

DEGRADATION



Machine Id
RST9963
Component
Diesel Engine

Fluid
PETRO CANADA DURON UHP 5W40 (8 LTR)

DIAGNOSIS

Recommendation

We advise that you check for faulty combustion and a possible overheat condition. The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Fuel content negligible. There is no indication of any contamination in the oil.

Fluid Condition

A small degree of oil oxidation was indicated. Viscosity of sample indicates oil is within SAE 5W50 range, advise investigate. The oil is no longer serviceable.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			PC0081604	PC0078315	PC0078317
Sample Date	Client Info			12 Jun 2024	22 Feb 2024	14 Feb 2024
Machine Age	hrs	Client Info		7657	6300	6249
Oil Age	hrs	Client Info		0	0	0
Oil Changed	Client Info			Changed	N/A	N/A
Sample Status				ABNORMAL	SEVERE	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
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)	>100	18	8	44
Chromium	ppm	ASTM D5185(m)	>20	2	<1	3
Nickel	ppm	ASTM D5185(m)	>4	<1	<1	0
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)	>3	0	0	0
Aluminum	ppm	ASTM D5185(m)	>20	8	2	4
Lead	ppm	ASTM D5185(m)	>40	0	0	<1
Copper	ppm	ASTM D5185(m)	>330	1	<1	<1
Tin	ppm	ASTM D5185(m)	>15	0	0	0
Antimony	ppm	ASTM D5185(m)		0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0

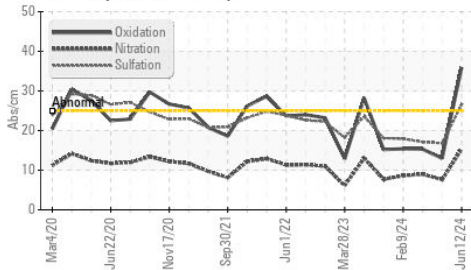
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	65	35	27	17
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	65	64	29	23
Manganese	ppm	ASTM D5185(m)	0	<1	0	0
Magnesium	ppm	ASTM D5185(m)	1160	1191	574	450
Calcium	ppm	ASTM D5185(m)	820	945	439	334
Phosphorus	ppm	ASTM D5185(m)	1160	1162	536	394
Zinc	ppm	ASTM D5185(m)	1260	1330	609	473
Sulfur	ppm	ASTM D5185(m)	3000	2720	1529	1009
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	15	6	5
Sodium	ppm	ASTM D5185(m)		6	2	2
Potassium	ppm	ASTM D5185(m)	>20	<1	<1	<1
Fuel	%	ASTM D7593*	>5	0.3	▲ 38.4	▲ 59.6

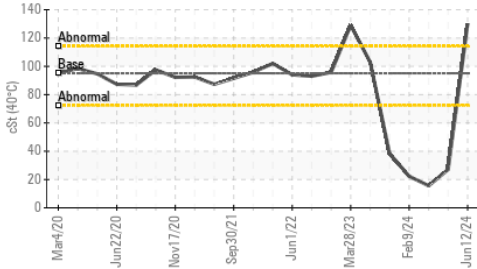
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	0	0	0.1
Nitration	Abs/cm	ASTM D7624*	>20	15.4	7.6	9.0
Sulfation	Abs/.1mm	ASTM D7415*	>30	26.5	16.8	17.1

OIL ANALYSIS REPORT

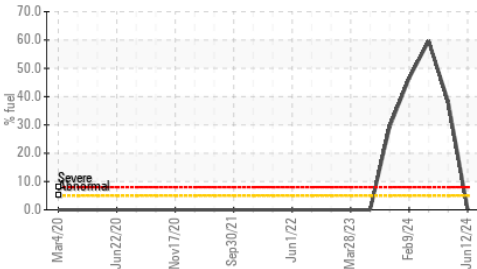
▲ FT-IR (Direct Trend)



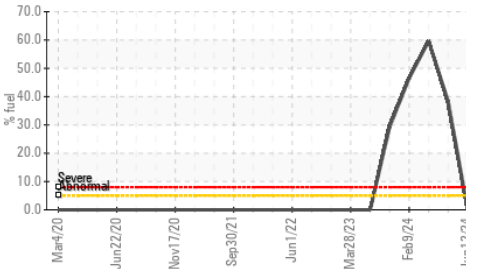
▲ Viscosity @ 40°C



Fuel Dilution



Fuel Dilution



FLUID DEGRADATION

method	limit/base	current	history1	history2	
Oxidation	Abs./1mm ASTM D7414*	>25	▲ 35.9	13.0	15.3

