

OIL ANALYSIS REPORT

Area (87J4TW) 726037-310027

Component **Diesel Engine** Fluid

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

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

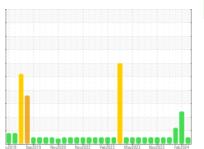
All component wear rates are normal.

Contamination

Light fuel dilution occurring. No other contaminants were detected 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.





NORMAL

Sample Rating Trend

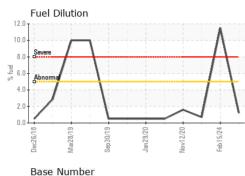
-2018 Smp2019 Nov2020 Hov2022 Feb2023 Mmp2023 Feb2023 Feb2024								
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2		
Sample Number		Client Info		GFL0114036	GFL0109828	GFL0103267		
Sample Date		Client Info		18 Mar 2024	15 Feb 2024	25 Jan 2024		
Machine Age	hrs	Client Info		15323	15206	15064		
Oil Age	hrs	Client Info		0	0	0		
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd		
Sample Status				NORMAL	SEVERE	ABNORMAL		
CONTAMINAT	ION	method	limit/base	current	history1	history2		
Water		WC Method	>0.2	NEG	NEG	NEG		
Glycol		WC Method		NEG	NEG	NEG		
WEAR METAL	S	method	limit/base	current	history1	history2		
Iron	ppm	ASTM D5185m	>100	9	47	10		
Chromium	ppm	ASTM D5185m	>20	<1	2	<1		
Nickel	ppm	ASTM D5185m	>4	<1	0	5		
Titanium	ppm	ASTM D5185m		<1	0	0		
Silver	ppm	ASTM D5185m	>3	0	0	<1		
Aluminum	ppm	ASTM D5185m	>20	2	5	7		
Lead	ppm	ASTM D5185m	>40	<1	<1	0		
Copper	ppm	ASTM D5185m	>330	<1	<1	12		
Tin	ppm	ASTM D5185m	>15	<1	<1	<1		
Vanadium	ppm	ASTM D5185m		<1	0	0		
Cadmium	ppm	ASTM D5185m		<1	0	0		
ADDITIVES		method	limit/base	current	history1	history2		
Boron	ppm	ASTM D5185m	0	5	4	47		
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	0	5 0	4 0	0		
Barium	ppm	ASTM D5185m	0	0	0	0		
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0 60	0 60	0 54	0 15		
Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0	0 60 <1	0 54 <1	0 15 1		
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010	0 60 <1 888	0 54 <1 826	0 15 1 814		
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070	0 60 <1 888 1139	0 54 <1 826 921	0 15 1 814 1184		
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150	0 60 <1 888 1139 1012	0 54 <1 826 921 874	0 15 1 814 1184 697		
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270	0 60 <1 888 1139 1012 1202	0 54 <1 826 921 874 1118	0 15 1 814 1184 697 878		
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060	0 60 <1 888 1139 1012 1202 3271	0 54 <1 826 921 874 1118 2522	0 15 1 814 1184 697 878 2271		
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060	0 60 <1 888 1139 1012 1202 3271 current	0 54 <1 826 921 874 1118 2522 history1	0 15 1 814 1184 697 878 2271 history2		
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20	0 60 <1 888 1139 1012 1202 3271 current 4 10 2	0 54 <1 826 921 874 1118 2522 history1 6 2 2 2	0 15 1 814 1184 697 878 2271 history2 4 <1 7		
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20	0 60 <1 888 1139 1012 1202 3271 current 4 10	0 54 <1 826 921 874 1118 2522 history1 6 2	0 15 1 814 1184 697 878 2271 history2 4 <1		
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20	0 60 <1 888 1139 1012 1202 3271 current 4 10 2	0 54 <1 826 921 874 1118 2522 history1 6 2 2 2	0 15 1 814 1184 697 878 2271 history2 4 <1 7		
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >20	0 60 <1 888 1139 1012 1202 3271 current 4 10 2 1.2	0 54 <1 826 921 874 1118 2522 history1 6 2 2 2 2 11.5	0 15 1 814 1184 697 878 2271 history2 4 <1 7 0.7		
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 >5	0 60 <1 888 1139 1012 1202 3271 current 4 10 2 1.2 current	0 54 <1 826 921 874 1118 2522 history1 6 2 2 2 2 ▲ 11.5 history1	0 15 1 814 697 878 2271 history2 4 <1 7 0.7 history2		
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm %	ASTM D5185m ASTM D3524	0 60 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 >5 <i>limit/base</i> >3	0 60 <1 888 1139 1012 1202 3271 current 4 10 2 1.2 current 0.3	0 54 <1 826 921 874 1118 2522 history1 6 2 2 2 ↓ 11.5 history1 1.6	0 15 1 814 697 878 2271 history2 4 <1 7 0.7 history2 0.3		
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D51854 *ASTM D7844	0 60 1010 1070 1150 1270 2060 limit/base >25 -20 >5 limit/base >3 >20	0 60 <1 888 1139 1012 1202 3271 current 4 10 2 1.2 current 0.3 7.6	0 54 <1 826 921 874 1118 2522 history1 6 2 2 2 ↓ 11.5 history1 1.6 1.6 14.5	0 15 1 814 1184 697 878 2271 history2 4 < <1 7 0.7 0.7 history2 0.3 10.3		
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D51854 *ASTM D7844	0 60 1010 1070 1150 1270 2060 2060 225 20 >20 >20 >20 >20 >20 >20 >20 >20 >20	0 60 <1 888 1139 1012 1202 3271 Current 4 10 2 1.2 Current 0.3 7.6 18.6	0 54 <1 826 921 874 1118 2522 history1 6 2 2 2 11.5 history1 1.6 14.5 26.5	0 15 1 814 1184 697 878 2271 history2 4 <1 7 0.7 history2 0.3 10.3 22.0		
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D3524 Method *ASTM D7844 *ASTM D7624 *ASTM D7415	0 60 1010 1070 1150 1270 2060 Imit/base >25 >20 >5 Imit/base >3 >20 >30 >30 Imit/base	0 60 <1 888 1139 1012 1202 3271 current 4 10 2 1.2 current 0.3 7.6 18.6 current	0 54 31 826 921 874 1118 2522 history1 6 2 2 2 11.5 history1 1.6 14.5 26.5 history1	0 15 1 814 1184 697 878 2271 history2 4 < <1 7 0.7 history2 0.3 10.3 22.0 history2		

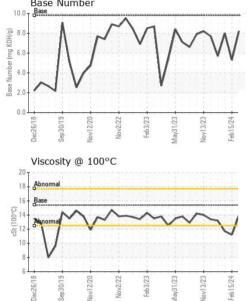
Contact/Location: GFL823,834,836,837,840 - Loyce Stewart - GFL836



Dec26/18

OIL ANALYSIS REPORT





Vov2/22

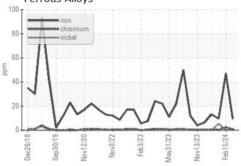
Feb3/23

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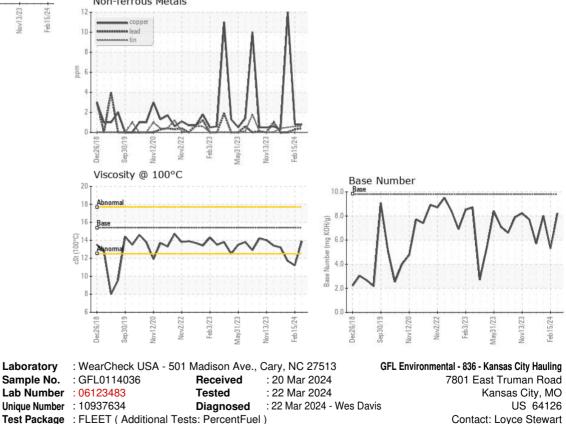
Vov13/23

VISUAL		method				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 PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.9	11.2	11.7
GRAPHS						

Ferrous Alloys



Non-ferrous Metals



Unique Number : 10937634 Test Package : FLEET (Additional Tests: PercentFuel) Certificate L2367 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)

Laboratory

Contact/Location: GFL823,834,836,837,840 - Loyce Stewart - GFL836

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