

## **OIL ANALYSIS REPORT**

Sample Rating Trend





Machine Id 795M Component Diesel Engine

Fluid

## PETRO CANADA DURON SHP 15W40 (36 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.

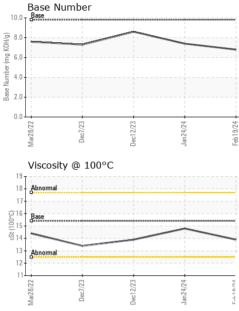
### Fluid Condition

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	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0110145	GFL0110054	GFL0104226
Sample Date		Client Info		19 Feb 2024	24 Jan 2024	12 Dec 2023
Machine Age	hrs	Client Info		8277	8207	8098
Oil Age	hrs	Client Info		600	600	0
Oil Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	ATTENTION	NORMAL
CONTAMINAT	ION	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 METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>75	41	<b>1</b> 73	7
Chromium	ppm	ASTM D5185m	>5	2	2	<1
Nickel	ppm	ASTM D5185m	>4	<1	1	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	8	2
Lead	ppm	ASTM D5185m	>25	4	7	0
Copper	ppm	ASTM D5185m	>100	2	2	<1
Tin	ppm	ASTM D5185m	>4	1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 1	history1 3	history2 1
	ppm ppm		0			
Boron		ASTM D5185m	0	1	3	1
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	1 0	3 <1	1 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	1 0 56	3 <1 57	1 0 52
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	1 0 56 <1	3 <1 57 1	1 0 52 <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	1 0 56 <1 907	3 <1 57 1 876	1 0 52 <1 889
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	1 0 56 <1 907 983	3 <1 57 1 876 975	1 0 52 <1 889 967
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	0 0 60 0 1010 1070 1150	1 0 56 <1 907 983 951	3 <1 57 1 876 975 986	1 0 52 <1 889 967 973
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 0 56 <1 907 983 951 1180	3 <1 57 1 876 975 986 1172	1 0 52 <1 889 967 973 1218
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	1 0 56 <1 907 983 951 1180 2708	3 <1 57 1 876 975 986 1172 2464	1 0 52 <1 889 967 973 1218 2956
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 0 1010 1070 1150 1270 2060	1 0 56 <1 907 983 951 1180 2708 current	3 <1 57 1 876 975 986 1172 2464 history1	1 0 52 <1 889 967 973 1218 2956 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 <b>limit/base</b> >25	1 0 56 <1 907 983 951 1180 2708 current 5	3 <1 57 1 876 975 986 1172 2464 history1 19	1 0 52 <1 889 967 973 1218 2956 history2 2
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 ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	1 0 56 <1 907 983 951 1180 2708 current 5 2	3 <1 57 1 876 975 986 1172 2464 <b>history1</b> 19 8	1 0 52 <1 889 967 973 1218 2956 history2 2 1
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 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20	1 0 56 <1 907 983 951 1180 2708 <u>current</u> 5 2 0	3 <1 57 1 876 975 986 1172 2464 <b>history1</b> 19 8 4	1 0 52 <1 889 967 973 1218 2956 history2 2 1 2 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 ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >20 20	1 0 56 <1 907 983 951 1180 2708 <b>current</b> 5 2 0 0	3 <1 57 1 876 975 986 1172 2464 history1 19 8 4 4 history1	1 0 52 <1 889 967 973 1218 2956 history2 2 1 2 2 1 2 2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 >20 <b>imit/base</b> >20	1 0 56 <1 907 983 951 1180 2708 <u>current</u> 5 2 0 0 <u>current</u> 0.5	3 <1 57 1 876 975 986 1172 2464 history1 19 8 4 4 history1 0.9	1 0 52 <1 889 967 973 1218 2956 history2 2 1 2 2 1 2 2 1 2 1 2 1 2 1 2 2
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 <b>imit/base</b> >25 >20 <b>imit/base</b> >20	1 0 56 <1 907 983 951 1180 2708 <i>current</i> 5 2 0 <i>current</i> 0.5 9.6	3 <1 57 1 876 975 986 1172 2464 history1 19 8 4 4 history1 0.9 13.8	1 0 52 <1 889 967 973 1218 2956 history2 2 1 2 2 1 2 2 history2 0.3 6.7
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 <b>imit/base</b> >20 20 20	1 0 56 <1 907 983 951 1180 2708 <u>current</u> 5 2 2 0 <u>current</u> 0.5 9.6 20.1	3 <1 57 1 876 975 986 1172 2464 history1 19 8 4 4 history1 0.9 13.8 25.8	1 0 52 <1 889 967 973 1218 2956 <b>history2</b> 2 1 2 2 1 2 <b>history2</b> 0.3 6.7 18.9
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 D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 2260 225 220 220 imit/base >6 >20 >30 imit/base	1 0 56 <1 907 983 951 1180 2708 <i>current</i> 5 2 2 0 <i>current</i> 0.5 9.6 20.1 <i>current</i>	3 <1 57 1 876 975 986 1172 2464 history1 19 8 4 4 history1 0.9 13.8 25.8 history1	1 0 52 <1 889 967 973 1218 2956 history2 2 1 2 2 1 2 2 history2 0.3 6.7 18.9 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	13.9	14.8	13.9
GRAPHS						
Ferrous Alloys						

