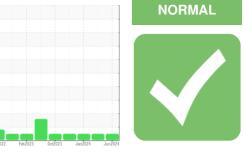


OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 727076-361315.1 Component Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- GAL)

SAMPLE INFORMATION method

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.

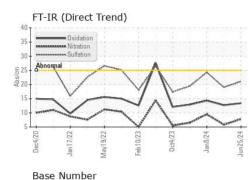
Fluid Condition

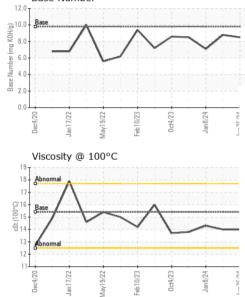
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number		Client Info		GFL0118209	GFL0109164	GFL0098356
Sample Date		Client Info		25 Jun 2024	20 Mar 2024	08 Jan 2024
Machine Age	hrs	Client Info		4585	4405	14217
Oil Age	hrs	Client Info		300	177	700
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
			12 . 19 /1			
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	11	3	10
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	<1	0
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver		ASTM D5185m	>2	<1 0	0	0
Aluminum	ppm	ASTM D5185m		1	2	<1
	ppm				<1	<1
Lead	ppm	ASTM D5185m	>40	<1		
Copper	ppm	ASTM D5185m	>330	2	0	2
Tin	ppm	ASTM D5185m	>15	0	0	0
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES						
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	Method ASTM D5185m	limit/base	current	history1 1	history2 0
	ppm ppm		0			
Boron		ASTM D5185m	0	<1	1	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	<1 0	1 0	0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	<1 0 57	1 0 54	0 0 57
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	<1 0 57 <1	1 0 54 0	0 0 57 <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 57 <1 995	1 0 54 0 905	0 0 57 <1 968
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 57 <1 995 1146	1 0 54 0 905 995	0 0 57 <1 968 1023
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 57 <1 995 1146 1100	1 0 54 0 905 995 1006	0 0 57 <1 968 1023 998
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 57 <1 995 1146 1100 1316	1 0 54 0 905 995 1006 1203	0 0 57 <1 968 1023 998 1242
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 57 <1 995 1146 1100 1316 3823	1 0 54 0 905 995 1006 1203 3406	0 0 57 <1 968 1023 998 1242 2919
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	<1 0 57 <1 995 1146 1100 1316 3823 current 4	1 0 54 0 905 995 1006 1203 3406 history1	0 0 57 <1 968 1023 998 1242 2919 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 0 60 1010 1070 1150 1270 2060	<1 0 57 <1 995 1146 1100 1316 3823 current	1 0 54 0 905 995 1006 1203 3406 history1 2	0 0 57 <1 968 1023 998 1242 2919 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 method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	<1 0 57 <1 995 1146 1100 1316 3823 current 4 12 2	1 0 54 0 905 995 1006 1203 3406 history1 2 6	0 0 57 <1 968 1023 998 1242 2919 history2 3 27
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 2060 225 >25	<1 0 57 <1 995 1146 1100 1316 3823 current 4 12 2 2	1 0 54 0 905 995 1006 1203 3406 history1 2 6 3 3 history1	0 0 57 <1 968 1023 998 1242 2919 history2 3 27 <1 kistory2
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 limit/base >25 >20 limit/base >20	<1 0 57 <1 995 1146 1100 1316 3823 <u>current</u> 4 12 2 2 <u>current</u> 2.2	1 0 54 0 905 995 1006 1203 3406 history1 2 6 3 3 history1 1.3	0 0 57 <1 968 1023 998 1242 2919 history2 3 27 <1 kistory2 3.3
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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 imit/base >20	<1 0 57 <1 995 1146 1100 1316 3823 <i>current</i> 4 12 2 <i>current</i> 2.2 7.8	1 0 54 0 905 995 1006 1203 3406 history1 2 6 3 3 history1 1.3 5.8	0 0 57 <1 968 1023 998 1242 2919 history2 3 27 <1 kistory2 3.3 9.5
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 20 20 20 20 20 20 20 20 20 20 20 20	<1 0 57 <1 995 1146 1100 1316 3823 <u>current</u> 4 12 2 2 <u>current</u> 2.2 7.8 21.1	1 0 54 0 905 995 1006 1203 3406 history1 2 6 3 3 6 3 3 history1 1.3 5.8 19.0	0 0 57 <1 968 1023 998 1242 2919 history2 3 27 <1 history2 3.3 9.5 24.3
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 TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	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	<1 0 57 <1 995 1146 1100 1316 3823 Current 4 12 2 Current 2.2 7.8 21.1 Current	1 0 54 0 905 995 1006 1203 3406 history1 2 6 3 3 history1 1.3 5.8 19.0 history1	0 0 57 <1 968 1023 998 1242 2919 history2 3 27 <1 history2 3.3 9.5 24.3 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm Abs/1mm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >4 >20 30 imit/base	<1 0 57 <1 995 1146 1100 1316 3823 <u>current</u> 4 12 2 <u>current</u> 2.2 7.8 21.1 <u>current</u> 13.4	1 0 54 0 905 995 1006 1203 3406 history1 2 6 3 3 history1 1.3 5.8 19.0 history1 12.7	0 0 57 <1 968 1023 998 1242 2919 history2 3 27 <1 history2 3.3 9.5 24.3 history2 14.3
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 TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	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	<1 0 57 <1 995 1146 1100 1316 3823 Current 4 12 2 Current 2.2 7.8 21.1 Current	1 0 54 0 905 995 1006 1203 3406 history1 2 6 3 3 history1 1.3 5.8 19.0 history1	0 0 57 <1 968 1023 998 1242 2919 history2 3 27 <1 history2 3.3 9.5 24.3 history2



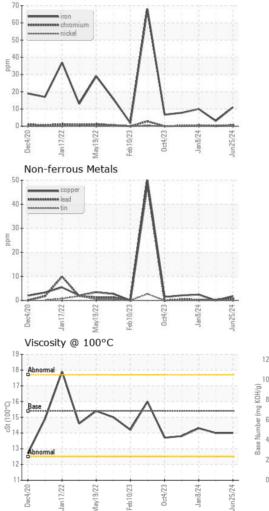
OIL ANALYSIS REPORT

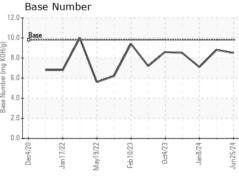




VISUAL		method				history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	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	14.0	14.0	14.3
GRAPHS						

Ferrous Alloys





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 822 - Springfield Hauling Sample No. : GFL0118209 Received : 01 Jul 2024 2120 West Bennett Street Lab Number : 06224330 Tested : 02 Jul 2024 Springfield, MO ŬS 65807 Unique Number : 11102527 Diagnosed : 02 Jul 2024 - Wes Davis Test Package : FLEET Contact: Dennis Moore Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. dennis.moore@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (417)403-3641

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

Submitted By: Dennis Moore

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