

OIL ANALYSIS REPORT

Sample Rating Trend

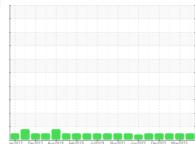
NORMAL



Machine Id 4490 Component

Diesel Engine

PETRO CANADA DURON XL SYN BLEND 15W40 (--- GAL)

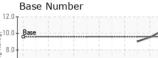


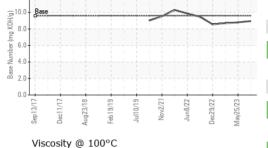


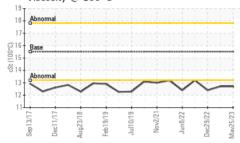
Resample at the next service interval to monitor. War Question Question <th>DIAGNOSIS</th> <th>SAMPLE INFOR</th> <th>RMATION</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	DIAGNOSIS	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Ware All components were rates are normal. Machine Age (intermediation) Kins Client linito 10007 00000 132 There is no indicator of any contamination in the oil. Client linito Client linito Changed (intermediate) Chande (intermediate) Change	Recommendation	Sample Number		Client Info		GFL0084358	GFL0077610	GFL0070736
All component wear rates are normal. Oil Age kms Oilenanged Oilenanged Changed Change	Resample at the next service interval to monitor.	Sample Date		Client Info		24 Aug 2023	25 May 2023	07 Mar 2023
Ontamination Oil Changed Client Info Changed Chanded Changed Changed <th>Wear</th> <th>Machine Age</th> <th>kms</th> <th>Client Info</th> <th></th> <th>1109579</th> <th>1100364</th> <th>36578</th>	Wear	Machine Age	kms	Client Info		1109579	1100364	36578
Sample Status NORMAL NORMAL NORMAL NORMAL Date is no indication of any contamination in the all. Imb contained Imb con	All component wear rates are normal.	Oil Age	kms	Client Info		0	0	132
Sample Status NORMAL NORMAL NORMAL NORMAL Fluid Condition The IX result indicates that there is suitable alkalinity remaining in the 0.1. the condition of the 0.1 is suitable for further service. NGC Method 1.6.0 <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	Oil Changed		Client Info		Changed	Changed	Changed
Oil. CONTAMINATION method imit/base current history1 history2 Fuel WC Method >6.0 <1.0 <1.0 <1.0 <1.0 Bit suitable for further service. WC Method NEG NEG NEG NEG VMCAR METALS method Imit/base current NEG NEG NEG Normality ppm ASTI05185m >200 0 0 0 0 Nickel ppm ASTI05185m >200 0 0 0 0 Nickel ppm ASTI05185m >20 0 0 0 0 Aluminum ppm ASTI05185m >20 0 0 0 0 Aluminum ppm ASTI05185m >20 0		Sample Status				NORMAL	NORMAL	NORMAL
Fuil Condition Fuel WC Method >6.0 <1.0	•	CONTAMINA	TION	method	limit/base	current	history1	history2
Bit with the solt. The condition of the oil is suitable for further service. NEG NEG NEG VEAR METALS method imit/base current history1 history2 Iron ppm ASTM D518(m) >200 3 4 5 Chromium ppm ASTM D518(m) >20 0 0 0 Nickel ppm ASTM D518(m) >20 0 0 0 Silver ppm ASTM D518(m) >2 0 0 0 Aluminum ppm ASTM D518(m) >2 0 0 0 Opper ppm ASTM D518(m) >2 0 0 0 Qopper ppm ASTM D518(m) >40 <1 <1 1 Cadmium ppm ASTM D518(m) >0 0 0 0 Vanadium ppm ASTM D518(m) 1 2 2 2 Barium ppm ASTM D518(m) 1 0 0	The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the	Fuel		WC Method	>6.0	<1.0	<1.0	<1.0
VIEAR METALS Therhod Initiations current Initiation Iron ppm ASTM D5185m >>0 0 0 Ohromium ppm ASTM D5185m >>2 0 0 <1 Nickel ppm ASTM D5185m >>2 0 0 <1 Silver ppm ASTM D5185m >>2 0 0 0 Aduminum ppm ASTM D5185m >>2 0 0 0 Aduminum ppm ASTM D5185m >>2 1 2 2 Lead ppm ASTM D5185m >>0 <1 <1 Adminony ppm ASTM D5185m >15 0 <1 <1 Adminony ppm ASTM D5185m >15 0		Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 0 0 1 Nickel ppm ASTM D5185m 2 0 0 <1 Titanium ppm ASTM D5185m 2 0 0 1 Silver ppm ASTM D5185m 2 1 2 2 Lead ppm ASTM D5185m 2 1 2 2 Lead ppm ASTM D5185m 23.0 <1 1 <1 Copper ppm ASTM D5185m 33.0 <1 <1 <1 Atminum ppm ASTM D5185m 33.0 <1 <1 <1 Vanadium ppm ASTM D5185m 1 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Abpoint/VES method limit/base current History1 History2 Barium ppm ASTM D5185m 1 0 0		WEAR META	LS	method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >2 0 0 <1		Iron	ppm	ASTM D5185(m)	>100	3	4	5
