

## **OIL ANALYSIS REPORT**

#### Area (NE1652) Machine Id 2715 PETERBILT 567 Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (48 QTS)

## DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

Fluid

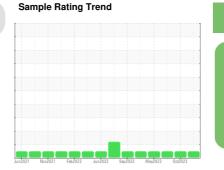
All component wear rates are normal.

#### 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.





NORMAL

SAMPLE INFORMATION method limit/base current history1

Sample Number Sample Date Machine Age Oil Age Oil Changed Sample Status	hrs hrs	Client Info Client Info Client Info Client Info		GFL0103157 18 Jan 2024 15040 0 Changed NORMAL	GFL0094679 24 Oct 2023 14350 556 Changed NORMAL	GFL0089336 14 Aug 2023 13794 614 Changed 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	>165	18	21	13
Chromium	ppm	ASTM D5185m	>5	1	1	<1
Nickel	ppm	ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m		2	3	3
Lead	ppm	ASTM D5185m	>150	2	3	2
Copper	ppm	ASTM D5185m		<1	<1	<1
Tin	ppm	ASTM D5185m	>5	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 3	history1 5	history2 2
	ppm ppm					
Boron		ASTM D5185m	0	3	5	2
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	3 <1	5	2 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	3 <1 66	5 3 79	2 0 63
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 <1 66 <1	5 3 79 <1	2 0 63 <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 1070 1150	3 <1 66 <1 1073	5 3 79 <1 1227	2 0 63 <1 1032 1184 1083
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	3 <1 66 <1 1073 1176	5 3 79 <1 1227 1305	2 0 63 <1 1032 1184 1083 1325
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	3 <1 66 <1 1073 1176 1158	5 3 79 <1 1227 1305 1397	2 0 63 <1 1032 1184 1083
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	3 <1 66 <1 1073 1176 1158 1372	5 3 79 <1 1227 1305 1397 1542	2 0 63 <1 1032 1184 1083 1325
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 1010 1070 1150 1270 2060 limit/base	3 <1 66 <1 1073 1176 1158 1372 3121	5 3 79 <1 1227 1305 1397 1542 4127	2 0 63 <1 1032 1184 1083 1325 3622
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base	3 <1 66 <1 1073 1176 1158 1372 3121 current	5 3 79 <1 1227 1305 1397 1542 4127 history1	2 0 63 <1 1032 1184 1083 1325 3622 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 1010 1070 1150 1270 2060 limit/base	3 <1 66 <1 1073 1176 1158 1372 3121 current 13	5 3 79 <1 1227 1305 1397 1542 4127 history1 22	2 0 63 <1 1032 1184 1083 1325 3622 history2 30
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >35	3 <1 66 <1 1073 1176 1158 1372 3121 current 13 6	5 3 79 <1 1227 1305 1397 1542 4127 history1 22 6	2 0 63 <1 1032 1184 1083 1325 3622 history2 30 6
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 0 1010 1070 1150 1270 2060 limit/base >35	3 <1 66 <1 1073 1176 1158 1372 3121 current 13 6 2	5 3 79 <1 1227 1305 1397 1542 4127 history1 22 6 5 5 history1	2 0 63 <1 1032 1184 1083 1325 3622 history2 30 6 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >35 ->20 limit/base	3 <1 66 <1 1073 1176 1158 1372 3121 current 13 6 2 2 current	5 3 79 <1 1227 1305 1397 1542 4127 <b>history1</b> 22 6 5	2 0 63 <1 1032 1184 1083 1325 3622 history2 30 6 7 7 history2 0.4
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 imit/base >35 >20 imit/base >7.5	3 <1 66 <1 1073 1176 1158 1372 3121 current 13 6 2 2 current 0.7	5 3 79 <1 1227 1305 1397 1542 4127 history1 22 6 5 5 history1 0.5	2 0 63 <1 1032 1184 1083 1325 3622 history2 30 6 7 7 history2
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 imit/base >35 20 imit/base >20	3 <1 66 <1 1073 1176 1158 1372 3121 <i>current</i> 13 6 2 2 <i>current</i> 0.7 11.4	5 3 79 <1 1227 1305 1397 1542 4127 history1 22 6 5 5 history1 0.5 11.3	2 0 63 <1 1032 1184 1083 1325 3622 history2 30 6 7 history2 0.4 10.4
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 D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 imit/base >35 >20 imit/base >7.5 >20 >30 imit/base	3 <1 66 <1 1073 1176 1158 1372 3121 <i>current</i> 13 6 2 <i>current</i> 0.7 11.4 23.6 <i>current</i>	5 3 79 <1 1227 1305 1397 1542 4127 <b>history1</b> 22 6 5 <b>history1</b> 0.5 11.3 23.4 <b>history1</b>	2 0 63 <1 1032 1184 1083 1325 3622 history2 30 6 7 7 history2 0.4 10.4 22.0 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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >35 >20 <b>imit/base</b> >7.5 >20	3 <1 66 <1 1073 1176 1158 1372 3121 <u>current</u> 13 6 2 <u>current</u> 0.7 11.4 23.6	5 3 79 <1 1227 1305 1397 1542 4127 <b>history1</b> 22 6 5 <b>bistory1</b> 0.5 11.3 23.4	2 0 63 <1 1032 1184 1083 1325 3622 history2 30 6 7 7 history2 0.4 10.4 22.0



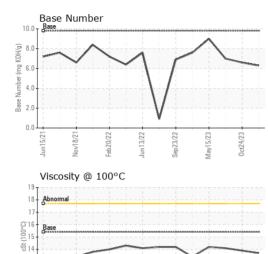
13 Abno

12

Jun15/21

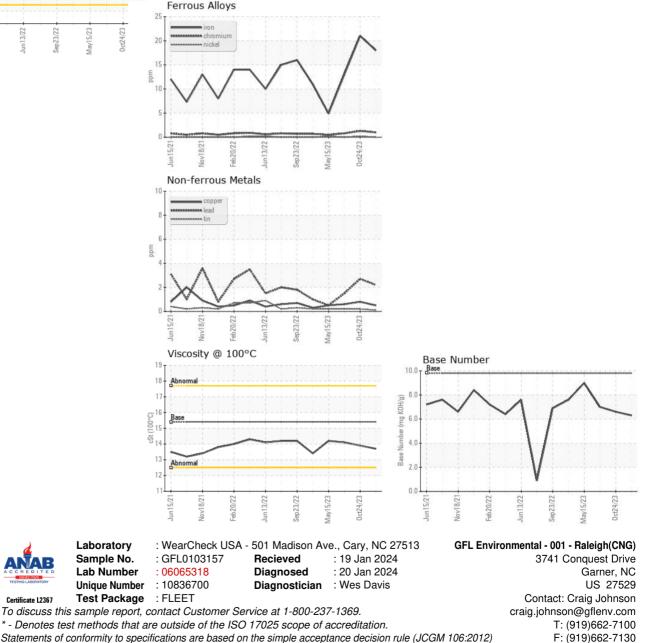
Vov18/2

# **OIL ANALYSIS REPORT**



ah20/72

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	13.7	13.9	14.1
GRAPHS						
Forrous Allove						



Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)