

## **OIL ANALYSIS REPORT**

Sample Rating Trend





Machine Id 4679M Component

Diesel Engine

### PETRO CANADA DURON SHP 15W40 (5 GAL)

DIAGNOSIS	
Recommendation	
necommenuation	

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

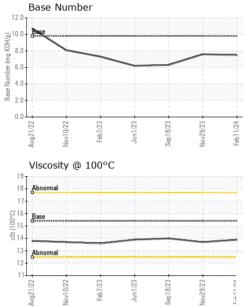
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0106704	GFL0097690	GFL0087260
Sample Date		Client Info		11 Feb 2024	29 Nov 2023	18 Sep 2023
Machine Age	nrs	Client Info		14207	13597	13013
Oil Age	nrs	Client Info		605	566	650
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATIC	N	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron p	opm	ASTM D5185m	>90	9	9	15
		ASTM D5185m	>20	<1	<1	0
		ASTM D5185m	>2	0	<1	0
	· .	ASTM D5185m	>2	<1	<1	0
		ASTM D5185m	>2	0	0	0
		ASTM D5185m	>20	2	2	<1
Lead	opm	ASTM D5185m	>40	0	<1	<1
		ASTM D5185m	>330	2	1	1
Tin p	opm	ASTM D5185m	>15	0	<1	<1
Vanadium p	opm	ASTM D5185m		<1	<1	0
Cadmium n	opm	ASTM D5185m		0	0	0
	Spin	AUTIVI DUTUUIII		U	0	0
ADDITIVES	opin	method	limit/base	current	history1	history2
ADDITIVES	•		limit/base	-	-	-
ADDITIVES Boron p	opm	method ASTM D5185m		current	history1	history2
ADDITIVES Boron p Barium p	opm opm	method ASTM D5185m	0	current 3	history1 2	history2
ADDITIVES Boron p Barium p Molybdenum p	opm opm opm	method ASTM D5185m ASTM D5185m	0	current 3 0	history1 2 0	history2 1 0
ADDITIVES Boron p Barium p Molybdenum p Manganese p	opm opm opm opm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 3 0 62	history1 2 0 59	history2 1 0 62
ADDITIVES Boron p Barium p Molybdenum p Manganese p Magnesium p	opm opm opm opm opm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 3 0 62 0	history1 2 0 59 <1	history2 1 0 62 0
ADDITIVES Boron p Barium p Molybdenum p Manganese p Magnesium p Calcium p	opm opm opm opm opm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 3 0 62 0 971	history1 2 0 59 <1 963	history2 1 0 62 0 1011
ADDITIVES Boron p Barium p Molybdenum p Manganese p Magnesium p Calcium p Phosphorus p	opm opm opm opm opm opm opm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	current           3           0           62           0           971           1155	history1 2 0 59 <1 963 1074	history2 1 0 62 0 1011 1160
ADDITIVES Boron p Barium p Molybdenum p Manganese p Magnesium p Calcium p Phosphorus p Zinc p	opm opm opm opm opm opm opm opm	Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	current           3           0           62           0           971           1155           1131	history1 2 0 59 <1 963 1074 1042	history2 1 0 62 0 1011 1160 1073
ADDITIVES Boron p Barium p Molybdenum p Manganese p Magnesium p Calcium p Phosphorus p Zinc p	opm opm opm opm opm opm opm opm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current           3           0           62           0           971           1155           1131           1371	history1 2 0 59 <1 963 1074 1042 1282	history2 1 0 62 0 1011 1160 1073 1393
ADDITIVES Boron p Barium p Molybdenum p Manganese p Magnesium p Calcium p Phosphorus p Zinc p Sulfur p	oppm oppm oppm oppm oppm oppm oppm oppm	method 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	current           3           0           62           0           971           1155           1131           1371           3273	history1 2 0 59 <1 963 1074 1042 1282 2770	history2 1 0 62 0 1011 1160 1073 1393 3123
ADDITIVES Boron p Barium p Molybdenum p Manganese p Magnesium p Calcium p Phosphorus p Zinc p Sulfur p CONTAMINANTS	oppm oppm oppm oppm oppm oppm oppm oppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	current           3           0           62           0           971           1155           1131           1371           3273           current	history1 2 0 59 <1 963 1074 1042 1282 2770 history1	history2 1 0 62 0 1011 1160 1073 1393 3123 history2
ADDITIVES Boron p Barium p Molybdenum p Manganese p Magnesium p Calcium p Phosphorus p Zinc p Sulfur p CONTAMINANT Silicon p	opm opm opm opm opm opm opm opm opm opm	method 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 <b>limit/base</b> >25	current           3           0           62           0           971           1155           1131           1371           3273           current           5	history1           2           0           59           <1           963           1074           1042           1282           2770           history1           5	history2           1           0           62           0           1011           1160           1073           1393           3123           history2           4
ADDITIVES Boron p Barium p Molybdenum p Manganese p Magnesium p Calcium p Phosphorus p Zinc p Sulfur p CONTAMINANT Silicon p	opm opm opm opm opm opm opm opm opm opm	methodASTM D5185mASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	current           3           0           62           0           971           1155           1131           1371           3273           current           5           4	history1           2           0           59           <1           963           1074           1042           1282           2770           history1           5           4	history2         1         0         62         0         1011         1160         1073         1393         3123         history2         4         8
ADDITIVES Boron p Barium p Molybdenum p Manganese p Magnesium p Calcium p Calcium p Calcium p Sulfur p Sulfur p CONTAMINANT Silicon p Sodium p Potassium p	opm opm opm opm opm opm opm opm opm S opm opm	method ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20	current           3           0           62           0           971           1155           1131           1371           3273           current           5           4           1	history1         2         0         59         <1         963         1074         1042         1282         2770         history1         5         4         2	history2         1         0         62         0         1011         1160         1073         1393         3123         history2         4         8         <1
ADDITIVES Boron p Barium p Molybdenum p Manganese p Magnesium p Calcium p Calcium p Calcium p Calcium p Sulfur p Contaminant p Solicon p Sodium p Potassium p Contasium p	opm opm opm opm opm opm opm opm opm S opm opm	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20	current           3           0           62           0           971           1155           1131           1371           3273           current           5           4           1           current	history1         2         0         59         <1         963         1074         1042         1282         2770         history1         5         4         2         history1	history2         1         0         62         0         1011         1160         1073         1393         3123         history2         4         8         <1         history2
ADDITIVES         Boron       p         Barium       p         Molybdenum       p         Manganese       p         Magnesium       p         Calcium       p         Phosphorus       p         Zinc       p         Sulfur       p         Sodium       p         Potassium       p         INFRA-RED       p         Nitration       p	opm opm opm opm opm opm opm opm opm opm	method ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20 <b>limit/base</b>	current           3           0           62           0           971           1155           1131           1371           3273           current           5           4           1           current           0.2	history1         2         0         59         <1         963         1074         1042         1282         2770         history1         5         4         2         history1         0.2	history2           1           0           62           0           1011           1160           1073           3123           history2           4           8           <1           history2           0           0.3
ADDITIVES         Boron       p         Barium       p         Molybdenum       p         Manganese       p         Magnesium       p         Calcium       p         Phosphorus       p         Zinc       p         Sulfur       p         Sodium       p         Potassium       p         INFRA-RED       p         Nitration       p	oppm oppm oppm oppm oppm oppm oppm oppm	methodASTM D5185mASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 >20 <b>imit/base</b> >20	current           3           0           62           0           971           1155           1131           1371           3273           current           5           4           1           current           0.2           8.6	history1         2         0         59         <1         963         1074         1042         1282         2770         history1         5         4         2         history1         5         4         2         history1         0.2         8.0	history2         1         0         62         0         1011         1160         1073         3123         history2         4         8         <1         history2         0.3         9.6
ADDITIVES Boron p Barium p Molybdenum p Manganese p Magnesium p Calcium p Phosphorus p Zinc p Sulfur p CONTAMINANT Silicon p Sodium p Potassium p INFRA-RED Soot % 9 Nitration A Sulfation A	opm opm opm opm opm opm opm opm opm opm	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 <u>imit/base</u> >6 20 20	current           3           0           62           0           971           1155           1131           1371           3273           current           5           4           1           current           0.2           8.6           19.3	history1         2         0         59         <1         963         1074         1042         1282         2770         history1         5         4         2         history1         0.2         8.0         19.1	history2         1         0         62         0         1011         1160         1073         3123         history2         4         8         <1         history2         0.3         9.6         20.7



# **OIL ANALYSIS REPORT**

VISUAL



Laboratory Sample No. Lab Number Unique Number Test Package To discuss this sample report,	: WearCheck USA - 5 : GFL0106704 : 06092647	01 Madiso Rece Teste	1 Madison Ave., Cary, NC 27513 GFL Er Received : 19 Feb 2024 Tested : 20 Feb 2024 Diagnosed : 20 Feb 2024 - Wes Davis				nvironmental - 405 - Arbor Hills 7400 Napier Rd NORTHVILLE, MI US 48168 Contact: John Nahal jnahal@gflenv.com T:		
		Mug21/22	Jun1/23	Sep18/23 Sep18/23	.8. .0. .0. .0. .0. .0. .0. .0. .0. .0.	0	Jun1/23	Sep 10/23	
		19 18 - Abnormal 17			12. (0) (0) (0) (0) (0) (0) (0) (0) (0) (0)	0 - <b>Disc</b>			
		Viscosity @ 100 <sup>c</sup>	Jun1/23	Sep 18/23	Feb11/24				
		б. 6. 4.							
		Non-ferrous Met	als						
		Aug21/22	Jun1/23	Sep 18/23 Nov29/23	Feb11/24				
, <sub>2</sub>	N								
Jun 1/23	Nov29/23	Ferrous Alloys							
		Visc @ 100°C GRAPHS	cSt	ASTM D445	15.4	13.9	13.7	14.0	
		FLUID PROP			limit/base	current	history1	history2	
		Emulsified Water Free Water	scalar scalar	*Visual *Visual	>0.2	NEG NEG	NEG NEG	NEG NEG	
Jun 1/23 Sep 1 8/23	Nov29/23 Feb11/24	Odor	scalar	*Visual	NORML	NORML	NORML	NORML	
/23	/23	Sand/Dirt Appearance	scalar scalar	*Visual *Visual	NONE NORML	NONE NORML	NONE NORML	NONE NORML	
		Silt Debris	scalar scalar	*Visual *Visual	NONE NONE	NONE NONE	NONE NONE	NONE	
		Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE	
		White Metal Yellow Metal	scalar scalar	*Visual *Visual	NONE NONE	NONE NONE	NONE	NONE	



Submitted By: John Nahal