Titanium ppm ASTM D5185(m) 0 <1		Chromium	ppm	ASTM D5185(m)	>20	0	0	0
Silver ppm ASTM DS165(m) >2 0 0 0 Aluminum ppm ASTM DS165(m) >26 <1 2 2 Lead ppm ASTM DS165(m) >40 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 1 1 <1>		Nickel	ppm	ASTM D5185(m)	>2	0	0	<1
Aluminum ppm ASTM D5185m >25 <1		Titanium	ppm	ASTM D5185(m)		0	<1	<1
Aluminum ppm ASTM D5183(m) >25 <1		Silver	ppm	ASTM D5185(m)	>2	0	0	0
Copper ppm ASTM D5185(m) >33.0 <1		Aluminum	ppm	ASTM D5185(m)	>25	<1	2	2
Tin ppm ASTM D5189m >15 0 <1 <1 Antimony ppm ASTM D5189m 0 0 0 Vanadium ppm ASTM D5189m 0 0 0 0 Berylliam ppm ASTM D5189m 0 0 0 0 Cadmium ppm ASTM D5189m 1 0 0 0 ADDITIVES method Imit/base current history1 history2 Boron ppm ASTM D5189m 1 0 0 0 Molybdenum ppm ASTM D5189m 1 0 0 0 Magnesium ppm ASTM D5189m 10 913 908 878 Calcium ppm ASTM D5189m 1070 972 1048 1091 Phosphorus ppm ASTM D5189m 1070 913 908 858 Zinc ppm ASTM D5189m 1070 913 1117 1110 Sulfur ppm ASTM D5189m 1270 1103 1		Lead	ppm	ASTM D5185(m)	>40	<1	<1	<1
Antimony ppm ASTM D5185(m) 0 0 0 Vanadium ppm ASTM D5185(m) 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 1 2 2 2 Barium ppm ASTM D5185(m) 1 0 0 0 Molybdenum ppm ASTM D5185(m) 1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <t< th=""><th></th><th>Copper</th><th>ppm</th><th>ASTM D5185(m)</th><th>>330</th><th><1</th><th><1</th><th><1</th></t<>		Copper	ppm	ASTM D5185(m)	>330	<1	<1	<1
Vanadium ppm ASTM D5185(m) 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 1 2 2 2 Barium ppm ASTM D5185(m) 1 0 0 0 Molybdenum ppm ASTM D5185(m) 1 0 0 0 Marganese ppm ASTM D5185(m) 10 913 908 878 Galacium ppm ASTM D5185(m) 1070 972 1048 1035 Zinc ppm ASTM D5185(m) 1150 991 1045 1035 Zinc ppm ASTM D5185(m) 1270 1103 1117 1110 Suffur ppm ASTM D5185(m) 2060 2466 2593 2585 Lithium ppm ASTM D5185(m) 20 0 0		Tin	ppm	ASTM D5185(m)	>15	0	<1	<1
Beryllium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 1 2 2 2 Barium ppm ASTM D5185(m) 1 0 0 0 Molybdenum ppm ASTM D5185(m) 1 0 0 0 Manganese ppm ASTM D5185(m) 101 913 908 878 Calcium ppm ASTM D5185(m) 1010 913 908 878 Calcium ppm ASTM D5185(m) 1010 913 908 878 Calcium ppm ASTM D5185(m) 1010 913 1091 1045 1035 Phosphorus ppm ASTM D5185(m) 1270 1103 1117 1110 Sulfur ppm ASTM D5185(m) 200		Antimony	ppm	ASTM D5185(m)		0	0	0
Beryllium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 1 2 2 2 Barium ppm ASTM D5185(m) 1 0 0 0 Molybdenum ppm ASTM D5185(m) 1 2 2 2 Manganese ppm ASTM D5185(m) 1 -1 -1 -1 Magnesium ppm ASTM D5185(m) 1010 913 908 878 Calcium ppm ASTM D5185(m) 1070 972 1048 1091 Phosphorus ppm ASTM D5185(m) 1070 972 1048 1095 Zinc ppm ASTM D5185(m) 1270 1103 1117 1110 Sulfur ppm ASTM D5185(m) 2060 2466		Vanadium	ppm	ASTM D5185(m)		0	0	0
Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 1 2 2 2 Barium ppm ASTM D5185(m) 1 0 0 0 Molybdenum ppm ASTM D5185(m) 60 53 55 54 Manganesse ppm ASTM D5185(m) 101 <1		Beryllium		ASTM D5185(m)		0	0	0
Boron ppm ASTM D5185(m) 1 2 2 2 Barium ppm ASTM D5185(m) 1 0 0 Molybdenum ppm ASTM D5185(m) 60 53 55 54 Manganese ppm ASTM D5185(m) 1 <1		Cadmium	ppm			0	0	0
Barium ppm ASTM D5185(m) 1 0 0 0 Molybdenum ppm ASTM D5185(m) 60 53 55 54 Manganese ppm ASTM D5185(m) 1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 1 <1 <1 <1		ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185(m) 60 53 55 54 Manganese ppm ASTM D5185(m) 1 <1 <1 <1 Magnesium ppm ASTM D5185(m) 1010 913 908 878 Calcium ppm ASTM D5185(m) 1070 972 1048 1091 Phosphorus ppm ASTM D5185(m) 1150 991 1045 1035 Zinc ppm ASTM D5185(m) 1270 1103 1117 1110 Sulfur ppm ASTM D5185(m) 2060 2466 2593 2585 Lithium ppm ASTM D5185(m) 2060 2466 2593 2585 Silicon ppm ASTM D5185(m) >26 3 5 3 5 Sodium ppm ASTM D5185(m) >25 5 3 5 3 5 Sodium ppm ASTM D5185(m) >20 0 0 0 0 INFRA-RED method limit/base current history1 histo		Boron	ppm	ASTM D5185(m)	1	2	2	2
Marganese ppm ASTM D5185(m) 1 <1		Barium	ppm	ASTM D5185(m)	1	0	0	0
Magnesium ppm ASTM D5185(m) 1010 913 908 878 Calcium ppm ASTM D5185(m) 1070 972 1048 1091 Phosphorus ppm ASTM D5185(m) 1150 991 1045 1035 Zinc ppm ASTM D5185(m) 1270 1103 1117 1110 Sulfur ppm ASTM D5185(m) 2060 2466 2593 2585 Lithium ppm ASTM D5185(m) 2060 2466 2593 2585 Silicon ppm ASTM D5185(m) >25 5 3 5 Sodium ppm ASTM D5185(m) >20 0 0 0 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0 0 0		Molybdenum	ppm	ASTM D5185(m)	60	53	55	54
Calcium ppm ASTM D5185(m) 1070 972 1048 1091 Phosphorus ppm ASTM D5185(m) 1150 991 1045 1035 Zinc ppm ASTM D5185(m) 1270 1103 1117 1110 Sulfur ppm ASTM D5185(m) 2060 2466 2593 2585 Lithium ppm ASTM D5185(m) 2060 2466 2593 2585 Silicon ppm ASTM D5185(m) >206 current history1 history2 Silicon ppm ASTM D5185(m) >25 5 3 5 Sodium ppm ASTM D5185(m) >20 0 0 0 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0 0 0		Manganese	ppm	ASTM D5185(m)	1	<1	<1	<1
Phosphorus ppm ASTM D5185(m) 1150 991 1045 1035 Zinc ppm ASTM D5185(m) 1270 1103 1117 1110 Sulfur ppm ASTM D5185(m) 2060 2466 2593 2585 Lithium ppm ASTM D5185(m) 2060 2466 2593 2585 Silicon ppm ASTM D5185(m) history1 history2 Silicon ppm ASTM D5185(m) >25 5 3 5 Sodium ppm ASTM D5185(m) >20 0 0 0 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0 0 0		Magnesium	ppm	ASTM D5185(m)	1010	913	908	878
Zinc ppm ASTM D5185(m) 1270 1103 1117 1110 Sulfur ppm ASTM D5185(m) 2060 2466 2593 2585 Lithium ppm ASTM D5185(m) 2060 2466 2593 2585 Soliton ppm ASTM D5185(m) Current history1 history2 Silicon ppm ASTM D5185(m) >25 5 3 5 Sodium ppm ASTM D5185(m) >25 5 3 5 Potassium ppm ASTM D5185(m) >20 0 0 0 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0 0 0		Calcium	ppm	ASTM D5185(m)	1070	972	1048	1091
Zinc ppm ASTM D5185(m) 1270 1103 1117 1110 Sulfur ppm ASTM D5185(m) 2060 2466 2593 2585 Lithium ppm ASTM D5185(m) 2060 2466 2593 2585 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >25 5 3 5 Sodium ppm ASTM D5185(m) >25 5 3 5 Potassium ppm ASTM D5185(m) >20 0 0 0 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0 0 0		Phosphorus		ASTM D5185(m)	1150	991	1045	
SulfurppmASTM D5185(m)2060246625932585LithiumppmASTM D5185(m)C<1				ASTM D5185(m)	1270	1103	1117	1110
LithiumppmASTM D5185(m)<1		Sulfur						
Silicon ppm ASTM D5185(m) >25 5 3 5 Sodium ppm ASTM D5185(m) 3 9 4 Potassium ppm ASTM D5185(m) >20 0 0 0 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0 0 0		Lithium	ppm	ASTM D5185(m)		<1	<1	<1
Sodium ppm ASTM D5185(m) 3 9 4 Potassium ppm ASTM D5185(m) >20 0 0 0 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0 0 0		CONTAMINA	NTS	method	limit/base	current	history1	history2
PotassiumppmASTM D5185(m)>20000INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%ASTM D7844*>3000		Silicon	ppm	ASTM D5185(m)	>25	5	3	5
INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%ASTM D7844*>3000		Sodium	ppm	ASTM D5185(m)		3	9	4
Soot % % ASTM D7844* >3 0 0 0		Potassium	ppm	ASTM D5185(m)	>20	0	0	0
		INFRA-RED		method	limit/base	current	history1	history2
		Soot %	%	ASTM D7844*	>3	0	0	0
		Nitration	Abs/cm			5.7	5.4	6.0
Sulfation Abs/.1mm ASTM D7415* >30 20.2 18.4 21.0								

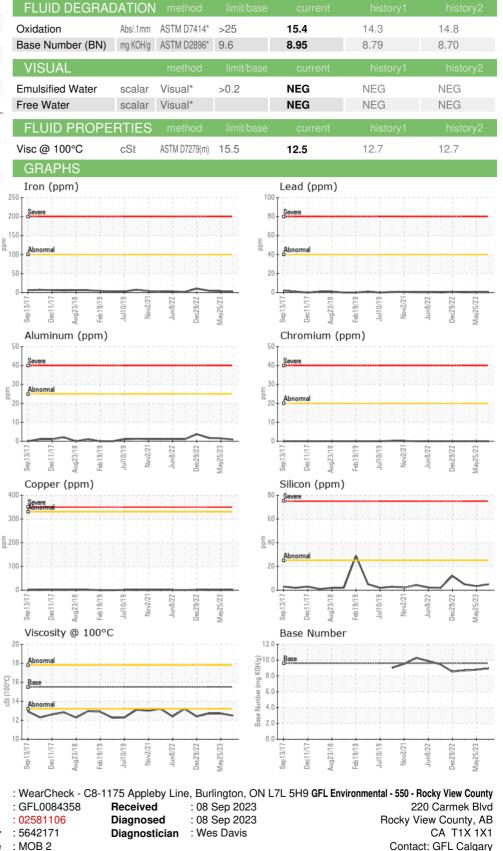


OIL ANALYSIS REPORT









Laboratory Test Package : MOB 2 To discuss this sample report, contact Customer Service at 1-800-268-2131. Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

CALA

ISO 17025:2017 Accredited

Laboratory

Sample No.

Lab Number

Unique Number