

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id
4608M
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

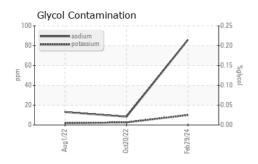
Fluid Condition

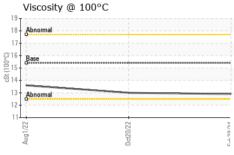
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

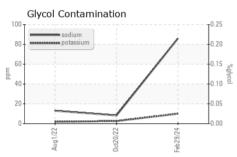
	Augžotz Ocizlotz Feb2024					
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0104339	GFL0059204	GFL0052083
Sample Date		Client Info		29 Feb 2024	20 Oct 2022	01 Aug 2022
Machine Age	hrs	Client Info		21185	18477	18015
Oil Age	hrs	Client Info		600	18477	18015
Oil Changed		Client Info		Changed	Changed	N/A
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
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	6	16	31
Chromium	ppm	ASTM D5185m	>20	0	<1	1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	1	1	4
Lead	ppm	ASTM D5185m	>40	0	1	5
Copper	ppm	ASTM D5185m	>330	0	<1	<1
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVEO			11 11 11			111
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		current 67	history1 3	nistory2 2
	ppm		0			
Boron	• • • • • • • • • • • • • • • • • • • •	ASTM D5185m	0	67	3	2
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	67 5	3	2
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	67 5 39	3 0 53	2 2 64
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	67 5 39 0	3 0 53	2 2 64 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	67 5 39 0 528	3 0 53 1 904	2 2 64 <1 937
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	67 5 39 0 528 1568	3 0 53 1 904 1036	2 64 <1 937 1072
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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	67 5 39 0 528 1568 931	3 0 53 1 904 1036 942	2 64 <1 937 1072 1060
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 ASTM D5185m	0 0 60 0 1010 1070 1150	67 5 39 0 528 1568 931 1082	3 0 53 1 904 1036 942 1213	2 64 <1 937 1072 1060 1274
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	67 5 39 0 528 1568 931 1082 2572	3 0 53 1 904 1036 942 1213 3081	2 64 <1 937 1072 1060 1274 2965
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	67 5 39 0 528 1568 931 1082 2572	3 0 53 1 904 1036 942 1213 3081 history1	2 2 64 <1 937 1072 1060 1274 2965
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	67 5 39 0 528 1568 931 1082 2572 current	3 0 53 1 904 1036 942 1213 3081 history1	2 64 <1 937 1072 1060 1274 2965 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	67 5 39 0 528 1568 931 1082 2572 current 11	3 0 53 1 904 1036 942 1213 3081 history1 4	2 64 <1 937 1072 1060 1274 2965 history2 4 13
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	67 5 39 0 528 1568 931 1082 2572 current 11 86 10	3 0 53 1 904 1036 942 1213 3081 history1 4 8 3	2 64 <1 937 1072 1060 1274 2965 history2 4 13
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	67 5 39 0 528 1568 931 1082 2572 current 11 86 10 NEG	3 0 53 1 904 1036 942 1213 3081 history1 4 8 3 NEG	2 64 <1 937 1072 1060 1274 2965 history2 4 13 2 NEG
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D2982	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	67 5 39 0 528 1568 931 1082 2572 current 11 86 10 NEG	3 0 53 1 904 1036 942 1213 3081 history1 4 8 3 NEG	2 64 <1 937 1072 1060 1274 2965 history2 4 13 2 NEG
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm	ASTM D5185m *ASTM D7844	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20	67 5 39 0 528 1568 931 1082 2572 current 11 86 10 NEG current 0.1	3 0 53 1 904 1036 942 1213 3081 history1 4 8 3 NEG history1	2 2 64 <1 937 1072 1060 1274 2965 history2 4 13 2 NEG history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7624	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20	67 5 39 0 528 1568 931 1082 2572 current 11 86 10 NEG current 0.1 5.2	3 0 53 1 904 1036 942 1213 3081 history1 4 8 3 NEG history1 0.1 13.7	2 2 64 <1 937 1072 1060 1274 2965 history2 4 13 2 NEG history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7624	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20	67 5 39 0 528 1568 931 1082 2572 current 11 86 10 NEG current 0.1 5.2 22.0	3 0 53 1 904 1036 942 1213 3081 history1 4 8 3 NEG history1 0.1 13.7 13.1	2 64 <1 937 1072 1060 1274 2965 history2 4 13 2 NEG history2 1.1 13.7 26.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm	ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D2982 *Method *ASTM D7844 *ASTM D7624 *ASTM D7415 *Method	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >30 limit/base	67 5 39 0 528 1568 931 1082 2572 current 11 86 10 NEG current 0.1 5.2 22.0 current	3 0 53 1 904 1036 942 1213 3081 history1 4 8 3 NEG history1 0.1 13.7 13.1	2 2 64 <1 937 1072 1060 1274 2965 history2 4 13 2 NEG history2 1.1 13.7 26.1



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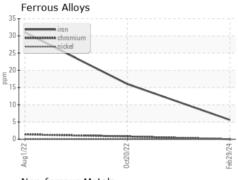


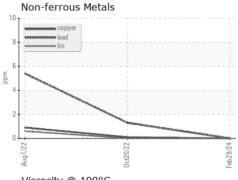


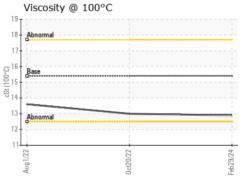
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

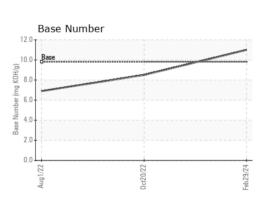
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.9	13.0	13.6

GRAPHS













Laboratory Sample No. Lab Number : 06109225 Unique Number : 10912722

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0104339

Received **Tested**

: 05 Mar 2024 Diagnosed

: 07 Mar 2024

: 07 Mar 2024 - Sean Felton

39000 Van Born Rd Wayne, MI US 48184 Contact: Belal Dgheish bdgheish@gflenv.com

GFL Environmental - 410 - Michigan West

To discuss this sample report, contact Customer Service at 1-800-237-1369. * - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Test Package: FLEET (Additional Tests: Glycol)

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

Report Id: GFL410 [WUSCAR] 06109225 (Generated: 03/07/2024 21:15:48) Rev: 1

Submitted By: seel also GFL468 - Laura Wilson

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