

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id 928029-1157

Component Diesel Engine Fluid

PETRO CANADA DURON SHP 15W40 (38 QTS)

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

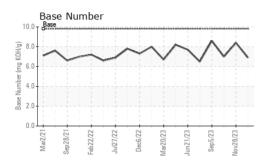
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

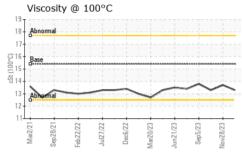
Sample Number		Client Info		GFL0110353	GFL0103070	GFL0090481
Sample Date		Client Info		09 Feb 2024	28 Nov 2023	14 Nov 2023
Machine Age	hrs	Client Info		17986	17456	17375
Oil Age	hrs	Client Info		600	81	612
Oil Changed		Client Info		Changed	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	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	6	0	8
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>5	<1	<1	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	1	1	1
Lead	ppm	ASTM D5185m	>40	2	<1	<1
Copper	ppm	ASTM D5185m	>330	3	0	3
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES			11 11 11		1 C	biotors/0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	current 4	history1 7	2
	ppm ppm		0			
Boron		ASTM D5185m	0	4	7	2
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	4 0	7 0	2
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 0 56	7 0 59	2 0 58
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 0 56 <1	7 0 59 <1	2 0 58 <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	4 0 56 <1 847	7 0 59 <1 922	2 0 58 <1 953
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	4 0 56 <1 847 1040	7 0 59 <1 922 1068	2 0 58 <1 953 1063
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 ASTM D5185m	0 0 60 0 1010 1070 1150	4 0 56 <1 847 1040 947	7 0 59 <1 922 1068 1076	2 0 58 <1 953 1063 895
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 56 <1 847 1040 947 1080	7 0 59 <1 922 1068 1076 1289	2 0 58 <1 953 1063 895 1214
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	4 0 56 <1 847 1040 947 1080 3156	7 0 59 <1 922 1068 1076 1289 3234	2 0 58 <1 953 1063 895 1214 2490
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 56 <1 847 1040 947 1080 3156 current	7 0 59 <1 922 1068 1076 1289 3234 history1	2 0 58 <1 953 1063 895 1214 2490 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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	4 0 56 <1 847 1040 947 1080 3156 current 4	7 0 59 <1 922 1068 1076 1289 3234 history1 2	2 0 58 <1 953 1063 895 1214 2490 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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base	4 0 56 <1 847 1040 947 1080 3156 current 4 <	7 0 59 <1 922 1068 1076 1289 3234 history1 2 1	2 0 58 <1 953 1063 895 1214 2490 history2 3 4
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	4 0 56 <1 847 1040 947 1080 3156 current 4 < 2	7 0 59 <1 922 1068 1076 1289 3234 history1 2 1 2 1	2 0 58 <1 953 1063 895 1214 2490 history2 3 4 0
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 Imit/base >25	4 0 56 <1 847 1040 947 1080 3156 <u>current</u> 4 <1 2 <u>current</u>	7 0 59 <1 922 1068 1076 1289 3234 history1 2 1 <1 <1 +istory1	2 0 58 <1 953 1063 895 1214 2490 history2 3 4 0 bistory2
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 ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	4 0 56 <1 847 1040 947 1080 3156 <u>current</u> 4 <1 2 <u>current</u> 0.4	7 0 59 <1 922 1068 1076 1289 3234 history1 2 1 <1 <1 +istory1 0.1	2 0 58 <1 953 1063 895 1214 2490 history2 3 4 0 history2 0.5
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 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	4 0 56 <1 847 1040 947 1080 3156 <u>current</u> 4 <1 2 <u>current</u> 0.4 8.2	7 0 59 <1 922 1068 1076 1289 3234 history1 2 1 2 1 <1 <1 history1 0.1 5.2	2 0 58 <1 953 1063 895 1214 2490 history2 3 4 0 history2 0.5 8.6
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 20 20 20 20 20	4 0 56 <1 847 1040 947 1080 3156 current 4 <1 2 current 0.4 8.2 19.7 current	7 0 59 <1 922 1068 1076 1289 3234 history1 2 1 <1 <1 0.1 5.2 17.6 history1	2 0 58 <1 953 1063 895 1214 2490 history2 3 4 0 0 history2 0.5 8.6 20.4 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 D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >4 >20	4 0 56 <1 847 1040 947 1080 3156 <u>current</u> 4 <1 2 <u>current</u> 0.4 8.2 19.7	7 0 59 <1 922 1068 1076 1289 3234 history1 2 1 <1 <1 <1 0.1 5.2 17.6	2 0 58 <1 953 1063 895 1214 2490 history2 3 4 0 0 history2 0.5 8.6 20.4



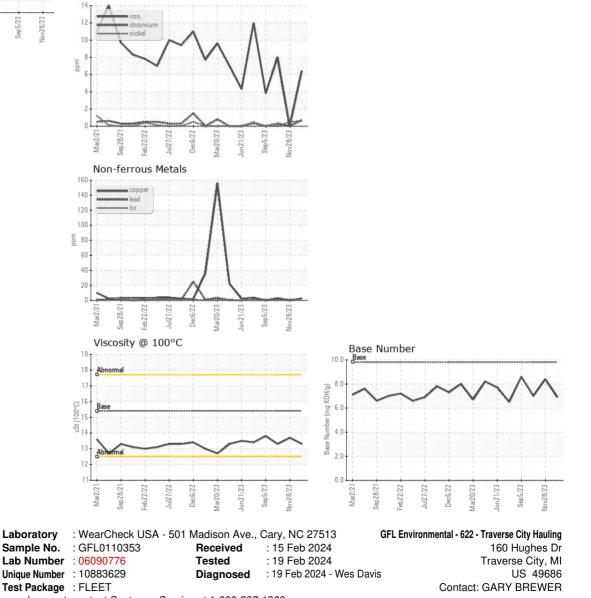
OIL ANALYSIS REPORT

Ferrous Alloys





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	13.7	13.3
GRAPHS						



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 Certificate 12367
 Test Package
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 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.
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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