

## **OIL ANALYSIS REPORT**

Sample Rating Trend





Machine Id 1250M

Fluid

Component Diesel Engine

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

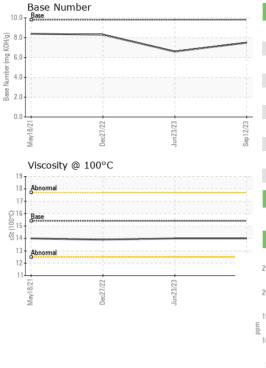
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	NATION	method	limit/base	current	history1	history2	
Sample Number		Client Info		GFL0092942	GFL0055938	GFL0067635	
Sample Date		Client Info		12 Sep 2023	23 Jun 2023	27 Dec 2022	
Machine Age	hrs	Client Info	<b>12553</b> 12076		12076	11511	
Oil Age	hrs	Client Info	12076		596	0	
Oil Changed		Client Info	N/A Changed		Changed	N/A	
Sample Status			NORMAL		NORMAL	NORMAL	
CONTAMINATI	ON	method	limit/base	current	history1	history2	
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0	
Glycol		WC Method		NEG	NEG	NEG	
WEAR METALS	S	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>120	17	24	6	
Chromium	ppm	ASTM D5185m	>20	1	1	<1	
Nickel	ppm	ASTM D5185m	>5	<1	<1	0	
Titanium	ppm	ASTM D5185m	>2	<1	<1	0	
Silver	ppm	ASTM D5185m	>2	0	0	0	
Aluminum	ppm	ASTM D5185m	>20	5	8	2	
Lead	ppm	ASTM D5185m	>40	1	1	<1	
Copper	ppm	ASTM D5185m	>330	3	9	<1	
Tin	ppm	ASTM D5185m	>15	2	2	<1	
Antimony	ppm	ASTM D5185m					
Vanadium	ppm	ASTM D5185m		0	0	0	
Cadmium	ppm	ASTM D5185m		<1	<1	0	
ADDITIVES		method	limit/base	current	history1	history2	
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current <1	history1 <1	90	
	ppm ppm						
Boron		ASTM D5185m	0	<1	<1	90	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	<1 44	<1 <1	90 0 64 <1	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	<1 44 57 1 894	<1 <1 67	90 0 64	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	<1 44 57 1 894 989	<1 <1 67 <1	90 0 64 <1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	<1 44 57 1 894 989 889	<1 <1 67 <1 967 1134 970	90 0 64 <1 884 1111 975	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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 44 57 1 894 989 889 1145	<1 <1 67 <1 967 1134 970 1268	90 0 64 <1 884 1111 975 1181	
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	<1 44 57 1 894 989 889	<1 <1 67 <1 967 1134 970	90 0 64 <1 884 1111 975	
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 44 57 1 894 989 889 1145	<1 <1 67 <1 967 1134 970 1268	90 0 64 <1 884 1111 975 1181	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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	<1 44 57 1 894 989 889 1145 2842	<1 <1 67 <1 967 1134 970 1268 3100	90 0 64 <1 884 1111 975 1181 3352	
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 0 60 1010 1070 1150 1270 2060	<1 44 57 1 894 989 889 1145 2842 current	<1 <1 67 <1 967 1134 970 1268 3100 history1 6 9	90 0 64 <1 884 1111 975 1181 3352 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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	<1 44 57 1 894 989 889 1145 2842 current 8	<1 <1 67 <1 967 1134 970 1268 3100 history1 6	90 0 64 <1 884 1111 975 1181 3352 history2 16	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 imit/base	<1 44 57 1 894 989 889 1145 2842 current 8 7	<1 <1 67 <1 967 1134 970 1268 3100 history1 6 9	90 0 64 <1 884 1111 975 1181 3352 history2 16 2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>Jimit/base</b> >25	<1 44 57 1 894 989 889 1145 2842 current 8 7 5	<1 <1 67 <1 967 1134 970 1268 3100 history1 6 9 5	90 0 64 <1 884 1111 975 1181 3352 history2 16 2 2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	<1 44 57 1 894 989 889 1145 2842 current 8 7 5 current	<1 <1 67 <1 967 1134 970 1268 3100 history1 6 9 5 5	90 0 64 <1 884 1111 975 1181 3352 history2 16 2 2 2 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	<1 44 57 1 894 989 889 1145 2842 current 8 7 5 current 1.1	<1 <1 67 <1 967 1134 970 1268 3100 history1 6 9 5 5 history1 1.4	90 0 64 <1 884 1111 975 1181 3352 history2 16 2 2 history2 0.6	
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 t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 >20 <b>imit/base</b> >4 >20	<1 44 57 1 894 989 889 1145 2842 current 8 7 5 current 1.1 8.3	<1 <1 <1 67 <1 967 1134 970 1268 3100 history1 6 9 5 history1 1.4 11.7	90 0 64 <1 884 1111 975 1181 3352 history2 16 2 2 history2 0.6 7.4	
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 t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 <b>imit/base</b> >20 <b>imit/base</b> >20	<1 44 57 1 894 989 889 1145 2842 current 8 7 5 current 1.1 8.3 20.5	<1 <1 67 <1 967 1134 970 1268 3100 history1 6 9 5 history1 1.4 11.7 23.2	90 0 64 <1 884 1111 975 1181 3352 history2 16 2 2 2 history2 0.6 7.4 19.0	



# **OIL ANALYSIS REPORT**

VISUAL



		White Metal Yellow Metal Precipitate Silt	scalar scalar scalar scalar	*Visual *Visual *Visual *Visual	NONE NONE NONE	NONE NONE NONE NONE	NONE NONE NONE	NONE NONE NONE
<b>Dec2</b> /1/22	Sap 12/23	Debris Sand/Dirt Appearance Odor Emulsified Water Free Water	scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual	NONE NORML NORML >0.2	NONE NORML NORML NEG NEG	NONE NORML NORML NEG NEG	NONE NORML NORML NEG NEG
		FLUID PROPE Visc @ 100°C GRAPHS	cSt	method ASTM D445	limit/base 15.4	current 14.0	history1 14.0	history2 13.9
Dec27/122 +		Ferrous Alloys		Jun23/23	Sep12/23			
		Viscosity @ 100°(			10.0 - (0, 8.0 - (0, HCX) (0, 0, - ) HCX (0, 10, - ) HCX (0, -) HCX (0, -	Base Number Base		
Certificate L2367	Laboratory Sample No. Lab Number Unique Number Test Package	: WearCheck USA - : GFL0092942 : 05952534 : 10648493 : FLEET	Received Diagnose Diagnosti	: 15 8 ed : 18 8 ician : Wes	ry, NC 27513 Sep 2023 Sep 2023 S Davis	GFL Envir	Cl	Western Ave heboygan, MI US 49721 act: Chris Gee
* - Denotes tes	t methods that a	contact Customer Serv are outside of the ISO i ifications are based on i	17025 sco <sub>l</sub>	be of accred	itation.	CGM 106:2012)		@gflenv.com 231)597-8553 F:

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