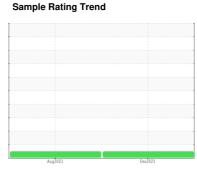


OIL ANALYSIS REPORT



NORMAL



725067 Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- 0

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

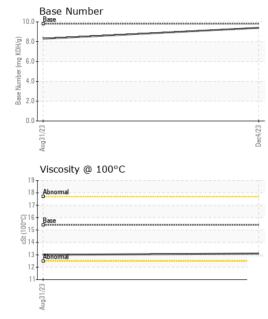
Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Oil Age Oil Changed Sample Status CONTAMINATIO Fuel Water Glycol WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	hrs hrs	method Client Info Client Info Client Info Client Info Client Info Client Info Method WC Method WC Method WC Method WC Method MSTM D5185m ASTM D5185m	limit/base >100 >20 >4 >3	current GFL0098401 04 Dec 2023 7656 7656 Changed NORMAL current <1.0 NEG NEG current 45 2 <1 <1 0	history1 GFL0079528 31 Aug 2023 7068 7068 Changed NORMAL history1 <1.0 NEG NEG history1 40 2 0 <1	history2 history2 history2
Sample Date Machine Age Oil Age Oil Changed Sample Status CONTAMINATIO Fuel Water Glycol WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm ppm ppm ppm	Client Info Client Info Client Info Client Info Client Info Mc Method WC Method WC Method WC Method ASTM D5185m	>5 >0.2 limit/base >100 >20 >4 >3 >20	04 Dec 2023 7656 7656 Changed NORMAL	31 Aug 2023 7068 7068 Changed NORMAL history1 <1.0 NEG NEG history1 40 2 0 <1	history2 history2
Machine Age Oil Age Oil Age Oil Changed Sample Status CONTAMINATION Fuel Water Glycol WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm ppm ppm ppm	Client Info Client Info Client Info Client Info method WC Method WC Method WC Method ASTM D5185m	>5 >0.2 limit/base >100 >20 >4 >3 >20	7656 7656 Changed NORMAL	7068 7068 Changed NORMAL history1 <1.0 NEG NEG 2 0 <1	history2 history2
Oil Age Oil Changed Sample Status CONTAMINATION Fuel Water Glycol WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm ppm ppm ppm	Client Info Client Info Client Info method WC Method WC Method WC Method ASTM D5185m	>5 >0.2 limit/base >100 >20 >4 >3 >20	7656 Changed NORMAL current <1.0 NEG NEG 2 <1 <1 <1 0	7068 Changed NORMAL history1 <1.0 NEG NEG 2 0 <1	history2 history2
Oil Changed Sample Status CONTAMINATIO Fuel Water Glycol WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm ppm ppm ppm	method WC Method WC Method WC Method WC Method ASTM D5185m	>5 >0.2 limit/base >100 >20 >4 >3 >20	Changed NORMAL current <1.0 NEG NEG 2 <11 <10 <10 <10 <10 <10 <10 <10 <10 <10	Changed NORMAL history1 <1.0 NEG NEG history1 40 2 0 <1	history2 history2 history2
Sample Status CONTAMINATION Fuel Water Glycol WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm ppm ppm ppm ppm	method WC Method WC Method WC Method Method MSTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>5 >0.2 limit/base >100 >20 >4 >3 >20	NORMAL current <1.0 NEG NEG current 45 2 <1 <1 0	NORMAL history1 <1.0 NEG NEG history1 40 2 0 <1	history2 history2
CONTAMINATION Fuel Water Glycol WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm ppm ppm ppm ppm	WC Method WC Method WC Method MC Method ASTM D5185m	>5 >0.2 limit/base >100 >20 >4 >3 >20	current <1.0 NEG NEG current 45 2 <1 <1 0	history1 <1.0 NEG NEG history1 40 2 0 <1	history2 history2
Fuel Water Glycol WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm ppm ppm ppm ppm	WC Method WC Method WC Method MC Method ASTM D5185m	>5 >0.2 limit/base >100 >20 >4 >3 >20	<1.0 NEG NEG current 45 2 <1 <1 0	<1.0 NEG NEG history1 40 2 0 <1	history2
Water Glycol WEAR METALS fron Chromium Nickel Fitanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm ppm ppm ppm	WC Method WC Method Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>0.2 limit/base >100 >20 >4 >3 >20	NEG NEG Current 45 2 <1 <1 0	NEG NEG history1 40 2 0 <1	history2
Glycol WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm ppm ppm ppm	WC Method method ASTM D5185m	limit/base >100 >20 >4 >3 >20	NEG current 45 2 <1 <1 0	NEG history1 40 2 0 <1	history2
WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	>100 >20 >4 >3 >20	current 45 2 <1 <1 0	history1 40 2 0 <1	history2
Chromium Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>100 >20 >4 >3 >20	45 2 <1 <1 0	40 2 0 <1	
Chromium Nickel Fitanium Silver Aluminum Lead Copper Fin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >4 >3 >20	2 <1 <1 0	2 0 <1	
Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>4 >3 >20	<1 <1 0	0 <1	
Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>3 >20	<1 0	<1	
Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	>20	0		
Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	>20		0	
Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm	ASTM D5185m		_	-	
Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	ppm		>40	5	5	
Fin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum		ASTM D5185m		4	5	
Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	ppm		>330	2	2	
Cadmium ADDITIVES Boron Barium Molybdenum		ASTM D5185m	>15	1	<1	
ADDITIVES Boron Barium Molybdenum	ppm	ASTM D5185m		0	0	
Boron Barium Molybdenum	ppm	ASTM D5185m		<1	0	
Barium Molybdenum		method	limit/base	current	history1	history2
Molybdenum	ppm	ASTM D5185m	0	149	251	
	ppm	ASTM D5185m	0	12	<1	
Manganese	ppm	ASTM D5185m	60	101	126	
	ppm	ASTM D5185m	0	<1	<1	
Magnesium	ppm	ASTM D5185m	1010	759	711	
Calcium	ppm	ASTM D5185m	1070	1340	1663	
Phosphorus	ppm	ASTM D5185m	1150	861	739	
Zinc	ppm	ASTM D5185m	1270	985	888	
	ppm	ASTM D5185m	2060	3103	2999	
CONTAMINANT	ΓS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	6	7	
	ppm	ASTM D5185m		0	2	
Potassium	ppm	ASTM D5185m	>20	18	3	
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	1.2	1.4	
Nitration	Abs/cm	*ASTM D7624	>20	11.8	13.1	
Sulfation	Abs/.1mm	*ASTM D7415	>30	25.1	27.2	
FLUID DEGRADA		method	limit/base	current	history1	history2
Oxidation	ATION	*ASTM D7414	>25	23.0	24.9	
Base Number (BN)	ATION Abs/.1mm	A311VI D7414		9.4	8.3	



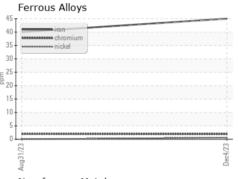
OIL ANALYSIS REPORT



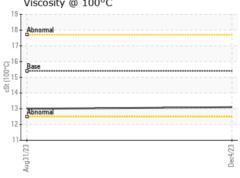
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	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	

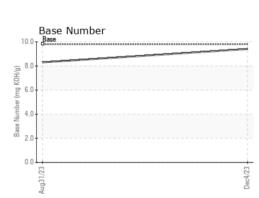
FLUID PROPE	RHES	method	limit/base		nistory1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.1	13.0	

GRAPHS



Non-re	errous Metals	
8 -	•• lead	
6-		
4	***************************************	-
2-		
Aug31/23		Dec4/23 +
	ity @ 100°C	De









Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10790315 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0098401 : 06035086

Recieved Diagnosed

: 14 Dec 2023 : 15 Dec 2023 Diagnostician : Wes Davis

GFL Environmental - 409 - Wood Island LF

E10081 State Hwy M28 Wetmore, MI US 49895

Contact: Service Manager

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: