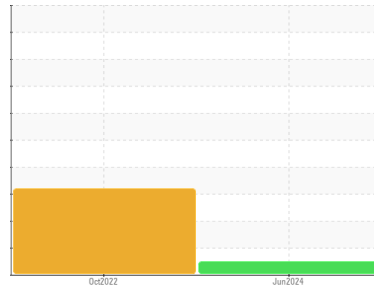


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id

HE2230

Component

Diesel Engine

Fluid

PETRO CANADA DURON UHP 5W40 (11 LTR)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		PC0081611	PC0066020	---
Sample Date	Client Info		12 Jun 2024	06 Oct 2022	---
Machine Age	hrs	Client Info	1563	100	---
Oil Age	hrs	Client Info	0	0	---
Oil Changed	Client Info		Changed	Changed	---
Sample Status			NORMAL	ABNORMAL	---

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<1.0	▲ 2.6	---
Water	WC Method	>0.2	NEG	NEG	---
Glycol	WC Method		NEG	0.0	---

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m) >100	9	8	---
Chromium	ppm	ASTM D5185(m) >20	<1	<1	---
Nickel	ppm	ASTM D5185(m) >4	0	0	---
Titanium	ppm	ASTM D5185(m)	0	0	---
Silver	ppm	ASTM D5185(m) >3	0	0	---
Aluminum	ppm	ASTM D5185(m) >20	1	3	---
Lead	ppm	ASTM D5185(m) >40	0	0	---
Copper	ppm	ASTM D5185(m) >330	<1	10	---
Tin	ppm	ASTM D5185(m) >15	0	<1	---
Antimony	ppm	ASTM D5185(m)	0	0	---
Vanadium	ppm	ASTM D5185(m)	0	0	---
Beryllium	ppm	ASTM D5185(m)	0	0	---
Cadmium	ppm	ASTM D5185(m)	0	0	---

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m) 65	48	144	---
Barium	ppm	ASTM D5185(m) 0	0	5	---
Molybdenum	ppm	ASTM D5185(m) 65	55	132	---
Manganese	ppm	ASTM D5185(m) 0	<1	2	---
Magnesium	ppm	ASTM D5185(m) 1160	1012	● 12	---
Calcium	ppm	ASTM D5185(m) 820	773	● 2767	---
Phosphorus	ppm	ASTM D5185(m) 1160	1073	● 491	---
Zinc	ppm	ASTM D5185(m) 1260	1140	● 510	---
Sulfur	ppm	ASTM D5185(m) 3000	2733	3016	---
Lithium	ppm	ASTM D5185(m)	<1	<1	---

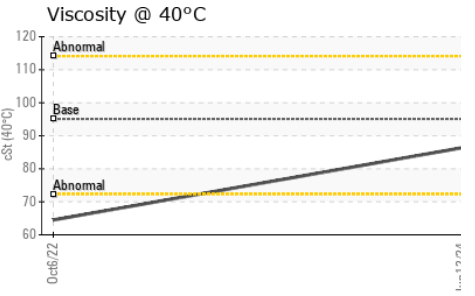
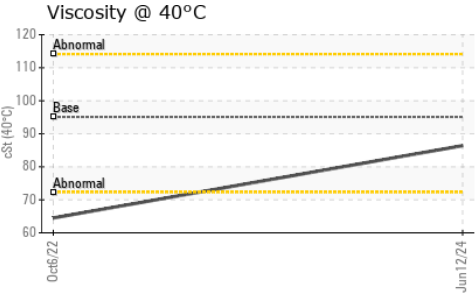
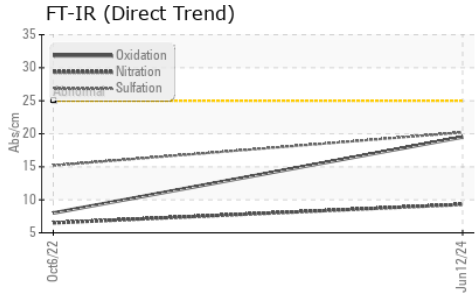
CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >25	3	14	---
Sodium	ppm	ASTM D5185(m)	4	4	---
Potassium	ppm	ASTM D5185(m) >20	<1	138	---

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	ASTM D7844* >3	0	0	---
Nitration	Abs/cm	ASTM D7624* >20	9.3	6.5	---
Sulfation	Abs./1mm	ASTM D7415* >30	20.2	15.2	---

OIL ANALYSIS REPORT

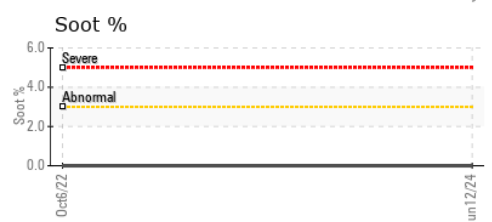
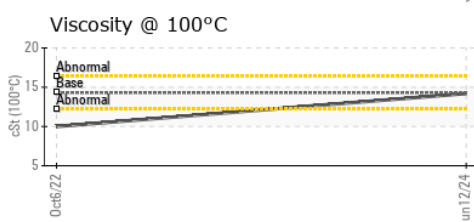
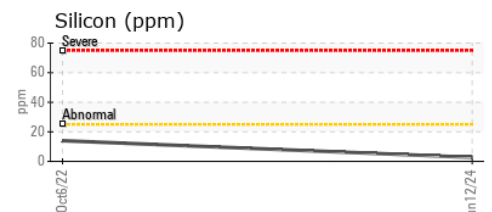
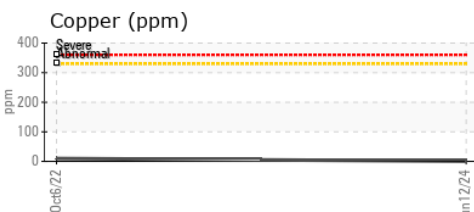
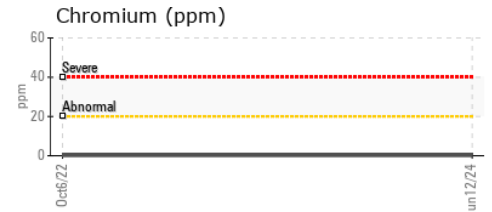
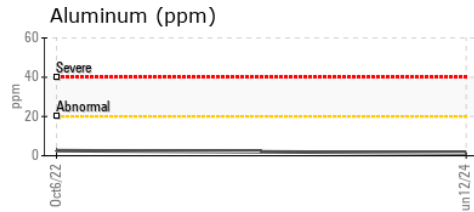
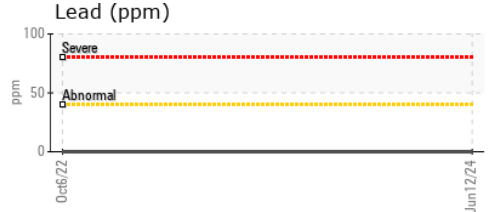
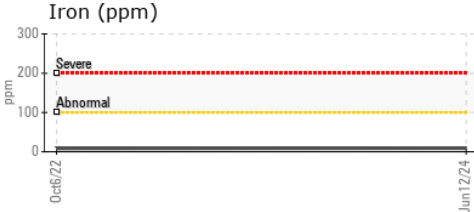


FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	ASTM D7414*	>25	19.5	8.0	---

VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	Visual*	NONE	VLITE	---	---
Yellow Metal	scalar	Visual*	NONE	NONE	---	---
Precipitate	scalar	Visual*	NONE	NONE	---	---
Silt	scalar	Visual*	NONE	NONE	---	---
Debris	scalar	Visual*	NONE	VLITE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	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 @ 40°C	cSt	ASTM D7279(m)	95.1	86.4	▲ 64.5	---
Visc @ 100°C	cSt	ASTM D7279(m)	14.3	14.2	▲ 10.0	---
Viscosity Index (VI)	Scale	ASTM D2270*	169	170	139	---

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0081611
Lab Number : **02648032**
Unique Number : 5813584
Test Package : MOB 1 (Additional Tests: KV40, VI, Visual)
Received : 16 Jul 2024
Tested : 16 Jul 2024
Diagnosed : 16 Jul 2024 - Wes Davis

Green Infrastructure and Partners Inc (GIPI) - 286 - Shoring & Foundations
 151 Ram Forest Rd,
 Stouffville, ON
 CA L4A 2G8
 Contact: Bill Acton
 bacton@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.