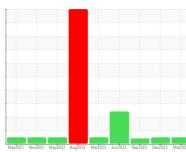


## **OIL ANALYSIS REPORT**

Sample Rating Trend





Component Diesel Engine

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

SAMPLE INFORMATION method

### DIAGNOSIS Recommendation

Resample at the next service interval to monitor.

Machine Id 4706M

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

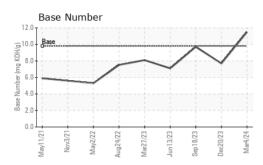
### Fluid Condition

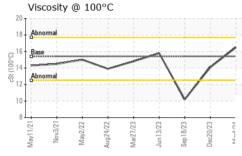
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		methou	iiiiii/base	Current	TIISTOLA	-
Sample Number		Client Info		GFL0107809	GFL0107049	GFL0091466
Sample Date		Client Info		04 Mar 2024	20 Dec 2023	18 Sep 2023
Machine Age	hrs	Client Info		10828	10654	9994
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		Changed	Not Changd	Changed
Sample Status				NORMAL	NORMAL	ATTENTION
CONTANAINAT		mathad	limit/bass	ourroat	biotond	biotory ()
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	0.7
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	76	27	24
Chromium	ppm	ASTM D5185m	>5	2	<1	2
Nickel	ppm	ASTM D5185m	>2	2	<1	0
Titanium	ppm	ASTM D5185m	~ -	<1	0	0
Silver	ppm		>3	0	0	0
Aluminum	ppm	ASTM D5185m	>30	8	2	1
Lead	ppm	ASTM D5185m	>30	6	0	0
Copper	ppm	ASTM D5185m	>150	2	2	3
Tin			>5	2 <1	<1	0
Vanadium	ppm ppm	ASTM D5185m	>0	<1	0	0
Cadmium		ASTM D5185m		<1	0	0
	ppm					
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	method ASTM D5185m	limit/base 0	5	3	48
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	5	3	48
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	5 0	3 0	48 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	5 0 74	3 0 63	48 0 32
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	5 0 74 <1	3 0 63 <1	48 0 32 <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	5 0 74 <1 1332	3 0 63 <1 913	48 0 32 <1 428
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	5 0 74 <1 1332 1461	3 0 63 <1 913 1081	48 0 32 <1 428 1585
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 ASTM D5185m	0 0 60 0 1010 1070 1150	5 0 74 <1 1332 1461 1287	3 0 63 <1 913 1081 955	48 0 32 <1 428 1585 851
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	5 0 74 <1 1332 1461 1287 1677	3 0 63 <1 913 1081 955 1206	48 0 32 <1 428 1585 851 1042
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 0 1010 1070 1150 1270 2060	5 0 74 <1 1332 1461 1287 1677 3336	3 0 63 <1 913 1081 955 1206 2964	48 0 32 <1 428 1585 851 1042 3324
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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 0 60 0 1010 1070 1150 1270 2060	5 0 74 <1 1332 1461 1287 1677 3336 current 12	3 0 63 <1 913 1081 955 1206 2964 history1 3	48 0 32 <1 428 1585 851 1042 3324 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> ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	5 0 74 <1 1332 1461 1287 1677 3336	3 0 63 <1 913 1081 955 1206 2964 history1	48 0 32 <1 428 1585 851 1042 3324 history2 9
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 0 1010 1070 1150 1270 2060 <b>limit/base</b>	5 0 74 <1 1332 1461 1287 1677 3336 current 12 5 6	3 0 63 <1 913 1081 955 1206 2964 <b>history1</b> 3 3	48 0 32 <1 428 1585 851 1042 3324 history2 9 9 9 9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 220 220	5 0 74 <1 1332 1461 1287 1677 3336 current 12 5 6 current	3 0 63 <1 913 1081 955 1206 2964 history1 3 3 2 2 history1	48 0 32 <1 428 1585 851 1042 3324 history2 9 9 9 6 kistory2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 220 220 220 220	5 0 74 <1 1332 1461 1287 1677 3336 current 12 5 6 current 0.3	3 0 63 <1 913 1081 955 1206 2964 history1 3 3 2 2 history1 0.8	48 0 32 <1 428 1585 851 1042 3324 history2 9 9 9 6 history2 0.1
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 2060 2060 220 220 220 220 220 23 20 23 20	5 0 74 <1 1332 1461 1287 1677 3336 current 12 5 6 current 0.3 13.9	3 0 63 <1 913 1081 955 1206 2964 history1 3 3 2 2 history1 0.8 9.7	48 0 32 <1 428 1585 851 1042 3324 history2 9 9 9 6 6 history2 0.1 6.4
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> >20 <b>imit/base</b> >3 >20 >3	5 0 74 <1 1332 1461 1287 1677 3336 <u>current</u> 12 5 6 <u>current</u> 0.3 13.9 22.6	3 0 63 <1 913 1081 955 1206 2964 history1 3 3 2 2 history1 0.8 9.7 21.1	48 0 32 <1 428 1585 851 1042 3324 <b>history2</b> 9 9 9 6 <b>history2</b> 0.1 6.4 20.8
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 ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 2060 220 220 220 220 220 23 20 23 20	5 0 74 <1 1332 1461 1287 1677 3336 Current 12 5 6 Current 0.3 13.9 22.6 Current	3 0 63 <1 913 1081 955 1206 2964 history1 3 3 2 2 history1 0.8 9.7	48 0 32 <1 428 1585 851 1042 3324 history2 9 9 9 6 6 history2 0.1 6.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >20 <b>imit/base</b> >3 >20 >3	5 0 74 <1 1332 1461 1287 1677 3336 <u>current</u> 12 5 6 <u>current</u> 0.3 13.9 22.6	3 0 63 <1 913 1081 955 1206 2964 history1 3 3 2 2 history1 0.8 9.7 21.1	48 0 32 <1 428 1585 851 1042 3324 <b>history2</b> 9 9 9 6 <b>history2</b> 0.1 6.4 20.8
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 ppm TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 2060 220 220 220 220 33 220 330 30	5 0 74 <1 1332 1461 1287 1677 3336 Current 12 5 6 Current 0.3 13.9 22.6 Current	3 0 63 <1 913 1081 955 1206 2964 history1 3 3 3 2 history1 0.8 9.7 21.1 history1	48 0 32 <1 428 1585 851 1042 3324 history2 9 9 9 6 history2 0.1 6.4 20.8 history2

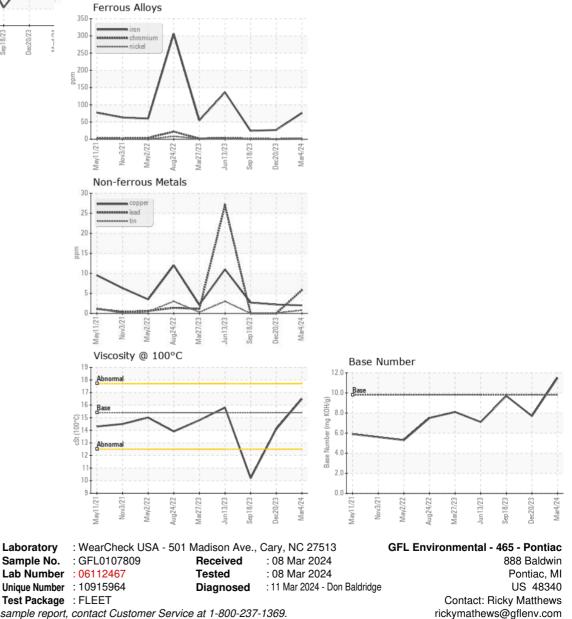


# **OIL ANALYSIS REPORT**





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	16.5	14.1	0.2
GRAPHS						





 Certificate L2367
 Test Package
 : FLEET
 CC

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

 \* - 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:

T: (586)825-9514