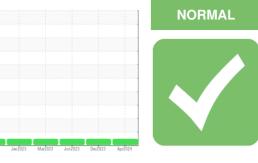


OIL ANALYSIS REPORT

SAMPLE INFORMATION method

Sample Rating Trend



Machine Id

712022 Component

Component Diesel Engine Fluid

PETRO CANADA DURON SHP 15W40 (--- LTR)

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.

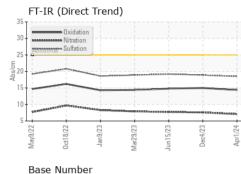
Fluid Condition

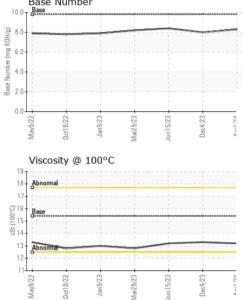
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM		method	limit/base	current	nistory i	nistory2
Sample Number		Client Info		GFL0106120	GFL0082078	GFL0082022
Sample Date		Client Info		01 Apr 2024	04 Dec 2023	15 Jun 2023
Machine Age	hrs	Client Info		6395	5863	0
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
-				Normize		
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron		ASTM D5185m	>110	9	8	6
Chromium	ppm	ASTM D5185m	>4	0	<1	<1
Nickel	ppm					0
	ppm	ASTM D5185m	>2	0	<1	
Titanium	ppm	ASTM D5185m	0	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	3	3	1
Lead	ppm	ASTM D5185m	>45	0	<1	0
Copper	ppm	ASTM D5185m	>85	0	<1	<1
Tin	ppm	ASTM D5185m	>4	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 7	history1 9	history2 9
	ppm ppm	ASTM D5185m				
Boron Barium		ASTM D5185m	0	7	9	9
Boron	ppm	ASTM D5185m ASTM D5185m	0 0 60	7 0	9 11	9
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	7 0 62	9 11 64	9 0 66
Boron Barium Molybdenum	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	7 0 62 0	9 11 64 <1	9 0 66 <1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	7 0 62 0 1010 1190	9 11 64 <1 918 1064	9 0 66 <1 978 1207
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	7 0 62 0 1010 1190 1066	9 11 64 <1 918 1064 985	9 0 66 <1 978 1207 1033
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	7 0 62 0 1010 1190 1066 1329	9 11 64 <1 918 1064 985 1224	9 0 66 <1 978 1207 1033 1268
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	7 0 62 0 1010 1190 1066 1329 3824	9 11 64 <1 918 1064 985 1224 3463	9 0 66 <1 978 1207 1033 1268 3709
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	7 0 62 0 1010 1190 1066 1329 3824 current	9 11 64 <1 918 1064 985 1224 3463 history1	9 0 66 <1 978 1207 1033 1268 3709 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 0 60 1010 1070 1150 1270 2060	7 0 62 0 1010 1190 1066 1329 3824	9 11 64 <1 918 1064 985 1224 3463 history1 4	9 0 66 <1 978 1207 1033 1268 3709 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >30	7 0 62 0 1010 1190 1066 1329 3824 <u>current</u> 3 <	9 11 64 <1 918 1064 985 1224 3463 history1 4 0	9 0 66 <1 978 1207 1033 1268 3709 history2 3 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 0 60 1010 1070 1150 1270 2060 limit/base >30	7 0 62 0 1010 1190 1066 1329 3824 current 3	9 11 64 <1 918 1064 985 1224 3463 history1 4	9 0 66 <1 978 1207 1033 1268 3709 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >30	7 0 62 0 1010 1190 1066 1329 3824 <u>current</u> 3 <	9 11 64 <1 918 1064 985 1224 3463 history1 4 0	9 0 66 <1 978 1207 1033 1268 3709 history2 3 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >30	7 0 62 0 1010 1190 1066 1329 3824 <u>current</u> 3 2 <1 2	9 11 64 <1 918 1064 985 1224 3463 history1 4 0 5	9 0 66 <1 978 1207 1033 1268 3709 history2 3 1 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >30 20 Imit/base >3	7 0 62 0 1010 1190 1066 1329 3824 <i>current</i> 3 2 <i>current</i> 2 <i>current</i>	9 11 64 <1 918 1064 985 1224 3463 history1 4 0 5 history1	9 0 66 <1 978 1207 1033 1268 3709 history2 3 1 <1 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >30 20	7 0 62 0 1010 1190 1066 1329 3824 current 3 2 2 current	9 11 64 <1 918 1064 985 1224 3463 history1 4 0 5 history1 0.3	9 0 66 <1 978 1207 1033 1268 3709 history2 3 1 <1 <1 history2 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >30 20 imit/base >3 >20 >30	7 0 62 0 1010 1190 1066 1329 3824 <u>current</u> 3 3 2 1 2 <u>current</u> 0.2 7.1 18.5	9 11 64 <1 918 1064 985 1224 3463 history1 4 0 5 history1 0.3 7.6 18.9	9 0 66 <1 978 1207 1033 1268 3709 history2 3 1 <1 <1 history2 0.3 7.7 19.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 2060 2060 2060 200 200 200 200 200 200	7 0 62 0 1010 1190 1066 1329 3824 current 3 <1 2 current 0.2 7.1 18.5 current	9 11 64 <1 918 1064 985 1224 3463 history1 4 0 5 history1 0.3 7.6 18.9 history1	9 0 66 <1 978 1207 1033 1268 3709 history2 3 1 <1 <1 history2 0.3 7.7 19.2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 2060 200 200 200 200 200 200	7 0 62 0 1010 1190 1066 1329 3824 <u>current</u> 3 3 2 1 2 0.2 7.1 18.5 <u>current</u> 14.4	9 11 64 <1 918 1064 985 1224 3463 history1 4 0 5 history1 0.3 7.6 18.9 history1 15.0	9 0 66 <1 978 1207 1033 1268 3709 history2 3 1 <1 <1 history2 0.3 7.7 19.2 history2 14.8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 2060 200 200 200 200 200 200	7 0 62 0 1010 1190 1066 1329 3824 current 3 <1 2 current 0.2 7.1 18.5 current	9 11 64 <1 918 1064 985 1224 3463 history1 4 0 5 history1 0.3 7.6 18.9 history1	9 0 66 <1 978 1207 1033 1268 3709 history2 3 1 <1 <1 history2 0.3 7.7 19.2 history2

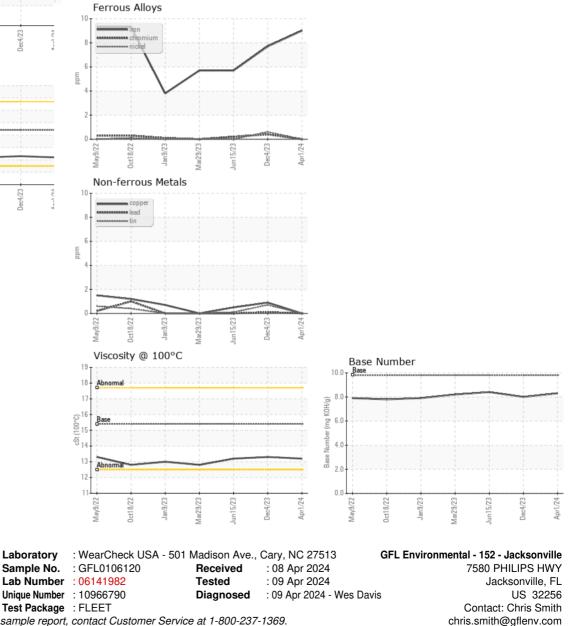


OIL ANALYSIS REPORT





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	13.2	13.3	13.2
GRAPHS						



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)

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Certificate 12367

Submitted By: WITH iNDIANA GFL - Chris Smith

E:

T: (904)252-0013