

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



MONTGOMERY **MACK 928112**

Component **Diesel Engine** Fluid

PETRO CANADA DURON

SAMP 15W40 (L SAMPLE INFORMAT Sample Date I Machine Age hrs Oil Age hrs Oil Changed sample Status Oil Changed I Sample Status I CONTAMINATION Fuel Glycol I WEAR METALS I Iron pp Chromium pp Nickel pp Aluminum pp Lead pp Copper pp Tin pp Cadmium pp Boron pp Barium pp Malybdenum pp Manganese pp	TION method Client Ini Client Ini s Client Ini s Client Ini s Client Ini Client Ini S Client Ini Client Ini S Client Ini Client Ini S Client Ini S C	fo fo fo fo fo fo fo fo fo imit/ba ba ba ba ba ba ba ba ba ba ba ba ba b	GFL0089895 31 Oct 2023 13572 640 Not Changd NORMAL se current <1.0 NEG	Nistory1 GFL00923711 02 Oct 2023 13366 434 Not Changd NORMAL history1 <1.0 NEG 10 <1.0 6434 0 <1.0 0 <1.0 10 <1.0 NEG 0 <10 <10 <10 <11 0 <11 0 <11 0 <11 0 <11 0 <10 <10 <10 <10	history2 GFL0092410 11 Sep 2023 13204 272 Not Changd NORMAL history2 <1.0 history2 <1.0 history2 <1.0 <1.0 <1.0 0
Sample Number Sample Date Machine Age hrs Oil Age hrs Oil Changed Sample Status CONTAMINATION Fuel Glycol P WEAR METALS Iron pp Chromium pp Nickel pp Titanium pp Silver pp Aluminum pp Lead pp Copper pp Tin pp Vanadium pp Cadmium pp Cadmium pp Barium pp Molybdenum pp Manganese pp	Client In Client In S Client In S Client In Client In Client In Client In Client In WC Methor WC Methor WC Methor WC Methor WC Methor WC Methor WC Methor MC Methor WC Methor MC	fo fo fo fo fo fo fo fo fo imit/ba ba ba ba ba ba ba ba ba ba ba ba ba b	GFL008989895 31 Oct 2023 13572 640 Not Changd NORMAL Se current 4 Se current 4 <1 51 <1 64 0 7 <1 7 <1 7 <1 7 <1 7 <1 7 <1 7 <1	GFL0092371 02 Oct 2023 13366 434 Not Changd NORMAL 10 10 10 10 10 10 10 0	GFL0092410 11 Sep 2023 13204 272 Not Changd NORMAL <br< th=""></br<>
Sample Date Image Machine Age hrs Oil Age hrs Oil Changed sample Status CONTAMINATION Image Fuel Glycol WEAR METALS Image Iron pp Chromium pp Nickel pp Silver pp Aluminum pp Lead pp Copper pp Cadmium pp Boron pp Barium pp Molybdenum pp Manganese pp	Client Inf S Client Inf Client Inf Client Inf Client Inf Client Inf Client Inf WC Metho WC Metho WC Metho WC Metho MC MC MC METHO MC MC MC MC METHO MC MC M	fo fo fo fo fo bd bd bd bd bd bd bd bd bd bd bd bd bd	31 Oct 2023 13572 640 Not Changd NORMAL se current <1.0	02 Oct 2023 13366 434 Not Changd NORMAL 10<1.0	11 Sep 2023 13204 272 Not Changd NORMAL <1.0 NEG history2 8 0 0 0 <1 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0
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GlycolWEAR METALSronppChromiumppChromiumppNickelppFitaniumppSilverppAluminumppLeadppCopperppTinppVanadiumppCadmiumppBoronppBariumppMolybdenumppManganesepp	WC Metho method m ASTM D518 m ASTM D518	Imit/ba Imit/ba 5m >20 5m >5 5m >2 5m >2 5m >2 5m >20 5m >2 5m >20 5m >20 5m >20 5m >330 5m >15 5m	NEG se current 4 <1	NEG history1 10 <1 0 <1 0 6 0 0 <1 0	NEG history2 8 0 0 <1 0 0 0 0 0 <1
GlycolWEAR METALSronppChromiumppChromiumppNickelppFitaniumppSilverppAluminumppLeadppCopperppFinppVanadiumppCadmiumppBoronppBariumppMolybdenumppManganesepp	WC Metho method m ASTM D518 m ASTM D518	Imit/ba Imit/ba 5m >20 5m >5 5m >2 5m >2 5m >2 5m >20 5m >2 5m >20 5m >20 5m >20 5m >330 5m >15 5m	NEG se current 4 <1	NEG history1 10 <1 0 <1 0 6 0 0 <1 0	NEG history2 8 0 0 <1 0 0 0 0 0 <1
