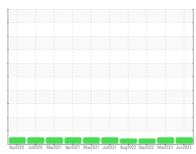


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



828047-6039

Component

Diesel Engine

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

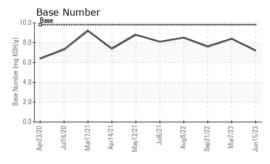
Fluid Condition

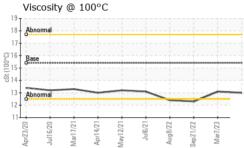
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number Client Info GFL0079764 GFL0059569 GFL005858 GFL0058569 GFL005858 GFL0058569 GFL005858 GFL0058569 GFL005858 GFL0058569 GFL	AAL)		Apr2020 Jul2	020 Mar2021 Apr2021 May	021 Jul2021 Aug2022 Sep2022 Mari	023 Jun2023	
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 189870 13781 12493 Oil Olange Client Info 125032 13781 12493 Oil Changed Client Info Changed Changed Changed Sample Status NORMAL NORMAL ATTENT CONTAMINATION method Imitibase current history1 history1 Fuel WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >1110 15 4 12 Chromium ppm ASTM D5185m >110 15 4 12 Chromium ppm ASTM D5185m >2 0 0 0 Chromium ppm ASTM D5185m >1 1 1 1 Iron ppm ASTM D5185m >2 0 0 0 0 Silver ppm AST	Sample Number		Client Info		GFL0079764	GFL0059569	GFL0055076
Oil Age hrs Client Info 125032 13781 12493 Oil Changed Chang	Sample Date		Client Info		15 Jun 2023	07 Mar 2023	21 Sep 2022
Oil Changed Sample Status Client Info Changed NORMAL Changed NORMAL Changed ATTENTI CONTAMINATION method limit/base current history1 history1 Fuel WC Method S5 <1.0	Machine Age	hrs	Client Info		189870	13781	12493
NORMAL NORMAL ATTENTI CONTAMINATION method limit/base current history1 history1	Oil Age	hrs	Client Info		125032	13781	12493
CONTAMINATION method limit/base current history1 history1 Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	Oil Changed		Client Info		Changed	Changed	Changed
Fuel	Sample Status				NORMAL	NORMAL	ATTENTION
WEAR METALS	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >110 15 4 12 Chromium ppm ASTM D5185m >4 <1 0 1 Nickel ppm ASTM D5185m >2 0 0 0 Titanium ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >4 0 0 <1 2 Tin ppm ASTM D5185m >4 0 0 <1 1 1 Capper ppm ASTM D5185m 0 0 <1 1 1 1 1 1 1 <td< th=""><th>Fuel</th><th></th><th>WC Method</th><th>>5</th><th><1.0</th><th><1.0</th><th><1.0</th></td<>	Fuel		WC Method	>5	<1.0	<1.0	<1.0
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >4 <1 0 1 Nickel ppm ASTM D5185m >2 0 0 0 Titanium ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >25 1 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>110	15	4	12
Titanium	Chromium	ppm	ASTM D5185m	>4	<1	0	1
Silver	Nickel		ASTM D5185m	>2	0	0	0
Silver	Titanium		ASTM D5185m			9	6
Aluminum ppm ASTM D5185m >25 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 <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 <1 <1 <1 <1 <1 <1 <1 <1 <1	Silver		ASTM D5185m	>2	0	0	0
Lead	Aluminum		ASTM D5185m	>25	1	<1	<1
Copper ppm ASTM D5185m >85 0 <1 2 Tin ppm ASTM D5185m >4 0 0 <1	Lead		ASTM D5185m	>45	0	0	3
Tin	Copper		ASTM D5185m	>85	0	<1	
Vanadium ppm ASTM D5185m 0 <1 <1 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 15 21 14 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 947 818 866 Calcium ppm ASTM D5185m 1070 1089 1166 1224 Phosphorus ppm ASTM D5185m 1170 1009 909 958 Zinc ppm ASTM D5185m 1270 1261 1147 1192 Sulfur ppm ASTM D5185m 2060 3430 3126	• •						
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 15 21 14 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 58 52 54 Manganese ppm ASTM D5185m 0 0 <1	Vanadium		ASTM D5185m		0	<1	<1
Boron	Cadmium						
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 58 52 54 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 947 818 866 Calcium ppm ASTM D5185m 1070 1089 1166 1224 Phosphorus ppm ASTM D5185m 1150 1009 909 958 Zinc ppm ASTM D5185m 1270 1261 1147 1192 Sulfur ppm ASTM D5185m 2060 3430 3126 3478 CONTAMINANTS method limit/base current history1 history1 history1 Silicon ppm ASTM D5185m >30 5 3 5 Sodium ppm ASTM D5185m >20 0 0 3 INFRA-RED method	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 58 52 54 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 947 818 866 Calcium ppm ASTM D5185m 1070 1089 1166 1224 Phosphorus ppm ASTM D5185m 1150 1009 909 958 Zinc ppm ASTM D5185m 1270 1261 1147 1192 Sulfur ppm ASTM D5185m 2060 3430 3126 3478 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >30 5 3 5 Sodium ppm ASTM D5185m 26 9 5 Potassium ppm ASTM D5185m >20 0 0 3 INFRA-RED method limit/base current	Boron	ppm	ASTM D5185m	0	15	21	14
Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 947 818 866 Calcium ppm ASTM D5185m 1070 1089 1166 1224 Phosphorus ppm ASTM D5185m 1150 1009 909 958 Zinc ppm ASTM D5185m 1270 1261 1147 1192 Sulfur ppm ASTM D5185m 2060 3430 3126 3478 CONTAMINANTS method limit/base current history1 history2 history2 history2 history2 history2 history2 history2	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 947 818 866 Calcium ppm ASTM D5185m 1070 1089 1166 1224 Phosphorus ppm ASTM D5185m 1150 1009 909 958 Zinc ppm ASTM D5185m 1270 1261 1147 1192 Sulfur ppm ASTM D5185m 2060 3430 3126 3478 CONTAMINANTS method limit/base current history1 history1 histor Silicon ppm ASTM D5185m >30 5 3 5 Sodium ppm ASTM D5185m >20 0 0 3 Potassium ppm ASTM D5185m >20 0 0 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7624 >20 9.5 7.5 10.7 Sulfation Abs/.1mm	Molybdenum	ppm	ASTM D5185m	60	58	52	54
