

## **OIL ANALYSIS REPORT**

Sample Rating Trend





# Machine Id 928028-1156

Component Diesel Engine Fluid

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.

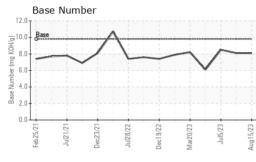
#### Fluid Condition

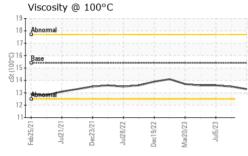
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0090510	GFL0083975	GFL0083979
Sample Date		Client Info		15 Aug 2023	25 Jul 2023	05 Jul 2023
Machine Age	hrs	Client Info		16152	15926	15738
Oil Age	hrs	Client Info		600	188	217
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	6	10	6
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	<1	<1	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	2	3	2
Lead	ppm	ASTM D5185m	>40	<1	<1	<1
Copper	ppm	ASTM D5185m	>330	1	2	1
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES		methou	iiiiii/base	current	Thistory I	Thistory Z
Boron	ppm	ASTM D5185m	0	3	4	4
	ppm ppm					
Boron		ASTM D5185m	0	3	4	4
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	3 2	4 0	4
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	3 2 63	4 0 86	4 0 63
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 2 63 <1	4 0 86 <1	4 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	3 2 63 <1 912	4 0 86 <1 1213	4 0 63 <1 899
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	3 2 63 <1 912 1099	4 0 86 <1 1213 1455	4 0 63 <1 899 1101
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 2 63 <1 912 1099 987	4 0 86 <1 1213 1455 1303	4 0 63 <1 899 1101 980
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 2 63 <1 912 1099 987 1177	4 0 86 <1 1213 1455 1303 1576	4 0 63 <1 899 1101 980 1167
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	3 2 63 <1 912 1099 987 1177 2969	4 0 86 <1 1213 1455 1303 1576 3986	4 0 63 <1 899 1101 980 1167 2825
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	3 2 63 <1 912 1099 987 1177 2969 current	4 0 86 <1 1213 1455 1303 1576 3986 history1	4 0 63 <1 899 1101 980 1167 2825 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 ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	3 2 63 <1 912 1099 987 1177 2969 current 3	4 0 86 <1 1213 1455 1303 1576 3986 history1 4	4 0 63 <1 899 1101 980 1167 2825 history2 3
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	0 0 60 1010 1070 1150 1270 2060 <b>limit/base</b>	3 2 63 <1 912 1099 987 1177 2969 current 3 6	4 0 86 <1 1213 1455 1303 1576 3986 history1 4 17	4 0 63 <1 899 1101 980 1167 2825 history2 3 11
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	3 2 63 <1 912 1099 987 1177 2969 current 3 6 1	4 0 86 <1 1213 1455 1303 1576 3986 history1 4 17 2	4 0 63 <1 899 1101 980 1167 2825 history2 3 11 2
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>Imit/base</b> >25	3 2 63 <1 912 1099 987 1177 2969 current 3 6 1 1	4 0 86 <1 1213 1455 1303 1576 3986 history1 4 17 2 history1	4 0 63 <1 899 1101 980 1167 2825 history2 3 11 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 ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20 <b>limit/base</b>	3 2 63 <1 912 1099 987 1177 2969 current 3 6 1 1 current 0.4	4 0 86 <1 1213 1455 1303 1576 3986 history1 4 17 2 history1 0.4	4 0 63 <1 899 1101 980 1167 2825 history2 3 11 2 2 3 11 2 history2 0.3
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 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	3 2 63 <1 912 1099 987 1177 2969 current 3 6 1 current 0.4 6.6	4 0 86 <1 1213 1455 1303 1576 3986 history1 4 17 2 history1 0.4 7.2	4 0 63 <1 899 1101 980 1167 2825 history2 3 111 2 history2 0.3 6.8
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 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	3 2 63 <1 912 1099 987 1177 2969 <u>current</u> 3 6 1 <u>current</u> 0.4 6.6 18.8	4 0 86 <1 1213 1455 1303 1576 3986 history1 4 17 2 history1 0.4 7.2 19.2	4 0 63 <1 899 1101 980 1167 2825 history2 3 11 2 2 bistory2 0.3 6.8 19.3
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 2260 225 220 220 imit/base >20 >20 >30 imit/base	3 2 63 <1 912 1099 987 1177 2969 Current 3 6 1 Current 0.4 6.6 18.8 Current	4 0 86 <1 1213 1455 1303 1576 3986 history1 4 17 2 history1 0.4 7.2 19.2 history1	4 0 63 <1 899 1101 980 1167 2825 history2 3 11 2 5 history2 0.3 6.8 19.3 history2

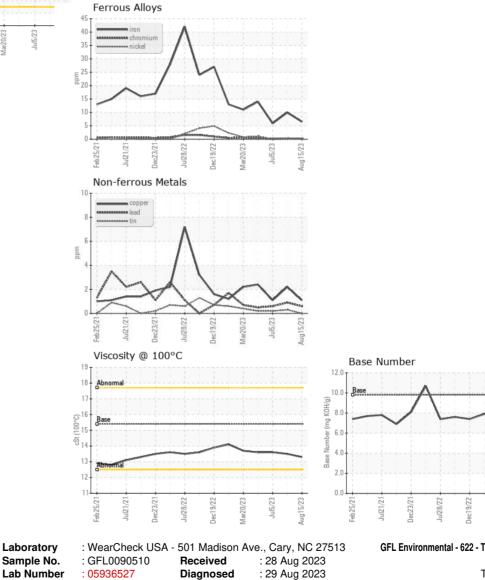


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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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	13.3	13.5	13.6
GRAPHS						



Diagnostician : Wes Davis





Certificate 12367 Test Package : FLEET To discuss this sample report, contact Customer Service at 1-800-237-1369.

Unique Number : 10621798

\* - 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)

Aug15/23

lul5/23

Mar20/23

Submitted By: TECHNICIAN ACCOUNT