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ron pp Chromium pp Nickel pp Titanium pp Silver pp Aluminum pp Lead pp Copper pp Tin pp Vanadium pp Cadmium pp ADDITIVES Boron pp Barium pp Molybdenum pp	ASTM D518:	5m >120 5m >20 5m >5 5m >2 5m >2 5m >2 5m >20 5m >2 5m >20 5m >20 5m >20 5m >40 5m >330 5m >15 5m	4 <1 <1 0 4 0 <1 <1 <1	10 <1 0 <1 0 6 0 <1 0	8 0 <1 0 0 0 0 <1
ChromiumppNickelppFitaniumppSilverppAluminumppLeadppCopperppCopperppZadmiumppADDITIVESBoronBariumppMolybdenumppManganesepp	ASTM D518: mm ASTM D518:	5m >20 5m >5 5m >2 5m >2 5m >20 5m >20 5m >20 5m >20 5m >330 5m >15 5m >15	<1 <1 <1 0 4 0 <1 <1 <1 <1	<1 0 <1 0 6 0 <1 0	0 0 <1 0 0 0 0 <1
NickelppVickelppFitaniumppSilverppAluminumpp_eadppCopperppCopperppZadmiumppCadmiumppBoronppBariumppMolybdenumppManganesepp	ASTM D518:	5m >5 5m >2 5m >2 5m >20 5m >20 5m >40 5m >330 5m >15 5m	<1 <1 0 4 0 <1 <1 <1	0 <1 0 6 0 <1 0	0 <1 0 0 0 <1
FitaniumppSilverppAluminumppLeadppCopperppFinppZanadiumppCadmiumppADDITIVESBoronppBariumppMolybdenumppManganesepp	ASTM D518	5m >2 5m >2 5m >20 5m >40 5m >330 5m >15 5m	<1 0 4 0 <1 <1 <1 <1	<1 0 6 0 <1 0	<1 0 0 0 0 <1
Silver pp Aluminum pp Lead pp Copper pp Fin pp /anadium pp Cadmium pp ADDITIVES Boron pp Barium pp Molybdenum pp Manganese pp	ASTM D518: vm ASTM D518:	5m >2 5m >20 5m >40 5m >330 5m >15 5m	0 4 0 <1 <1 <1	0 6 0 <1 0	0 0 0 0 <1
Aluminum pp Lead pp Copper pp Fin pp /anadium pp Cadmium pp ADDITIVES Boron pp Barium pp Molybdenum pp Manganese pp	ASTM D518 ASTM D518 ASTM D518 ASTM D518 ASTM D518 ASTM D518 ASTM D518	5m >20 5m >40 5m >330 5m >15 5m	4 0 <1 <1 <1	6 0 <1 0	0 0 0 <1
Lead pp Copper pp Fin pp /anadium pp Cadmium pp ADDITIVES Boron pp Barium pp Molybdenum pp Manganese pp	ASTM D518 ASTM D518 ASTM D518 ASTM D518 ASTM D518	5m >40 5m >330 5m >15 5m	0 <1 <1 <1	0 <1 0	0 0 <1
Copper pp Fin pp /anadium pp Cadmium pp ADDITIVES Boron pp Barium pp Molybdenum pp Manganese pp	ASTM D518 ASTM D518 ASTM D518 ASTM D518	5m >330 5m >15 5m	<1 <1 <1	<1 0	0 <1
Tin pp Vanadium pp Cadmium pp ADDITIVES Boron pp Barium pp Molybdenum pp Manganese pp	ASTM D518 ASTM D518	5m >15 5m	<1 <1	0	<1
Vanadium pp Cadmium pp ADDITIVES Boron pp Barium pp Molybdenum pp Manganese pp	ASTM D518	5m	<1		
Cadmium pp ADDITIVES Boron pp Barium pp Molybdenum pp Manganese pp				0	0
ADDITIVES Boron pp Barium pp Molybdenum pp Manganese pp	ASTM D518	5m	<1		
Boron pp Barium pp Molybdenum pp Manganese pp				0	0
Barium pp Molybdenum pp Manganese pp	methoo	l limit/ba	se current	history1	history2
Molybdenum pp Manganese pp	ASTM D518	5m O	2	<1	0
Manganese pp	ASTM D518	5m O	<1	0	0
e	ASTM D518	5m 60	64	56	60
Magnesium pp	ASTM D518	5m O	0	<1	<1
	ASTM D518	5m 1010	959	976	1046
Calcium pp	ASTM D518	5m 1070	1061	1030	1164
Phosphorus pp			1018	980	1054
Zinc pp	ASTM D518	5m 1270	1242	1243	1320
Sulfur pp		5m 2060	3768	2869	3769
CONTAMINANTS	methoo	l limit/ba	se current	history1	history2
Silicon pp	ASTM D518	5m >25	5	13	11
Sodium pp	ASTM D518	5m	6	9	5
Potassium pp	ASTM D518	5m >20	5	6	4
INFRA-RED	method	l limit/ba	se current	history1	history2
Soot % %	*ASTM D78	44 >4	0.2	0.6	0.4
Nitration Abs	s/cm *ASTM D76	24 >20	5.1	7.5	6.6
Sulfation Abs	/.1mm *ASTM D74	15 >30	17.8	19.3	17.8
FLUID DEGRADAT	ON method	l limit/ba	se current	history1	history2
Dxidation Abs					
Base Number (BN) mg		14 >25	13.5	14.7	13.1

