

# **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id 912016 Component

Fluid

Diesel Engine

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

## 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.

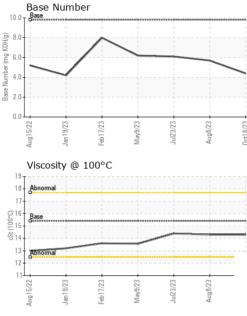
### Fluid Condition

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		GFL0097704	GFL0087324	GFL0087286
Sample Date		Client Info		18 Oct 2023	08 Aug 2023	23 Jul 2023
Machine Age	hrs	Client Info		5427	4867	4714
Oil Age	hrs	Client Info		560	700	616
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method	>0.0	NEG	NEG	NEG
	0		11 11 /1			
WEAR METAL		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m		54	36	37
Chromium	ppm	ASTM D5185m		2	2	1
Nickel	ppm	ASTM D5185m		2	2	2
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m		2	<1	1
Lead	ppm	ASTM D5185m		3	2	0
Copper	ppm	ASTM D5185m	>330	5	5	3
Tin	ppm	ASTM D5185m	>15	1	1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 2	history1 2	history2 4
	ppm ppm					
Boron		ASTM D5185m	0	2	2	4
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	2 5	2 0	4
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 5 66	2 0 61	4 0 68
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 5 66 <1	2 0 61 1	4 0 68 <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	2 5 66 <1 955	2 0 61 1 989	4 0 68 <1 1082
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	2 5 66 <1 955 1168	2 0 61 1 989 1185	4 0 68 <1 1082 1222
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	2 5 66 <1 955 1168 1076	2 0 61 1 989 1185 1018	4 0 68 <1 1082 1222 1135
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	2 5 66 <1 955 1168 1076 1285 2333	2 0 61 1 989 1185 1018 1309	4 0 68 <1 1082 1222 1135 1410
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	2 5 66 <1 955 1168 1076 1285 2333	2 0 61 1 989 1185 1018 1309 2959	4 0 68 <1 1082 1222 1135 1410 3209
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 0 1010 1070 1150 1270 2060	2 5 66 <1 955 1168 1076 1285 2333 current	2 0 61 1 989 1185 1018 1309 2959 history1	4 0 68 <1 1082 1222 1135 1410 3209 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 >25	2 5 66 <1 955 1168 1076 1285 2333 current 6	2 0 61 1 989 1185 1018 1309 2959 history1 5	4 0 68 <1 1082 1222 1135 1410 3209 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm 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> ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >25	2 5 66 <1 955 1168 1076 1285 2333 current 6 13 3	2 0 61 1 989 1185 1018 1309 2959 history1 5 12	4 0 68 <1 1082 1222 1135 1410 3209 history2 4 9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	2 5 66 <1 955 1168 1076 1285 2333 current 6 13 3	2 0 61 1 989 1185 1018 1309 2959 history1 5 12 3	4 0 68 <1 1082 1222 1135 1410 3209 history2 4 9 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm <b>TTS</b>	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	2 5 66 <1 955 1168 1076 1285 2333 <u>current</u> 6 13 3 <u>current</u> 1.6	2 0 61 1 989 1185 1018 1309 2959 history1 5 12 3 history1 1.2	4 0 68 <1 1082 1222 1135 1410 3209 history2 4 9 0 history2 1.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	2 5 66 <1 955 1168 1076 1285 2333 current 6 13 3 3	2 0 61 1 989 1185 1018 1309 2959 history1 5 12 3	4 0 68 <1 1082 1222 1135 1410 3209 history2 4 9 0 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> >4 >20	2 5 66 <1 955 1168 1076 1285 2333 current 6 13 3 current 1.6 11.8	2 0 61 1 989 1185 1018 1309 2959 history1 5 12 3 history1 1.2 1.2 10.3	4 0 68 <1 1082 1222 1135 1410 3209 history2 4 9 0 history2 1.2 1.2 10.7
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 D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 20 20 20 20 20 20 20 20 20	2 5 66 <1 955 1168 1076 1285 2333 current 6 13 3 current 1.6 11.8 26.4 current	2 0 61 1 989 1185 1018 1309 2959 history1 5 12 3 history1 1.2 10.3 23.6 history1	4 0 68 <1 1082 1222 1135 1410 3209 history2 4 9 0 history2 1.2 10.7 24.1 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 2060 225 20 225 20 20 20 20 20 20 20 20 20 20 20 20 20	2 5 66 <1 955 1168 1076 1285 2333 current 6 13 3 Current 1.6 11.8 26.4	2 0 61 1 989 1185 1018 1309 2959 history1 5 12 3 history1 1.2 1.2 10.3 23.6	4 0 68 <1 1082 1222 1135 1410 3209 history2 4 9 0 history2 1.2 1.2 10.7 24.1



# **OIL ANALYSIS REPORT**



VISUAL		method	limit/base	current	history1	histor
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	NORM
Odor	scalar	*Visual	NORML	NORML	NORML	NORM
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPER	RTIES	method	limit/base	current	history1	histor
Visc @ 100°C	cSt	ASTM D445	15.4	14.3	14.3	14.4
GRAPHS						
Ferrous Alloys						
iron						
nickel			1			
chromium pickel			/			
chromium nickel						
nickel	/					
nickel						
D- 						
and a second sec	53	23				
D- 	May9/23	Jui23/23 Aug8/23	Oct18,23			
nickel CZJS10mW Non-ferrous Metals	May9/23 -					
nickel CZJS10mW Non-ferrous Metals	May9/23 -					
nickel Rep 1223 Ron-ferrous Metals	May9/23 -					
Copper Copper	May9/23 -					
Copper Copper	May9/23 -					
CIC/SIDINA CONTINUE CIC/SIDINA EST EST EST EST EST EST EST EST EST EST	May9/23 -					
Non-ferrous Metals	May9/23 -					
nickel nickel nickel czystem Non-ferrous Metals	May9/23 -					
nickel nickel	May9/23 -					
nickel CZCS EZCS	May9/23 -	Jui23/23 +	Oct18/23 -			
Non-ferrous Metals	May9/23 -					
Non-ferrous Metals	May9/23 -	Jui23/23 +	Oct18/23 -	Dace Number		
Non-ferrous Metals	May9/23 -	Jui23/23 +	Oct18/23 -	Base Number		
Copper Sources Sour	May9/23 -	Jui23/23 +	Oct18/23			
Non-ferrous Metals	May9/23 -	Jui23/23 +	0ct18/23			
Non-ferrous Metals	May9/23 -	Jui23/23 +	0ct18/23			
Non-ferrous Metals	May9/23 -	Jui23/23 +	0 cct 873			

Base

2 (

0.0

Aug15/22 -



 Certificate L2367
 Test Package
 : FLEET

 To discuss this sample report, contact Customer Service at 1-800-237-1369.
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 \* - 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)

Feb17/23

May9/23

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Received

Diagnosed

Jan 19/23

: GFL0097704

: 06000291

Jul23/23 -

Diagnostician : Wes Davis

Aug8/23.

0ct18/23 -

: 07 Nov 2023

: 07 Nov 2023

13 Abr

12

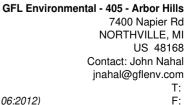
Laboratory

Sample No.

Lab Number

Unique Number : 10728651

Aug15/22



Jul23/23

May9/23 -

Feb17/23

Jan 19/23

Aug8/23 -

0ct18/23