

# **OIL ANALYSIS REPORT**

#### Sample Rating Trend

## NORMAL



# Component

Diesel Engine

## PETRO CANADA DURON SHP 15W40 (6 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.

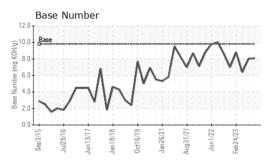
### Fluid Condition

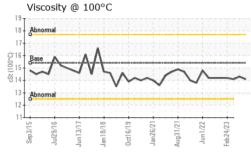
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0071820	GFL0071818	GFL0071840
Sample Date		Client Info		07 Aug 2023	12 Jul 2023	25 Apr 2023
Machine Age	hrs	Client Info		9040	8883	8308
Oil Age	hrs	Client Info		157	575	548
Oil Changed		Client Info		N/A	Changed	Changed
Sample Status				NORMAL	ABNORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron		ASTM D5185m	>90	12	29	27
Chromium	ppm	ASTM D5185m	>90 >20	<1	29	1
	ppm			0		
Nickel	ppm	ASTM D5185m	>2	-	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	6	<u> </u>	16 0
Lead	ppm	ASTM D5185m	>40	0	1	
Copper	ppm	ASTM D5185m	>330	5	23	33
Tin	ppm	ASTM D5185m	>15	<1	3	1
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES						
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	8	6	8
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	8	6	8
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	8 0	6 0	8
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	8 0 62	6 0 61	8 0 63
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	8 0 62 <1	6 0 61 <1	8 0 63 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	8 0 62 <1 929	6 0 61 <1 948	8 0 63 <1 946
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	8 0 62 <1 929 1212	6 0 61 <1 948 1230	8 0 63 <1 946 1197
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	8 0 62 <1 929 1212 1001	6 0 61 <1 948 1230 996	8 0 63 <1 946 1197 1016
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	8 0 62 <1 929 1212 1001 1245	6 0 61 <1 948 1230 996 1301	8 0 63 <1 946 1197 1016 1303
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 0 60 1010 1070 1150 1270 2060	8 0 62 <1 929 1212 1001 1245 3479	6 0 61 <1 948 1230 996 1301 3133	8 0 63 <1 946 1197 1016 1303 3199
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	8 0 62 <1 929 1212 1001 1245 3479 current	6 0 61 <1 948 1230 996 1301 3133 history1	8 0 63 <1 946 1197 1016 1303 3199 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b>	0 0 60 1010 1070 1150 1270 2060 Limit/base	8 0 62 <1 929 1212 1001 1245 3479 current 4	6 0 61 <1 948 1230 996 1301 3133 history1 6	8 0 63 <1 946 1197 1016 1303 3199 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 <b>method</b> ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 Limit/base	8 0 62 <1 929 1212 1001 1245 3479 <u>current</u> 4 2	6 0 61 <1 948 1230 996 1301 3133 history1 6 4	8 0 63 <1 946 1197 1016 1303 3199 history2 4 2
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	8 0 62 <1 929 1212 1001 1245 3479 current 4 2 2 <1	6 0 61 <1 948 1230 996 1301 3133 history1 6 4 4	8 0 63 <1 946 1197 1016 1303 3199 history2 4 2 0 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 ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 <b>limit/base</b> >20	8 0 62 <1 929 1212 1001 1245 3479 <u>current</u> 4 2 <1 <u>current</u> 1	6 0 61 <1 948 1230 996 1301 3133 history1 6 4 4 4 <b>history1</b> 1.7	8 0 63 <1 946 1197 1016 1303 3199 history2 4 2 0 history2 1.4
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 2060 225 >25 >20 <b>limit/base</b> >20	8 0 62 <1 929 1212 1001 1245 3479 current 4 2 <1 current	6 0 61 <1 948 1230 996 1301 3133 history1 6 4 4 4	8 0 63 <1 946 1197 1016 1303 3199 history2 4 2 0 history2
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> >6 >20	8 0 62 <1 929 1212 1001 1245 3479 <u>current</u> 4 2 <1 2 <1 <u>current</u> 1 8.4 20.5	6 0 61 <1 948 1230 996 1301 3133 history1 6 4 4 4 <u>history1</u> 1.7 1.7	8 0 63 <1 946 1197 1016 1303 3199 history2 4 2 0 history2 1.4 1.0.0 21.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 20 20 20 20 20 20 20 20 20 20 20	8 0 62 <1 929 1212 1001 1245 3479 <i>current</i> 4 2 <1 <i>current</i> 1 8.4 20.5 <i>current</i>	6 0 61 <1 948 1230 996 1301 3133 history1 6 4 4 4 history1 1.7 10.8 23.9 history1	8 0 63 <1 946 1197 1016 1303 3199 history2 4 2 0 history2 1.4 10.0 21.3 history2
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 /////////////////////////////////	8 0 62 <1 929 1212 1001 1245 3479 <u>current</u> 4 2 <1 2 <1 <u>current</u> 1 8.4 20.5	6 0 61 <1 948 1230 996 1301 3133 history1 6 4 4 4 <u>history1</u> 1.7 1.7	8 0 63 <1 946 1197 1016 1303 3199 history2 4 2 0 history2 1.4 1.4 10.0 21.3

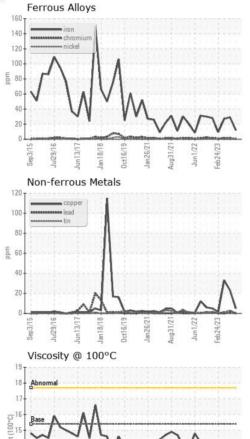


# **OIL ANALYSIS REPORT**





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	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.1	14.3	14.1
GRAPHS						



Jun1/22 -

Feb24/23

: 08 Aug 2023

: 08 Aug 2023

: Wes Davis

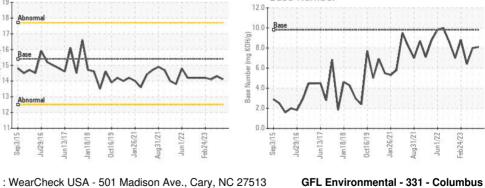
Aug31/21

GUBCUS

Received

Diagnosed

Diagnostician



Base Number



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)

Jan 18/18

531

12 11

Unique Number : 10590264

Laboratory

Sample No.

Lab Number

Abr

Sep3/15

Jul29/16

: GFL0071820

: 05918350

Jun13/17

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