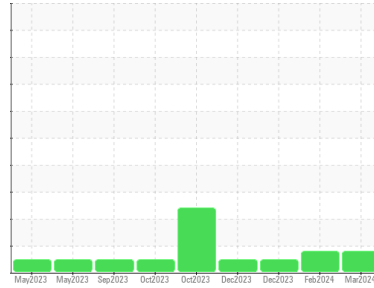




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Area
BD SHOP
 Machine Id
300215

Component
Diesel Engine
 Fluid

PETRO CANADA DURON SHP 10W30 (40 LTR)

DIAGNOSIS

Recommendation

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

Wear

Aluminum ppm levels are abnormal. Piston wear is indicated.

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 oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0888904	WC0888899	WC0864695
Sample Date	Client Info		08 Mar 2024	08 Feb 2024	01 Dec 2023
Machine Age	kms	Client Info	227102	213795	186995
Oil Age	kms	Client Info	46107	32800	68641
Oil Changed	Client Info		Not Chngd	Not Chngd	Changed
Sample Status			ABNORMAL	ABNORMAL	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

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>100	33	23	44
Chromium	ppm	ASTM D5185(m)	>20	2	2	2
Nickel	ppm	ASTM D5185(m)	>4	<1	<1	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)	>3	0	0	<1
Aluminum	ppm	ASTM D5185(m)	>20	▲ 31	▲ 23	27
Lead	ppm	ASTM D5185(m)	>40	<1	<1	<1
Copper	ppm	ASTM D5185(m)	>330	2	3	4
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)	2	2	2	3
Barium	ppm	ASTM D5185(m)	0	0	0	<1
Molybdenum	ppm	ASTM D5185(m)	50	62	60	62
Manganese	ppm	ASTM D5185(m)	0	<1	0	<1
Magnesium	ppm	ASTM D5185(m)	950	995	969	975
Calcium	ppm	ASTM D5185(m)	1050	1093	1083	1085
Phosphorus	ppm	ASTM D5185(m)	995	1018	1020	980
Zinc	ppm	ASTM D5185(m)	1180	1205	1184	1201
Sulfur	ppm	ASTM D5185(m)	2600	2645	2678	2298
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS

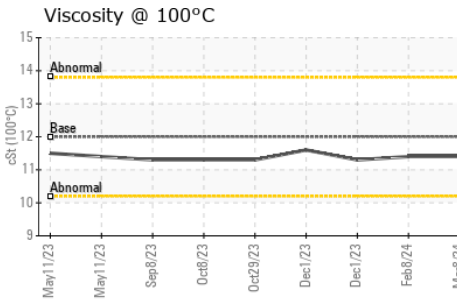
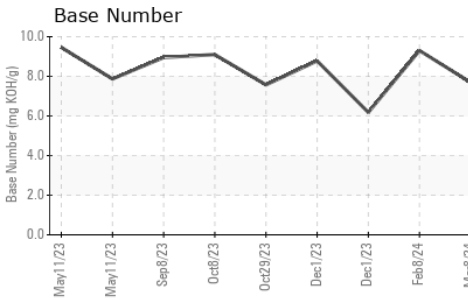
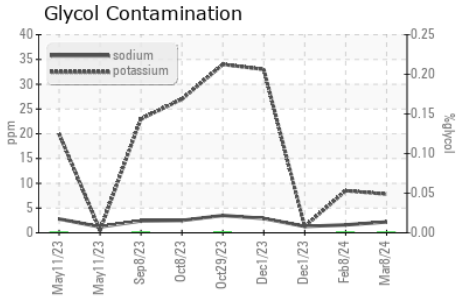
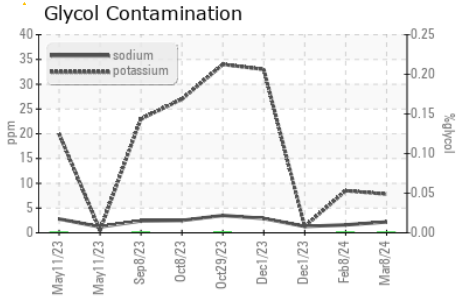
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>25	6	5	9
Sodium	ppm	ASTM D5185(m)		2	2	3
Potassium	ppm	ASTM D5185(m)	>20	8	8	33
Glycol	%	ASTM D7922*		0.0	0.0	NEG

INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844*	>3	0.9	0.6	1
Nitration	Abs/cm	ASTM D7624*	>20	8.9	7.8	9.7
Nitration(Diff)	Abs/cm	ASTM E2412*		11.1	7.8	---
Sulfation	Abs.:1mm	ASTM D7415*	>30	20.6	19.8	22.2
Sulfation(Diff)	Abs/cm	ASTM E2412*		4	2.3	---



OIL ANALYSIS REPORT

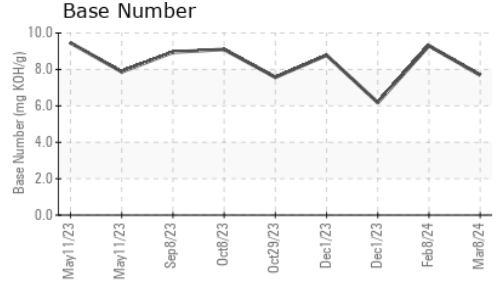
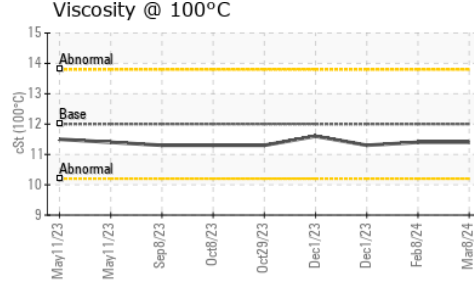
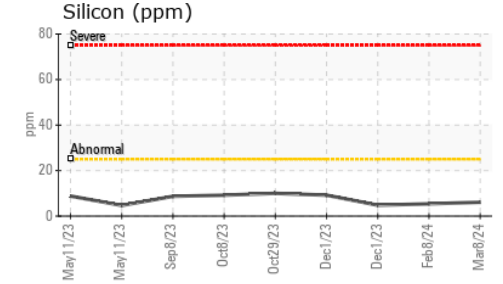
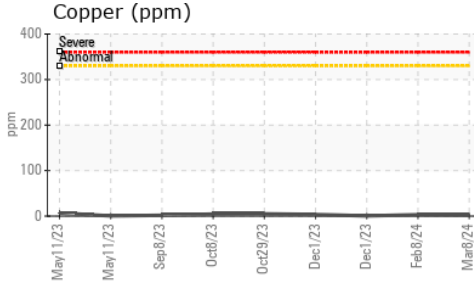
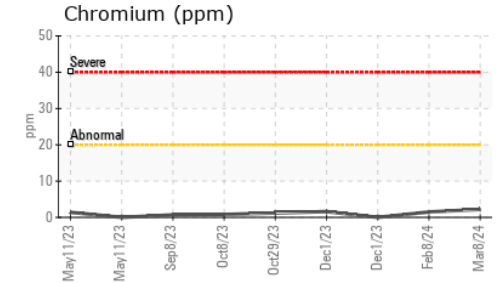
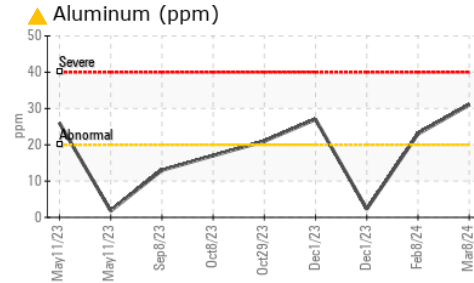
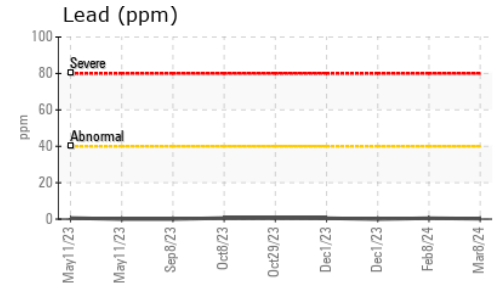
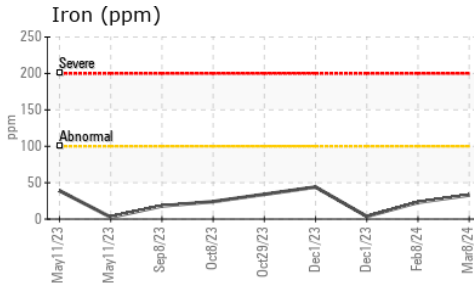


FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	ASTM D7414*	>25	15.7	14.8	17.7
Oxidation(Diff)	Abs/cm	ASTM E2412*		10.9	10.3	---
Base Number (BN)	mg KOH/g	ASTM D2896*		7.69	9.30	6.18

VISUAL	method	limit/base	current	history1	history2	
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 D7279(m)	12.00	11.4	11.4	11.3

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0888904 **Received** : 11 Mar 2024
Lab Number : 02621059 **Tested** : 11 Mar 2024
Unique Number : 5746178 **Diagnosed** : 12 Mar 2024 - Kevin Marson
Test Package : MOB 2 (Additional Tests: FT-IR(Diff), Glycol)

WFR Technical Services
 5389 Riverside Drive
 Burlington, ON
 CA L7L 3Y1
 Contact: William Ridley
 wfr.technical.services@gmail.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:
F: