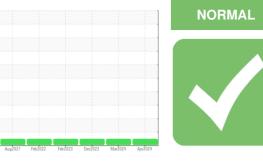


OIL ANALYSIS REPORT

Sample Rating Trend



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

SAMPLE INFORMATION method

DIAGNOSIS Recommendation

Resample at the next service interval to monitor.

Machine Id 4599M

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

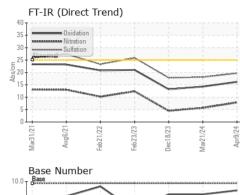
Fluid Condition

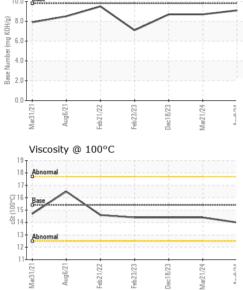
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		method	iiiiii/base	current	TIIStOry I	THSTOLAS
Sample Number		Client Info		GFL0108805	GFL0108736	GFL0105706
Sample Date		Client Info		09 Apr 2024	21 Mar 2024	18 Dec 2023
Machine Age	hrs	Client Info		19481	19426	18838
Oil Age	hrs	Client Info		19426	0	18457
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
		and the set	Preside Marca and		la facta a su at	la fa ta ma O
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	>90	21	6	4
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	<1
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m		12	3	2
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m		8	0	12
Tin	ppm		>15	۲ <1	0	0
Vanadium	ppm	ASTM D5185m	210	0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
	ppin			Ű.		-
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	30	<1	18
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	30 11	<1 0	18 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	30 11 52	<1 0 58	18 0 61
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	30 11 52 3	<1 0 58 0	18 0 61 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	30 11 52 3 663	<1 0 58 0 1010	18 0 61 0 878
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	30 11 52 3 663 1517	<1 0 58 0 1010 1152	18 0 61 0 878 984
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	30 11 52 3 663 1517 1084	<1 0 58 0 1010 1152 1118	18 0 61 0 878 984 846
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	30 11 52 3 663 1517 1084 1328	<1 0 58 0 1010 1152 1118 1302	18 0 61 0 878 984 846 1113
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	0 0 60 0 1010 1070 1150	30 11 52 3 663 1517 1084	<1 0 58 0 1010 1152 1118	18 0 61 0 878 984 846
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	30 11 52 3 663 1517 1084 1328	<1 0 58 0 1010 1152 1118 1302	18 0 61 0 878 984 846 1113
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	30 11 52 3 663 1517 1084 1328 3831	<1 0 58 0 1010 1152 1118 1302 3952	18 0 61 0 878 984 846 1113 2885
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	30 11 52 3 663 1517 1084 1328 3831 current	<1 0 58 0 1010 1152 1118 1302 3952 history1	18 0 61 0 878 984 846 1113 2885 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 method	0 0 60 1010 1070 1150 1270 2060	30 11 52 3 663 1517 1084 1328 3831 current 13	<1 0 58 0 1010 1152 1118 1302 3952 history1 2	18 0 61 0 878 984 846 1113 2885 history2 9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm 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 0 1010 1070 1150 1270 2060 limit/base	30 11 52 3 663 1517 1084 1328 3831 current 13 13	<1 0 58 0 1010 1152 1118 1302 3952 history1 2 1	18 0 61 0 878 984 846 1113 2885 history2 9 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	30 11 52 3 663 1517 1084 1328 3831 current 13 17 3 current	<1 0 58 0 1010 1152 1118 1302 3952 history1 2 1 <1 <1 history1	18 0 61 0 878 984 846 1113 2885 history2 9 0 1
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 2060 225 >20 20	30 11 52 3 663 1517 1084 1328 3831 current 13 17 3	<1 0 58 0 1010 1152 1118 1302 3952 history1 2 1 2 1 <1	18 0 61 0 878 984 846 1113 2885 history2 9 0 1 1 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 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	30 11 52 3 663 1517 1084 1328 3831 current 13 17 3 current 0.3	<1 0 58 0 1010 1152 1118 1302 3952 history1 2 1 <1 <1 history1 0.2	18 0 61 0 878 984 846 1113 2885 history2 9 0 1 1 history2 0.1
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 2060 225 >20 20 imit/base >20	30 11 52 3 663 1517 1084 1328 3831 current 13 17 3 current 0.3 7.9	<1 0 58 0 1010 1152 1118 1302 3952 history1 2 1 2 1 <1 <1 history1 0.2 5.7	18 0 61 0 878 984 846 1113 2885 history2 9 0 1 1 history2 0.1 4.5
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 D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 220 20 20 20 30 20 20 20 20 20 20 20 20 20	30 11 52 3 663 1517 1084 1328 3831 current 13 17 3 current 0.3 7.9 19.7 current	<1 0 58 0 1010 1152 1118 1302 3952 history1 2 1 <1 <1 0.2 5.7 18.1 history1	18 0 61 0 878 984 846 1113 2885 history2 9 0 1 1 history2 0.1 4.5 17.8 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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 imit/base >6 >20 20	30 11 52 3 663 1517 1084 1328 3831 current 13 17 3 current 0.3 7.9 19.7	<1 0 58 0 1010 1152 1118 1302 3952 history1 2 1 <1 <1 0.2 5.7 18.1	18 0 61 0 878 984 846 1113 2885 history2 9 0 1 1 history2 0.1 4.5 17.8

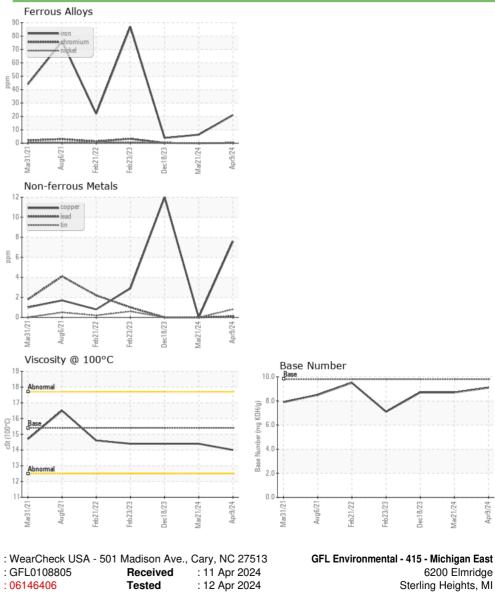


OIL ANALYSIS REPORT





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	14.0	14.4	14.4
GRAPHS						





Sample No. Lab Number : 06146406 Tested : 12 Apr 2024 Unique Number : 10976484 Diagnosed : 15 Apr 2024 - Don Baldridge Test Package : FLEET Contact: Frank Wolak Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. fwolak@gflenv.com T: (586)825-9514 * - 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)

Report Id: GFL415 [WUSCAR] 06146406 (Generated: 04/15/2024 15:37:48) Rev: 1

Laboratory

Submitted By: Frank Wolak

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Apr9/24