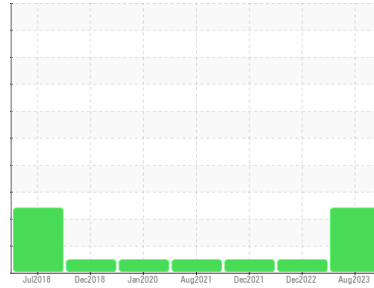


OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id
433U

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check for possible coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		PCA0102863	PCA0085116	PCA0074345
Sample Date	Client Info		07 Aug 2023	06 Dec 2022	16 Dec 2021
Machine Age	mls	Client Info	173866	148640	115549
Oil Age	mls	Client Info	25226	7599	13583
Oil Changed	Client Info		Changed	Changed	Changed
Sample Status			ABNORMAL	NORMAL	NORMAL

CONTAMINATION

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

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	35	13	20
Chromium	ppm	ASTM D5185m >20	<1	<1	<1
Nickel	ppm	ASTM D5185m >4	<1	<1	<1
Titanium	ppm	ASTM D5185m	0	0	<1
Silver	ppm	ASTM D5185m >3	0	0	<1
Aluminum	ppm	ASTM D5185m >20	3	0	3
Lead	ppm	ASTM D5185m >40	2	0	1
Copper	ppm	ASTM D5185m >330	2	<1	9
Tin	ppm	ASTM D5185m >15	<1	<1	<1
Antimony	ppm	ASTM D5185m	---	---	---
Vanadium	ppm	ASTM D5185m	0	0	<1
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	3	3	0
Barium	ppm	ASTM D5185m 0	0	0	0
Molybdenum	ppm	ASTM D5185m 60	86	60	59
Manganese	ppm	ASTM D5185m 0	<1	<1	1
Magnesium	ppm	ASTM D5185m 1010	1048	944	954
Calcium	ppm	ASTM D5185m 1070	1152	1083	1080
Phosphorus	ppm	ASTM D5185m 1150	1039	1011	984
Zinc	ppm	ASTM D5185m 1270	1349	1235	1261
Sulfur	ppm	ASTM D5185m 2060	3703	3650	3327

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	11	3	4
Sodium	ppm	ASTM D5185m	▲ 220	16	4
Potassium	ppm	ASTM D5185m >20	▲ 26	2	7
Glycol	%	*ASTM D2982	NEG	NEG	NEG

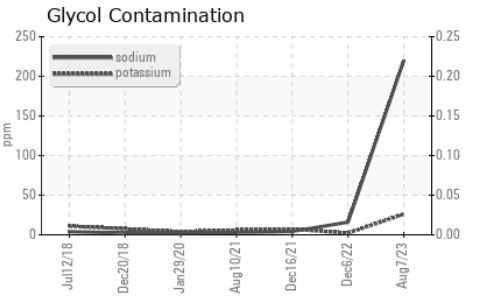
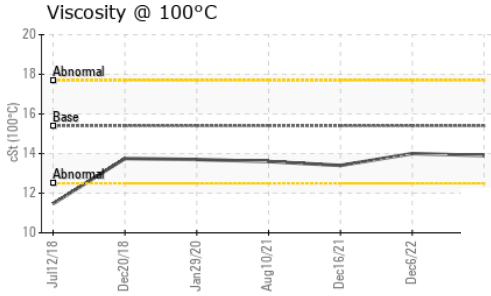
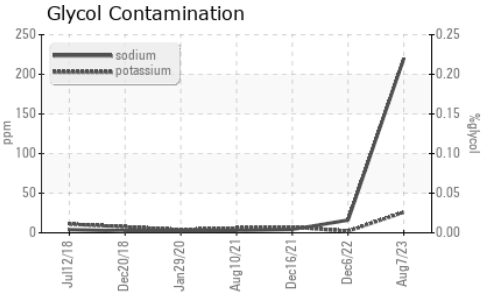
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.3	0.2	0.3
Nitration	Abs/cm	*ASTM D7624 >20	10.1	7.4	9.3
Sulfation	Abs/.1mm	*ASTM D7415 >30	21.7	20.0	20.9

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	17.8	15.5	16.1
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	8.69	10.12	8.51

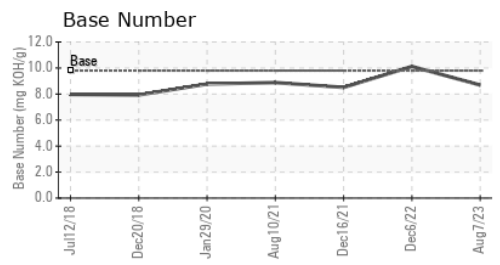
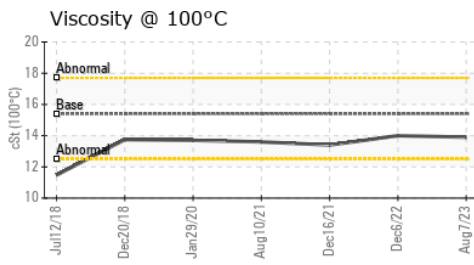
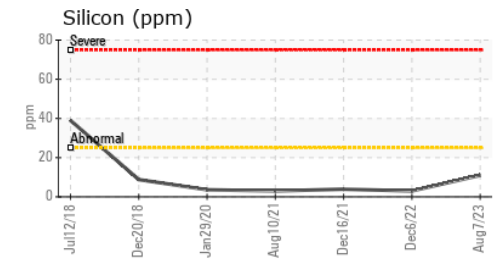
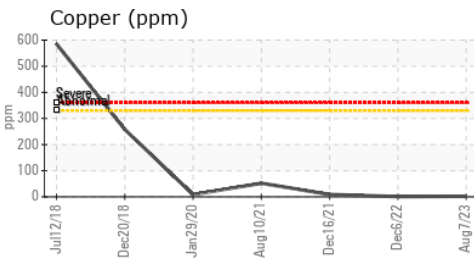
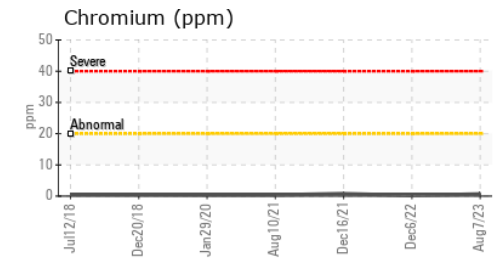
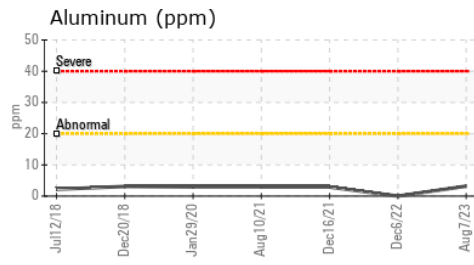
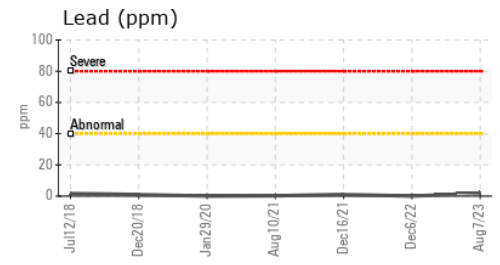
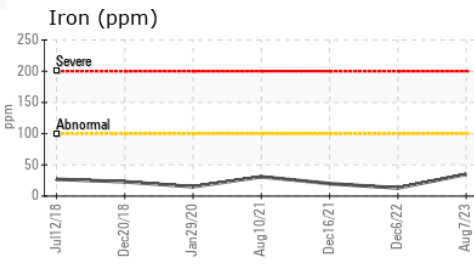
OIL ANALYSIS REPORT



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	13.9	14.0	13.4

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0102863 **Received** : 17 Aug 2023
Lab Number : **05927442** **Diagnosed** : 21 Aug 2023
Unique Number : 10607389 **Diagnostician** : Jonathan Hester
Test Package : MOB 2 (Additional Tests: Glycol)

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 AMSTERDAM, NY
 US 12010
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 cwilbur@browncoach.com
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 F: (518)843-3600

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)