

OIL ANALYSIS REPORT

Sample Rating Trend

2001 Jan2018 And/2018 Jan2018 We/2010 Jan2019 Oud/2019 And/2022 Fe/2022 Sen/202

NORMAL



MCGINN BUS COMPANY Machine Id 11424

Component **Diesel Engine**

PETRO CANADA DURON SHP 15W40 (36 QTS)

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.

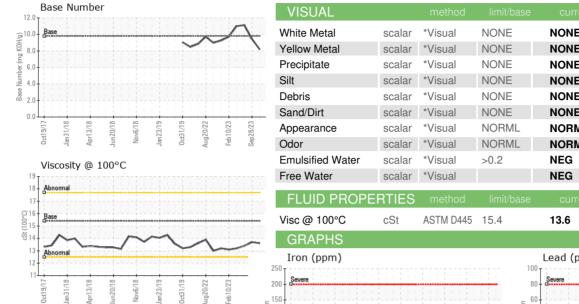
Fluid Condition

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		PCA0090530	PCA0104414	PCA0090738
Sample Date		Client Info		10 Jan 2024	28 Sep 2023	02 Jun 2023
Machine Age	mls	Client Info		543167	519219	507682
Oil Age	mls	Client Info		24000	24000	12000
Oil Changed		Client Info		Changed	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<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	>100	24	12	7
Chromium	ppm	ASTM D5185m	>20	1	<1	0
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	1	<1
Lead	ppm	ASTM D5185m	>40	10	<1	0
Copper	ppm	ASTM D5185m	>330	4	<1	<1
Tin	ppm	ASTM D5185m	>15	1	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 6	history1	history2
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	6	4	13
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	6 <1	4	13
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	6 <1 63	4 0 56	13 0 61
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	6 <1 63 <1	4 0 56 0	13 0 61 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	6 <1 63 <1 943	4 0 56 0 911	13 0 61 <1 920
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	6 <1 63 <1 943 1049	4 0 56 0 911 1040	13 0 61 <1 920 1118
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	6 <1 63 <1 943 1049 1036	4 0 56 0 911 1040 934	13 0 61 <1 920 1118 958
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270	6 <1 63 <1 943 1049 1036 1237	4 0 56 0 911 1040 934 1183	13 0 61 <1 920 1118 958 1161
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	6 <1 63 <1 943 1049 1036 1237 2789	4 0 56 0 911 1040 934 1183 2769	13 0 61 <1 920 1118 958 1161 3349
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	6 <1 63 <1 943 1049 1036 1237 2789 current	4 0 56 0 911 1040 934 1183 2769 history1	13 0 61 <1 920 1118 958 1161 3349 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	6 <1 63 <1 943 1049 1036 1237 2789 current	4 0 56 0 911 1040 934 1183 2769 history1	13 0 61 <1 920 1118 958 1161 3349 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	6 <1 63 <1 943 1049 1036 1237 2789 current 11	4 0 56 0 911 1040 934 1183 2769 history1	13 0 61 <1 920 1118 958 1161 3349 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	6 <1 63 <1 943 1049 1036 1237 2789 current 11 2 0	4 0 56 0 911 1040 934 1183 2769 history1 5 3 <1	13 0 61 <1 920 1118 958 1161 3349 history2 4 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	6 <1 63 <1 943 1049 1036 1237 2789 current 11 2 0 current	4 0 56 0 911 1040 934 1183 2769 history1 5 3 <1	13 0 61 <1 920 1118 958 1161 3349 history2 4 6 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m Method *ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	6 <1 63 <1 943 1049 1036 1237 2789 current 11 2 0 current 0.7	4 0 56 0 911 1040 934 1183 2769 history1 5 3 <1	13 0 61 <1 920 1118 958 1161 3349 history2 4 6 0 history2 0.3
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 Method ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 limit/base	6 <1 63 <1 943 1049 1036 1237 2789 current 11 2 0 current 0.7 11.0	4 0 56 0 911 1040 934 1183 2769 history1 5 3 <1 history1 0.4 7.5	13 0 61 <1 920 1118 958 1161 3349 history2 4 6 0 history2 0.3 7.4
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 Method ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >30	6 <1 63 <1 943 1049 1036 1237 2789 current 11 2 0 current 0.7 11.0 22.6	4 0 56 0 911 1040 934 1183 2769 history1 5 3 <1 history1 0.4 7.5 18.7	13 0 61 <1 920 1118 958 1161 3349 history2 4 6 0 history2 0.3 7.4 18.9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7624 *ASTM D7624 *ASTM D7415 Method	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >3 limit/base	6 <1 63 <1 943 1049 1036 1237 2789 current 11 2 0 current 0.7 11.0 22.6 current	4 0 56 0 911 1040 934 1183 2769 history1 5 3 <1 history1 0.4 7.5 18.7 history1	13 0 61 <1 920 1118 958 1161 3349 history2 4 6 0 history2 1.4 18.9



OIL ANALYSIS REPORT



VISUAL		method	IIIIII/base	current	riistory i	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				NONE	NONE
Sand/Dirt	scalar		NONE		NONE	NONE
						NORML
						NORML
						NEG
			ZU.Z			NEG
		Visuai		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.6	13.7	13.4
GRAPHS						
				Lead (ppm)		
50 T 3 - c 3 - c 3 - c 3 - c - c - c -			7 10	0 T 3 - C 3 - C 3 - C 3 - C 3 - C	101111111111	
00 - Severe				0 Severe		
50			E 6			
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Cervere				Smirro		
Transcription						
Abnormal			5.	Asimilar I		
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Oct19 Jan31 Apr13 Jun20	Jan 23	Oct31 Aug20 Feb10	Sep 28	Oct19 Jan31 Apr13 Jun20	Nov6 Jan23 Oct31	Aug20/22 Feb10/23 Sep28/23
Copper (ppm)				Silicon (ppm)		
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200 - Abnormal				60		
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13/18	123/1	±31/1 ‡20/2; 10/25	28/2:	119/1	123/18	Aug20/22
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Base	***************************************		m e			
Abnormal Abnormal	~	<u> </u>	A Mark			
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an31/ pr13/ un20/	an 23/	ug20/	ep28/	oct19, an31/ pr13/ un20/	Nov6/ an 23/ let 31/	Aug20/22 Feb10/23 Sep28/23
2 4 4 4	- ~	Pe At	25	2 2 4 3	- 7	Ai Fi
	White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Iron (ppm) Severe Abnormal LUSTING Abnormal Viscosity @ 100°C Copper (ppm) Viscosity @ 100°C	White Metal scalar Yellow Metal scalar Precipitate scalar Silt scalar Debris scalar Sand/Dirt scalar Appearance scalar Odor scalar Emulsified Water scalar Free Water scalar FLUID PROPERTIES Visc @ 100°C cSt GRAPHS Iron (ppm) Severe Johnsmal Jo	White Metal Yellow Metal Yellow Metal Precipitate Scalar Precipitate Scalar Silt Scalar Scalar Silt Scalar Scalar Visual Scalar Visual Debris Scalar Scalar Scalar Visual Scalar Scalar Visual Scalar Appearance Scalar Appearance Scalar Odor Scalar Scalar Visual Scalar Visual Free Water Scalar Visual Free Water Scalar Visual Free Water Scalar Visual FRUID PROPERTIES Method Visc @ 100°C CSt ASTM D445 GRAPHS Iron (ppm) Abnormal Abnormal Copper (ppm) Severe Scalar Visual Scalar Scalar Visual Scalar S	White Metal scalar *Visual NONE Yellow Metal scalar *Visual NONE Precipitate scalar *Visual NONE Silt scalar *Visual NONE Silt scalar *Visual NONE Sand/Dirt scalar *Visual NONE Sand/Dirt scalar *Visual NONE Appearance scalar *Visual NORML Odor scalar *Visual NORML Emulsified Water scalar *Visual NORML Emulsified Water scalar *Visual NORML Free Water scalar *Visual NORML FLUID PROPERTIES method limit/base Visc @ 100°C cSt ASTM D445 15.4 GRAPHS Iron (ppm) Aluminum (ppm) Copper (ppm)	White Metal scalar *Visual NONE NONE NONE Scalar *Visual NONE NONE NONE Sitt scalar *Visual NONE NONE NONE Sitt scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE Scalar *Visual NONE NONE NONE NONE NONE Scalar *Visual NONE NONE NONE NONE NONE NONE NONE NON	White Metal scalar "Visual NONE NONE NONE NONE NONE Precipitate scalar "Visual NONE NONE NONE NONE NONE Silt scalar "Visual NONE NONE NONE NONE NONE Scalar "Visual NONE NONE NONE NONE NONE NONE NONE NON





Certificate L2367

Laboratory Sample No. Lab Number

Unique Number : 10859165

: PCA0090530 : 06077074

To discuss this sample report, contact Customer Service at 1-800-237-1369.

Test Package : MOB 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : 01 Feb 2024 Recieved Diagnosed : 02 Feb 2024

Diagnostician : Wes Davis

LYNN, MA US 01902 Contact: TOM SCHULZ tommcginnbus@aol.com

MCGINN BUS CO

36 ALLEY ST

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* - 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)

F: