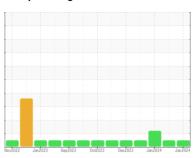


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id 913148

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

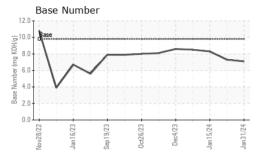
Fluid Condition

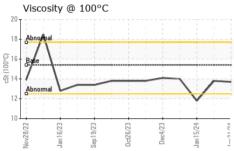
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method limit/base current history1 history2	āAL)		Nov2022	Jan2023 Sep2023	Oct2023 Dec2023 Jan2024	Jan 2024	
Sample Date	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 2788 2746 2665 Oil Age hrs Client Info 305 548 467 Oil Changed Client Info N/A N/A N/A NORMAL ABNORMAL Sample Status Both Image: Control of the properties of	Sample Number		Client Info		GFL0111095	GFL0103524	GFL0103518
Oil Age hrs Client Info N/A N/A N/A Not Changd Sample Status Client Info N/A N/A N/A Not Changd Sample Status CONTAMINATION method Imilibase current history1 history2 Fuel WC Method >5 <1.0	Sample Date		Client Info		31 Jan 2024	25 Jan 2024	15 Jan 2024
Oil Changed Sample Status Client Info N/A N/A NORMAL NoRMAL ABNORMAL CONTAMINATION method limit base current history1 history2 Fuel WC Method >5.5 <1.0	Machine Age	hrs	Client Info		2788	2746	2665
Sample Status	Oil Age	hrs	Client Info		305	548	467
Sample Status Morman Norman ABNORMAL CONTAMINATION method imitibase current history1 history2 Fuel WC Method >5 <1.0 0.4 4 2 Water WC Method NEG NEG NEG NEG Glycol WC Method Imitibase current history1 history2 Iron ppm ASTM D5185m >110 0 22 16 Chromium ppm ASTM D5185m >4 <1 <1 <1 <1 Nickel ppm ASTM D5185m >2 0 <1 0 <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 <th>Oil Changed</th> <th></th> <th>Client Info</th> <th></th> <th>N/A</th> <th>N/A</th> <th>Not Changd</th>	Oil Changed		Client Info		N/A	N/A	Not Changd
Fuel WC Method S5 NEG Neg					NORMAL	NORMAL	_
Water Glycol WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >110 10 22 16 Chromium ppm ASTM D5185m >44 <1	CONTAMINA	TION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0	0.4	4.2
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >4 <1 <1 <1 Nickel ppm ASTM D5185m >2 0 <1	WEAR META	LS	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>110	10	22	16
Titanium ppm ASTM D5185m <1 0 <1 Silver ppm ASTM D5185m >2 0 <1	Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Silver ppm ASTM D5185m >2 0 <1 0 Aluminum ppm ASTM D5185m >25 8 14 5 Lead ppm ASTM D5185m >45 0 0 1 Copper ppm ASTM D5185m >4 <1 <1 1 Vanadium ppm ASTM D5185m >4 <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 <	Nickel	ppm	ASTM D5185m	>2	0	<1	1
Aluminum	Titanium	ppm	ASTM D5185m		<1	0	<1
Lead	Silver	ppm	ASTM D5185m	>2	0	<1	0
Copper ppm ASTM D5185m >85 1 5 20 Tin ppm ASTM D5185m -4 -1 -1 1 Vanadium ppm ASTM D5185m - -1 -1 -1 Cadmium ppm ASTM D5185m 0 0 0 -1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 1 ADDITIVES method method ppm 4 82 91 Boron ppm ASTM D5185m 0 0 1 1 <td>Aluminum</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>25</td> <th>8</th> <td>14</td> <td>5</td>	Aluminum	ppm	ASTM D5185m	>25	8	14	5
Tin ppm ASTM D5185m >4 <1 <1 1 Vanadium ppm ASTM D5185m <1 <1 <1 <1 Cadmium ppm ASTM D5185m 0 0 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 14 17 20 Barium ppm ASTM D5185m 0 0 0 1 Molybdenum ppm ASTM D5185m 0 4 82 91 Manganese ppm ASTM D5185m 0 <1	Lead	ppm	ASTM D5185m	>45	0	0	1
Tin ppm ASTM D5185m >4 <1 <1 1 Vanadium ppm ASTM D5185m <1 <1 <1 <1 Cadmium ppm ASTM D5185m 0 0 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 14 17 20 Barium ppm ASTM D5185m 0 0 0 1 1 Molybdenum ppm ASTM D5185m 0 94 82 91 Manganese ppm ASTM D5185m 0 <1 <1 1 Magnesium ppm ASTM D5185m 1010 951 817 906 Calcium ppm ASTM D5185m 1070 1085 1083 980 Phosphorus ppm ASTM D5185m 1270 1224 1123 1171 Sulfur ppm ASTM D5185m	Copper	ppm	ASTM D5185m	>85	1	5	20
Vanadium ppm ASTM D5185m <1 <1 <1 Cadmium ppm ASTM D5185m 0 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 14 17 20 Barium ppm ASTM D5185m 0 0 0 1 Molybdenum ppm ASTM D5185m 60 94 82 91 Manganese ppm ASTM D5185m 0 <1 <1 1 Magnesium ppm ASTM D5185m 1010 951 817 906 Calcium ppm ASTM D5185m 1070 1085 1083 980 Phosphorus ppm ASTM D5185m 1150 1028 900 823 Zinc ppm ASTM D5185m 1270 1224 1123 1171 Sulfur ppm ASTM D5185m 2060 3005 2701 <td></td> <td></td> <td></td> <td></td> <th><1</th> <td><1</td> <td>1</td>					<1	<1	1
Cadmium ppm ASTM D5185m 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 14 17 20 Barium ppm ASTM D5185m 0 0 0 0 0 14 17 20 Barium ppm ASTM D5185m 0 0 0 1 Magnesium ppm ASTM D5185m 1010 951 817 906 Calcium ppm ASTM D5185m 1070 1085 1083 980 Phosphorus ppm ASTM D5185m 1270 1224	Vanadium		ASTM D5185m		<1	<1	<1
Boron ppm ASTM D5185m 0 14 17 20 Barium ppm ASTM D5185m 0 0 0 1 Molybdenum ppm ASTM D5185m 60 94 82 91 Manganese ppm ASTM D5185m 0 <1 <1 1 Magnesium ppm ASTM D5185m 1010 951 817 906 Calcium ppm ASTM D5185m 1070 1085 1083 980 Phosphorus ppm ASTM D5185m 1270 1224 1123 1171 Sulfur ppm ASTM D5185m 1270 1224 1123 1171 Sulfur ppm ASTM D5185m 2060 3005 2701 2688 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 12 25 12 INFRA-RED method limit/base	Cadmium				0	0	<1
Barium ppm ASTM D5185m 0 0 0 1 Molybdenum ppm ASTM D5185m 60 94 82 91 Manganese ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 94 82 91 Manganese ppm ASTM D5185m 0 <1 <1 1 Magnesium ppm ASTM D5185m 1010 951 817 906 Calcium ppm ASTM D5185m 1070 1085 1083 980 Phosphorus ppm ASTM D5185m 1070 1085 1083 980 Phosphorus ppm ASTM D5185m 1150 1028 900 823 Zinc ppm ASTM D5185m 1270 1224 1123 1171 Sulfur ppm ASTM D5185m 2060 3005 2701 2688 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 15 5 Sodium ppm ASTM D5185m >20 12 25 12 INFRA-RED method	Boron	ppm	ASTM D5185m	0	14	17	20
Manganese ppm ASTM D5185m 0 <1 <1 1 Magnesium ppm ASTM D5185m 1010 951 817 906 Calcium ppm ASTM D5185m 1070 1085 1083 980 Phosphorus ppm ASTM D5185m 1150 1028 900 823 Zinc ppm ASTM D5185m 1270 1224 1123 1171 Sulfur ppm ASTM D5185m 2060 3005 2701 2688 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 15 5 Sodium ppm ASTM D5185m >20 12 25 12 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.4 0.3 Nitration Abs/cm *ASTM D	Barium	ppm	ASTM D5185m	0	0	0	1
Magnesium ppm ASTM D5185m 1010 951 817 906 Calcium ppm ASTM D5185m 1070 1085 1083 980 Phosphorus ppm ASTM D5185m 1150 1028 900 823 Zinc ppm ASTM D5185m 1270 1224 1123 1171 Sulfur ppm ASTM D5185m 2060 3005 2701 2688 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 15 5 Sodium ppm ASTM D5185m 2 1 0 Potassium ppm ASTM D5185m >20 12 25 12 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 7.2 8.2 6.0 Sulfation Abs/.1mm *ASTM D7415	Molybdenum	ppm	ASTM D5185m	60	94	82	91
Calcium ppm ASTM D5185m 1070 1085 1083 980 Phosphorus ppm ASTM D5185m 1150 1028 900 823 Zinc ppm ASTM D5185m 1270 1224 1123 1171 Sulfur ppm ASTM D5185m 2060 3005 2701 2688 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 15 5 Sodium ppm ASTM D5185m 2 1 0 Potassium ppm ASTM D5185m >20 12 25 12 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >3 0.3 0.4 0.3 Nitration Abs/.1mm *ASTM D7415 >30 18.9 21.2 17.9 FLUID DEGRADATION method l	Manganese	ppm	ASTM D5185m	0	<1	<1	1
Phosphorus ppm ASTM D5185m 1150 1028 900 823 Zinc ppm ASTM D5185m 1270 1224 1123 1171 Sulfur ppm ASTM D5185m 2060 3005 2701 2688 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 15 5 Sodium ppm ASTM D5185m 2 1 0 Potassium ppm ASTM D5185m >20 12 25 12 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >3 0.3 0.4 0.3 Nitration Abs/.1mm *ASTM D7624 >20 7.2 8.2 6.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 17.9 FLUID DEGRADATION method <	Magnesium	ppm	ASTM D5185m	1010	951	817	906
Phosphorus ppm ASTM D5185m 1150 1028 900 823 Zinc ppm ASTM D5185m 1270 1224 1123 1171 Sulfur ppm ASTM D5185m 2060 3005 2701 2688 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 15 5 Sodium ppm ASTM D5185m 2 1 0 Potassium ppm ASTM D5185m >20 12 25 12 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >3 0.3 0.4 0.3 Nitration Abs/.1mm *ASTM D7624 >20 7.2 8.2 6.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 17.9 FLUID DEGRADATION method <	Calcium	ppm	ASTM D5185m	1070	1085	1083	980
Zinc ppm ASTM D5185m 1270 1224 1123 1171 Sulfur ppm ASTM D5185m 2060 3005 2701 2688 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 15 5 Sodium ppm ASTM D5185m 2 1 0 Potassium ppm ASTM D5185m >20 12 25 12 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 7.2 8.2 6.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM	Phosphorus	ppm	ASTM D5185m	1150	1028	900	823
Sulfur ppm ASTM D5185m 2060 3005 2701 2688 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 15 5 Sodium ppm ASTM D5185m 2 1 0 Potassium ppm ASTM D5185m >20 12 25 12 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 7.2 8.2 6.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 16.6 13.2			ASTM D5185m	1270	1224	1123	1171
Silicon ppm ASTM D5185m >30 4 15 5 Sodium ppm ASTM D5185m 2 1 0 Potassium ppm ASTM D5185m >20 12 25 12 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 7.2 8.2 6.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 16.6 13.2	Sulfur			2060	3005	2701	2688
Sodium ppm ASTM D5185m 2 1 0 Potassium ppm ASTM D5185m >20 12 25 12 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 7.2 8.2 6.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 16.6 13.2	CONTAMINAL	NTS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 12 25 12 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 7.2 8.2 6.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 16.6 13.2	Silicon	ppm	ASTM D5185m	>30	4	15	5
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 7.2 8.2 6.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 16.6 13.2	Sodium	ppm	ASTM D5185m		2	1	0
Soot % % *ASTM D7844 >3 0.3 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 7.2 8.2 6.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 16.6 13.2	Potassium	ppm	ASTM D5185m	>20	12	25	12
Nitration Abs/cm *ASTM D7624 >20 7.2 8.2 6.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 17.9 FLUID DEGRADATION method limit/base current bistory1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 16.6 13.2	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 16.6 13.2	Soot %	%	*ASTM D7844	>3	0.3	0.4	0.3
Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 16.6 13.2	Nitration	Abs/cm	*ASTM D7624	>20	7.2	8.2	6.0
Oxidation Abs/.1mm *ASTM D7414 >25 14.6 16.6 13.2	Sulfation	Abs/.1mm	*ASTM D7415	>30	18.9	21.2	
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.6	16.6	13.2



