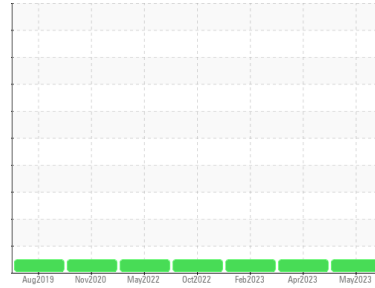


OIL ANALYSIS REPORT

Sample Rating Trend
NORMAL


Machine Id
CATERPILLAR 1311
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON HP 15W40 (--- Oz)


DIAGNOSIS
Recommendation

Resample at the next service interval to monitor.

Wear

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history 1	history 2
Sample Number	Client Info			PCA0083452	PCA0083476	PCA0083500
Sample Date	Client Info			07 May 2023	13 Apr 2023	22 Feb 2023
Machine Age	hrs	Client Info		136	205	334
Oil Age	hrs	Client Info		136	205	334
Oil Changed	Client Info			Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history 1	history 2
Fuel	WC Method	>5		<1.0	<1.0	<1.0
Glycol	WC Method			NEG	NEG	NEG

WEAR METALS		method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>100	12	18	23
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	2	2	2
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	<1	4	1
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0

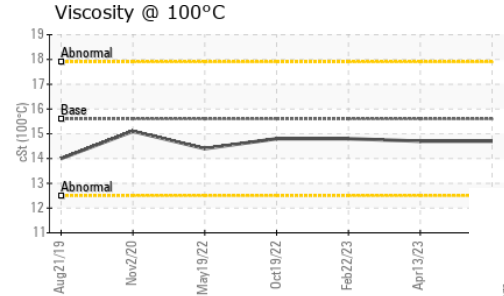
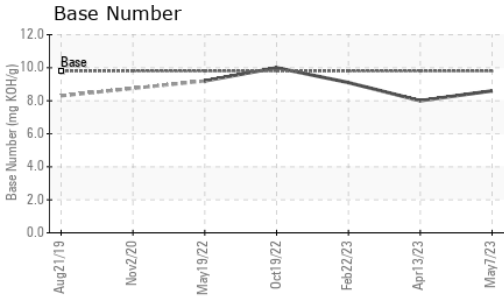
ADDITIVES		method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m		1	2	2
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		58	63	62
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		999	1090	1066
Calcium	ppm	ASTM D5185m		1064	1167	1137
Phosphorus	ppm	ASTM D5185m		1088	1095	1121
Zinc	ppm	ASTM D5185m		1344	1346	1397
Sulfur	ppm	ASTM D5185m		3944	3695	4085

CONTAMINANTS		method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185m	>25	3	4	2
Sodium	ppm	ASTM D5185m		1	0	<1
Potassium	ppm	ASTM D5185m	>20	2	3	<1

INFRA-RED		method	limit/base	current	history 1	history 2
Soot %	%	*ASTM D7844	>3	0.5	0.5	0.6
Nitration	Abs/cm	*ASTM D7624	>20	6.4	6.4	7.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.7	16.9	19.4

FLUID DEGRADATION		method	limit/base	current	history 1	history 2
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.1	13.4	15.0
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.6	8.0	9.1

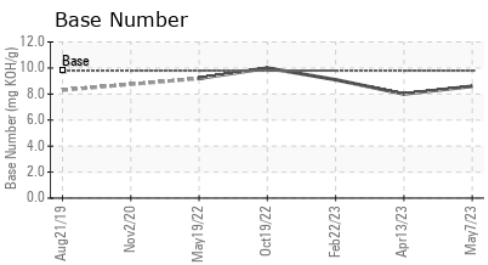
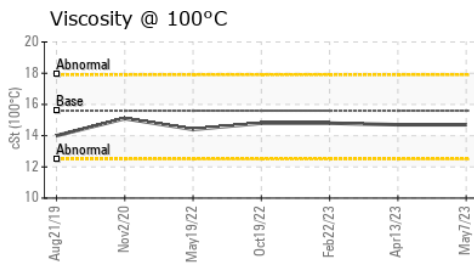
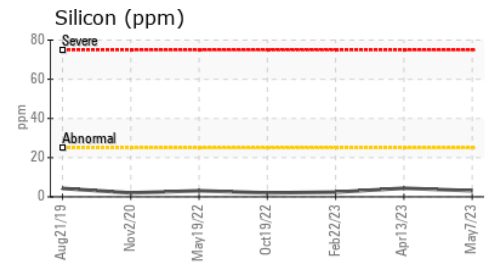
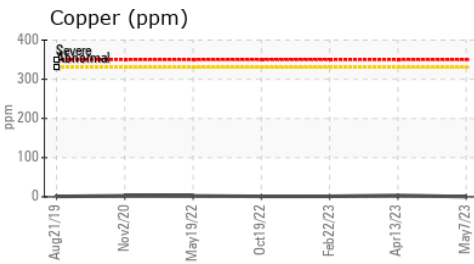
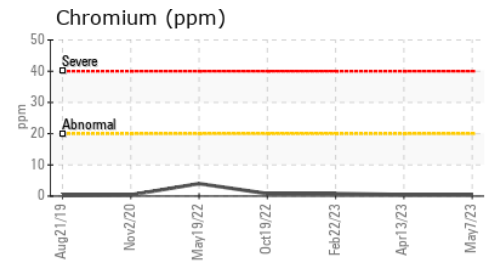
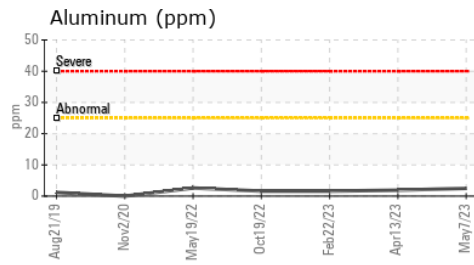
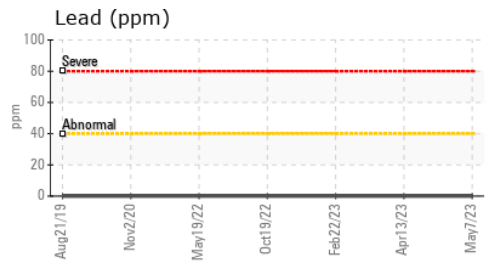
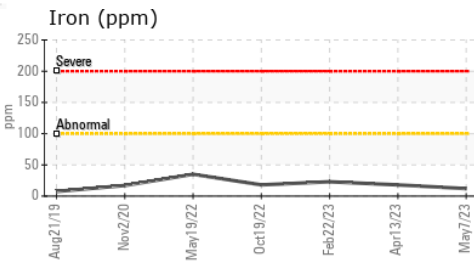
OIL ANALYSIS REPORT



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

FLUID PROPERTIES		method	limit/base	current	history 1	history 2
Visc @ 100°C	cSt	ASTM D445	15.6	14.7	14.7	14.8

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0083452 **Received** : 10 Jul 2023
Lab Number : 05894299 **Diagnosed** : 11 Jul 2023
Unique Number : 10550109 **Diagnostician** : Wes Davis
Test Package : MOB 1 (Additional Tests: TBN)

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 767 OIL HILL ROAD
 EL DORADO, KS
 US 67042
 Contact: LOREN JACK
 loren@hogoboom.net
 T:
 F: (316)321-1396

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)