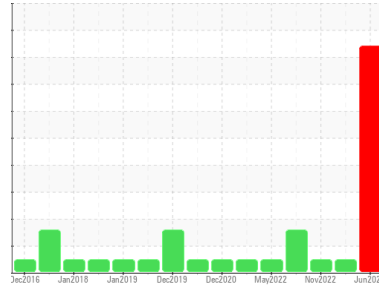




Machine Id
KENWORTH 150-16

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)



DIAGNOSIS

Recommendation

We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high. Test for glycol is positive.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		PCA0082160	PCA0078522	PCA0070809
Sample Date	Client Info		20 Jun 2023	01 Feb 2023	04 Nov 2022
Machine Age	mls	Client Info	321512	307526	298503
Oil Age	mls	Client Info	10000	10000	10000
Oil Changed	Client Info		Changed	Changed	Changed
Sample Status			SEVERE	NORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<1.0	<1.0	<1.0

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	45	7	16
Chromium	ppm	ASTM D5185m >20	2	<1	1
Nickel	ppm	ASTM D5185m >4	<1	0	<1
Titanium	ppm	ASTM D5185m	<1	0	<1
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >20	1	2	1
Lead	ppm	ASTM D5185m >40	8	<1	6
Copper	ppm	ASTM D5185m >330	7	<1	4
Tin	ppm	ASTM D5185m >15	2	<1	2
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	0	2	3
Barium	ppm	ASTM D5185m 0	<1	0	0
Molybdenum	ppm	ASTM D5185m 60	105	59	72
Manganese	ppm	ASTM D5185m 0	<1	<1	1
Magnesium	ppm	ASTM D5185m 1010	953	929	923
Calcium	ppm	ASTM D5185m 1070	1028	1102	1288
Phosphorus	ppm	ASTM D5185m 1150	990	1012	1054
Zinc	ppm	ASTM D5185m 1270	1219	1202	1324
Sulfur	ppm	ASTM D5185m 2060	3504	3604	3597

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	12	5	19
Sodium	ppm	ASTM D5185m	▲ 198	1	61
Potassium	ppm	ASTM D5185m >20	▲ 338	4	103
Glycol	%	*ASTM D2982	◆ 0.10	NEG	0.0

INFRA-RED

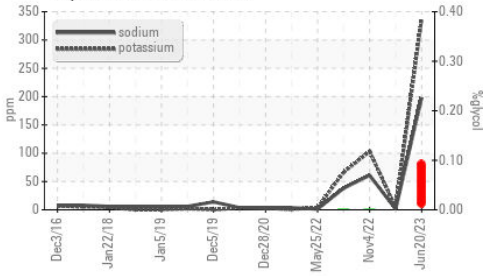
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.7	0.3	0.3
Nitration	Abs/cm	*ASTM D7624 >20	10.7	7.3	9.0
Sulfation	Abs/.1mm	*ASTM D7415 >30	23.2	18.3	21.6

FLUID DEGRADATION

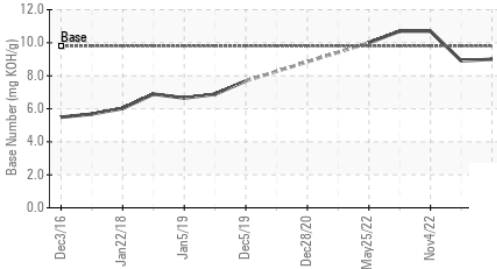
	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	20.2	14.2	17.2
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	9.0	8.9	10.7

OIL ANALYSIS REPORT

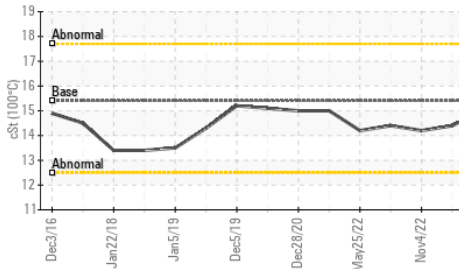
Glycol Contamination



Base Number



Viscosity @ 100°C



VISUAL

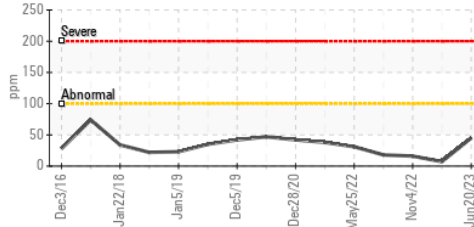
	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*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

