

OIL ANALYSIS REPORT

Sample Rating Trend

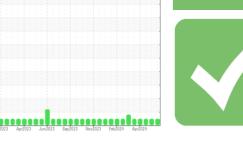




Machine Id 913024

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

SAMPLE INFORMATION method



D	IA	GI	NC	JS	IS	

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.

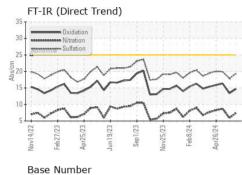
Fluid Condition

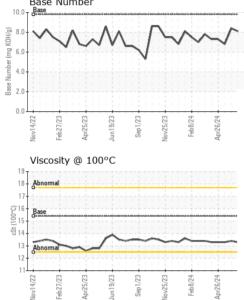
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number		Client Info		GFL0111429	GFL0111419	GFL0111408
Sample Date		Client Info		28 Jun 2024	05 Jun 2024	20 May 2024
Machine Age	hrs	Client Info		5526	5308	5164
Oil Age	hrs	Client Info		362	144	520
Oil Changed		Client Info		Not Changd	Not Changd	Changed
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	7	5	13
Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Nickel	ppm	ASTM D5185m	>5	1	1	4
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	0
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	1	2	7
Tin	ppm	ASTM D5185m	>15	0	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	<1	0
		ام م داخم میں	limit/bass	ourropt	historyd	history2
ADDITIVES		method	limit/base	current	history1	TIIStOTYZ
Boron	ppm	ASTM D5185m	0	4	4	6
	ppm ppm		0			
Boron		ASTM D5185m	0	4	4	6
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m	0 0 60	4 0	4	6 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 0 57	4 0 58	6 0 69
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 0 57 0	4 0 58 <1	6 0 69 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	4 0 57 0 895	4 0 58 <1 871	6 0 69 0 982
Boron Barium Molybdenum Manganese Magnesium Calcium	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	4 0 57 0 895 1013	4 0 58 <1 871 993	6 0 69 0 982 1147 1060 1298
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	4 0 57 0 895 1013 949	4 0 58 <1 871 993 873	6 0 69 0 982 1147 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	0 0 60 0 1010 1070 1150 1270	4 0 57 0 895 1013 949 1177	4 0 58 <1 871 993 873 1097	6 0 69 0 982 1147 1060 1298
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	4 0 57 0 895 1013 949 1177 2641	4 0 58 <1 871 993 873 1097 2965	6 0 69 0 982 1147 1060 1298 3337
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	4 0 57 0 895 1013 949 1177 2641 current	4 0 58 <1 871 993 873 1097 2965 history1	6 0 69 0 982 1147 1060 1298 3337 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm 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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	4 0 57 0 895 1013 949 1177 2641 <u>current</u> 3	4 0 58 <1 871 993 873 1097 2965 history1 3	6 0 69 0 982 1147 1060 1298 3337 history2 6
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base	4 0 57 0 895 1013 949 1177 2641 <u>current</u> 3 2	4 0 58 <1 871 993 873 1097 2965 history1 3 1	6 0 69 0 982 1147 1060 1298 3337 history2 6 3
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 0 1010 1070 1150 1270 2060 limit/base >25 >20	4 0 57 0 895 1013 949 1177 2641 current 3 2 2 2	4 0 58 <1 871 993 873 1097 2965 history1 3 1 2	6 0 69 0 982 1147 1060 1298 3337 history2 6 3 3 3 7
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 >25 >20	4 0 57 0 895 1013 949 1177 2641 <u>current</u> 3 2 2 2 2	4 0 58 <1 871 993 873 1097 2965 history1 3 1 2 2 <i>history</i> 1	6 0 69 0 982 1147 1060 1298 3337 history2 6 3 3 <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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	4 0 57 0 895 1013 949 1177 2641 <u>current</u> 3 2 2 2 2 <u>current</u> 0.4	4 0 58 <1 871 993 873 1097 2965 history1 3 1 2 2 history1 0.2	6 0 69 0 982 1147 1060 1298 3337 history2 6 3 3 <1 history2 0.6
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 limit/base >25 >20 limit/base >20	4 0 57 0 895 1013 949 1177 2641 <u>current</u> 3 2 2 2 2 <u>current</u> 0.4 7.4 19.3	4 0 58 <1 871 993 873 1097 2965 history1 3 1 2 2 history1 0.2 5.9	6 0 69 0 982 1147 1060 1298 3337 history2 6 3 3 <1 history2 0.6 8.7
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 imit/base >25 imit/base >4 >20	4 0 57 0 895 1013 949 1177 2641 <u>current</u> 3 2 2 2 2 <u>current</u> 0.4 7.4 19.3	4 0 58 <1 871 993 873 1097 2965 history1 3 1 2 history1 0.2 5.9 17.9	6 0 69 0 982 1147 1060 1298 3337 history2 6 3 3 <1 history2 0.6 8.7 19.9
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 20 220 220 220 230 20 20 20 20 20 20 20 20 20 20 20 20 20	4 0 57 0 895 1013 949 1177 2641 <i>current</i> 3 2 2 2 <i>current</i> 0.4 7.4 19.3 <i>current</i>	4 0 58 <1 871 993 873 1097 2965 history1 3 1 2 2 history1 0.2 5.9 17.9 history1	6 0 69 0 982 1147 1060 1298 3337 history2 6 3 3 1 9 6 3 3 1 9 0.6 8.7 19.9 0.6 8.7



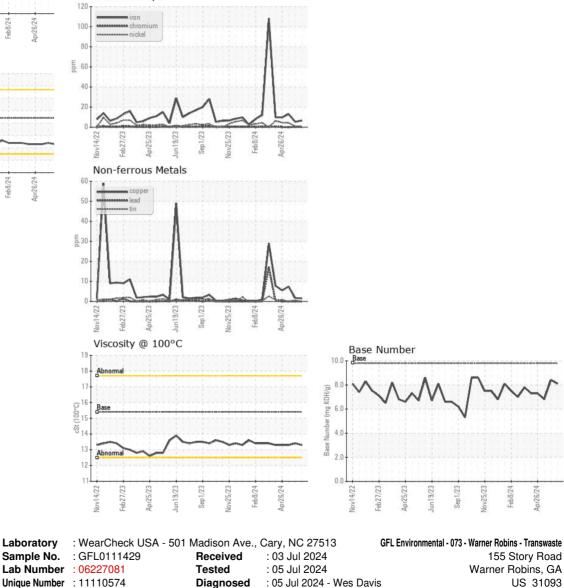
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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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	13.4	13.3
GRAPHS						

Ferrous Alloys





Unique Number : 11110574 Diagnosed : 05 Jul 2024 - Wes Davis Test Package : FLEET Contact: JOSH MALONEY Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. jmaloney@gflenv.com * - 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)

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Submitted By: JOSH MALONEY

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