Calcium ppm ASTM D5185m 1070 1089 1166 1224 Phosphorus ppm ASTM D5185m 1150 1009 909 958 Zinc ppm ASTM D5185m 1270 1261 1147 1192 Sulfur ppm ASTM D5185m 2060 3430 3126 3478 CONTAMINANTS method limit/base current history1 histor Silicon ppm ASTM D5185m >30 5 3 5 Sodium ppm ASTM D5185m 26 9 5 Potassium ppm ASTM D5185m >20 0 0 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >3 0.4 0.2 0.4 Nitration Abs/cm *ASTM D7415 >30 21.3 18.9 22.3 FLUID DEGRADATION *ASTM D7414	Manganese	ppm	ASTM D5185m	0	0	<1	<1
Phosphorus ppm ASTM D5185m 1150 1009 909 958 Zinc ppm ASTM D5185m 1270 1261 1147 1192 Sulfur ppm ASTM D5185m 2060 3430 3126 3478 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >30 5 3 5 Sodium ppm ASTM D5185m 26 9 5 Potassium ppm ASTM D5185m >20 0 0 3 INFRA-RED method limit/base current history1 history1 history1 Soot % % *ASTM D7844 >3 0.4 0.2 0.4 Nitration Abs/cm *ASTM D7415 >30 21.3 18.9 22.3 FLUID DEGRADATION method limit/base current history1 history1 history1 Oxidation	-	ppm	ASTM D5185m	1010	947	818	866
Zinc ppm ASTM D5185m 1270 1261 1147 1192 Sulfur ppm ASTM D5185m 2060 3430 3126 3478 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >30 5 3 5 Sodium ppm ASTM D5185m 26 9 5 Potassium ppm ASTM D5185m >20 0 0 3 INFRA-RED method limit/base current history1 history1 history1 Soot % % *ASTM D7844 >3 0.4 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 9.5 7.5 10.7 Sulfation Abs/.1mm *ASTM D7415 >30 21.3 18.9 22.3 FLUID DEGRADATION method limit/base current history1 history1 history2 Oxidatio	Calcium	ppm	ASTM D5185m	1070	1089	1166	1224
Zinc ppm ASTM D5185m 1270 1261 1147 1192 Sulfur ppm ASTM D5185m 2060 3430 3126 3478 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >30 5 3 5 Sodium ppm ASTM D5185m 26 9 5 Potassium ppm ASTM D5185m >20 0 0 3 INFRA-RED method limit/base current history1 history1 history1 Soot % % *ASTM D7844 >3 0.4 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 9.5 7.5 10.7 Sulfation Abs/.1mm *ASTM D7415 >30 21.3 18.9 22.3 FLUID DEGRADATION method limit/base current history1 history1 history2 Oxidation	Phosphorus	ppm	ASTM D5185m	1150	1009	909	958
Sulfur ppm ASTM D5185m 2060 3430 3126 3478 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >30 5 3 5 Sodium ppm ASTM D5185m 26 9 5 Potassium ppm ASTM D5185m >20 0 0 3 INFRA-RED method limit/base current history1 history1 history1 Soot % % *ASTM D7844 >3 0.4 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 9.5 7.5 10.7 Sulfation Abs/.1mm *ASTM D7415 >30 21.3 18.9 22.3 FLUID DEGRADATION method limit/base current history1 history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.0 14.3 18.0			ASTM D5185m	1270	1261	1147	1192
Silicon ppm ASTM D5185m >30 5 3 5 Sodium ppm ASTM D5185m 26 9 5 Potassium ppm ASTM D5185m >20 0 0 3 INFRA-RED method limit/base current history1 history1 history1 Soot % % *ASTM D7844 >3 0.4 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 9.5 7.5 10.7 Sulfation Abs/.1mm *ASTM D7415 >30 21.3 18.9 22.3 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 18.0 14.3 18.0	Sulfur	ppm	ASTM D5185m	2060	3430	3126	3478
Sodium ppm ASTM D5185m 26 9 5 Potassium ppm ASTM D5185m >20 0 0 3 INFRA-RED method limit/base current history1 history1 Soot % *ASTM D7844 >3 0.4 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 9.5 7.5 10.7 Sulfation Abs/.1mm *ASTM D7415 >30 21.3 18.9 22.3 FLUID DEGRADATION method limit/base current history1 history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 18.0 14.3 18.0	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Sodium ppm ASTM D5185m 26 9 5 Potassium ppm ASTM D5185m >20 0 0 3 INFRA-RED method limit/base current history1 history1 Soot % *ASTM D7844 >3 0.4 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 9.5 7.5 10.7 Sulfation Abs/.1mm *ASTM D7415 >30 21.3 18.9 22.3 FLUID DEGRADATION method limit/base current history1 history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 18.0 14.3 18.0	Silicon	ppm	ASTM D5185m	>30	5	3	5
Potassium ppm ASTM D5185m >20 0 0 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >3 0.4 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 9.5 7.5 10.7 Sulfation Abs/.1mm *ASTM D7415 >30 21.3 18.9 22.3 FLUID DEGRADATION method limit/base current history1 history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 18.0 14.3 18.0	Sodium		ASTM D5185m		26	9	5
Soot % % *ASTM D7844 >3 0.4 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 9.5 7.5 10.7 Sulfation Abs/.1mm *ASTM D7415 >30 21.3 18.9 22.3 FLUID DEGRADATION method limit/base current history1 histor Oxidation Abs/.1mm *ASTM D7414 >25 18.0 14.3 18.0	Potassium		ASTM D5185m	>20	0	0	3
Nitration Abs/cm *ASTM D7624 >20 9.5 7.5 10.7 Sulfation Abs/.1mm *ASTM D7415 >30 21.3 18.9 22.3 FLUID DEGRADATION method limit/base current history1 history1 history Oxidation Abs/.1mm *ASTM D7414 >25 18.0 14.3 18.0	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 21.3 18.9 22.3 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 18.0 14.3 18.0	Soot %	%	*ASTM D7844	>3	0.4	0.2	0.4
FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 18.0 14.3 18.0	Nitration	Abs/cm	*ASTM D7624	>20	9.5	7.5	10.7
Oxidation Abs/.1mm *ASTM D7414 >25 18.0 14.3 18.0	Sulfation	Abs/.1mm	*ASTM D7415	>30	21.3	18.9	22.3
	FLUID DEGRA	OATION	method	limit/base	current	history1	history2
Rase Number (RN) mg KOH/g ASTM D2896 Q 8 72 8.4 7.6	Oxidation	Abs/.1mm	*ASTM D7414	>25	18.0	14.3	18.0
Dase Number (DIV) highority Ashir D2000 5.0	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.2	8.4	7.6



OIL ANALYSIS REPORT

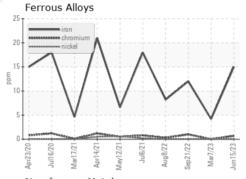


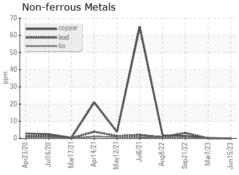


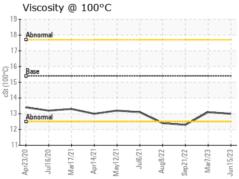
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

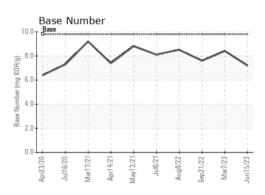
FLUID PROPE	EKIIES	method	ilmit/base		nistory i	nistory2
Visc @ 100°C	cSt	ASTM D445	15.4	13.0	13.1	<u> </u>

GRAPHS













Certificate L2367

Laboratory Sample No.

Lab Number Unique Number : 10551841 Test Package : FLEET

: GFL0079764 : 05896031

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 12 Jul 2023

Diagnosed : 13 Jul 2023 Diagnostician : Wes Davis

GFL Environmental - 663 - Lake Ariel (Scranton Hauling)

17 Industrial Park Rd Lake Ariel, PA US 18436

Contact: Eric Merone emerone@countyrecycling.net

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: