

OIL ANALYSIS REPORT

Sample Rating Trend



Area (43346HA) Machine Id 811004 Component Diesel Engine Fluid PETRO CANADA

Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (--- LTR)

IP 15W40 (--- LTR)

Sample Number Client Info GFL0058103 GFL0058052 GFL0058052 GFL0058052 GFL0058057 Sample Date Client Info 09 May 2024 13 Mar 2024 28 Feb 2024 Oil Age hrs Client Info 4983 4891 Oil Changed Client Info 4983 0 478 CONTAMINATION method imit/base current history1 history1 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG Mater WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 1 1 1 Norskie ppm ASTM05185m >20 <1 1 Nor		MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 5338 4983 4891 Oil Age hrs Client Info Changed NA Sample Status Imit/base current history1 history2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG Water WC Method NEG NEG NEG NEG Tron ppm ASTM D5185m >12.0 4 15 17 Chrormium ppm ASTM D5185m >2.0 0 1 1 Nickel ppm ASTM D5185m >2.0 1 0 2 0 Aluminum ppm ASTM D5185m >2.0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Sample Number		Client Info		GFL0058103	GFL0058052	GFL0058087
Oil Age hrs Client Info 4983 0 478 Oil Changed Client Info Changed N/A Sample Status NORMAL NORMAL NORMAL CONTAMINATION method imit/base current history1 history2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Water WC Method NEG NEG NEG NEG Water WC Method NEG NEG NEG NEG WEAR METALS method imit/base current history1 history2 Iron ppm ASTM D5165m<>20 0 1 1 1 Nickel ppm ASTM D5165m<>20 1 3 4 Lead ppm ASTM D5165m<>20 1 3 4 Lead ppm ASTM D5165m<>20 1 0 Cafmium ppm	Sample Date		Client Info		09 May 2024	13 Mar 2024	28 Feb 2024
Oil Changed Client Info Changed NORMAL NORMAL NORMAL NORMAL Sample Status Imit base current history1 history2 Fuel WC Method >3.0 <1.0	Machine Age	hrs	Client Info		5338	4983	4891
Sample Status 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 >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG NEG Iron ppm ASTM D5185m >20 0 1 1 Nickel ppm ASTM D5185m >20 0 <1 0 Nickel ppm ASTM D5185m >2 0 <1 0 Aluminum ppm ASTM D5185m >2 0 <1 0 Aluminum ppm ASTM D5185m >2 0 <1 0 Copper ppm ASTM D5185m >15 <1 1 <1 Vanadrum ppm ASTM D5185m 0 <1 0 0 Copper<	Oil Age	hrs	Client Info		4983	0	478
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG NEG WeAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 4 15 17 Chromium ppm ASTM D5185m >20 0 1 1 Nickel ppm ASTM D5185m >20 0 <1 <1 Silver ppm ASTM D5185m >20 1 3 4 Lead ppm ASTM D5185m >40 <1 2 0 Copper ppm ASTM D5185m 0 <1 0 0 Cadminum ppm ASTM D5185m 0 <1 0 0 Do	Oil Changed		Client Info		Changed	Changed	N/A
Fuel WC Method >3.0 <1.0	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG NEG Glycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 4 15 17 Chromium ppm ASTM D5185m >20 0 1 1 Nickel ppm ASTM D5185m >20 0 <1 <1 Silver ppm ASTM D5185m >20 1 3 4 Lead ppm ASTM D5185m >20 1 3 4 Lead ppm ASTM D5185m >20 1 <1 <1 Vanadium ppm ASTM D5185m >20 1 3 4 Lead ppm ASTM D5185m 0 <1 0 0 Copper ppm ASTM D5185m 0 2 4 4	CONTAMINAT	TION	method	limit/base	current	history1	history2
Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 4 15 17 Chromium ppm ASTM D5185m >20 0 1 1 Nickel ppm ASTM D5185m >20 0 <1 0 Silver ppm ASTM D5185m >20 1 3 4 Lead ppm ASTM D5185m >20 1 3 4 Lead ppm ASTM D5185m >20 1 3 4 Lead ppm ASTM D5185m >20 1 1 <1 Vanadium ppm ASTM D5185m >30 0 <1 0 Cadmium ppm ASTM D5185m 0 <1 1 <1 Maneganese ppm ASTM D5185m 0 <1 1 <1	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 4 15 17 Chromium ppm ASTM D5185m >20 0 1 1 Nickel ppm ASTM D5185m >2 0 <1 <1 Silver ppm ASTM D5185m >2 0 <1 0 Aluminum ppm ASTM D5185m >2 0 <1 0 Lead ppm ASTM D5185m >20 <1 3 4 Lead ppm ASTM D5185m >20 1 3 4 Lead ppm ASTM D5185m 0 <1 0 0 Copper ppm ASTM D5185m 0 <1 0 1 0 Cadmium ppm ASTM D5185m 0 2 4 4 Barium ppm ASTM D5185m 0 2 4	Water		WC Method	>0.2	NEG	NEG	NEG
Iron ppm ASTM D5185m >120 4 15 17 Chromium ppm ASTM D5185m >20 0 1 1 Nickel ppm ASTM D5185m >2 0 <1	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 0 1 1 Nickel ppm ASTM D5185m >5 0 3 3 Titanium ppm ASTM D5185m >2 0 <1 <1 Silver ppm ASTM D5185m >2 0 <1 0 Aluminum ppm ASTM D5185m >20 1 3 4 Lead ppm ASTM D5185m >40 <1 2 0 Copper ppm ASTM D5185m >40 <1 2 0 Cadmium ppm ASTM D5185m >330 0 9 9 Tin ppm ASTM D5185m 0 <1 1 <1 Vanadium ppm ASTM D5185m 0 <1 1 <1 Vanadium ppm ASTM D5185m 0 <1 1 <1 Vanadium ppm ASTM D5185m 0 <1 1 <td< th=""><th>WEAR METAL</th><th>S</th><th>method</th><th>limit/base</th><th>current</th><th>history1</th><th>history2</th></td<>	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >5 0 3 3 Titanium ppm ASTM D5185m >2 0 <1	Iron	ppm	ASTM D5185m	>120	4	15	17
Titanium ppm ASTM D5185m >2 0 <1 <1 Silver ppm ASTM D5185m >2 0 <1	Chromium	ppm	ASTM D5185m	>20	0	1	1
Silver ppm ASTM D5185m >2 0 <1 0 Aluminum ppm ASTM D5185m >20 1 3 4 Lead ppm ASTM D5185m >40 <1	Nickel	ppm	ASTM D5185m	>5	0	3	3
Aluminum ppm ASTM D5185m >20 1 3 4 Lead ppm ASTM D5185m >40 <1	Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Lead ppm ASTM D5185m >40 <1 2 0 Copper ppm ASTM D5185m >330 0 9 9 Tin ppm ASTM D5185m >15 <1	Silver	ppm	ASTM D5185m	>2	0	<1	0
Copper ppm ASTM D5185m >330 0 9 9 Tin ppm ASTM D5185m >15 <1	Aluminum	ppm	ASTM D5185m	>20	1	3	4
Tin ppm ASTM D5185m >15 <1	Lead	ppm	ASTM D5185m	>40	<1	2	0
Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 4 4 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 0 Magnesium ppm ASTM D5185m 0 <1 1 <1 Magnesium ppm ASTM D5185m 01010 951 970 979 Calcium ppm ASTM D5185m 1070 1063 1153 1051 Phosphorus ppm ASTM D5185m 1070 1031 999 964 Zinc ppm ASTM D5185m 1270 1237 1273 1263 Sulfur ppm ASTM D5185m 2060 <th< td=""><td>Copper</td><td>ppm</td><td>ASTM D5185m</td><td>>330</td><th>0</th><td>9</td><td>9</td></th<>	Copper	ppm	ASTM D5185m	>330	0	9	9
Cadmium ppm ASTM D5185m 0 <1	Tin	ppm	ASTM D5185m	>15	<1	1	<1
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 4 4 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 60 56 63 Manganese ppm ASTM D5185m 0 <1 1 <1 Magnesium ppm ASTM D5185m 1010 951 970 979 Calcium ppm ASTM D5185m 1070 1063 1153 1051 Phosphorus ppm ASTM D5185m 1270 1237 1273 1263 Sulfur ppm ASTM D5185m 2060 3368 3291 2925 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 <1 3 2 INFRA-RED method limit/base c	Vanadium	ppm	ASTM D5185m		0	<1	0
Boron ppm ASTM D5185m 0 2 4 4 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 60 60 56 63 Manganese ppm ASTM D5185m 0 <1 1 <1 Magnesium ppm ASTM D5185m 1010 951 970 979 Calcium ppm ASTM D5185m 1010 951 970 979 Calcium ppm ASTM D5185m 1070 1063 1153 1051 Phosphorus ppm ASTM D5185m 1270 1237 1273 1263 Sulfur ppm ASTM D5185m 2060 3368 3291 2925 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 <1 3 2 INFRA-RED method limit/	Cadmium	ppm	ASTM D5185m		0	<1	0
Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 60 60 56 63 Manganese ppm ASTM D5185m 0 <1 1 <1 Magnesium ppm ASTM D5185m 1010 951 970 979 Calcium ppm ASTM D5185m 1070 1063 1153 1051 Phosphorus ppm ASTM D5185m 1070 1063 1153 1051 Phosphorus ppm ASTM D5185m 1270 1237 1273 1263 Sulfur ppm ASTM D5185m 2060 3368 3291 2925 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m >20 <1 3 2 INFRA-RED method <	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 60 56 63 Manganese ppm ASTM D5185m 0 <1 1 <1 Magnesium ppm ASTM D5185m 1010 951 970 979 Calcium ppm ASTM D5185m 1010 951 970 979 Calcium ppm ASTM D5185m 1070 1063 1153 1051 Phosphorus ppm ASTM D5185m 1070 1031 999 964 Zinc ppm ASTM D5185m 1270 1237 1273 1263 Sulfur ppm ASTM D5185m 2060 3368 3291 2925 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 <1 3 2 INFRA-RED method limit/base current history1 history2 Soot % % 'ASTM D7624	Boron	ppm	ASTM D5185m	0	2	4	
Maganese ppm ASTM D5185m 0 <1	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 951 970 979 Calcium ppm ASTM D5185m 1070 1063 1153 1051 Phosphorus ppm ASTM D5185m 1150 1031 999 964 Zinc ppm ASTM D5185m 1270 1237 1273 1263 Sulfur ppm ASTM D5185m 2060 3368 3291 2925 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m >20 <1	Molvbdenum	maa	ASTM D5185m	60			
Calcium ppm ASTM D5185m 1070 1063 1153 1051 Phosphorus ppm ASTM D5185m 1150 1031 999 964 Zinc ppm ASTM D5185m 1270 1237 1273 1263 Sulfur ppm ASTM D5185m 2060 3368 3291 2925 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m >20 <1 3 5 5 Potassium ppm ASTM D5185m >20 <1 3 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 6.8 8.2 7.8 Sulfation Abs/.1mm *ASTM D7		1+ 1+ · · · ·	AOTIM DOTODIII	00	60	56	63
Phosphorus ppm ASTM D5185m 1150 1031 999 964 Zinc ppm ASTM D5185m 1270 1237 1273 1263 Sulfur ppm ASTM D5185m 2060 3368 3291 2925 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m >20 <11 3 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 6.8 8.2 7.8 Sulfation Abs/.1mm *ASTM D7415 >30 19.2 20.0 19.5 FLUID DEGRADATION method limit/b	Manganese						
Zinc ppm ASTM D5185m 1270 1237 1273 1263 Sulfur ppm ASTM D5185m 2060 3368 3291 2925 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m >25 3 5 5 Potassium ppm ASTM D5185m >20 <1 3 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 6.8 8.2 7.8 Sulfation Abs/.1mm *ASTM D7415 >30 19.2 20.0 19.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414	Manganese	ppm	ASTM D5185m	0	<1	1	<1
Sulfur ppm ASTM D5185m 2060 3368 3291 2925 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m >20 <1	Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m	0 1010	<1 951	1 970	<1 979
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m<>25 3 4 4 Sodium ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m >20 3 5 5 Potassium ppm ASTM D5185m >20 <1 3 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 6.8 8.2 7.8 Sulfation Abs/.1mm *ASTM D7415 >30 19.2 20.0 19.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 15.7 15.4	Manganese Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070	<1 951 1063 1031	1 970 1153 999	<1 979 1051 964
Silicon ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m >25 3 5 5 Potassium ppm ASTM D5185m >20 <1	Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150	<1 951 1063 1031	1 970 1153 999	<1 979 1051 964 1263
Sodium ppm ASTM D5185m 3 5 5 Potassium ppm ASTM D5185m<>20 <1 3 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 6.8 8.2 7.8 Sulfation Abs/.1mm *ASTM D7415 >30 19.2 20.0 19.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 15.7 15.4	Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270	<1 951 1063 1031 1237	1 970 1153 999 1273	<1 979 1051 964 1263
Potassium ppm ASTM D5185m >20 <1	Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060	<1 951 1063 1031 1237 3368	1 970 1153 999 1273 3291	<1 979 1051 964 1263 2925
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 6.8 8.2 7.8 Sulfation Abs/.1mm *ASTM D7415 >30 19.2 20.0 19.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 15.7 15.4	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 1010 1070 1150 1270 2060 limit/base	<1 951 1063 1031 1237 3368 current	1 970 1153 999 1273 3291 history1	<1 979 1051 964 1263 2925 history2 4
Soot % % *ASTM D7844 >4 0.3 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 6.8 8.2 7.8 Sulfation Abs/.1mm *ASTM D7415 >30 19.2 20.0 19.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 15.7 15.4	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base	<1 951 1063 1031 1237 3368 current 3	1 970 1153 999 1273 3291 history1 4 5	<1 979 1051 964 1263 2925 history2 4 5
Nitration Abs/cm *ASTM D7624 >20 6.8 8.2 7.8 Sulfation Abs/.1mm *ASTM D7415 >30 19.2 20.0 19.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 15.7 15.4	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm NTS ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >25	<1 951 1063 1031 1237 3368 <u>current</u> 3 3	1 970 1153 999 1273 3291 history1 4 5	<1 979 1051 964 1263 2925 history2 4 5
Sulfation Abs/.1mm *ASTM D7415 >30 19.2 20.0 19.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 15.7 15.4	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm NTS ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 /////////////////////////////////	<1 951 1063 1031 1237 3368 <u>current</u> 3 3 <1	1 970 1153 999 1273 3291 history1 4 5 3	<1 979 1051 964 1263 2925 history2 4 5 2
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 15.7 15.4	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm vTS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20	<1 951 1063 1031 1237 3368 <u>current</u> 3 3 <1 current	1 970 1153 999 1273 3291 history1 4 5 3 3 <u>history1</u> 0.5	<1 979 1051 964 1263 2925 history2 4 5 2 history2
Oxidation Abs/.1mm *ASTM D7414 >25 14.7 15.7 15.4	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm vTS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4	<1 951 1063 1031 1237 3368 <u>current</u> 3 3 <1 <u>current</u> 0.3	1 970 1153 999 1273 3291 history1 4 5 3 3 <u>history1</u> 0.5	<1 979 1051 964 1263 2925 history2 4 5 2 history2 0.4
	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm vTS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7844	0 1010 1070 1150 1270 2060 limit/base >25 	<1 951 1063 1031 1237 3368 <u>current</u> 3 3 <1 <u>current</u> 0.3 6.8	1 970 1153 999 1273 3291 history1 4 5 3 3 history1 0.5 8.2	<1 979 1051 964 1263 2925 history2 4 5 2 history2 0.4 7.8
Base Number (BN) mg KOH/g ASTM D2896 9.8 7.6 6.5 6.9	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624	0 1010 1070 1150 1270 2060 /////////////////////////////////	<1 951 1063 1031 1237 3368 <u>current</u> 3 3 <1 <u>current</u> 0.3 6.8 19.2	1 970 1153 999 1273 3291 history1 4 5 3 history1 0.5 8.2 20.0	<1 979 1051 964 1263 2925 history2 4 5 2 history2 0.4 7.8 19.5
	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRA	ppm ppm ppm ppm ppm ppm vTS ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7415	0 1010 1070 1150 1270 2060 /////////////////////////////////	<1 951 1063 1031 1237 3368 current 3 3 <1 current 0.3 6.8 19.2 current	1 970 1153 999 1273 3291 history1 4 5 3 history1 0.5 8.2 20.0 history1	<1 979 1051 964 1263 2925 history2 4 5 2 0.4 7.8 19.5 history2

DIAGNOSIS Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

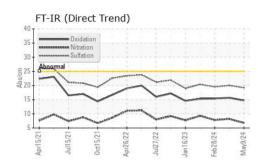
There is no indication of any contamination in the oil.

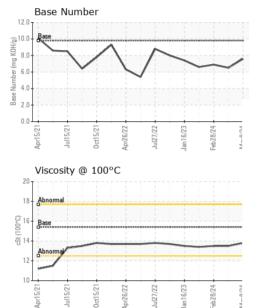
Fluid Condition

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



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	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	13.5	13.5

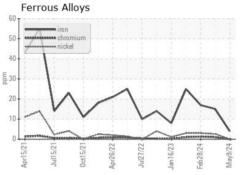
GRAPHS

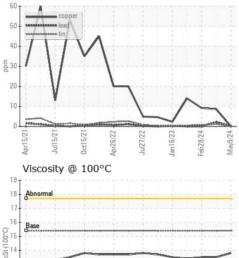
Non-ferrous Metals

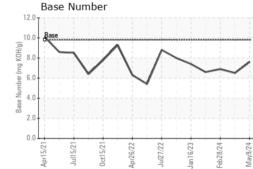
12

11-10-

Apr15/21







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 657 - Charlottesville Hauling Sample No. : GFL0058103 Received : 10 May 2024 5498 Richmond Road Lab Number : 06175265 Tested : 13 May 2024 Troy, VA US 22974 Unique Number : 11021318 Diagnosed : 13 May 2024 - Wes Davis Test Package : FLEET Contact: Brian Ulickas Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. bulickas@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Apr26/22

Jul27/22

May9/24 -

Feb28/24

Jan 16/23

Submitted By: TECHNICIAN ACCOUNT

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