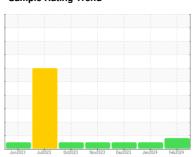


OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id **414045**

Component **Diesel Engine**

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

Exhaust valve wear is indicated.

Contamination

There is no indication of any contamination in the oil.

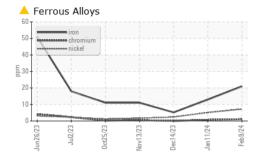
Fluid Condition

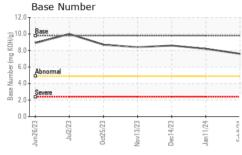
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

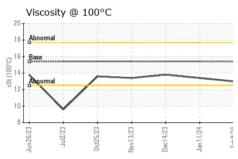
SAMPLE INFORMATION method limit/base current history1 history2 Sample Number Client Info GFL00999033 GFL00999036 GFL00999038 GFL00999038 GFL0099038 GFL0098036 GFL0098036 GFL0098036 GFL0098036 GFL0098036 GFL0098038	AL)						
Sample Number Client Info GFL0099033 GFL0099056 GFL0099013 Sample Date Client Info O9 Feb 2024 11 Jan 2024 14 Dec 2023 Machine Age hrs Client Info 1153 1153 989 Silver Dil Age hrs Client Info 1323 989 842 Dil Changed Client Info N/A		MATION			Nov2023 Dec2023 Jan2024 Current	history1	history2
Sample Date Client Info 09 Feb 2024 11 Jan 2024 14 Dec 2023 14 Jan 2024 14 Dec 2023 18 Jan 2024							
Machine Age hrs Client Info 1153 989 842 Oil Age hrs Client Info N/A	•						
Dil Age		hrs					
Client Info							
CONTAMINATION method limit/base current history1 history2	•						
Value							
Water Gilycol WC Method WC Method WC Method >0.2.1 NEG NEG NEG NEG NEG NEG NEG WEAR METALS method WC Method limit/base current history1 history2 ron ppm ASTM D5185m >51 21 13 5 Chromium ppm ASTM D5185m >11 1 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
Calycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Fron ppm ASTM D5185m >51 21 13 5 Chromium ppm ASTM D5185m >11 1 <1 0 Vickel ppm ASTM D5185m >5 ↑ 7 5 2 Siliver ppm ASTM D5185m >3 <1 0 0 Aluminum ppm ASTM D5185m >31 6 5 2 Lead ppm ASTM D5185m >36 6 5 2 Lead ppm ASTM D5185m >34 <1 <1 0 Copper ppm ASTM D5185m >4 <1 <1 0 Calcidium ppm ASTM D5185m 0 0 0 0 Calcidium ppm ASTM D5185m 0 2 <1 1 </td <td>-uel</td> <td></td> <td>WC Method</td> <td>>2.1</td> <td><1.0</td> <td><1.0</td> <td><1.0</td>	-uel		WC Method	>2.1	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history2 ron ppm ASTM D5185m >51 21 13 5 Chromium ppm ASTM D5185m >1 1 <1	Water		WC Method	>0.21	NEG	NEG	NEG
Pron	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METAL	.S	method	limit/base	current	history1	history2
Silver	ron	ppm	ASTM D5185m	>51	21	13	5
Silver	Chromium	ppm	ASTM D5185m	>11	1	<1	0
Silver	Nickel	ppm	ASTM D5185m	>5	<u> </u>	5	2
Aluminum	Γitanium	ppm	ASTM D5185m		<1	0	0
December December	Silver	ppm	ASTM D5185m	>3	<1	0	0
Description	Aluminum	ppm	ASTM D5185m	>31	6	5	2
Act	_ead	ppm	ASTM D5185m	>26	0	<1	0
Anadium	Copper	ppm	ASTM D5185m	>26	6	4	2
ADDITIVES	Γin	ppm	ASTM D5185m	>4	<1	<1	0
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 <1	/anadium	ppm	ASTM D5185m		0	0	0
Soron ppm ASTM D5185m 0 2 <1 1 1 1 1 0 0 0 1 0 0	Cadmium	ppm	ASTM D5185m		0	0	0
Description	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 57 55 52 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 868 1016 877 Calcium ppm ASTM D5185m 1070 990 1138 1035 Phosphorus ppm ASTM D5185m 1150 885 979 907 Zinc ppm ASTM D5185m 1270 1146 1201 1144 Sulfur ppm ASTM D5185m 2060 3105 3120 2777 CONTAMINANTS method limit/base current history1 history2 Goldium ppm ASTM D5185m >22 6 4 3 Godium ppm ASTM D5185m >20 16 9 4 INFRA-RED method limit/base current history1 history2 Goot % *ASTM D7844 >3	Boron	ppm	ASTM D5185m	0	2	<1	1
Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 868 1016 877 Calcium ppm ASTM D5185m 1070 990 1138 1035 Phosphorus ppm ASTM D5185m 1150 885 979 907 Zinc ppm ASTM D5185m 1270 1146 1201 1144 Sulfur ppm ASTM D5185m 2060 3105 3120 2777 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 6 4 3 Godium ppm ASTM D5185m >31 1 0 <1 Potassium ppm ASTM D5185m >20 16 9 4 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >3 <t< td=""><td>Barium</td><td>ppm</td><td>ASTM D5185m</td><td>0</td><td>11</td><td>0</td><td>0</td></t<>	Barium	ppm	ASTM D5185m	0	11	0	0
Magnesium ppm ASTM D5185m 1010 868 1016 877 Calcium ppm ASTM D5185m 1070 990 1138 1035 Phosphorus ppm ASTM D5185m 1150 885 979 907 Zinc ppm ASTM D5185m 1270 1146 1201 1144 Sulfur ppm ASTM D5185m 2060 3105 3120 2777 CONTAMINANTS method limit/base current history1 history2 Goldium ppm ASTM D5185m >22 6 4 3 Bodium ppm ASTM D5185m >31 1 0 <1 Potassium ppm ASTM D5185m >20 16 9 4 INFRA-RED method limit/base current history1 history2 Goot % % *ASTM D7624 >20 7.5 6.6 5.4 Sulfation Abs/.1mm *ASTM D7414	Molybdenum	ppm	ASTM D5185m	60	57	55	52
Calcium ppm ASTM D5185m 1070 990 1138 1035 Phosphorus ppm ASTM D5185m 1150 885 979 907 Zinc ppm ASTM D5185m 1270 1146 1201 1144 Sulfur ppm ASTM D5185m 2060 3105 3120 2777 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 6 4 3 Sodium ppm ASTM D5185m >31 1 0 <1	Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Phosphorus ppm ASTM D5185m 1150 885 979 907 Zinc ppm ASTM D5185m 1270 1146 1201 1144 Sulfur ppm ASTM D5185m 2060 3105 3120 2777 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 6 4 3 Sodium ppm ASTM D5185m >31 1 0 <1	Magnesium	ppm	ASTM D5185m	1010	868	1016	877
Zinc ppm ASTM D5185m 1270 1146 1201 1144 Sulfur ppm ASTM D5185m 2060 3105 3120 2777 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 6 4 3 Sodium ppm ASTM D5185m >31 1 0 <1	Calcium	ppm	ASTM D5185m	1070	990	1138	1035
Sulfur ppm ASTM D5185m 2060 3105 3120 2777 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 6 4 3 Sodium ppm ASTM D5185m >31 1 0 <1	Phosphorus	ppm	ASTM D5185m	1150	885	979	907
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 6 4 3 Sodium ppm ASTM D5185m >31 1 0 <1	Zinc	ppm	ASTM D5185m	1270	1146	1201	1144
Solicon ppm ASTM D5185m >22 6	Sulfur	ppm	ASTM D5185m	2060	3105	3120	2777
Sodium ppm ASTM D5185m >31 1 0 <1 Potassium ppm ASTM D5185m >20 16 9 4 INFRA-RED method limit/base current history1 history2 Goot % % *ASTM D7844 >3 0.3 0.2 0.1 Vitration Abs/cm *ASTM D7624 >20 7.5 6.6 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 19.0 18.3 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.0 13.4	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 16 9 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 7.5 6.6 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 19.0 18.3 17.7 FLUID DEGRADATION method limit/base current history1 history2 Dxidation Abs/.1mm *ASTM D7414 >25 14.5 14.0 13.4	Silicon	ppm	ASTM D5185m	>22	6	4	3
INFRA-RED	Sodium	ppm	ASTM D5185m	>31	1	0	<1
Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 7.5 6.6 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 19.0 18.3 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.0 13.4	Potassium	ppm	ASTM D5185m	>20	16	9	4
Nitration Abs/cm *ASTM D7624 >20 7.5 6.6 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 19.0 18.3 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.0 13.4	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.0 18.3 17.7 FLUID DEGRADATION method limit/base current history1 history2 Dxidation Abs/.1mm *ASTM D7414 >25 14.5 14.0 13.4	Soot %	%	*ASTM D7844	>3	0.3	0.2	0.1
FLUID DEGRADATION method limit/base current history1 history2 Dxidation Abs/.1mm *ASTM D7414 >25 14.5 14.0 13.4	Nitration	Abs/cm	*ASTM D7624	>20	7.5	6.6	5.4
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.0	18.3	17.7
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 7.6 8.2 8.6	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.5	14.0	13.4
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.6	8.2	8.6

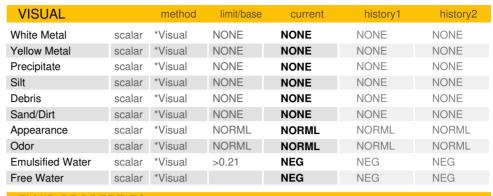


OIL ANALYSIS REPORT



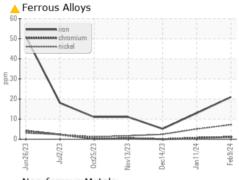


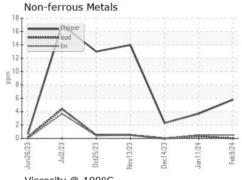


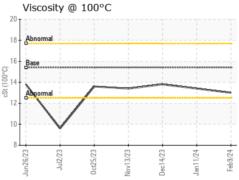


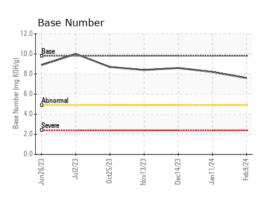
FLUID PROP	ERITES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.0	13.4	13.8

GRAPHS











Laboratory Sample No.

Lab Number : 06089899 **Unique Number** : 10882752

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0099033

Received : 15 Feb 2024 **Tested** Diagnosed

: 16 Feb 2024 : 16 Feb 2024 - Sean Felton

GFL Environmental - 084 - Clarksville

699 Jack Miller Boulevard Clarksville, TN US 37042

Contact: ROBERT THIBAULT

robert.thibault@gflenv.com T: (931)552-7276

Test Package : FLEET 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)

F: (931)572-9674