

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 607M Component Diesel Engine

Fluid

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

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.

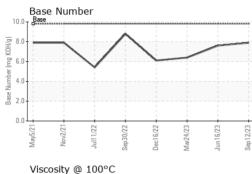
Fluid Condition

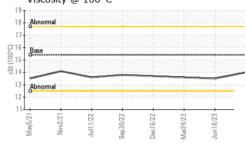
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0091510	GFL0082810	GFL0071193
Sample Date		Client Info		12 Sep 2023	16 Jun 2023	24 Mar 2023
Machine Age	hrs	Client Info		13267	11481	12480
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		Not Changd	Changed	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
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	16	11	25
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	1	2
Lead	ppm	ASTM D5185m	>40	<1	<1	0
Copper	ppm	ASTM D5185m	>330	<1	<1	1
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		mathad	limit/base	ourropt	histowed.	history2
ADDITIVES		method	iiiiii/base	current	history1	nistoryz
Boron	ppm	ASTM D5185m	0	2	3	<1
	ppm ppm					
Boron		ASTM D5185m	0	2	3	<1
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	2 0	3 0	<1 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 0 60	3 0 58	<1 0 62
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 0 60 <1	3 0 58 <1	<1 0 62 <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	2 0 60 <1 1059	3 0 58 <1 986	<1 0 62 <1 1035
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	2 0 60 <1 1059 1221	3 0 58 <1 986 1071	<1 0 62 <1 1035 1166
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	2 0 60 <1 1059 1221 1054	3 0 58 <1 986 1071 986	<1 0 62 <1 1035 1166 1003
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	2 0 60 <1 1059 1221 1054 1342	3 0 58 <1 986 1071 986 1273	<1 0 62 <1 1035 1166 1003 1352
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	2 0 60 <1 1059 1221 1054 1342 3642	3 0 58 <1 986 1071 986 1273 3262	<1 0 62 <1 1035 1166 1003 1352 3122
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	2 0 60 <1 1059 1221 1054 1342 3642 current	3 0 58 <1 986 1071 986 1273 3262 history1	<1 0 62 <1 1035 1166 1003 1352 3122 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 kimit/base >25	2 0 60 <1 1059 1221 1054 1342 3642 <i>current</i> 8	3 0 58 <1 986 1071 986 1273 3262 history1 4	<1 0 62 <1 1035 1166 1003 1352 3122 history2 4
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base >25	2 0 60 <1 1059 1221 1054 1342 3642 <u>current</u> 8 5	3 0 58 <1 986 1071 986 1273 3262 history1 4 3	<1 0 62 <1 1035 1166 1003 1352 3122 history2 4 4
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 0 1010 1070 1150 1270 2060 limit/base >25 >20	2 0 60 <1 1059 1221 1054 1342 3642 <i>current</i> 8 5 1	3 0 58 <1 986 1071 986 1273 3262 history1 4 3 0	<1 0 62 <1 1035 1166 1003 1352 3122 history2 4 4 4 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Iinit/base >25	2 0 60 <1 1059 1221 1054 1342 3642 current 8 5 1 1 current	3 0 58 <1 986 1071 986 1273 3262 history1 4 3 0 bistory1	<1 0 62 <1 1035 1166 1003 1352 3122 history2 4 4 2 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 ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 1imit/base >20	2 0 60 <1 1059 1221 1054 1342 3642 current 8 5 1 1 current 0.6	3 0 58 <1 986 1071 986 1273 3262 history1 4 3 0 history1 0.4	<1 0 62 <1 1035 1166 1003 1352 3122 history2 4 4 2 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	2 0 60 <1 1059 1221 1054 1342 3642 <i>current</i> 8 5 1 <i>current</i> 0.6 7.1	3 0 58 <1 986 1071 986 1273 3262 history1 4 3 0 history1 0.4 8.1	<1 0 62 <1 1035 1166 1003 1352 3122 history2 4 4 2 history2 0.5 9.2
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 ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >4 >20	2 0 60 <1 1059 1221 1054 1342 3642 <u>current</u> 8 5 1 1 <u>current</u> 0.6 7.1 19.6	3 0 58 <1 986 1071 986 1273 3262 history1 4 3 0 <u>history1</u> 0.4 8.1 20.0	<1 0 62 <1 1035 1166 1003 1352 3122 history2 4 4 4 2 <u>history2</u> 0.5 9.2 20.6
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 D7624	0 0 0 1010 1070 1150 2260 225 220 220 imit/base >4 >20 >30 imit/base	2 0 60 <1 1059 1221 1054 1342 3642 <i>current</i> 8 5 1 <i>current</i> 0.6 7.1 19.6	3 0 58 <1 986 1071 986 1273 3262 history1 4 3 0 history1 0.4 8.1 20.0 history1	<1 0 62 <1 1035 1166 1003 1352 3122 history2 4 4 4 2 history2 0.5 9.2 20.6 history2

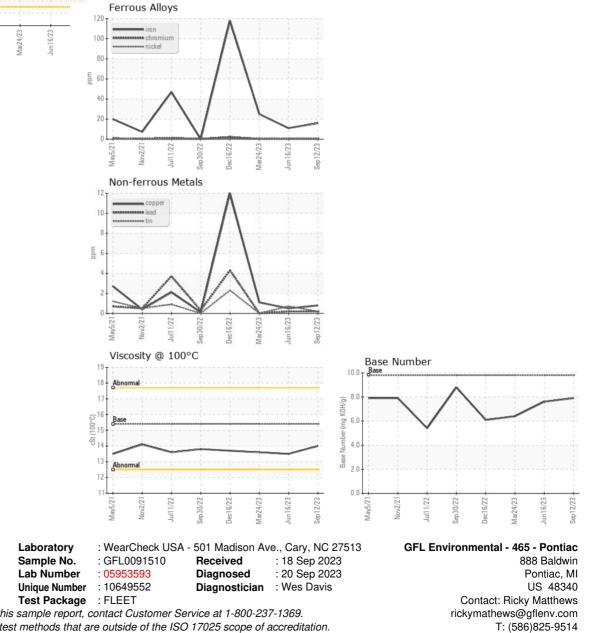


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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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	14.0	13.5	13.6
GRAPHS						



Certificate L2367 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)

Submitted By: Ricky Matthews

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