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.

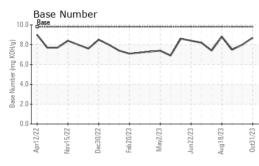
Fluid Condition

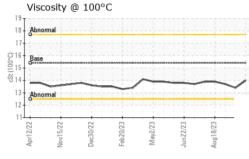
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.



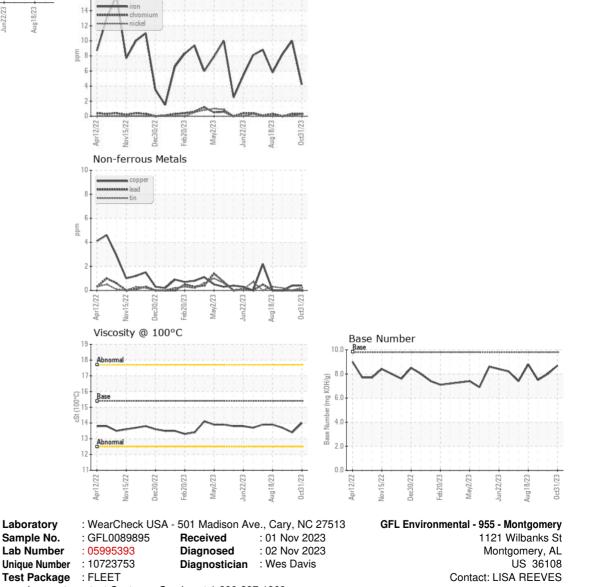
OIL ANALYSIS REPORT

Ferrous Alloys





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	13.4	13.7
GRAPHS						



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)

Certificate L2367