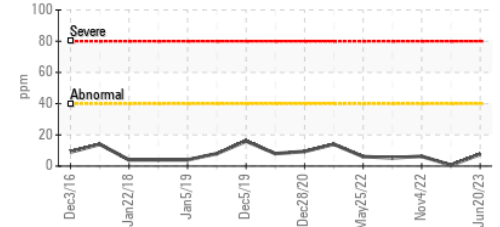
	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	15.0	14.4

GRAPHS

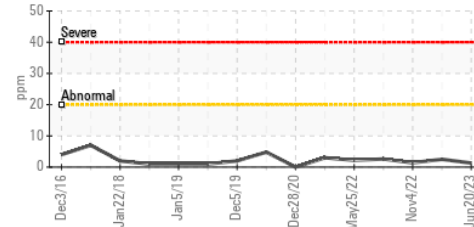
Iron (ppm)



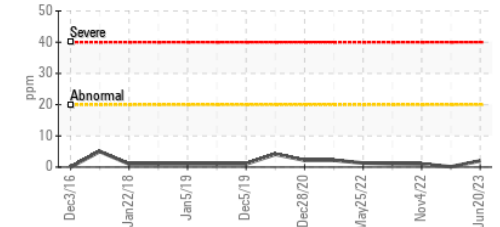
Lead (ppm)



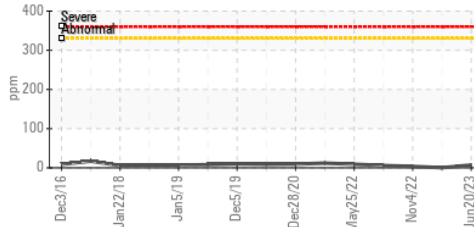
Aluminum (ppm)



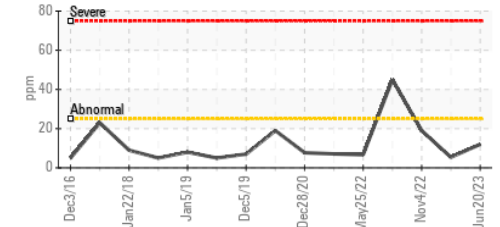
Chromium (ppm)



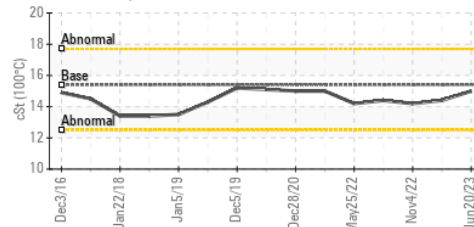
Copper (ppm)



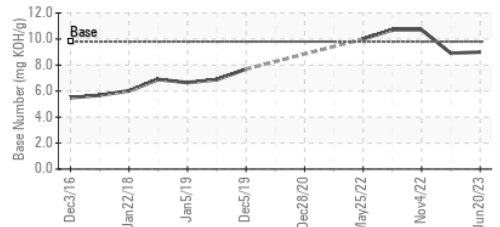
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0082160 **Received** : 10 Jul 2023
Lab Number : 05893341 **Diagnosed** : 12 Jul 2023
Unique Number : 10549151 **Diagnostician** : Jonathan Hester
Test Package : MOB 1 (Additional Tests: Glycol, TBN)

GE MARSHALL EXCAVATION
 1351 JOLIET RD
 VALPARAISO, IN
 US 46385
 Contact: MARK STEFFEL
 mark.steffel@gemarshall.com

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)

T:
F: