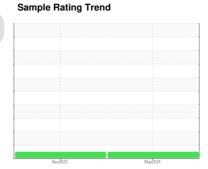


OIL ANALYSIS REPORT



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





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

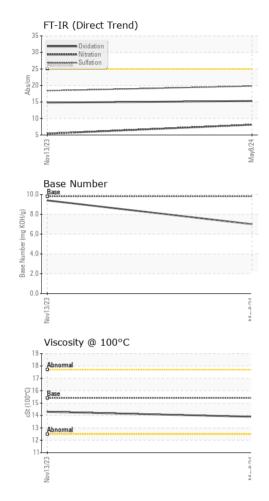
Fluid Condition

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

SAMPLE INFORI Sample Number Sample Date Machine Age Oil Age Oil Changed Sample Status CONTAMINAT Fuel Water Glycol WEAR METAL Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium	hrs hrs	Client Info Mc Method WC Method WC Method WC Method ASTM D5185m	limit/base >120 >20 >5 >2 >2 >2 >2 >2 >40	current GFL0106273 08 May 2024 17994 0 Changed NORMAL current <1.0 NEG NEG current 11 0 0 0 0 4 0	history1 GFL0066979 13 Nov 2023 17793 0 Changed NORMAL history1 <1.0 NEG NEG history1 7 0 1 0 0 3 <1	history2 history2 history2
Sample Date Machine Age Oil Age Oil Age Oil Changed Sample Status CONTAMINAT Fuel Water Glycol WEAR METAL Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium	ION S ppm 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	>3.0 >0.2 limit/base >120 >20 >5 >2 >2 >2 >2 >2	08 May 2024 17994 0 Changed NORMAL	13 Nov 2023 17793 0 Changed NORMAL history1 <1.0 NEG NEG history1 7 0 1 0 3 <1	history2 history2
Machine Age Oil Age Oil Age Oil Changed Sample Status CONTAMINAT Fuel Water Glycol WEAR METAL Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium	ION S ppm ppm ppm ppm ppm ppm ppm ppm	Client Info Client Info Client Info Client Info Method WC Method WC Method WC Method MSTM D5185m ASTM D5185m	>3.0 >0.2 limit/base >120 >20 >5 >2 >2 >2 >2 >2	17994 0 Changed NORMAL current <1.0 NEG NEG current 11 0 0 0 4 0	17793 0 Changed NORMAL history1 <1.0 NEG NEG 1 0 1 0 1 0 3 <1	history2
Oil Age Oil Changed Sample Status CONTAMINAT Fuel Water Glycol WEAR METAL Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium	ION S ppm ppm ppm ppm ppm ppm ppm ppm	Client Info Client Info Client Info method WC Method WC Method WC Method ASTM D5185m	>3.0 >0.2 limit/base >120 >20 >5 >2 >2 >2 >2 >2	0 Changed NORMAL current <1.0 NEG NEG current 11 0 0 0 0 4 0	O Changed NORMAL history1 <1.0 NEG NEG history1 7 0 1 0 0 3 <1	history2 history2
Oil Changed Sample Status CONTAMINAT Fuel Water Glycol WEAR METAL Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium	S ppm ppm ppm ppm ppm ppm ppm ppm	method WC Method WC Method WC Method MSTM D5185m ASTM D5185m	>3.0 >0.2 limit/base >120 >20 >5 >2 >2 >2 >2 >2	Changed NORMAL current <1.0 NEG NEG current 11 0 0 0 4 0	Changed NORMAL history1 <1.0 NEG NEG history1 7 0 1 0 0 3 <1	history2 history2 history2
Sample Status CONTAMINAT Fuel Water Glycol WEAR METAL ron Chromium Nickel Fitanium Silver Aluminum Lead Copper Fin Vanadium Cadmium	ppm ppm ppm ppm ppm ppm ppm	method WC Method WC Method WC Method MC Method ASTM D5185m	>3.0 >0.2 limit/base >120 >20 >5 >2 >2 >2 >2 >2	NORMAL current <1.0 NEG NEG current 11 0 0 0 0 4 0	NORMAL history1 <1.0 NEG NEG history1 7 0 1 0 0 3 <1	history2
CONTAMINAT Fuel Water Glycol WEAR METAL fron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium	ppm ppm ppm ppm ppm ppm ppm	WC Method WC Method WC Method Method ASTM D5185m	>3.0 >0.2 limit/base >120 >20 >5 >2 >2 >2 >2 >2	current <1.0 NEG NEG current 11 0 0 0 4 0	history1 <1.0 NEG NEG history1 7 0 1 0 0 3 <1	history2 history2
Fuel Water Glycol WEAR METAL: Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium	ppm ppm ppm ppm ppm ppm ppm	WC Method WC Method WC Method Method ASTM D5185m	>3.0 >0.2 limit/base >120 >20 >5 >2 >2 >2 >2 >2	<1.0 NEG NEG Current 11 0 0 0 4 0	<1.0 NEG NEG NEG history1 7 0 1 0 3 <1	 history2
Water Glycol WEAR METAL Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium	ppm ppm ppm ppm ppm ppm ppm	WC Method WC Method Method ASTM D5185m	>0.2 limit/base >120 >20 >5 >2 >2 >2 >2 >20 >40	NEG NEG current 11 0 0 0 0 0 4	NEG NEG history1 7 0 1 0 0 3 <1	 history2
Glycol WEAR METAL Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium	ppm ppm ppm ppm ppm ppm ppm	WC Method method ASTM D5185m	limit/base >120 >20 >5 >2 >2 >2 >2 >2 >40	NEG current 11 0 0 0 4 0	NEG history1 7 0 1 0 0 3 <1	 history2
WEAR METAL Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	>120 >20 >5 >2 >2 >2 >2 >20 >40	current 11 0 0 0 0 4 0	history1 7 0 1 0 3 <1	history2
Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>120 >20 >5 >2 >2 >2 >2 >20 >40	11 0 0 0 0 0 4	7 0 1 0 0 0 3 <1	
Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >5 >2 >2 >2 >20 >40	0 0 0 0 4	0 1 0 0 3 <1	
Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>5 >2 >2 >2 >20 >40	0 0 0 4 0	1 0 0 3 <1	
Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>2 >2 >2 >20 >40	0 0 4 0	0 0 3 <1	
Silver Aluminum Lead Copper Tin Vanadium Cadmium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>2 >20 >40	0 4 0	0 3 <1	
Aluminum Lead Copper Tin Vanadium Cadmium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	>20 >40	4	3 <1	
Lead Copper Tin Vanadium Cadmium	ppm	ASTM D5185m ASTM D5185m	>40	0	<1	
Copper Tin Vanadium Cadmium	ppm	ASTM D5185m				
Tin Vanadium Cadmium			>330		0	
Vanadium Cadmium	ppm		. 000	1	2	
Cadmium		ASTM D5185m	>15	0	1	
	ppm	ASTM D5185m		0	<1	
	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	1	16	
Barium	ppm	ASTM D5185m	0	0	0	
Molybdenum	ppm	ASTM D5185m	60	60	58	
Manganese	ppm	ASTM D5185m	0	<1	<1	
Magnesium	ppm	ASTM D5185m	1010	953	922	
Calcium	ppm	ASTM D5185m	1070	1141	1020	
Phosphorus	ppm	ASTM D5185m	1150	1067	1068	
Zinc	ppm	ASTM D5185m	1270	1223	1255	
Sulfur	ppm	ASTM D5185m	2060	3570	3243	
CONTAMINAN	ITS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	2	4	
Sodium	ppm	ASTM D5185m		3	3	
Potassium	ppm	ASTM D5185m	>20	<1	3	
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	0.7	0.1	
Nitration	Abs/cm	*ASTM D7624	>20	8.1	5.4	
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.8	18.4	
FLUID DEGRA	OITAC	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.3	14.8	
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.0	9.4	



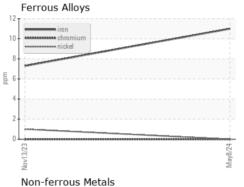
OIL ANALYSIS REPORT

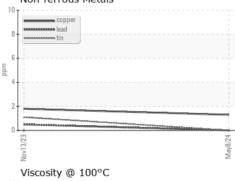


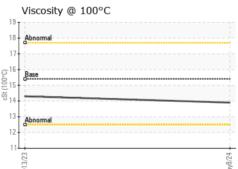
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	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	
	DTIEO				111	1

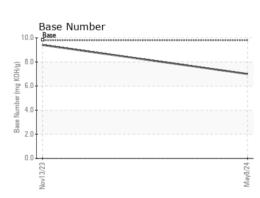
FLUID PROPI	ERITES	method	limit/base		history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.9	14.3	

GRAPHS













Certificate 12367

Sample No. : GFL0106273 Lab Number : 06197319 Unique Number : 11059442

Test Package : FLEET

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

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 03 Jun 2024 **Tested** : 03 Jun 2024 Diagnosed

: 03 Jun 2024 - Wes Davis

GFL Environmental - 916 - Greenbay HC

1799 County Trunk PP DePere, WI US 54115

Contact: Travis Runge travis.runge@gflenv.com T: (920)351-2341

* - 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)

Report Id: GFL916 [WUSCAR] 06197319 (Generated: 06/03/2024 18:36:20) Rev: 1

Contact/Location: Travis Runge - GFL916