

OIL ANALYSIS REPORT

Sample Rating Trend

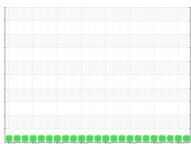
NORMAL



MONTGOMERY **MACK 928112**

Component **Diesel Engine** Fluid

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



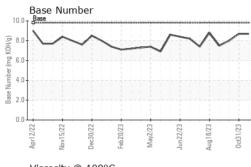


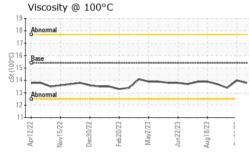
2/27 Nov/277 Dec/077 Feb/203 Max/273 Lun2023 Aux/2023 0-503

Beample at the next service interval to monitor. As at the next service interval to monitor. Is any lead to a service at the next service interval. Interval is no indication of any contamination in the it. Uid Condition the BN result indicates that there is suitable Kulhi y contaming in the oil. The condition of the is suitable for further service. Sample Date interval Client Info GFL0087944 F80 GFL0087944 GFL0087945 GFL0087944 GFL008794 GFL0087944 GFL008794 GFL0087945 GFL008796 GFL008796 GFL008796 GFL0087966 GFL0087966 GFL0087966 GFL0087966 GFL0087966 GFL0087966	DIAGNOSIS	SAMPLE INFOR	ΜΑΤΙΟΝ	method	limit/base	current	history1	history2
esample at the next service interval to monitor. Kear Client Info 16 Bory 2023 31 Oct 2023 02 Oct 2023 Machine Age hrs Client Info 19701 13572 13386 Iomanoment wear rates are normal. Ont Age hrs Client Info 19701 13572 13386 Iot Age hrs Client Info Not Changd Not Changd Not Changd Ind Contion hrs Client Info Not Okangd Not Changd Not Changd Is is suitable for further service. WC Method 3.0 <1.0								
Appendix Appendix Clean line 10 Appendix	Resample at the next service interval to monitor.							
Decomponent wear rates are normal. Oil Age hts Client Info 769 640 434 Detailstoin of any contamination in the Lindo Chongo Nort Chango			hrs					
Orithminition Intere is no indication of any contamination in the L. OI Chanaged Sample Status Client Info Not Changed NORMAL Not Changed NORMAL Not Changed NORMAL total Contamine heal Drive unit indicates that there is suitable for further service. CONTAMINATION method Imit base current heatsoy NEG		Ŭ						
Sample Status NORMAL NORMAL NORMAL NORMAL uid condition he BN result indicates that there is suitable It is suitable for further service. CONTAMINATION method limitbase current history1 history2 Vial Water WC Method >3.0 <1.0	•	•						
Util Condition ne BN result indicates that there is suitable klinify menining in the oil. The condition of the it is suitable for further service. UCM Intel VS WCM Method >0.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	Contamination					-		
Picel W0 (Method >3.0 <1.0	il.	CONTAMINAT	ION	method	limit/base	current	history1	history2
Water WC Method So.2 NEG NEG NEG Glycod WC WC Method So.2 NEG NEG NEG Glycod WC WC Method WC Method So.2 NEG NEG NEG Wear glycod WC Method WC Method So.2 NEG NEG NEG Wear ppm ASTM Distism >20 <1		Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Bit is suitable for further service. Glycol WC Method Imat/base NEG NEG NEG Vis a suitable for further service. Glycol WC Method Imat/base current Nistory1 Nistory1 I'ron ppm ASTM D5156n >100 c1 c1 c1 Nickel ppm ASTM D5156n >2 c1 c1 c1 Nickel ppm ASTM D5156n >2 c1 c1 c1 Nickel ppm ASTM D5156n >20 5 4 6 Lead ppm ASTM D5156n >20 5 4 1 Copoper ppm ASTM D515m 300 c1 c1 c1 Tin ppm ASTM D515m 300 c1 c1 0 ADDITIVES method Imm/base current History1 History2 Molydenum ppm ASTM D515m 0 c1 0 Cadicium ppm ASTM D		Water		WC Method	>0.2		NEG	NEG
Iron ppm ASTM D5185m >120 2 4 10 Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >5 0 <1 <1 <1 Nickel ppm ASTM D5185m >2 0 0 0 Attminum ppm ASTM D5185m >2 0 0 0 Attminum ppm ASTM D5185m >2 0 0 0 Attminum ppm ASTM D5185m >2 0 0 0 Copper ppm ASTM D5185m >10 0 1 0 Quadium ppm ASTM D5185m 0 4 0 2 Cadmium ppm ASTM D5185m 0 4 0 2 1 Barium ppm ASTM D5185m 0 4 2 1 3 Barium ppm ASTM D5185m 0 0 0 0 1 0 Manganese ppm <t< td=""><td>il is suitable for further service.</td><td></td><td></td><td></td><td></td><th></th><td></td><td></td></t<>	il is suitable for further service.							
Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >2 0 <1		WEAR METAL	.S	method	limit/base	current	history1	history2
Chromium ppm ASTM DS185m >20 <1 <1 <1 Nickel ppm ASTM DS185m >2 0 <1		Iron	ppm	ASTM D5185m	>120	2	4	10
Nickel ppm ASTM D5185m >5 0 <1 0 Titanium ppm ASTM D5185m >2 <1		Chromium		ASTM D5185m	>20			<1
Titanium ppm ASTM D5186m >2 <1 <1 <1 Silver ppm ASTM D5186m >2 0 0 0 Aluminum ppm ASTM D5186m >2 0 0 0 Lead ppm ASTM D5186m >40 <1								
Silver ppm ASTM D5185m >20 0 0 0 Aluminum ppm ASTM D5185m >200 5 4 6 Leada ppm ASTM D5185m >200 <1 0 0 Copper ppm ASTM D5185m >3300 <1 <1 0 0 Copper ppm ASTM D5185m >15 0 <10 0 Cadmium ppm ASTM D5185m 0 <10 0 0 0 0 0 0 ADDITIVES method limit/base current history1 history2 0 Barium ppm ASTM D5185m 0 4 2 <1 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 0 0 Molybdenum ppm ASTM D5185m 010 9 0 0101 950 976 Calcium ppm ASTM D5185m 1010								
Aluminum ppm ASTM D5185m >20 5 4 6 Lead ppm ASTM D5185m >40 <1								
Lead ppm ASTM D5185m >40 <1 0 0 Copper ppm ASTM D5185m >330 <1								
Copper ppm ASTM D5185m >330 <1 <1 <1 Tin ppm ASTM D5185m >15 0 <1								
Tin ppm ASTM D5185m >15 0 <1 0 Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 2 <1 Barium ppm ASTM D5185m 0 4 2 <1 Barium ppm ASTM D5185m 0 4 2 <1 Molybdenum ppm ASTM D5185m 0 0 <1 00 <1 Magnesium ppm ASTM D5185m 1010 960 959 976 Calcium ppm ASTM D5185m 1010 940 1018 980 Zinc ppm ASTM D5185m 1010 940 1018 980 Zinc ppm ASTM D5185m 1270 1226 1242 1243 Sulfur ppm ASTM D5185m 2060 3051 3								
Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 <1								
Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 2 <1					>15			
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 2 <1								
Boron ppm ASTM D5185m 0 4 2 <1 Barium ppm ASTM D5185m 0 0 <1 0 Molybdenum ppm ASTM D5185m 60 59 64 56 Manganese ppm ASTM D5185m 0 0 0 <1 Magnesium ppm ASTM D5185m 1010 960 959 976 Calcian ppm ASTM D5185m 1010 960 959 976 Calcian ppm ASTM D5185m 1010 940 1018 980 Phosphorus ppm ASTM D5185m 1070 1226 1242 1243 Sulfur ppm ASTM D5185m 1270 1226 1242 1243 Sulfur ppm ASTM D5185m 2060 3051 3768 2869 CONTAMINANTS method imit/base current history1 history2 Silicon ppm ASTM D5185m >20 3 5 6 INFRA-RED method limit/bas			ppm		l:			
Barium ppm ASTM D5185m 0 0 <1 0 Molybdenum ppm ASTM D5185m 60 59 64 56 Manganese ppm ASTM D5185m 0 0 0 <1								
Molybdenum ppm ASTM D5185m 60 59 64 56 Manganese ppm ASTM D5185m 0 0 0 <1								
Marganese prm ASTM D5185m 0 0 0 <1 Magnesium ppm ASTM D5185m 1010 960 959 976 Calcium ppm ASTM D5185m 1070 1050 1061 1030 Phosphorus ppm ASTM D5185m 1150 940 1018 980 Zinc ppm ASTM D5185m 1270 1226 1242 1243 Sulfur ppm ASTM D5185m 2060 3051 3768 2869 CONTAMINANTS method imit/base current history1 history2 Silicon ppm ASTM D5185m >20 3 5 6 INFRA-RED method limit/base current history1 history2 Soot % % 'ASTM D7844 >4 0.2 0.2 0.6 Nitration Abs/cm 'ASTM D7644 >20 5.4 5.1 7.5 Sulfation Abs/cm 'ASTM D7644<			ppm					
Magnesium ppm ASTM D5185m 1010 960 959 976 Calcium ppm ASTM D5185m 1070 1050 1061 1030 Phosphorus ppm ASTM D5185m 1150 940 1018 980 Zinc ppm ASTM D5185m 1270 1226 1242 1243 Sulfur ppm ASTM D5185m 2060 3051 3768 2869 CONTAMINANTS method imit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 13 Sodium ppm ASTM D5185m >260 3051 5 6 INFRA-RED ppm ASTM D5185m >20 3 5 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7644 >4 0.2 0.2 0.6 Nitration Abs/tm *ASTM D7624 >20 5.4 5.1 7.5 Sulfation Abs/tm			ppm					
Calcium ppm ASTM D5185n 1070 1050 1061 1030 Phosphorus ppm ASTM D5185n 1150 940 1018 980 Zinc ppm ASTM D5185n 1270 1226 1242 1243 Sulfur ppm ASTM D5185n 2060 3051 3768 2869 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185n >25 4 5 13 Sodium ppm ASTM D5185n >20 3 5 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D5185n >20 3 5 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.2 0.6 Nitration Abs/cm *ASTM D7845 >30 17.6 17.8 19.3 FLUID DEGRADATION Method		0	ppm					
Phosphorus ppm ASTM D5185m 1150 940 1018 980 Zinc ppm ASTM D5185m 1270 1226 1242 1243 Sulfur ppm ASTM D5185m 2060 3051 3768 2869 CONTAMINATY method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 13 Sodium ppm ASTM D5185m >25 4 6 9 Potassium ppm ASTM D5185m >25 4 6 9 Ntertation ppm ASTM D5185m >20 3 5 6 INFRA-RED method limit/base current history1 history2 0.2 0.2 0.6 Nitration Abs/rm 'ASTM D7614 >4 0.2 0.2 0.2 0.6 Nitration Abs/rm 'ASTM D7624 >20 5.4 5.1 7.5 Sulfation Abs/rm 'ASTM D7415 >30 17.6 17.8 19.			ppm					
Zinc ppm ASTM D5185m 1270 1226 1242 1243 Sulfur ppm ASTM D5185m 2060 3051 3768 2869 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 13 Sodium ppm ASTM D5185m >25 4 6 9 Potassium ppm ASTM D5185m >20 3 5 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D5185m >20 3 5 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.2 0.6 Nitration Abs/m *ASTM D7624 >20 5.4 5.1 7.5 Sulfation Abs/imm *ASTM D7815 >30 17.6 17.8 19.3 FLUID DEGRADATION Method lim			ppm	ASTM D5185m	1070	1050	1061	1030
SulfurppmASTM D5185m2060305137682869CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>254513SodiumppmASTM D5185m>20469PotassiumppmASTM D5185m>20356INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>40.20.20.6NitrationAbs/cm*ASTM D7624>205.45.17.5SulfationAbs/tm*ASTM D7415>3017.617.819.3FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/tm*ASTM D7414>2513.613.514.7		Phosphorus	ppm			940	1018	980
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m<>254513SodiumppmASTM D5185m>25469PotassiumppmASTM D5185m>20356INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>40.20.20.6NitrationAbs/cm*ASTM D7414>205.45.17.5SulfationAbs/.1mm*ASTM D7415>3017.617.819.3FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2513.613.514.7		Zinc	ppm	ASTM D5185m	1270	1226	1242	1243
SiliconppmASTM D5185m>254513SodiumppmASTM D5185mI469PotassiumppmASTM D5185m>20356INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>40.20.20.6NitrationAbs/cm*ASTM D7624>205.45.17.5SulfationAbs/1m*ASTM D7624>3017.617.819.3FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/1m*ASTM D7414>2513.613.514.7		Sulfur	ppm	ASTM D5185m	2060	3051	3768	2869
SodiumppmASTM D5185m469PotassiumppmASTM D5185m>20356INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>40.20.20.6NitrationAbs/cm*ASTM D7624>205.45.17.5SulfationAbs/.1mm*ASTM D7415>3017.617.819.3FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2513.613.514.7		CONTAMINAN	ITS	method	limit/base	current	history1	history2
PotassiumppmASTM D5185m>20356INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>40.20.20.6NitrationAbs/cm*ASTM D7624>205.45.17.5SulfationAbs/.1mm*ASTM D7415>3017.617.819.3FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2513.613.514.7			ppm		>25	4		
INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>40.20.20.6NitrationAbs/cm*ASTM D7624>205.45.17.5SulfationAbs/.1mm*ASTM D7415>3017.617.819.3FLUID DEGRADATION methodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2513.613.514.7		Sodium	ppm	ASTM D5185m		4	6	9
Soot % % *ASTM D7844 >4 0.2 0.2 0.6 Nitration Abs/cm *ASTM D7624 >20 5.4 5.1 7.5 Sulfation Abs/.1mm *ASTM D7415 >30 17.6 17.8 19.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.6 13.5 14.7		Potassium	ppm	ASTM D5185m	>20	3	5	6
Nitration Abs/cm *ASTM D7624 >20 5.4 5.1 7.5 Sulfation Abs/.1mm *ASTM D7615 >30 17.6 17.8 19.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.6 13.5 14.7		INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 17.6 17.8 19.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.6 13.5 14.7		Soot %	%	*ASTM D7844	>4	0.2	0.2	0.6
Sulfation Abs/.1mm *ASTM D7415 >30 17.6 17.8 19.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.6 13.5 14.7		Nitration	Abs/cm	*ASTM D7624	>20	5.4	5.1	7.5
Oxidation Abs/.1mm *ASTM D7414 >25 13.6 13.5 14.7		Sulfation	Abs/.1mm				17.8	19.3
		FLUID DEGRAI	DATION	method	limit/base	current	history1	history2
		Oxidation	Abs/.1mm	*ASTM D7414	>25	13.6	13.5	14.7
		Base Number (BN)				8.7	8.7	8.0

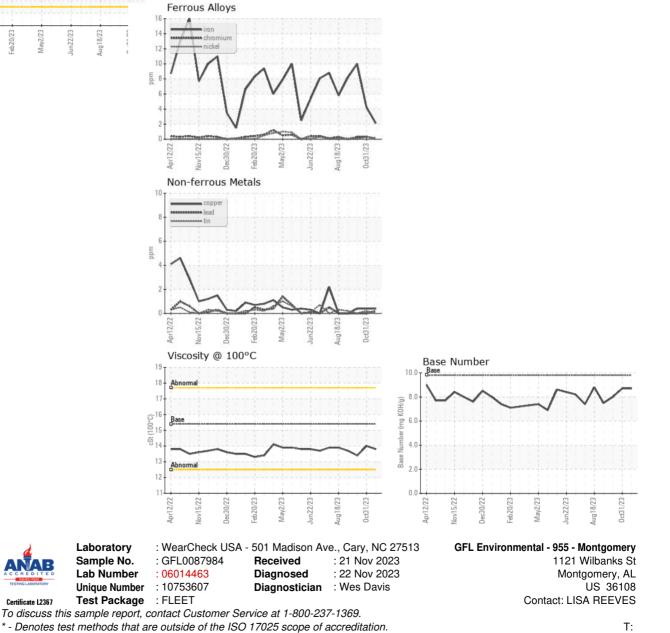


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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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	13.8	14.0	13.4
GRAPHS						





* - 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

F: