

## **OIL ANALYSIS REPORT**

Sample Rating Trend



## Machine Id 926009-9011

Component Diesel Engine

Fluid PETRO CANADA DURON SHP 15W40 (--- LTR)

## 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.

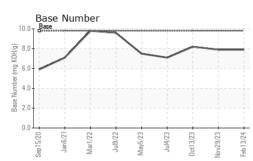
## Fluid Condition

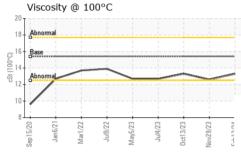
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

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SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0112710	GFL0045470	GFL0091773
Sample Date		Client Info		13 Feb 2024	29 Nov 2023	13 Oct 2023
Machine Age	hrs	Client Info		21847	21249	21060
Oil Age	hrs	Client Info		40076	0	0
Oil Changed		Client Info		Not Changd	Changed	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
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	>120	14	15	7
Chromium	ppm	ASTM D5185m	>20	<1	0	1
Nickel	ppm	ASTM D5185m	>5	<1	<1	<1
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	5	10	2
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	2	2	<1
Tin	ppm	ASTM D5185m	>15	1	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	nnm	ASTM D5185m		•	0	0
Caumum	ppm	ASTIVI DOTODITI		0	0	0
ADDITIVES	ppin	method	limit/base	current	0 history1	history2
	ppm		limit/base			-
ADDITIVES		method	0	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 1	history1 1	history2 3
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0	current 1 0	history1 1 0	history2 3 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 1 0 56	history1 1 0 58	history2 3 0 54
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 1 0 56 <1	history1 1 0 58 0	history2 3 0 54 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 1 0 56 <1 919	history1 1 0 58 0 974	history2 3 0 54 0 832
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	Current 1 0 56 <1 919 1004	history1 1 0 58 0 974 1049	history2 3 0 54 0 832 941
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	Current 1 0 56 <1 919 1004 919	history1 1 0 58 0 974 1049 991	history2 3 0 54 0 832 941 934
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current           1           0           56           <1           919           1004           919           1167	history1 1 0 58 0 974 1049 991 1235	history2 3 0 54 0 832 941 934 1065
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	Current 1 0 56 <1 919 1004 919 1167 2639	history1	history2 3 0 54 0 832 941 934 1065 2578
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	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           1           0           56           <1           919           1004           919           1167           2639           current	history1	history2 3 0 54 0 832 941 934 1065 2578 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >25	current           1           0           56           <1           919           1004           919           1167           2639           current           6	history1         1         0         58         0         974         1049         991         1235         2779         history1         6	history2         3         0         54         0         832         941         934         1065         2578         history2         4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >25	current           1           0           56           <1           919           1004           919           1167           2639           current           6           2	history1         1         0         58         0         974         1049         991         1235         2779         history1         6         5	history2         3         0         54         0         832         941         934         1065         2578         history2         4         <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	current           1           0           56           <1           919           1004           919           1167           2639           current           6           2           0	history1         1         0         58         0         974         1049         991         1235         2779         history1         6         5         5	history2         3         0         54         0         832         941         934         1065         2578         history2         4         <1         1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b>	method           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	1         0         56         <1         919         1004         919         1064         919         1064         919         0         current         6         2         0         current	history1         1         0         58         0         974         1049         991         1235         2779         history1         6         5         5         history1	history2         3         0         54         0         832         941         934         1065         2578         history2         4         <1         1         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Silicon Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm	method           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20	current         1         0         56         <1         919         1004         919         1004         919         1167         2639         current         6         2         0         current         0.2	history1         1         0         58         0         974         1049         991         1235         2779         history1         6         5         5         history1         0.3	history2         3         0         54         0         832         941         934         1065         2578         history2         4         <1         1         history2         0.2
ADDITIVES 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	method           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	current         1         0         56         <1         919         1004         919         1167         2639         current         6         2         0         current         0         current         0.2         6.9	history1         1         0         58         0         974         1049         991         1235         2779         history1         6         5         5         history1         0.3         7.4	history2         3         0         54         0         832         941         934         1065         2578         history2         4         <1         1         history2         0.2         5.9
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRA	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	method         ASTM D5185m         ASTM D7844         *ASTM D7844         *ASTM D7415         method	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 220 20 20 20 20 20 20 20 20 20 20 20	current         1         0         56         <1         919         1004         919         1167         2639         current         6         2         0         current         0         current         0.2         6.9         19.0	history1         1         0         58         0         974         1049         991         1235         2779         history1         6         5         history1         0.3         7.4         19.2         history1	history2         3         0         54         0         832         941         934         1065         2578         history2         4         <1         1         history2         0.2         5.9         18.1         history2
ADDITIVES 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	method           ASTM D5185m           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 <b>imit/base</b> >4 >20	1         0         56         <1         919         1004         919         1064         919         1167         2639         current         6         2         0         current         0.2         6.9         19.0	history1         1         0         58         0         974         1049         991         1235         2779         history1         6         5         history1         0.3         7.4         19.2	history2         3         0         54         0         832         941         934         1065         2578         history2         4         <1         1         history2         0.2         5.9         18.1

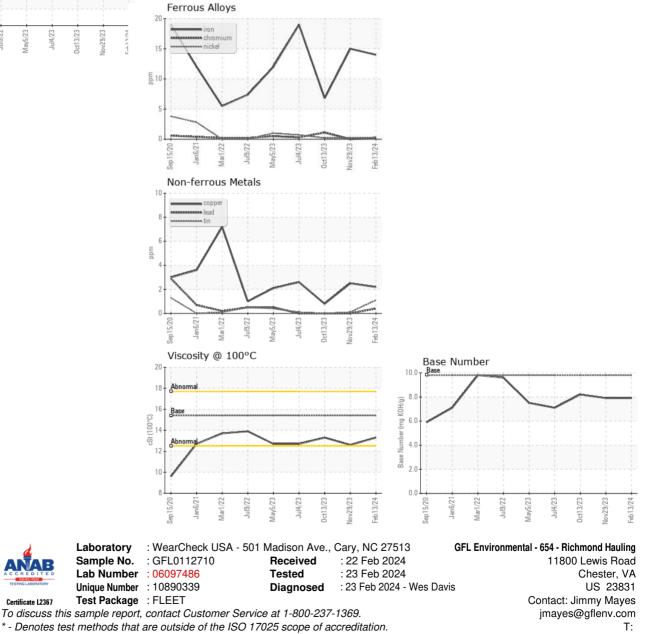


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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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	12.6	13.3
GRAPHS						



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

Certificate L2367

Submitted By: TECHNICIAN ACCOUNT

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