

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 651M Component Diesel Engine

Fluid

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

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.

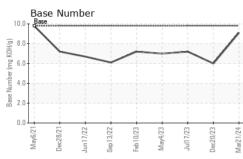
Fluid Condition

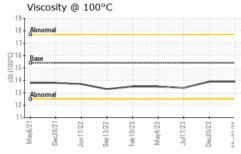
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		method	IIIII/Dase	current	nistory i	nistory2
Sample Number		Client Info		GFL0116929	GFL0107067	GFL0082759
Sample Date		Client Info		21 Mar 2024	20 Dec 2023	17 Jul 2023
Machine Age	hrs	Client Info		10244	9851	8978
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		Changed	Not Changd	N/A
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	c	method	limit/base	ourropt	history1	history2
	3			current		
Iron	ppm	ASTM D5185m	>120	3	13	19
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	1	<1
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	1	2	2
Lead	ppm	ASTM D5185m	>40	0	<1	1
Copper	ppm	ASTM D5185m	>330	3	2	3
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm		limit/base	current	history1 <1	
	ppm ppm	ASTM D5185m				history2 <1 0
Boron Barium	ppm	ASTM D5185m	0	1	<1	<1
Boron		ASTM D5185m ASTM D5185m	0	1 0	<1 0	<1 0
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	1 0 58	<1 0 63	<1 0 63
Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	1 0 58 <1	<1 0 63 0	<1 0 63 <1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	1 0 58 <1 996	<1 0 63 0 935	<1 0 63 <1 976
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	1 0 58 <1 996 1101 1053	<1 0 63 0 935 1091	<1 0 63 <1 976 1140
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	1 0 58 <1 996 1101	<1 0 63 0 935 1091 871	<1 0 63 <1 976 1140 966
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	1 0 58 <1 996 1101 1053 1239 3774	<1 0 63 0 935 1091 871 1225 2414	<1 0 63 <1 976 1140 966 1260 2909
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 0 1010 1070 1150 1270 2060	1 0 58 <1 996 1101 1053 1239 3774 current	<1 0 63 0 935 1091 871 1225 2414 history1	<1 0 63 <1 976 1140 966 1260 2909 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 0 1010 1070 1150 1270 2060	1 0 58 <1 996 1101 1053 1239 3774 current 3	<1 0 63 0 935 1091 871 1225 2414 history1 3	<1 0 63 <1 976 1140 966 1260 2909 history2 5
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	1 0 58 <1 996 1101 1053 1239 3774 current	<1 0 63 0 935 1091 871 1225 2414 history1 3 2	<1 0 63 <1 976 1140 966 1260 2909 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 imit/base >25	1 0 58 <1 996 1101 1053 1239 3774 current 3 2 0	<1 0 63 0 935 1091 871 1225 2414 history1 3 2 2 2	<1 0 63 <1 976 1140 966 1260 2909 history2 5 6 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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	1 0 58 <1 996 1101 1053 1239 3774 current 3 2 0 0	<1 0 63 0 935 1091 871 1225 2414 history1 3 2 2 2 history1	<1 0 63 <1 976 1140 966 1260 2909 bistory2 5 6 0 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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	1 0 58 <1 996 1101 1053 1239 3774 <i>current</i> 3 2 0 <i>current</i> 0.2	<1 0 63 0 935 1091 871 1225 2414 history1 3 2 2 2 history1 1	<1 0 63 <1 976 1140 966 1260 2909 history2 5 6 0 0 history2 0.9
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 2060 225 220 220 220 20 20 20 20 20 20 20 20 20	1 0 58 <1 996 1101 1053 1239 3774 <i>current</i> 3 2 0 <i>current</i> 0.2 5.3	<1 0 63 0 935 1091 871 1225 2414 history1 3 2 2 history1 1 9.0	<1 0 63 <1 976 1140 966 1260 2909 history2 5 6 0 0 history2 0.9 8.3
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 limit/base >25 >20 limit/base	1 0 58 <1 996 1101 1053 1239 3774 <i>current</i> 3 2 0 <i>current</i> 0.2	<1 0 63 0 935 1091 871 1225 2414 history1 3 2 2 2 history1 1	<1 0 63 <1 976 1140 966 1260 2909 history2 5 6 0 0 history2 0.9
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 225 220 220 220 20 20 20 20 20 20 20 20 20	1 0 58 <1 996 1101 1053 1239 3774 <i>current</i> 3 2 0 <i>current</i> 0.2 5.3	<1 0 63 0 935 1091 871 1225 2414 history1 3 2 2 history1 1 9.0	<1 0 63 <1 976 1140 966 1260 2909 history2 5 6 0 0 history2 0.9 8.3
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 20 20 20 20 20 20 20 20 20 20 20 20	1 0 58 <1 996 1101 1053 1239 3774 <i>current</i> 3 2 0 <i>current</i> 0.2 5.3 18.0	<1 0 63 0 935 1091 871 1225 2414 history1 3 2 2 history1 1 9.0 20.6	<1 0 63 <1 976 1140 966 1260 2909 bistory2 5 6 0 0 bistory2 0.9 8.3 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 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 220 20 20 20 20 20 20 20 20 20 20 20	1 0 58 <1 996 1101 1053 1239 3774 <i>current</i> 3 2 0 <i>current</i> 0.2 5.3 18.0	<1 0 63 0 935 1091 871 1225 2414 history1 3 2 2 history1 1 9.0 20.6 history1	<1 0 63 <1 976 1140 966 1260 2909 history2 5 6 0 0 history2 0.9 8.3 20.6 history2



OIL ANALYSIS REPORT





	VISUAL		method	limit/base	current	history1	history2
1	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
\sim /	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
Jul17/23 - Dec20/23 - Mar21/24 -	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Jul17/23 Dec20/23 Mar21/24	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	13.9	13.9	13.4
	GRAPHS						
	Ferrous Alloys						
Juli7/2 De:20/23	40 35 30 25 20 15 10 50 15 10 50 15 10 50 15 10 50 15 10 50 15 10 10 10 10 10 10 10 10 10 10	S	Marylid Juli1723 - Juli1723 - Jul	Mar21/24 Mar21/24	0	Sep 13/22	Jult7/23
Laboratory Sample No.	: WearCheck USA - 50 : GFL0116929	1 Madiso Recei	ived : 26	, NC 27513 Mar 2024 Mar 2024	GFL E	nvironmental -	465 - Pontiac 888 Baldwin

Diagnosed Test Package : FLEET Contact: Ricky Matthews Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. rickymathews@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)

Tested

: 27 Mar 2024

: 27 Mar 2024 - Wes Davis

Lab Number : 06129297

Unique Number : 10943448

F:

Pontiac, MI US 48340

T: (586)825-9514