VISUAL

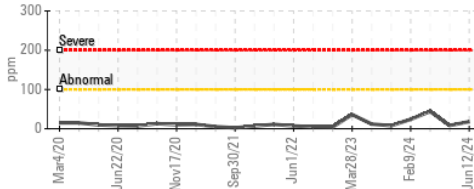
method	limit/base	current	history1	history2	
White Metal	scalar Visual*	NONE	VLITE	---	VLITE
Yellow Metal	scalar Visual*	NONE	NONE	---	NONE
Precipitate	scalar Visual*	NONE	NONE	---	NONE
Silt	scalar Visual*	NONE	NONE	---	NONE
Debris	scalar Visual*	NONE	NONE	---	NONE
Sand/Dirt	scalar Visual*	NONE	NONE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

FLUID PROPERTIES

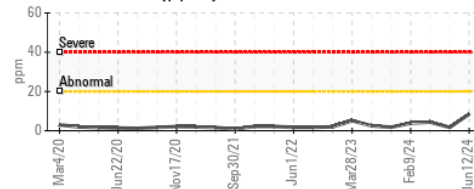
method	limit/base	current	history1	history2	
Visc @ 40°C	cSt ASTM D7279(m)	95.1	▲ 130	▲ 27.1	▲ 15.6
Visc @ 100°C	cSt ASTM D7279(m)	14.3	▲ 17.1	▲ 5.9	▲ 3.8
Viscosity Index (VI)	Scale ASTM D2270*	169	143	171	138

GRAPHS

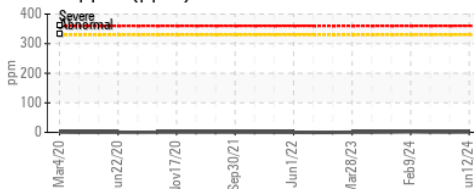
Iron (ppm)



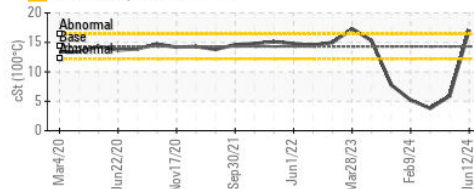
Aluminum (ppm)



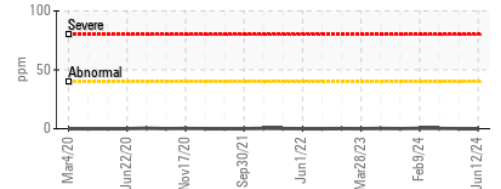
Copper (ppm)



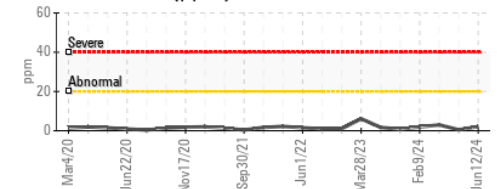
▲ Viscosity @ 100°C



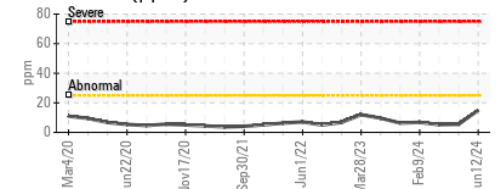
Lead (ppm)



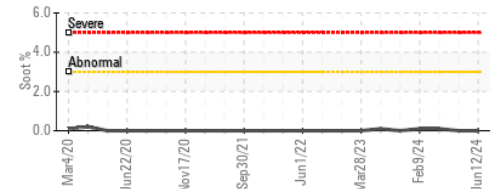
Chromium (ppm)



Silicon (ppm)



Soot %



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Green Infrastructure and Partners Inc (GIPI) - 286 - Shoring & Foundations
Sample No. : PC0081604 **Received** : 16 Jul 2024 151 Ram Forest Rd,
Lab Number : 02648031 **Tested** : 17 Jul 2024 Stouffville, ON
Unique Number : 5813583 **Diagnosed** : 17 Jul 2024 - Kevin Marson CA L4A 2G8
Test Package : MOB 1 (Additional Tests: KV40, PercentFuel, VI, Visual) Contact: Shannon Abbott
sabbott@gipi.com

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.

T: (905)750-5900
F: