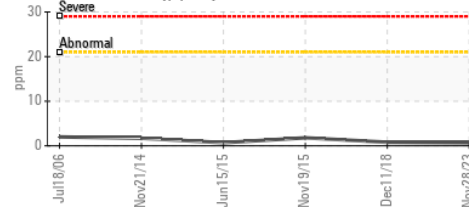
Iron (ppm)



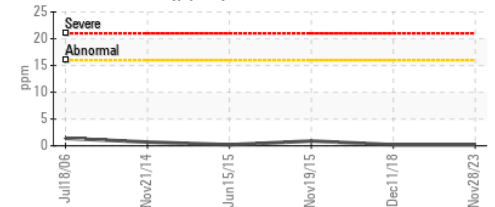
Lead (ppm)



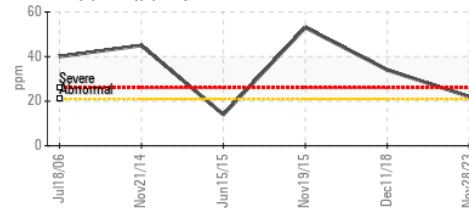
Aluminum (ppm)



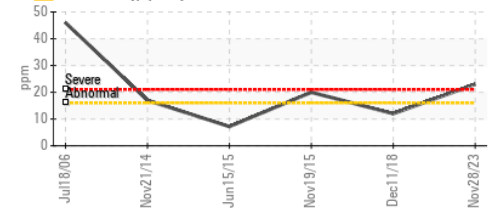
Chromium (ppm)



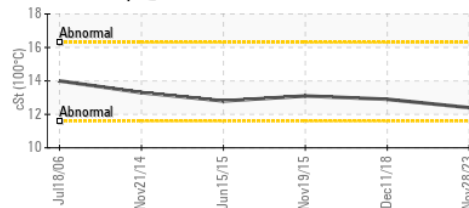
Copper (ppm)



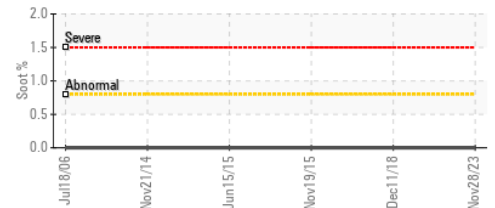
▲ Silicon (ppm)



Viscosity @ 100°C



Soot %



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9

Sample No. : WA0020747

Lab Number : 02601163

Unique Number : 5694248

Test Package : MOB 1 (Additional Tests: Visual)

Received : 06 Dec 2023

Tested : 06 Dec 2023

Diagnosed : 07 Dec 2023 - Bill Quesnel

DEPARTMENT OF NATIONAL DEFENSE

MGEN.GEORGE R.PEARKE'S BUILDING

OTTAWA, ON

CA K1A 0K2

Contact: Jean-Marc Beaudoin

JEAN-MARC.BEAUDOIN@Forces.gc.ca

T: (819)993-0911

F: (819)997-9989

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.