

(JW8525)

10607

# **OIL ANALYSIS REPORT**

### Sample Rating Trend

SAMPLE INFORMATION method limit/base

NORMAL

# Maž017 Mag2018 Mag2019 Mag2020 Mag2021 Nex2023

PETRO CANADA DURON SHP 15W40 (16 QTS)

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

Area

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 INFOR		methoa	iimivbase	current	riistory i	riistory2
Sample Number		Client Info		GFL0112896	GFL0088510	GFL0098105
Sample Date		Client Info		24 Apr 2024	19 Feb 2024	01 Nov 2023
Machine Age	hrs	Client Info		8361	8361	8361
Oil Age	hrs	Client Info		330	381	135
Oil Changed		Client Info		N/A	Not Changd	N/A
Sample Status				NORMAL	NORMAL	NORMAL
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	>100	22	12	41
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
	ppm			0		
Nickel	ppm	ASTM D5185m	>4	0	<1 0	0
Titanium	ppm	ASTM D5185m	0	-		
Silver	ppm	ASTM D5185m		0	0	0 5
Aluminum	ppm	ASTM D5185m	>20	10	6	
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m	>330	18	4	11
Tin	ppm		>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	<1
ADDITIVES						history2
ADDITIVES		method	limit/base	current	history1	riistory2
Boron	ppm		limit/base	current 1	nistory i 2	4
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	1	2	4
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	1 0	2	4
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	1 0 62	2 0 57	4 1 63
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	1 0 62 <1	2 0 57 <1	4 1 63 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	1 0 62 <1 963	2 0 57 <1 897	4 1 63 0 936
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	1 0 62 <1 963 1110	2 0 57 <1 897 991	4 1 63 0 936 1121
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	1 0 62 <1 963 1110 1027	2 0 57 <1 897 991 1033	4 1 63 0 936 1121 965
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm 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	1 0 62 <1 963 1110 1027 1283	2 0 57 <1 897 991 1033 1211	4 1 63 0 936 1121 965 1267
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 00 00 1010 1070 1150 1270 2060	1 0 62 <1 963 1110 1027 1283 3186	2 0 57 <1 897 991 1033 1211 2914	4 1 63 0 936 1121 965 1267 3565
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 00 00 1010 1070 1150 1270 2060	1 0 62 <1 963 1110 1027 1283 3186 current 5	2 0 57 <1 897 991 1033 1211 2914 history1 6	4 1 63 0 936 1121 965 1267 3565 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 00 00 1010 1070 1150 1270 2060	1 0 62 <1 963 1110 1027 1283 3186 current	2 0 57 <1 897 991 1033 1211 2914 history1	4 1 63 0 936 1121 965 1267 3565 history2 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	1 0 62 <1 963 1110 1027 1283 3186 current 5 12 2	2 0 57 <1 897 991 1033 1211 2914 history1 6 8 8 4	4 1 63 0 936 1121 965 1267 3565 history2 6 32 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>Imit/base</b> >25	1 0 62 <1 963 1110 1027 1283 3186 current 5 12 2 2 current	2 0 57 <1 897 991 1033 1211 2914 history1 6 8 4 4 history1	4 1 63 0 936 1121 965 1267 3565 history2 6 32 7 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	1 0 62 <1 963 1110 1027 1283 3186 <u>current</u> 5 12 2 2 <u>current</u> 1.4	2 0 57 <1 897 991 1033 1211 2914 history1 6 8 4 4 history1 0.7	4 1 63 0 936 1121 965 1267 3565 history2 6 32 7 history2 1.8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	1 0 62 <1 963 1110 1027 1283 3186 <i>current</i> 5 12 2 2 <i>current</i> 1.4 1.4 11.7	2 0 57 <1 897 991 1033 1211 2914 history1 6 8 4 4 history1 0.7 8.9	4 1 63 0 936 1121 965 1267 3565 history2 6 32 7 history2 1.8 8.6
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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 <b>imit/base</b> >3 >20 >3	1 0 62 <1 963 1110 1027 1283 3186 <u>current</u> 5 12 2 2 <u>current</u> 1.4 1.4 11.7 22.7	2 0 57 <1 897 991 1033 1211 2914 history1 6 8 4 4 history1 0.7 8.9 19.8	4 1 63 0 936 1121 965 1267 3565 history2 6 32 7 history2 1.8 8.6 22.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	1 0 62 <1 963 1110 1027 1283 3186 <i>current</i> 5 12 2 2 <i>current</i> 1.4 1.4 11.7	2 0 57 <1 897 991 1033 1211 2914 history1 6 8 4 4 history1 0.7 8.9	4 1 63 0 936 1121 965 1267 3565 history2 6 32 7 history2 1.8 8.6
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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 <b>imit/base</b> >3 >20 >3	1 0 62 <1 963 1110 1027 1283 3186 <u>current</u> 5 12 2 2 <u>current</u> 1.4 1.4 11.7 22.7	2 0 57 <1 897 991 1033 1211 2914 history1 6 8 4 4 history1 0.7 8.9 19.8	4 1 63 0 936 1121 965 1267 3565 history2 6 32 7 history2 1.8 8.6 22.0
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 ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 2260 225 220 220 imit/base >3 >20 >30 >30	1 0 62 <1 963 1110 1027 1283 3186 <i>current</i> 5 12 2 <i>current</i> 1.4 11.7 22.7 <i>current</i>	2 0 57 <1 897 991 1033 1211 2914 history1 6 8 8 4 <b>history1</b> 0.7 8.9 19.8 history1	4 1 63 0 936 1121 965 1267 3565 history2 6 32 7 history2 1.8 8.6 22.0 history2

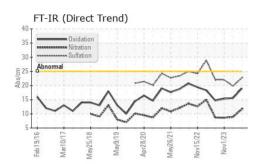


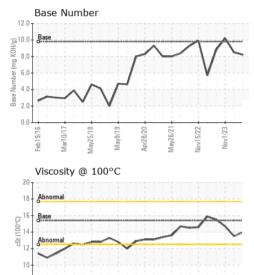
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# **OIL ANALYSIS REPORT**



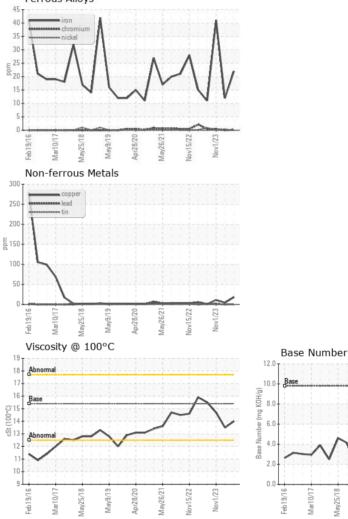


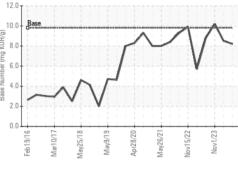
Apr28/20

May26/21 Vov15/22 Nov1/23 -

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	14.0	13.5	14.7
GRAPHS						

Ferrous Alloys





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 017 - Durham Sample No. : GFL0112896 Received : 24 Apr 2024 148 Stone Park Court Lab Number : 06158934 Tested : 25 Apr 2024 Durham, NC Unique Number : 10994357 Diagnosed : 25 Apr 2024 - Wes Davis US 27703 Test Package : FLEET Contact: Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. bill.waring@wearcheck.com T: (919)596-1363 \* - 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: (919)598-1852

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Submitted By: Ren - William Russel

Page 2 of 2