

## Machine Id C-449 Component **Diesel Engine** PETRO CANADA DURON SHP 10W30 (--- GAL)

RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Resample at the next service interval to monitor.	Sample Number		Client Info		WC0903680	WC0879652	
	Sample Date		Client Info		28 Feb 2024	06 Nov 2023	
	Machine Age	kms	Client Info		585467	562409	
	Oil Age	kms	Client Info		23058	54496	
	Filter Age	kms	Client Info		23058	54496	
	Oil Changed		Client Info		Changed	Changed	
	Filter Changed		Client Info		Changed	Changed	
	Sample Status				NORMAL	NORMAL	
WEAR	Iron	ppm	ASTM D5185(m)	>65	16	23	
All component wear rates are normal.	Chromium	ppm	ASTM D5185(m)	>5	1	1	
	Nickel	ppm	ASTM D5185(m)	>3	<1	<1	
	Titanium	ppm	ASTM D5185(m)	>5	0	0	
	Silver	ppm	ASTM D5185(m)	>2	0	0	
	Aluminum	ppm	ASTM D5185(m)	>35	10	10	
	Lead	ppm	ASTM D5185(m)	>10	0	0	
	Copper	ppm	ASTM D5185(m)	>180	8	6	
	Tin	ppm	ASTM D5185(m)	>8	0	0	
	Vanadium	ppm	ASTM D5185(m)		0	0	
CONTAMINATION There is no indication of any contamination in the oil.	Silicon	ppm	ASTM D5185(m)	>15	2	5	
	Potassium	ppm	ASTM D5185(m)	>20	2	4	
	Fuel		WC Method	>3.0	<1.0	<1.0	
	Water		WC Method	>0.2	NEG	NEG	
	Glycol		WC Method		NEG	NEG	
	Soot %	%	ASTM D7844*	>3	0.4	0.9	
	Nitration	Abs/cm	ASTM D7624*	>20	9.1	10.6	
	Sulfation	Abs/.1mm	ASTM D7415*	>30	20.1	24.6	
	Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	
FLUID CONDITION	Sodium	ppm	ASTM D5185(m)		1	2	
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.	Boron	ppm	ASTM D5185(m)	2	4	4	
	Barium	ppm	ASTM D5185(m)		0	0	
	Molybdenum	ppm	ASTM D5185(m)	50	60	57	
	Manganese	ppm	ASTM D5185(m)	0	<1	0	
	Magnesium	ppm	ASTM D5185(m)	950	963	893	
	Calcium	ppm	ASTM D5185(m)	1050	1108	1287	
	Phosphorus	ppm	ASTM D5185(m)	995	987	1010	
	Zinc	ppm	ASTM D5185(m)	1180	1183	1235	

Sulfur

Oxidation

Visc @ 100°C cSt

ppm

Abs/.1mm Base Number (BN) mg KOH/g ASTM D2896\*

ASTM D5185(m) 2600 ASTM D7414\* >25

ASTM D7279(m) 12.00

12.2 Submitted By: Stephane Godbout

2434

19.4

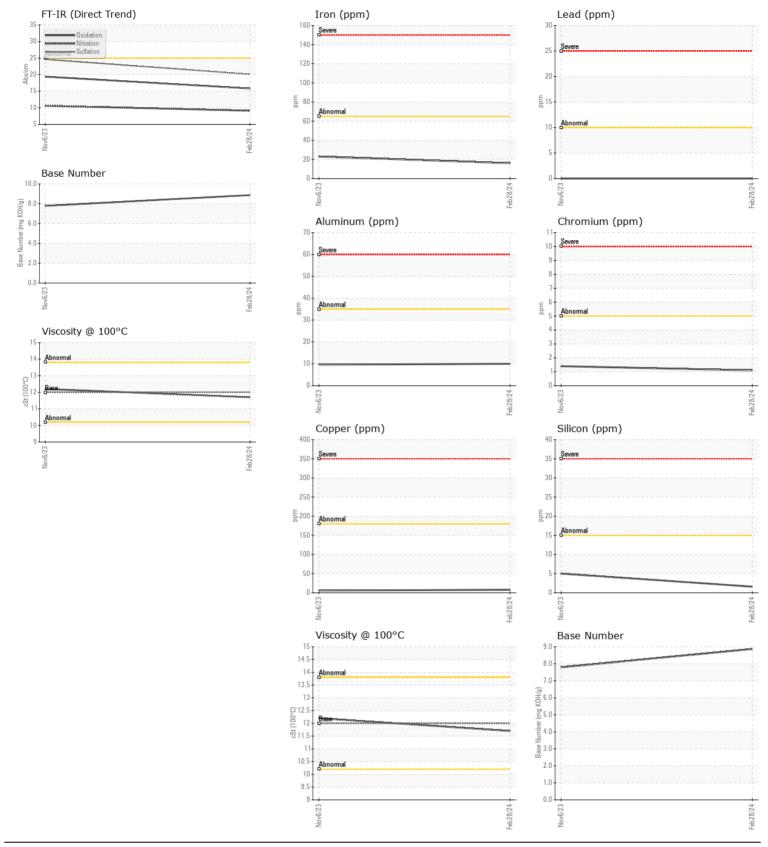
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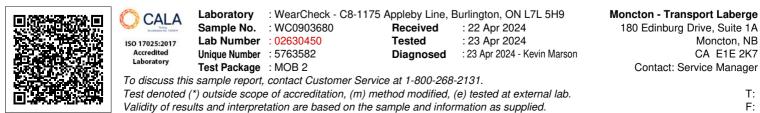
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15.8

8.87

11.7





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