

OIL ANALYSIS REPORT

NORMAL

Machine Id 10466

Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (32 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.

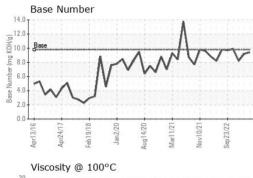
Fluid Condition

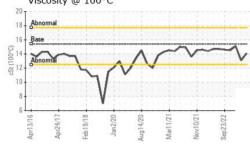
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method			history 1	history 2
Sample Number		Client Info		GFL0081711	GFL0074541	GFL0064592
Sample Date		Client Info		04 Jul 2023	16 Mar 2023	28 Nov 2022
Machine Age	hrs	Client Info		22130	21766	21395
Oil Age	hrs	Client Info		400	600	600
Oil Changed		Client Info		Not Changd	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINAT		method	limit/base	current	history 1	history 2
Fuel		WC Method	>5		<1.0	<1.0
			>0	<1.0		
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>110	32	10	1 31
Chromium	ppm	ASTM D5185m	>4	2	<1	2
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	6	2	<u> </u>
Lead	ppm	ASTM D5185m	>45	5	4	13
Copper	ppm	ASTM D5185m	>85	4	2	11
Tin	ppm	ASTM D5185m	>4	3	3	1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
		ام م مالح میں	limit/booo		biotom 1	history 2
ADDITIVES		method			history 1	TISLOTY Z
Boron	ppm	ASTM D5185m	0	current 1	0	3
	ppm ppm					
Boron Barium	ppm	ASTM D5185m	0	1	0	3
Boron Barium Molybdenum		ASTM D5185m ASTM D5185m ASTM D5185m	0	1 0	0 0	3 0
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	1 0 61	0 0 58	3 0 66
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	1 0 61 1	0 0 58 <1	3 0 66 2
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	1 0 61 1 970	0 0 58 <1 420	3 0 66 2 1010
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	1 0 61 1 970 1132	0 0 58 <1 420 1704	3 0 66 2 1010 1203
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 61 1 970 1132 1050	0 0 58 <1 420 1704 1022	3 0 66 2 1010 1203 1034
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	1 0 61 1 970 1132 1050 1311	0 0 58 <1 420 1704 1022 1233	3 0 66 2 1010 1203 1034 1345 3291
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm 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 1010 1070 1150 1270 2060	1 0 61 1 970 1132 1050 1311 3731 current	0 0 58 <1 420 1704 1022 1233 3117 history 1	3 0 66 2 1010 1203 1034 1345 3291 history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	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	1 0 61 1 970 1132 1050 1311 3731 current 11	0 0 58 <1 420 1704 1022 1233 3117 history 1 8	3 0 66 2 1010 1203 1034 1345 3291 history 2 ▲ 39
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	1 0 61 1 970 1132 1050 1311 3731 current	0 0 58 <1 420 1704 1022 1233 3117 history 1	3 0 66 2 1010 1203 1034 1345 3291 history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >30	1 0 61 1 970 1132 1050 1311 3731 current 11 11 4	0 0 58 <1 420 1704 1022 1233 3117 history 1 8 0 <1	3 0 66 2 1010 1203 1034 1345 3291 history 2 ▲ 39 4 5
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 limit/base >30 >20	1 0 61 1 970 1132 1050 1311 3731 current 11 11 4 current	0 0 58 <1 420 1704 1022 1233 3117 history 1 8 0 <1 history 1	3 0 66 2 1010 1203 1034 1345 3291 history 2 39 4 5 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >30 limit/base >20	1 0 61 1 970 1132 1050 1311 3731 <i>current</i> 11 11 4 <i>current</i>	0 0 58 <1 420 1704 1022 1233 3117 history 1 8 0 <1 history 1 0.1	3 0 66 2 1010 1203 1034 1345 3291 history 2 39 4 5 5 history 2 1.6
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> >30 <i>limit/base</i> >20	1 0 61 1 970 1132 1050 1311 3731 <i>current</i> 11 11 4 <i>current</i> 0.8 9.8	0 0 58 <1 420 1704 1022 1233 3117 history 1 8 0 <1 kistory 1 0.1 5.4	3 0 66 2 1010 1203 1034 1345 3291 history 2 39 4 5 history 2 1.6 1.6 15.8
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 >30 limit/base >20	1 0 61 1 970 1132 1050 1311 3731 <i>current</i> 11 11 4 <i>current</i>	0 0 58 <1 420 1704 1022 1233 3117 history 1 8 0 <1 history 1 0.1	3 0 66 2 1010 1203 1034 1345 3291 history 2 39 4 5 5 history 2 1.6
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> >30 <i>limit/base</i> >20	1 0 61 1 970 1132 1050 1311 3731 <i>current</i> 11 11 4 <i>current</i> 0.8 9.8	0 0 58 <1 420 1704 1022 1233 3117 history 1 8 0 <1 kistory 1 0.1 5.4	3 0 66 2 1010 1203 1034 1345 3291 history 2 ▲ 39 4 5 history 2 1.6 1.6 15.8
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 >30 imit/base >3 20	1 0 61 1 970 1132 1050 1311 3731 <i>current</i> 11 11 4 <i>current</i> 0.8 9.8 20.0	0 0 58 <1 420 1704 1022 1233 3117 history 1 8 0 <1 history 1 0.1 5.4 18.4	3 0 66 2 1010 1203 1034 1345 3291 history 2 ▲ 39 4 5 bistory 2 1.6 1.6 15.8 27.6
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 2060 2060 2060 2060 2060 2	1 0 61 1 970 1132 1050 1311 3731 <i>current</i> 11 11 4 <i>current</i> 0.8 9.8 20.0 <i>current</i>	0 0 58 <1 420 1704 1022 1233 3117 history 1 8 0 <1 kistory 1 0.1 5.4 18.4 history 1	3 0 66 2 1010 1203 1034 1345 3291 history 2 4 5 history 2 1.6 15.8 27.6 history 2



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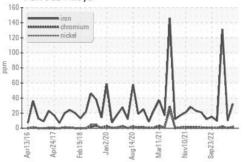


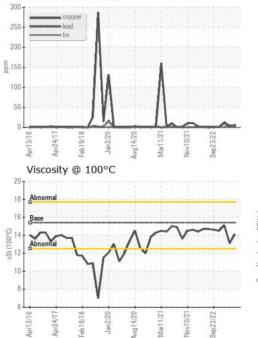


VISUAL		method	limit/base	current	history 1	history 2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	history 1	history 2
Visc @ 100°C	cSt	ASTM D445	15.4	14.1	13.1	15.1
GRAPHS						

Ferrous Alloys

Non-ferrous Metals





Received

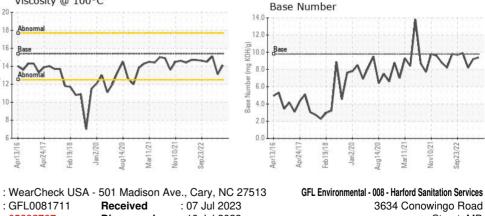
Diagnosed

Diagnostician

: 07 Jul 2023

: 10 Jul 2023

: Wes Davis







Test Package : FLEET 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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: 05892767

: 10548577