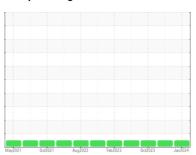


OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id 1124M Component Diesel Engine Fluid PETRO CANAL

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

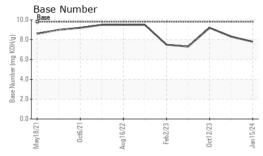
Fluid Condition

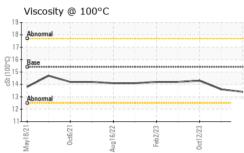
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method limil/base current history1 history2	M 3HP 13W40 (- GAL)	May2021	Oct2021 Aug2022	Feb2023 Oct2023	Jan2024	
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Date Client Info 15 Jan 2024 30 Nov 2023 12 Oct 2023 Machine Age hrs Client Info 11964 11692 11367 Oil Age hrs Client Info 11367 11367 10455 Oil Changed Client Info Changed Nor Changed Nor Changed Nor Changed Nor MAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0	Sample Number		Client Info		GFL0108812	GFL0101431	GFL0093133
Oil Age hrs Client Info 11367 11367 10465 Oil Changed Sample Status Client Info Changed Not Changed Not Changed Not Changed NorMAL NoRMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 Water WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >200 8 6 3 Chromium ppm ASTM D5185m >200 8 6 3 Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Juminum ppm ASTM D5185m >30 2 2 2 2 James ppm ASTM D5185m >30 2 2 </td <td></td> <td></td> <td>Client Info</td> <td></td> <th>15 Jan 2024</th> <td>30 Nov 2023</td> <td>12 Oct 2023</td>			Client Info		15 Jan 2024	30 Nov 2023	12 Oct 2023
Oil Changed Sample Status Client Info Changed NORMAL Not Changed NORMAL Changed NORMAL NORMAL Changed NORMAL Changed NORMAL Changed NORMAL NOR	•	hrs	Client Info		11954	11692	11367
CONTAMINATION	Oil Age	hrs	Client Info		11367	11367	10465
NORMAL NORMAL NORMAL	-		Client Info		Changed	Not Changd	Changed
Fuel WC Method So.2 NEG Ne	-				_	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method Imit/base current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >200 8 6 3 Chromium ppm ASTM D5185m >20 <1	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Irron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >2 0 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>200	8	6	3
Description	Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Silver	Nickel	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	Titanium	ppm	ASTM D5185m	>2	0	0	0
Lead	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >30 2 2 2 2 Tin ppm ASTM D5185m >15 <1	Aluminum	ppm	ASTM D5185m	>30	2	2	2
Tin	Lead	ppm	ASTM D5185m	>30	0	0	0
Tin	Copper	ppm	ASTM D5185m	>30	2	2	2
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 <1		ppm	ASTM D5185m	>15	<1	0	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		<1	0	0
Boron ppm ASTM D5185m 0 0 2 0 0	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 2 0 Molybdenum ppm ASTM D5185m 60 55 51 56 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 928 791 906 Calcium ppm ASTM D5185m 1070 988 959 1039 Phosphorus ppm ASTM D5185m 1150 1018 889 905 Zinc ppm ASTM D5185m 1270 1242 1093 1218 Sulfur ppm ASTM D5185m 2060 2867 4109 3009 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 5 2 5 Sodium ppm ASTM D5185m 20 2 2 1 INFRA-RED method limit/base	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 55 51 56 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 928 791 906 Calcium ppm ASTM D5185m 1070 988 959 1039 Phosphorus ppm ASTM D5185m 1150 1018 889 905 Zinc ppm ASTM D5185m 1270 1242 1093 1218 Sulfur ppm ASTM D5185m 2060 2867 4109 3009 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 5 2 5 Sodium ppm ASTM D5185m >20 2 2 1 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7824 >20 <td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <th><1</th> <td>1</td> <td>5</td>	Boron	ppm	ASTM D5185m	0	<1	1	5
Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 928 791 906 Calcium ppm ASTM D5185m 1070 988 959 1039 Phosphorus ppm ASTM D5185m 1150 1018 889 905 Zinc ppm ASTM D5185m 1270 1242 1093 1218 Sulfur ppm ASTM D5185m 2060 2867 4109 3009 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 5 2 5 Sodium ppm ASTM D5185m >20 2 0 <1	Barium	ppm	ASTM D5185m	0	0	2	0
Magnesium ppm ASTM D5185m 1010 928 791 906 Calcium ppm ASTM D5185m 1070 988 959 1039 Phosphorus ppm ASTM D5185m 1150 1018 889 905 Zinc ppm ASTM D5185m 1270 1242 1093 1218 Sulfur ppm ASTM D5185m 2060 2867 4109 3009 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 5 2 5 Sodium ppm ASTM D5185m 2 0 <1	Molybdenum	ppm	ASTM D5185m	60	55	51	56
Calcium ppm ASTM D5185m 1070 988 959 1039 Phosphorus ppm ASTM D5185m 1150 1018 889 905 Zinc ppm ASTM D5185m 1270 1242 1093 1218 Sulfur ppm ASTM D5185m 2060 2867 4109 3009 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 5 2 5 Sodium ppm ASTM D5185m 20 2 0 <1	Manganese	ppm	ASTM D5185m	0	<1	0	<1
Phosphorus ppm ASTM D5185m 1150 1018 889 905 Zinc ppm ASTM D5185m 1270 1242 1093 1218 Sulfur ppm ASTM D5185m 2060 2867 4109 3009 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 5 2 5 Sodium ppm ASTM D5185m 2 0 <1	Magnesium	ppm	ASTM D5185m	1010	928	791	906
Zinc ppm ASTM D5185m 1270 1242 1093 1218 Sulfur ppm ASTM D5185m 2060 2867 4109 3009 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 5 2 5 Sodium ppm ASTM D5185m 2 0 <1	Calcium	ppm	ASTM D5185m	1070	988	959	1039
Sulfur ppm ASTM D5185m 2060 2867 4109 3009 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 5 2 5 Sodium ppm ASTM D5185m 2 0 <1	Phosphorus	ppm	ASTM D5185m	1150	1018	889	905
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 5 2 5 Sodium ppm ASTM D5185m 2 0 <1	Zinc	ppm	ASTM D5185m	1270	1242	1093	1218
Silicon ppm ASTM D5185m >30 5 2 5 Sodium ppm ASTM D5185m 2 0 <1 Potassium ppm ASTM D5185m >20 2 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.2 5.5 4.7 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.7 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.1 13.3	Sulfur	ppm	ASTM D5185m	2060	2867	4109	3009
Sodium ppm ASTM D5185m 2 0 <1 Potassium ppm ASTM D5185m >20 2 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.2 5.5 4.7 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.7 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.1 13.3	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 2 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.2 5.5 4.7 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.7 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.1 13.3	Silicon	ppm	ASTM D5185m	>30	5	2	5
INFRA-RED	Sodium	ppm	ASTM D5185m		2	0	<1
Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.2 5.5 4.7 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.7 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.1 13.3	Potassium	ppm	ASTM D5185m	>20	2	2	1
Nitration Abs/cm *ASTM D7624 >20 6.2 5.5 4.7 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.7 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.1 13.3	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.7 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.1 13.3	Soot %	%	*ASTM D7844	>3	0.3	0.2	0.1
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm 'ASTM D7414 >25 14.1 13.3	Nitration	Abs/cm	*ASTM D7624	>20	6.2	5.5	4.7
Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.1 13.3	Sulfation	Abs/.1mm	*ASTM D7415	>30	18.8	18.7	17.7
	FLUID DEGRA	OATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.5	14.1	13.3
		mg KOH/g	ASTM D2896		7.8	8.3	



OIL ANALYSIS REPORT

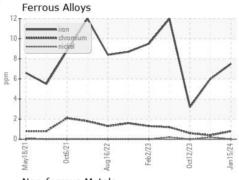


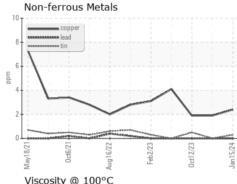


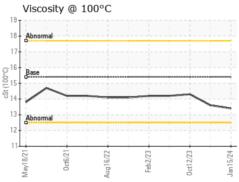
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

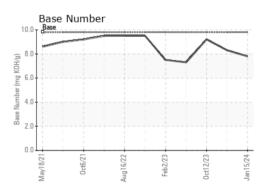
FLUID PROPE	RTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.4	13.6	14.3

GRAPHS













Laboratory Sample No. Lab Number **Unique Number**

: GFL0108812 : 06064835 : 10836217

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved : 18 Jan 2024 Diagnosed : 19 Jan 2024 Diagnostician : Wes Davis

GFL Environmental - 415 - Michigan East

6200 Elmridge Sterling Heights, MI US 48313 Contact: Frank Wolak fwolak@gflenv.com T: (586)825-9514

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)