OIL ANALYSIS REPORT

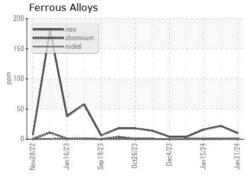


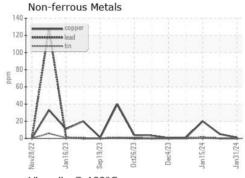


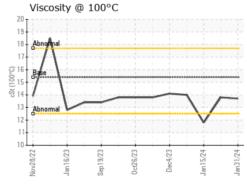
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

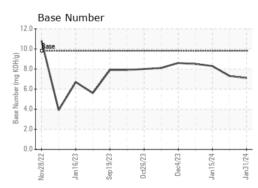
FLUID PROPE	RHES	metnoa	ilmit/base	current	nistory i	nistory2
Visc @ 100°C	cSt	ASTM D445	15.4	13.7	13.8	<u></u> 11.8

GRAPHS













Laboratory Sample No.

Test Package : FLEET

: GFL0111095 Lab Number : 06084489 Unique Number: 10871934

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

Tested Diagnosed

: 09 Feb 2024 : 09 Feb 2024

: 09 Feb 2024 - Wes Davis

GFL environmental - 867 - Trafford (Blount Hauling)

1130 County Line Rd Trafford, AL US 35172

Contact: Jonathan Williams jonathan.williams@gflenv.com

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: