

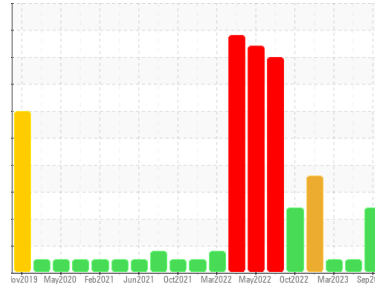


OIL ANALYSIS REPORT



Area
Off-Road
Machine Id
E18
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

Sample Rating Trend



DIAGNOSIS

Recommendation
We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	PCA0090500	PCA0083190	PCA0083140
Sample Date	Client Info	20 Sep 2023	25 Apr 2023	02 Mar 2023
Machine Age	hrs	9914	8961	8839
Oil Age	hrs	6280	5449	5714
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		ABNORMAL	NORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<1.0	<1.0	1.3
Glycol	WC Method	NEG	0.0	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >100	49	16	24
Chromium	ppm ASTM D5185m >20	2	0	1
Nickel	ppm ASTM D5185m >2	<1	0	<1
Titanium	ppm ASTM D5185m >2	0	<1	1
Silver	ppm ASTM D5185m >2	0	0	0
Aluminum	ppm ASTM D5185m >25	▲ 49	7	11
Lead	ppm ASTM D5185m >40	0	0	<1
Copper	ppm ASTM D5185m >330	4	<1	3
Tin	ppm ASTM D5185m >15	0	0	<1
Vanadium	ppm ASTM D5185m	0	<1	0
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	0	8	5
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 60	61	58	58
Manganese	ppm ASTM D5185m 0	<1	<1	2
Magnesium	ppm ASTM D5185m 1010	1047	945	967
Calcium	ppm ASTM D5185m 1070	1157	1046	1087
Phosphorus	ppm ASTM D5185m 1150	1013	963	957
Zinc	ppm ASTM D5185m 1270	1337	1219	1255
Sulfur	ppm ASTM D5185m 2060	3240	4173	3224

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	▲ 35	13	21
Sodium	ppm ASTM D5185m	8	6	9
Potassium	ppm ASTM D5185m >20	6	4	6

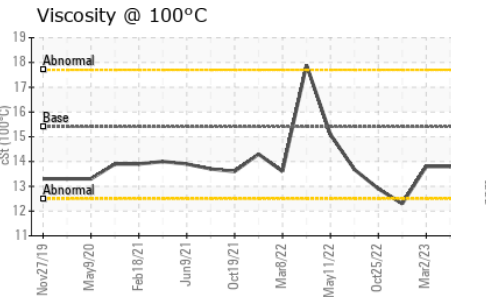
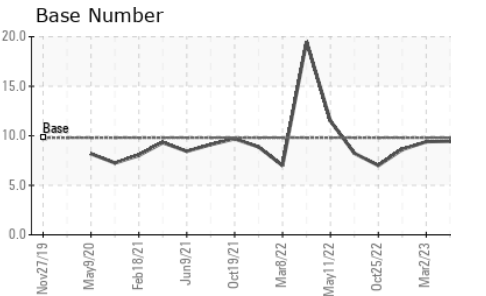
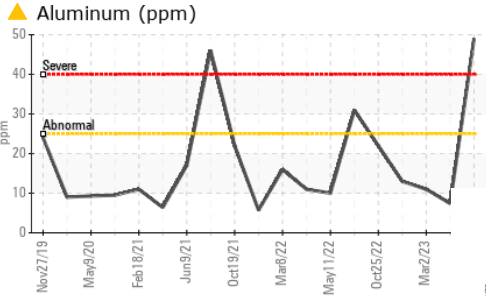
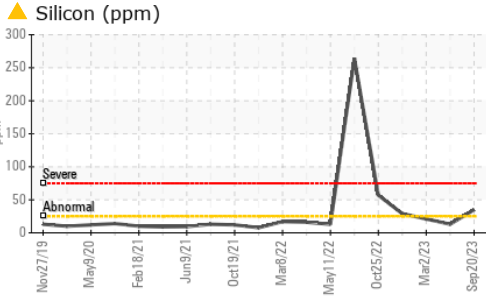
INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.6	0.2	0.4
Nitration	Abs/cm *ASTM D7624 >20	8.2	5.8	8.2
Sulfation	Abs/.1mm *ASTM D7415 >30	20.3	16.5	19.1

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	17.2	13.2	15.5
Base Number (BN)	mg KOH/g ASTM D2896 9.8	8.85	9.45	9.40

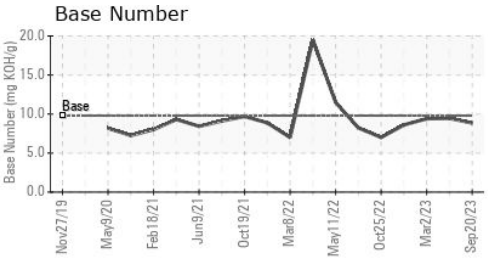
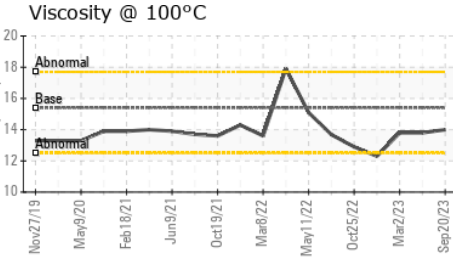
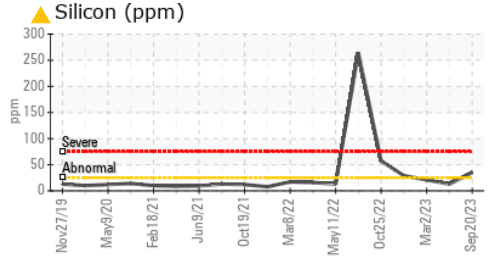
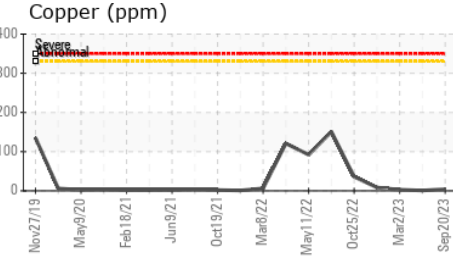
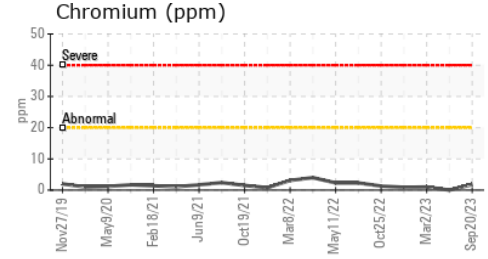
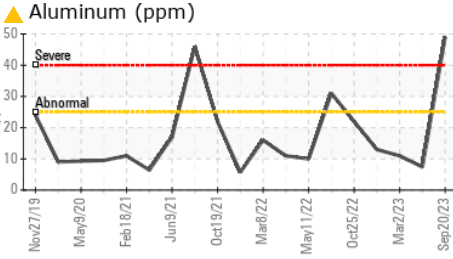
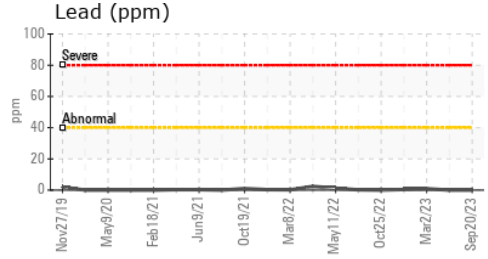
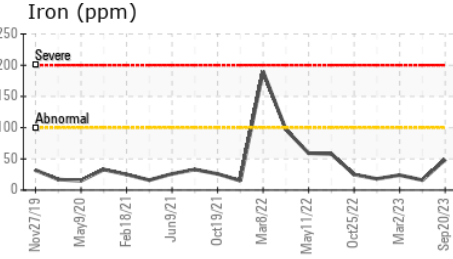
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
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
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.0	13.8	13.8

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0090500 **Received** : 22 Sep 2023
Lab Number : 05958740 **Diagnosed** : 25 Sep 2023
Unique Number : 10659953 **Diagnostician** : Don Baldrige
Test Package : MOB 2

WIN Waste Innovations - Shop # - Taunton
 565 WINTHROP ST
 TAUNTON, MA
 US 02780
 Contact: Dave Wilson
 dwilson@win-waste.com

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

T:
F: