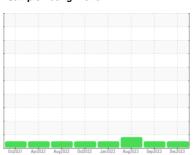


OIL ANALYSIS REPORT

Sample Rating Trend









7842M
Component
Diesel Engine
Fluid

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil

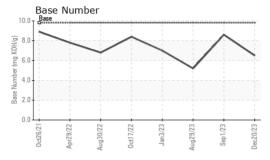
Fluid Condition

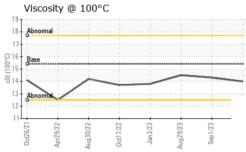
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Date	N SHP 15W40 (- GAL)	Oct2021	Apr2022 Aug2022 Oct20	22 Jan2023 Aug2023 Sep2023	Dec2023		
Sample Date Client Info 20 Dec 2023 29 Aug 2023 29 Aug 2023 20 Aug 2023	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2	
Machine Age	Sample Number		Client Info		GFL0107070	GFL0091463	GFL0091531	
Machine Age hrs	Sample Date		Client Info		20 Dec 2023	01 Sep 2023	29 Aug 2023	
Oil Age hrs Client Info 600	Machine Age	hrs	Client Info		10127		_	
CONTAMINATION method mill/base current history1 history2	Oil Age	hrs	Client Info		600	600	600	
CONTAMINATION method mill/base current history1 history2	-		Client Info		Changed	Changed	Changed	
Fuel WC Method					_		ATTENTION	
Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 16 6 ♣ 72 Chromium ppm ASTM D5185m >20 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2	
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0	
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG	
Pron	Glycol		WC Method					
Chromium ppm ASTM D5185m >20 <1 0 2 Nickel ppm ASTM D5185m >5 <1 0 <1 Titanium ppm ASTM D5185m >2 0 0 0 Siliver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 2 1 3 Lead ppm ASTM D5185m >40 <1 <1 <1 <1 Copper ppm ASTM D5185m >40 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	WEAR METAL	S	method	limit/base	current	history1	history2	
Chromium	Iron	ppm	ASTM D5185m	>120	16	6	▲ 72	
Nickel	Chromium		ASTM D5185m	>20	<1	0	2	
Description						0	<1	
Silver	Titanium					0		
Aluminum								
Lead	Aluminum		ASTM D5185m	>20		1	3	
Copper					<1	<1	<1	
Standard				>330				
Vanadium ppm ASTM D5185m 0 <1 <1 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 1 2 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 0 0 0 <1 Magnesium ppm ASTM D5185m 1010 902 1006 1059 Calcium ppm ASTM D5185m 1070 1066 1166 1234 Phosphorus ppm ASTM D5185m 1270 1182 1313 1342 Sulfur ppm ASTM D5185m 2060 2808 3772 2831 CONTAMINANTS method limit/base current his								
ADDITIVES	Vanadium							
Boron ppm ASTM D5185m 0 0 0 0 0 0 0 0 0								
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 60 61 68 Manganese ppm ASTM D5185m 0 0 0 <1 Magnesium ppm ASTM D5185m 1010 902 1006 1059 Calcium ppm ASTM D5185m 1070 1066 1166 1234 Phosphorus ppm ASTM D5185m 1150 937 1063 1060 Zinc ppm ASTM D5185m 1270 1182 1313 1342 Sulfur ppm ASTM D5185m 2060 2808 3772 2831 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 3 6 Sodium ppm ASTM D5185m >20 2 1 0 INFRA-RED method limit/base<	ADDITIVES		method	limit/base	current	history1	history2	
Molybdenum ppm ASTM D5185m 60 60 61 68 Manganese ppm ASTM D5185m 0 0 0 <1 Magnesium ppm ASTM D5185m 1010 902 1006 1059 Calcium ppm ASTM D5185m 1070 1066 1166 1234 Phosphorus ppm ASTM D5185m 1150 937 1063 1060 Zinc ppm ASTM D5185m 1270 1182 1313 1342 Sulfur ppm ASTM D5185m 2060 2808 3772 2831 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 3 6 Sodium ppm ASTM D5185m >20 2 1 0 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >4	Boron	ppm	ASTM D5185m	0	1	2	0	
Manganese ppm ASTM D5185m 0 0 <1 Magnesium ppm ASTM D5185m 1010 902 1006 1059 Calcium ppm ASTM D5185m 1070 1066 1166 1234 Phosphorus ppm ASTM D5185m 1150 937 1063 1060 Zinc ppm ASTM D5185m 1270 1182 1313 1342 Sulfur ppm ASTM D5185m 2060 2808 3772 2831 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 3 6 Sodium ppm ASTM D5185m >20 2 1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 1 0.3 2.3 Nitration Abs/cm *ASTM D7415	Barium	ppm	ASTM D5185m	0	0	0	0	
Manganese ppm ASTM D5185m 0 0 0 <1 Magnesium ppm ASTM D5185m 1010 902 1006 1059 Calcium ppm ASTM D5185m 1070 1066 1166 1234 Phosphorus ppm ASTM D5185m 1150 937 1063 1060 Zinc ppm ASTM D5185m 1270 1182 1313 1342 Sulfur ppm ASTM D5185m 2060 2808 3772 2831 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 3 6 Sodium ppm ASTM D5185m >20 2 1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 1 0.3 2.3 Nitration Abs/cm *ASTM D762	Molybdenum	ppm	ASTM D5185m	60	60	61	68	
Calcium ppm ASTM D5185m 1070 1066 1166 1234 Phosphorus ppm ASTM D5185m 1150 937 1063 1060 Zinc ppm ASTM D5185m 1270 1182 1313 1342 Sulfur ppm ASTM D5185m 2060 2808 3772 2831 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 3 6 Sodium ppm ASTM D5185m 3 3 10 Potassium ppm ASTM D5185m >20 2 1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 1 0.3 2.3 Nitration Abs/cm *ASTM D7415 >30 21.0 17.5 24.8 FLUID DEGRADATION method limit/	•	ppm	ASTM D5185m	0	0	0	<1	
Phosphorus ppm ASTM D5185m 1150 937 1063 1060 Zinc ppm ASTM D5185m 1270 1182 1313 1342 Sulfur ppm ASTM D5185m 2060 2808 3772 2831 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 3 6 Sodium ppm ASTM D5185m >20 2 1 0 Potassium ppm ASTM D5185m >20 2 1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 1 0.3 2.3 Nitration Abs/cm *ASTM D7624 >20 9.3 5.1 11.6 Sulfation Abs/.1mm *ASTM D7415 >30 21.0 17.5 24.8 FLUID DEGRADATION method	Magnesium	ppm	ASTM D5185m	1010	902	1006	1059	
Zinc ppm ASTM D5185m 1270 1182 1313 1342	Calcium	ppm	ASTM D5185m	1070	1066	1166	1234	
Sulfur ppm ASTM D5185m 2060 2808 3772 2831 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 3 6 Sodium ppm ASTM D5185m 3 3 10 Potassium ppm ASTM D5185m >20 2 1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 1 0.3 2.3 Nitration Abs/cm *ASTM D7624 >20 9.3 5.1 11.6 Sulfation Abs/.1mm *ASTM D7415 >30 21.0 17.5 24.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.7 12.9 19.2	Phosphorus	ppm	ASTM D5185m	1150	937	1063	1060	
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 3 6 Sodium ppm ASTM D5185m 3 3 10 Potassium ppm ASTM D5185m >20 2 1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 1 0.3 2.3 Nitration Abs/cm *ASTM D7624 >20 9.3 5.1 11.6 Sulfation Abs/.1mm *ASTM D7415 >30 21.0 17.5 24.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.7 12.9 19.2	Zinc	ppm	ASTM D5185m	1270	1182	1313	1342	
Silicon ppm ASTM D5185m >25 3 3 6 Sodium ppm ASTM D5185m 3 3 10 Potassium ppm ASTM D5185m >20 2 1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 1 0.3 2.3 Nitration Abs/cm *ASTM D7624 >20 9.3 5.1 11.6 Sulfation Abs/.1mm *ASTM D7415 >30 21.0 17.5 24.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.7 12.9 19.2	Sulfur	ppm		2060	2808	3772	2831	
Sodium ppm ASTM D5185m 3 3 10 Potassium ppm ASTM D5185m >20 2 1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 1 0.3 2.3 Nitration Abs/cm *ASTM D7624 >20 9.3 5.1 11.6 Sulfation Abs/.1mm *ASTM D7415 >30 21.0 17.5 24.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.7 12.9 19.2	CONTAMINANTS method limit/base current history1 history2							
Sodium ppm ASTM D5185m 3 3 10 Potassium ppm ASTM D5185m >20 2 1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 1 0.3 2.3 Nitration Abs/cm *ASTM D7624 >20 9.3 5.1 11.6 Sulfation Abs/.1mm *ASTM D7415 >30 21.0 17.5 24.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.7 12.9 19.2	Silicon	ppm	ASTM D5185m	>25	3	3	6	
Potassium ppm ASTM D5185m >20 2 1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 1 0.3 2.3 Nitration Abs/cm *ASTM D7624 >20 9.3 5.1 11.6 Sulfation Abs/.1mm *ASTM D7415 >30 21.0 17.5 24.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.7 12.9 19.2	Sodium		ASTM D5185m		3	3	10	
Soot % % *ASTM D7844 >4 1 0.3 2.3 Nitration Abs/cm *ASTM D7624 >20 9.3 5.1 11.6 Sulfation Abs/.1mm *ASTM D7415 >30 21.0 17.5 24.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.7 12.9 19.2	Potassium	ppm	ASTM D5185m	>20	2	1	0	
Nitration Abs/cm *ASTM D7624 >20 9.3 5.1 11.6 Sulfation Abs/.1mm *ASTM D7415 >30 21.0 17.5 24.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.7 12.9 19.2	INFRA-RED		method	limit/base	current	history1	history2	
Nitration Abs/cm *ASTM D7624 >20 9.3 5.1 11.6 Sulfation Abs/.1mm *ASTM D7415 >30 21.0 17.5 24.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.7 12.9 19.2	Soot %	%	*ASTM D7844	>4	1	0.3	2.3	
Sulfation Abs/.1mm *ASTM D7415 >30 21.0 17.5 24.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.7 12.9 19.2								
Oxidation								
	FLUID DEGRADATION method limit/base current history1 history2							
	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.7	12.9	19.2	
	Base Number (BN)	mg KOH/g			6.5	8.6	5.2	



OIL ANALYSIS REPORT

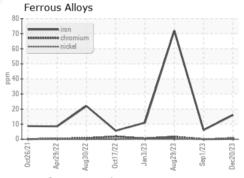


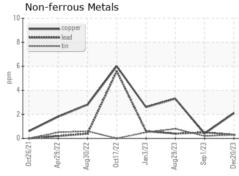


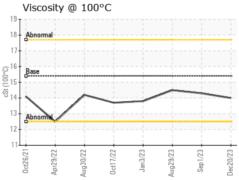
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

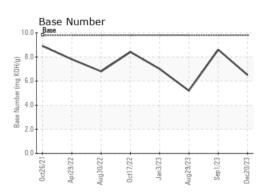
FLUID PROPI	ERITES	metnoa	ilmit/base	current	nistory i	nistory2
Visc @ 100°C	cSt	ASTM D445	15.4	14.0	14.3	14.5

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number Test Package : FLEET

Unique Number : 10806419

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0107070 : 06045811

Recieved Diagnosed Diagnostician : Wes Davis

: 27 Dec 2023 : 28 Dec 2023 GFL Environmental - 465 - Pontiac

888 Baldwin Pontiac, MI US 48340

Contact: Ricky Matthews rickymathews@gflenv.com T: (586)825-9514

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)