



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id  
**WESTERN STAR 23-63**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON UHP 5W40 (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		PC0081759	PC0081763	PC0081770
Sample Date		Client Info		01 Apr 2024	13 Dec 2023	28 Nov 2023
Machine Age	hrs	Client Info		1636	1033	1016
Oil Age	hrs	Client Info		620	17	634
Filter Age	hrs	Client Info		620	17	634
Oil Changed		Client Info		Changed	Changed	N/A
Filter Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	ABNORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>65	27	10	42
Chromium	ppm	ASTM D5185(m)	>5	5	2	▲ 7
Nickel	ppm	ASTM D5185(m)	>3	0	0	<1
Titanium	ppm	ASTM D5185(m)	>5	0	0	0
Silver	ppm	ASTM D5185(m)	>2	0	<1	<1
Aluminum	ppm	ASTM D5185(m)	>35	23	7	36
Lead	ppm	ASTM D5185(m)	>10	<1	1	3
Copper	ppm	ASTM D5185(m)	>180	76	60	136
Tin	ppm	ASTM D5185(m)	>8	0	0	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0

## CONTAMINATION

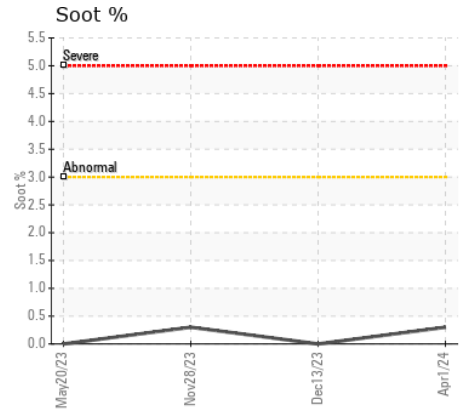
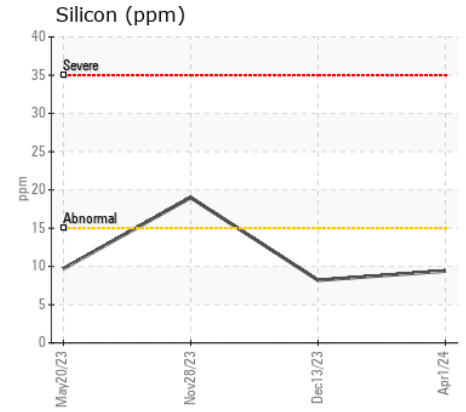
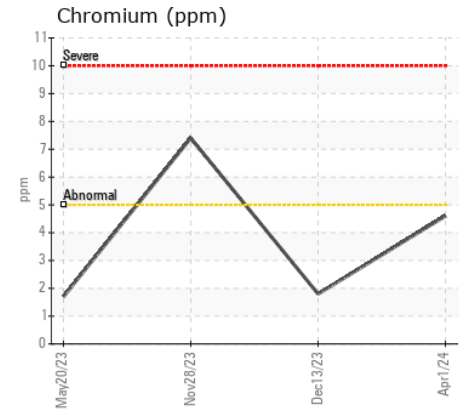
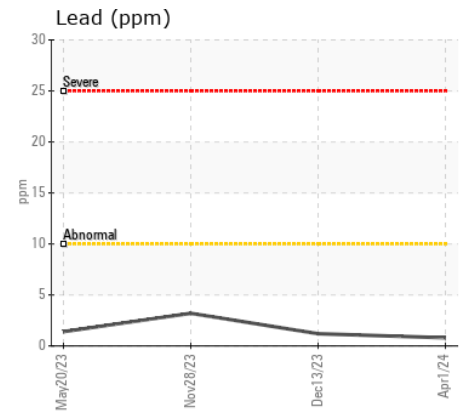
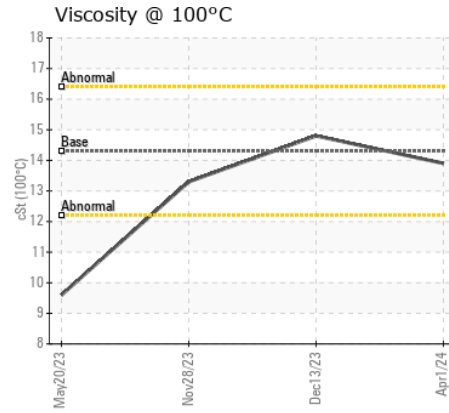
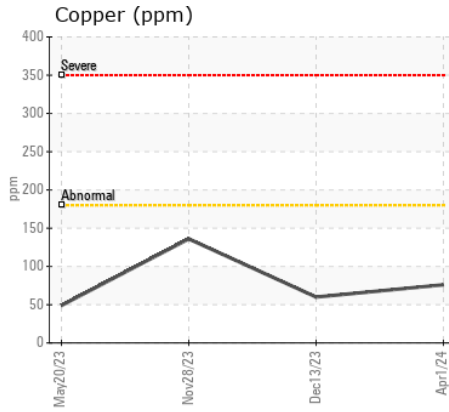
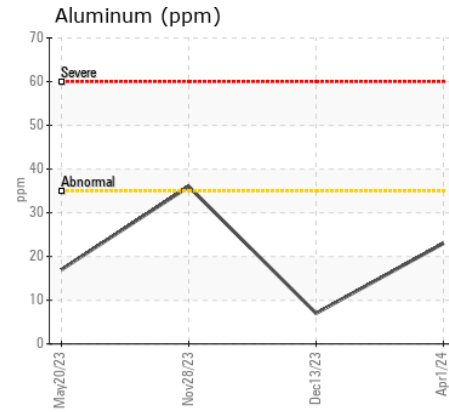
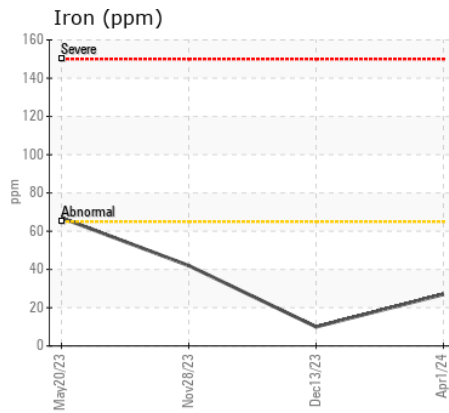
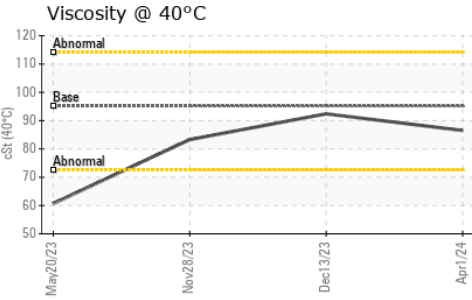
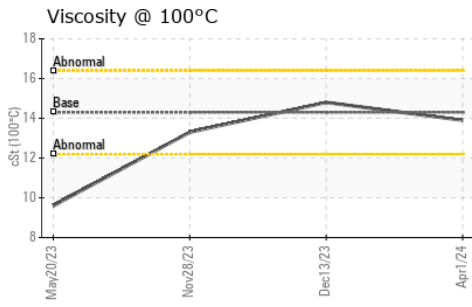
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>15	9	8	▲ 19
Potassium	ppm	ASTM D5185(m)	>20	40	9	59
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7844*	>3	0.3	0	0.3
Nitration	Abs/cm	ASTM D7624*	>20	9.9	6.8	10.0
Sulfation	Abs/.1mm	ASTM D7415*	>30	21.5	19.9	22.4
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

## FLUID CONDITION

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

Sodium	ppm	ASTM D5185(m)		4	4	5
Boron	ppm	ASTM D5185(m)	65	29	52	23
Barium	ppm	ASTM D5185(m)	0	0	<1	<1
Molybdenum	ppm	ASTM D5185(m)	65	60	56	56
Manganese	ppm	ASTM D5185(m)	0	0	0	<1
Magnesium	ppm	ASTM D5185(m)	1160	1123	1089	1093
Calcium	ppm	ASTM D5185(m)	820	855	841	840
Phosphorus	ppm	ASTM D5185(m)	1160	972	971	893
Zinc	ppm	ASTM D5185(m)	1260	1183	1156	1145
Sulfur	ppm	ASTM D5185(m)	3000	2432	2712	2146
Oxidation	Abs/.1mm	ASTM D7414*	>25	20.6	17.3	21.7
Visc @ 40°C	cSt	ASTM D7279(m)	95.1	86.5	92.4	83.3
Visc @ 100°C	cSt	ASTM D7279(m)	14.3	13.9	14.8	13.3
Viscosity Index (VI)	Scale	ASTM D2270*	169	165	167	161



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0081759 **Received** : 03 Apr 2024  
**Lab Number** : 02626401 **Tested** : 03 Apr 2024  
**Unique Number** : 5759533 **Diagnosed** : 03 Apr 2024 - Wes Davis  
**Test Package** : MOB 1 ( Additional Tests: KV40, VI )

**B & A PETROLEUM**  
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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.