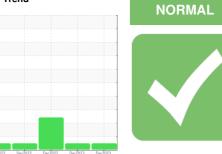


OIL ANALYSIS REPORT

Sample Rating Trend



Component Diesel Engine Fluid

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

SAMPLE INFORMATION method

DIAGNOSIS Recommendation

Resample at the next service interval to monitor.

Machine Id 4637M

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.

			iiiiii/base	Current	nistory i	2
Sample Number		Client Info		GFL0105640	GFL0101474	GFL0064002
Sample Date		Client Info		14 Dec 2023	01 Dec 2023	14 Dec 2022
Machine Age	hrs	Client Info		19086	18992	17441
Oil Age	hrs	Client Info		18992	17441	16880
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
		and the set	Page 14 // 2010 10		In the tax work	history 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
			>90		29	52
Iron	ppm	ASTM D5185m		24		2
Chromium	ppm	ASTM D5185m	>20	1	<1	
Nickel	ppm	ASTM D5185m	>2	<1	0	<1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	▲ 34
Lead	ppm	ASTM D5185m	>40	0	0	2
Copper	ppm	ASTM D5185m	>330	39	52	2
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 3	history1 2	history2 3
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	3	2	3
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	3 0	2 0	3 0
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	3 0 54	2 0 60	3 0 60
Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 0 54 1	2 0 60 <1	3 0 60 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	3 0 54 1 880	2 0 60 <1 968	3 0 60 <1 939
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	3 0 54 1 880 1060	2 0 60 <1 968 1173	3 0 60 <1 939 1109
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	3 0 54 1 880 1060 949	2 0 60 <1 968 1173 1036	3 0 60 <1 939 1109 1004
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	3 0 54 1 880 1060 949 1239	2 0 60 <1 968 1173 1036 1308 2698	3 0 60 <1 939 1109 1004 1275 3135
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	3 0 54 1 880 1060 949 1239 2570 current	2 0 60 <1 968 1173 1036 1308 2698 history1	3 0 60 <1 939 1109 1004 1275 3135 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 0 1010 1070 1150 1270 2060	3 0 54 1 880 1060 949 1239 2570 current 6	2 0 60 <1 968 1173 1036 1308 2698 history1 6	3 0 60 <1 939 1109 1004 1275 3135 history2 ▲ 32
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	3 0 54 1 880 1060 949 1239 2570 current	2 0 60 <1 968 1173 1036 1308 2698 history1	3 0 60 <1 939 1109 1004 1275 3135 history2
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	3 0 54 1 880 1060 949 1239 2570 current 6 7 2	2 0 60 <1 968 1173 1036 1308 2698 history1 6 9 0	3 0 60 <1 939 1109 1004 1275 3135 history2 ▲ 32 22 11
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	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	3 0 54 1 880 1060 949 1239 2570 current 6 7 2 2	2 0 60 <1 968 1173 1036 1308 2698 history1 6 9 0 0	3 0 60 <1 939 1109 1004 1275 3135 history2 22 11 11 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	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	3 0 54 1 880 1060 949 1239 2570 current 6 7 2 2 current 0.6	2 0 60 <1 968 1173 1036 1308 2698 history1 6 9 0 history1 0.6	3 0 60 <1 939 1109 1004 1275 3135 history2 ▲ 32 22 11 11 history2 1.4
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 <i>limit/base</i> >25 >20 <i>limit/base</i> >20	3 0 54 1 880 1060 949 1239 2570 <i>current</i> 6 7 2 2 <i>current</i> 0.6 8.8	2 0 60 <1 968 1173 1036 1308 2698 history1 6 9 0 0 history1 0.6 8.8	3 0 60 <1 939 1109 1004 1275 3135 history2 ▲ 32 22 11 history2 1.4 1.4 13.2
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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	3 0 54 1 880 1060 949 1239 2570 current 6 7 2 2 current 0.6	2 0 60 <1 968 1173 1036 1308 2698 history1 6 9 0 history1 0.6	3 0 60 <1 939 1109 1004 1275 3135 history2 ▲ 32 22 11 11 history2 1.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm TS 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> >20	3 0 54 1 880 1060 949 1239 2570 <i>current</i> 6 7 2 2 <i>current</i> 0.6 8.8	2 0 60 <1 968 1173 1036 1308 2698 history1 6 9 0 0 history1 0.6 8.8	3 0 60 <1 939 1109 1004 1275 3135 history2 ▲ 32 22 11 history2 1.4 1.4 13.2
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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >6 >20	3 0 54 1 880 1060 949 1239 2570 current 6 7 2 2 current 0.6 8.8 20.3	2 0 60 <1 968 1173 1036 1308 2698 history1 6 9 0 0 history1 0.6 8.8 20.2	3 0 60 <1 939 1109 1004 1275 3135 history2 ▲ 32 22 11 11 history2 1.4 1.2 25.9
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 TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 20 20 20 20 20 20 20 20 20 20 20	3 0 54 1 880 1060 949 1239 2570 Current 6 7 2 2 Current 0.6 8.8 20.3 Current	2 0 60 <1 968 1173 1036 1308 2698 history1 6 9 0 0 history1 0.6 8.8 20.2 history1	3 0 60 <1 939 1109 1004 1275 3135 history2 ▲ 32 22 11 history2 1.4 13.2 25.9 history2



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OIL ANALYSIS REPORT

scalar

*Visual

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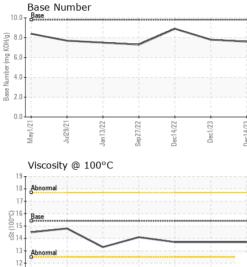
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VISUAL

White Metal



Jan13/22

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Sand Dirit Sand Dirit Appearance scalar Visual NORML			Silt	scalar	*Visual	NONE	NONE	NONE	NONE	
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Emulsified Water scalar Visual >0.2 NEG	/22	1/23								
Emulsified Water scalar Visual >0.2 NEG	Sep 27	Dec14	Odor							
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Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (586)825-95			cifications are based or				(ICGM 106.2012		. (000)010 00	

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

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