OIL ANALYSIS REPORT

360 OIL DIAGNOSTICS — TECHNICAL EXPERTISE

Sample Rating Trend

Nov2022 Jan2023 May2023 Oct2023 Mar2024 May2024

NORMAL ✓

Machine Id
731572
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 10W30 (--- GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear
All component wear rates are normal.

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	history1	history2
Sample Number	Client Info		PCA0125199	PCA0118994	PCA0108324
Sample Date	Client Info		24 May 2024	06 Mar 2024	30 Oct 2023
Machine Age	mls	Client Info	390079	349965	282531
Oil Age	mls	Client Info	390079	67434	282531
Oil Changed		Client Info	Not Changd	Changed	Changed
Sample Status			NORMAL	NORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<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 D5185m	>100	36	62	70
Chromium	ppm	ASTM D5185m	>20	2	2	3
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		13	1	5
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	8	8
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	6	13	26
Tin	ppm	ASTM D5185m	>15	<1	0	0
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	2	11	4	2
Barium	ppm	ASTM D5185m	0	<1	0	0
Molybdenum	ppm	ASTM D5185m	50	54	65	58
Manganese	ppm	ASTM D5185m	0	1	0	<1
Magnesium	ppm	ASTM D5185m	950	884	987	854
Calcium	ppm	ASTM D5185m	1050	1241	1279	1194
Phosphorus	ppm	ASTM D5185m	995	1072	1192	940
Zinc	ppm	ASTM D5185m	1180	1242	1348	1178
Sulfur	ppm	ASTM D5185m	2600	3038	2786	2126

CONTAMINANTS

		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	7	13	11
Sodium	ppm	ASTM D5185m		2	0	4
Potassium	ppm	ASTM D5185m	>20	6	14	11

INFRA-RED

		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	1.1	1.5	1.5
Nitration	Abs/cm	*ASTM D7624	>20	11.4	13.8	15.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.7	26.6	28.1

FLUID DEGRADATION

		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	22.7	27.6	29.6
Base Number (BN)	mg KOH/g	ASTM D2896		4.8	4.0	3.4

OIL ANALYSIS REPORT

FT-IR (Direct Trend)

Base Number

Viscosity @ 100°C
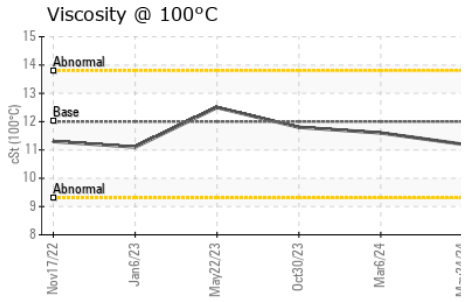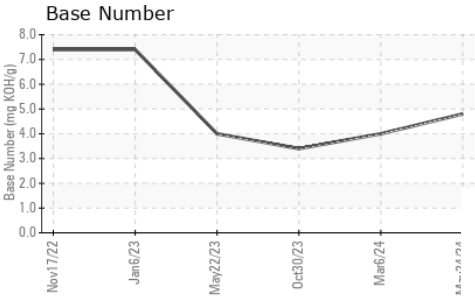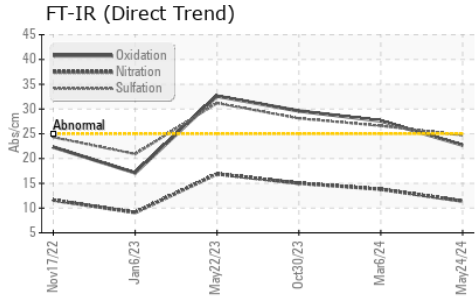
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	**11.2**	11.6	11.8

GRAPHS
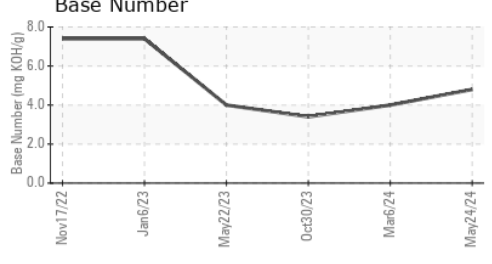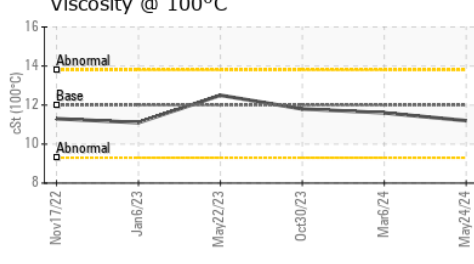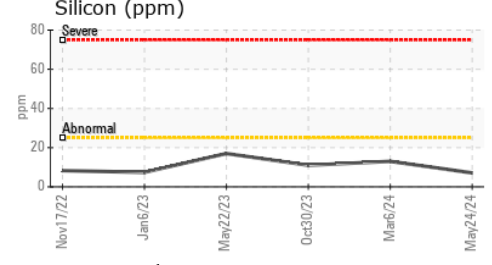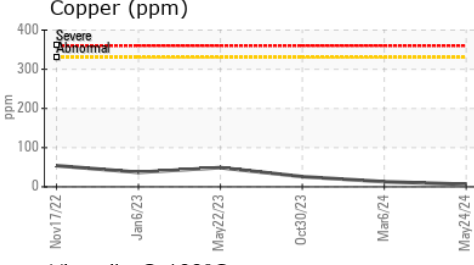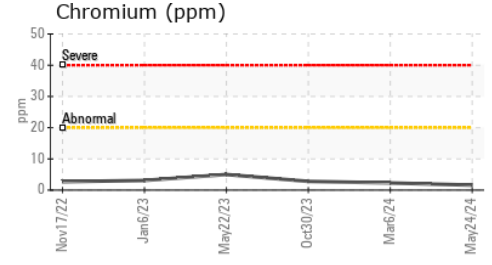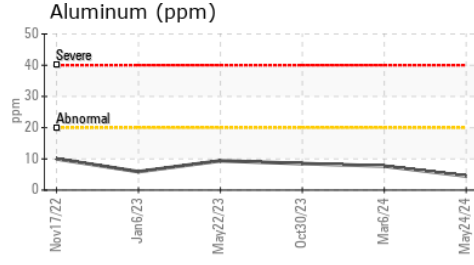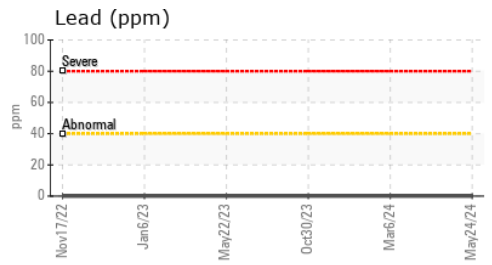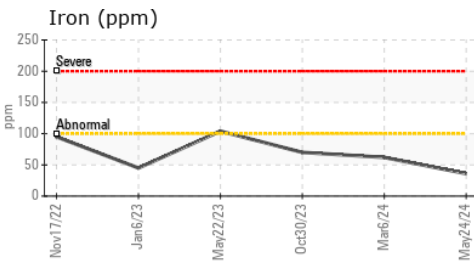
Iron (ppm)

Lead (ppm)

Aluminum (ppm)

Chromium (ppm)

Copper (ppm)

Silicon (ppm)

Viscosity @ 100°C

Base Number

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US 19116
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