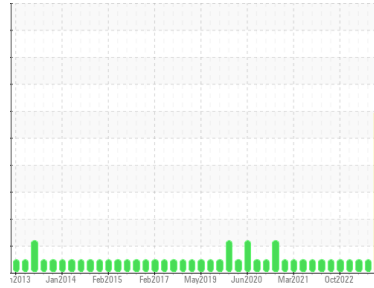




Machine Id
WESTERN STAR 811A

Component
Front Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (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
Silver ppm levels are severe.

Contamination
There is no indication of any contamination in the oil.

Fluid Condition
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			PC0010728	PC0010720	PC0010726
Sample Date	Client Info			15 Jul 2023	08 Apr 2023	07 Feb 2023
Machine Age	hrs	Client Info		15347	15040	14849
Oil Age	hrs	Client Info		280	540	299
Oil Changed	Client Info			Not Changed	Changed	Not Changed
Sample Status				SEVERE	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>5		<1.0	<1.0	<1.0
Glycol	WC Method			NEG	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	7	11	9
Chromium	ppm	ASTM D5185(m)	>20	<1	<1	<1
Nickel	ppm	ASTM D5185(m)	>50	<1	<1	0
Titanium	ppm	ASTM D5185(m)	>2	0	0	0
Silver	ppm	ASTM D5185(m)	>2	8	0	0
Aluminum	ppm	ASTM D5185(m)	>50	2	3	3
Lead	ppm	ASTM D5185(m)	>40	0	<1	0
Copper	ppm	ASTM D5185(m)	>330	<1	<1	<1
Tin	ppm	ASTM D5185(m)	>15	0	0	0
Antimony	ppm	ASTM D5185(m)		0	<1	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0

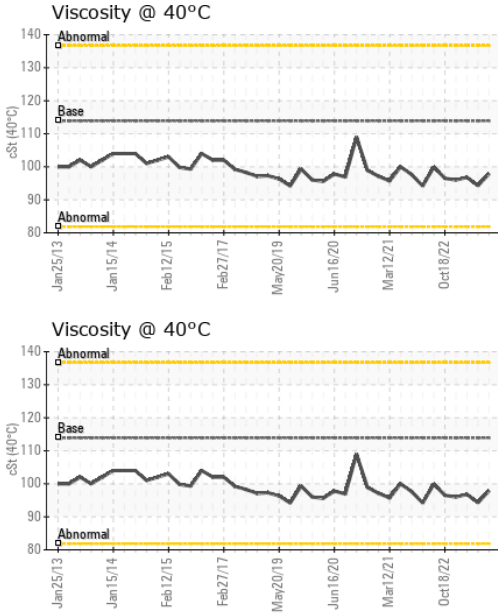
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	2	1	1
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	60	56	59	59
Manganese	ppm	ASTM D5185(m)	0	<1	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	937	970	949
Calcium	ppm	ASTM D5185(m)	1070	997	1057	1076
Phosphorus	ppm	ASTM D5185(m)	1150	1023	1104	1093
Zinc	ppm	ASTM D5185(m)	1270	1130	1161	1184
Sulfur	ppm	ASTM D5185(m)	2060	2525	2706	2683
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	2	2	4
Sodium	ppm	ASTM D5185(m)		1	<1	1
Potassium	ppm	ASTM D5185(m)	>20	1	1	<1

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	0.3	0.3	0.1
Nitration	Abs/cm	ASTM D7624*	>20	6.3	7.1	6.4
Sulfation	Abs/.1mm	ASTM D7415*	>30	18.4	18.2	19.8

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	13.5	13.8	13.8

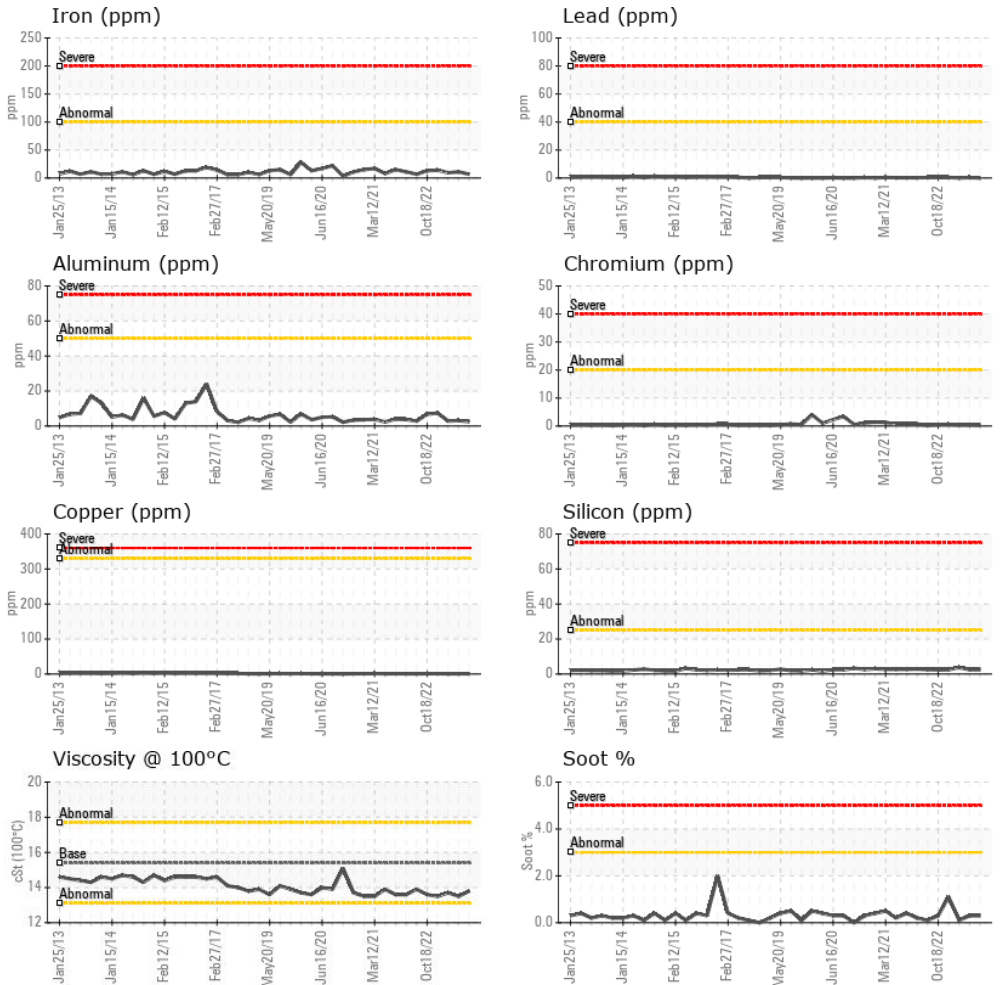
OIL ANALYSIS REPORT



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)	113.9	97.9	94.3
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	13.8	13.5
Viscosity Index (VI)	Scale	ASTM D2270*	142	142	143

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0010728 **Received** : 21 Jul 2023
Lab Number : 02571375 **Diagnosed** : 21 Jul 2023
Unique Number : 5616426 **Diagnostician** : Kevin Marson
Test Package : MOB 1 (Additional Tests: KV40, VI, Visual)

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 211 WATER STREET
 YARMOUTH, NS
 CA B5A 1L9
 Contact: Clinton Hubbard
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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.