

### **OIL ANALYSIS REPORT**

#### Sample Rating Trend

accesses lances

NORMAL

# Machine Id 811046

#### Component Diesel Engine Fluid

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

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

Test for glycol is negative. There is no indication of any contamination in the oil.

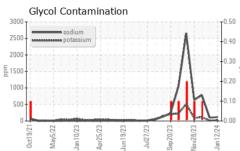
#### Fluid Condition

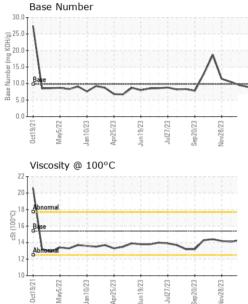
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0090971	GFL0103028	GFL0102995
Sample Date		Client Info		12 Jan 2024	30 Dec 2023	14 Dec 2023
Machine Age	hrs	Client Info		6282	6185	71445
Oil Age	hrs	Client Info		0	71445	65485
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	ATTENTION	SEVERE
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
	0	and the set	11.0011/10.000		h la ha mat	history O
WEAR METAL	5	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m		3	3	6
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	1	3
Lead	ppm	ASTM D5185m	>40	0	0	1
Copper	ppm	ASTM D5185m	>330	<1	<1	<1
Tin	ppm	ASTM D5185m	>15	0	0	0
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 13	history1 14	history2 19
	ppm ppm					
Boron		ASTM D5185m	0	13	14	19
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	13 0	14 0	19 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	13 0 59	14 0 64	19 0 86
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	13 0 59 0	14 0 64 <1	19 0 86 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	13 0 59 0 944	14 0 64 <1 968	19 0 86 0 944
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	13 0 59 0 944 1031	14 0 64 <1 968 1035	19 0 86 0 944 976
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	0 0 60 0 1010 1070 1150	13 0 59 0 944 1031 1024	14 0 64 <1 968 1035 1012	19 0 86 0 944 976 957
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 ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	13 0 59 0 944 1031 1024 1221	14 0 64 <1 968 1035 1012 1206	19 0 86 0 944 976 957 1242
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	13 0 59 0 944 1031 1024 1221 3177	14 0 64 <1 968 1035 1012 1206 3013	19 0 86 0 944 976 957 1242 3208
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	0 0 60 0 1010 1070 1150 1270 2060	13 0 59 0 944 1031 1024 1221 3177 current	14 0 64 <1 968 1035 1012 1206 3013 history1	19 0 86 0 944 976 957 1242 3208 history2
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 <b>method</b>	0 0 60 1010 1070 1150 1270 2060 kimit/base >25	13 0 59 0 944 1031 1024 1221 3177 current 4	14 0 64 <1 968 1035 1012 1206 3013 history1 4	19 0 86 0 944 976 957 1242 3208 history2 11
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm 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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base >25	13 0 59 0 944 1031 1024 1221 3177 current 4 118	14 0 64 <1 968 1035 1012 1206 3013 history1 4 4 103	19 0 86 0 944 976 957 1242 3208 history2 11 11 ▲ 782
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 60 1010 1070 1150 1270 2060 kimit/base >25	13 0 59 0 944 1031 1024 1221 3177 current 4 118 19	14 0 64 <1 968 1035 1012 1206 3013 history1 4 ▲ 103 13	19 0 86 0 944 976 957 1242 3208 history2 11 1 1 × 782 ▲ 113
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >20 >20	13 0 59 0 944 1031 1024 1221 3177 current 4 118 19 0.0	14 0 64 <1 968 1035 1012 1206 3013 history1 4 ▲ 103 13 NEG	19 0 86 0 944 976 957 1242 3208 history2 11 ▲ 782 ▲ 113 ● 0.10
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D2982	0 0 0 1010 1070 1150 1270 2060 2060 225 >20 >20 20 20 3	13 0 59 0 944 1031 1024 1221 3177 current 4 118 19 0.0 current	14 0 64 <1 968 1035 1012 1206 3013 history1 4 103 13 NEG history1	19 0 86 0 944 976 957 1242 3208 history2 11 ▲ 782 ▲ 113 ● 0.10 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D2982 method	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	13 0 59 0 944 1031 1024 1221 3177 <i>current</i> 4 118 19 0.0 <i>current</i> 0.2	14 0 64 <1 968 1035 1012 1206 3013 history1 4 103 13 NEG history1 0.2	19 0 86 0 944 976 957 1242 3208 history2 11 ▲ 782 ▲ 113 ● 0.10 history2 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol 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	13 0 59 0 944 1031 1024 1221 3177 current 4 118 19 0.0 current 0.2 5.6	14 0 64 <1 968 1035 1012 1206 3013 history1 4 103 13 NEG history1 0.2 5.1	19 0 86 0 944 976 957 1242 3208 history2 11 ▲ 782 ▲ 113 ● 0.10 history2 0.3 7.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D2982 <b>method</b> *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 /////////////////////////////////	13 0 59 0 944 1031 1024 1221 3177 current 4 118 19 0.0 current 0.2 5.6 18.0	14 0 64 <1 968 1035 1012 1206 3013 history1 4 103 13 NEG history1 0.2 5.1 17.9	19 0 86 0 944 976 957 1242 3208 history2 11 ▲ 782 ▲ 113 ● 0.10 history2 0.3 7.6 18.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol 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 30 <b>imit/base</b>	13 0 59 0 944 1031 1024 1221 3177 current 4 118 19 0.0 current 0.2 5.6 18.0	14 0 64 <1 968 1035 1012 1206 3013 history1 4 ▲ 103 13 NEG NEG 0.2 5.1 17.9	19 0 86 0 944 976 957 1242 3208 <b>history2</b> 11 ▲ 782 11 3 0.10 <b>history2</b> 0.3 7.6 18.5



## **OIL ANALYSIS REPORT**





0.50					current		
).40	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
).30 glycol	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
).20 🖁	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
0.10	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
0.00	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	14.3	14.1
	GRAPHS Ferrous Alloys						
	120						
	60 40 40 40 40 40 40 40 40 40 4	2/10/23	Sep 20/23	Jan12/24			
	40 20 0 10 0 10 0 10 0 10 10 0 10 1	5		1 4727 Luer 30.0-	Base Number		
	40 20 12/61H0 Non-ferrous Metal 10 0 12/61H0 Viscosity @ 100°C	5		47221LeF 30.0- 25.0-	Base Number		
	40 20 12/15/15/20 Non-ferrous Metall 10 10 10 10 10 10 10 10 10 10	5		47221LeF 30.0- 25.0-	Base Number		
	40 20 12/15/15/20 Non-ferrous Metall 10 10 10 10 10 10 10 10 10 10	5		47221LeF 30.0- 25.0-	Base Number		Λ
	40 20 126 thto Non-ferrous Metall 10 126 thto Non-ferrous Metall 10 127 the Mon-ferrous Metall 10 10 127 typew Viscosity @ 100°C 20 10 10 10 10 10 10 10 10 10 1	5		47221LeF 30.0- 25.0-	Base Number		Λ
	40 40 40 40 40 40 40 40 40 40	5		47221LeF 30.0- 25.0-	Base Number		
	40 20 126 thto Non-ferrous Metall 10 126 thto Non-ferrous Metall 10 127 the Mon-ferrous Metall 10 10 127 typew Viscosity @ 100°C 20 10 10 10 10 10 10 10 10 10 1	5		47251mer	Base Number		
	40 40 40 40 40 40 40 40 40 40	S	Sep 20/23	30.0 25.0 (b)(HQ) (b) 15.0 15.0 15.0 15.0 10.0 10.0 0.0	Base		
	40 20 126 th Non-ferrous Metall 10 10 127 th 10 10 127 th 10 10 10 127 th 10 10 127 th 10 10 127 th 10 10 10 10 10 10 10 10 10 10	5		30.0- 25.0- (6)HOX Bull and Solution and Solution and Solution and Solution and Solution and Solution and Solution and Sol	Base Number	Apr25/23	Sep2013



Unique Number : 10844252 Diagnostician : Wes Davis Test Package : FLEET (Additional Tests: Glycol) 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)

Recieved

Diagnosed

: 22 Jan 2024

:01 Feb 2024

: GFL0090971

: 06067575

Sample No.

Lab Number

4005 Hwy 161 N.

F: