

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



CATERPILLAR D6 LGP 10041 (S/N KEW01161) Component

Diesel Engine

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

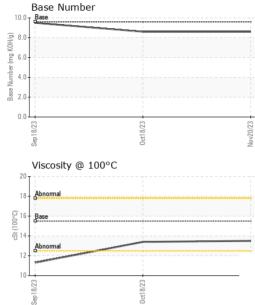
Fluid Condition

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

Sample Number Client Info WC0879401 WC0862885 WC0831305 Sample Date Client Info 20 Nov 2023 18 Sep 2023 19 Sep 2023 18 Sep 2023 19 Sep 2023 18 Sep 2023 18 Sep 2023 19 Sep 2023 18 S			Sep	2023	Oct2023 Nov2	JE3	
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 1659 1104 675	Sample Number		Client Info		WC0879401	WC0862885	WC0831330
Oil Age hrs Client Info 532 429 675 Oil Changed Clanged Changed	Sample Date		Client Info		20 Nov 2023	18 Oct 2023	18 Sep 2023
Oil Changed Sample Status Client Info Changed NORMAL NORMAL NORMAL NORMAL Normal Changed NORMAL Normal Listory2 Listory2 Changed Normal Normal Listory2 Changed Normal Normal Listory2 Changed Normal Normal	Machine Age	hrs	Client Info		1659	1104	675
NORMAL NORMAL NORMAL NORMAL CONTAMINATION method fimit/base current history1 history2	Oil Age	hrs	Client Info		532	429	675
Fuel	Oil Changed		Client Info		Changed	Changed	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method Image NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 <1	CONTAMINATION	٧	method limit/base		current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0	<1.0	0.2
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >2 0 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	22	27	54
Nickel	Chromium	• •	ASTM D5185m	>20	<1	<1	<1
Titanium	Nickel				0	<1	<1
Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >25 1 4 14 Lead ppm ASTM D5185m >40 <1 2 5 Copper ppm ASTM D5185m 330 10 21 100 Tin ppm ASTM D5185m >15 0 1 2 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 1 4 8 26 Barium ppm ASTM D5185m 1 2 <1 10 Molydenum ppm ASTM D5185m 1 0 <1 3 Mangaesium ppm ASTM D5185m 100 871 868	Titanium		ASTM D5185m	>2	0	0	0
Aluminum	Silver				0		
Lead	Aluminum	• •	ASTM D5185m	>25	1	4	14
Copper ppm ASTM D5185m >330 10 21 100 Tin ppm ASTM D5185m >15 0 1 2 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 1 4 8 26 Barium ppm ASTM D5185m 1 2 <1					<1		5
Tin							
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 1 4 8 26 Barium ppm ASTM D5185m 1 2 <1 10 Molybdenum ppm ASTM D5185m 1 2 <1 10 Molybdenum ppm ASTM D5185m 1 0 <1 3 Manganese ppm ASTM D5185m 1 0 <1 3 Magnesium ppm ASTM D5185m 1070 1125 1211 1662 Phosphorus ppm ASTM D5185m 1270 1164 1215 1126 Sulfur ppm ASTM D5185m 2060 3202 3343 3086 CONTAMINANTS method limit/base current history1	• •						
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 1 4 8 26 Barium ppm ASTM D5185m 1 2 <1	Vanadium	• •					
Boron	Cadmium				-		
Barium ppm ASTM D5185m 1 2 <1	ADDITIVES		method	limit/base	current	history1	history2
Barium ppm ASTM D5185m 1 2 <1 10 Molybdenum ppm ASTM D5185m 60 58 62 43 Manganese ppm ASTM D5185m 1 0 <1	Boron	ppm	ASTM D5185m	1	4	8	26
Molybdenum ppm ASTM D5185m 60 58 62 43 Manganese ppm ASTM D5185m 1 0 <1 3 Magnesium ppm ASTM D5185m 1010 871 868 481 Calcium ppm ASTM D5185m 1070 1125 1211 1662 Phosphorus ppm ASTM D5185m 1150 901 1027 870 Zinc ppm ASTM D5185m 1270 1164 1215 1126 Sulfur ppm ASTM D5185m 2060 3202 3343 3086 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 12 46 Sodium ppm ASTM D5185m >20 1 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 <	Barium		ASTM D5185m	1	2	<1	10
Manganese ppm ASTM D5185m 1 0 <1 3 Magnesium ppm ASTM D5185m 1010 871 868 481 Calcium ppm ASTM D5185m 1070 1125 1211 1662 Phosphorus ppm ASTM D5185m 1150 901 1027 870 Zinc ppm ASTM D5185m 1270 1164 1215 1126 Sulfur ppm ASTM D5185m 2060 3202 3343 3086 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 12 46 Sodium ppm ASTM D5185m >20 1 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.4 0.7 Nitration Abs/.1mm *ASTM D7815	Molybdenum		ASTM D5185m	60	58	62	43
Magnesium ppm ASTM D5185m 1010 871 868 481 Calcium ppm ASTM D5185m 1070 1125 1211 1662 Phosphorus ppm ASTM D5185m 1150 901 1027 870 Zinc ppm ASTM D5185m 1270 1164 1215 1126 Sulfur ppm ASTM D5185m 2060 3202 3343 3086 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 12 46 Sodium ppm ASTM D5185m >20 1 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.4 0.7 Nitration Abs/cm *ASTM D7624 >20 6.9 6.3 8.3 Sulfation Abs/.1mm *ASTM D74		• •	ASTM D5185m	1	0	<1	3
Calcium ppm ASTM D5185m 1070 1125 1211 1662 Phosphorus ppm ASTM D5185m 1150 901 1027 870 Zinc ppm ASTM D5185m 1270 1164 1215 1126 Sulfur ppm ASTM D5185m 2060 3202 3343 3086 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 12 46 Sodium ppm ASTM D5185m 0 0 4 Potassium ppm ASTM D5185m >20 1 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.4 0.7 Nitration Abs/.mm *ASTM D7415 >30 18.9 18.5 23.8 FLUID DEGRADATION *ASTM D7414 <t< td=""><td>Magnesium</td><td></td><td>ASTM D5185m</td><td>1010</td><th></th><td>868</td><td>481</td></t<>	Magnesium		ASTM D5185m	1010		868	481
Phosphorus ppm ASTM D5185m 1150 901 1027 870 Zinc ppm ASTM D5185m 1270 1164 1215 1126 Sulfur ppm ASTM D5185m 2060 3202 3343 3086 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 12 46 Sodium ppm ASTM D5185m >0 0 4 Potassium ppm ASTM D5185m >20 1 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.4 0.7 Nitration Abs/cm *ASTM D7624 >20 6.9 6.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.5 23.8 FLUID DEGRADATION method	Calcium		ASTM D5185m	1070	1125	1211	1662
Zinc ppm ASTM D5185m 1270 1164 1215 1126 Sulfur ppm ASTM D5185m 2060 3202 3343 3086 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 12 46 Sodium ppm ASTM D5185m 0 0 4 Potassium ppm ASTM D5185m >20 1 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.4 0.7 Nitration Abs/cm *ASTM D7624 >20 6.9 6.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.5 23.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D	Phosphorus		ASTM D5185m	1150		1027	870
Sulfur ppm ASTM D5185m 2060 3202 3343 3086 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 12 46 Sodium ppm ASTM D5185m 0 0 4 Potassium ppm ASTM D5185m >20 1 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.4 0.7 Nitration Abs/cm *ASTM D7624 >20 6.9 6.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.5 23.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.3 14.0 21.3	Zinc			1270	1164	1215	1126
Silicon ppm ASTM D5185m >25 5 12 46 Sodium ppm ASTM D5185m 0 0 4 Potassium ppm ASTM D5185m >20 1 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.4 0.7 Nitration Abs/cm *ASTM D7624 >20 6.9 6.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.5 23.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.3 14.0 21.3	Sulfur				3202	3343	3086
Sodium ppm ASTM D5185m 0 0 4 Potassium ppm ASTM D5185m >20 1 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.4 0.7 Nitration Abs/cm *ASTM D7624 >20 6.9 6.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.5 23.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.3 14.0 21.3	CONTAMINANTS		method	limit/base	current	history1	history2
Sodium ppm ASTM D5185m 0 0 4 Potassium ppm ASTM D5185m >20 1 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.4 0.7 Nitration Abs/cm *ASTM D7624 >20 6.9 6.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.5 23.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.3 14.0 21.3	Silicon	ppm	ASTM D5185m	>25	5	12	46
INFRA-RED	Sodium		ASTM D5185m		0	0	4
Soot % % *ASTM D7844 >3 0.5 0.4 0.7 Nitration Abs/cm *ASTM D7624 >20 6.9 6.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.5 23.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.3 14.0 21.3	Potassium		ASTM D5185m	>20	1	2	3
Nitration Abs/cm *ASTM D7624 >20 6.9 6.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.5 23.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.3 14.0 21.3	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm *ASTM D7624 >20 6.9 6.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.5 23.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.3 14.0 21.3	Soot %	%	*ASTM D7844	>3	0.5	0.4	0.7
Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.5 23.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.3 14.0 21.3	Nitration	Abs/cm					
Oxidation Abs/.1mm *ASTM D7414 >25 14.3 14.0 21.3	Sulfation						
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.3	14.0	21.3
	Base Number (BN)	mg KOH/g	ASTM D2896	9.6	8.6	8.6	9.5

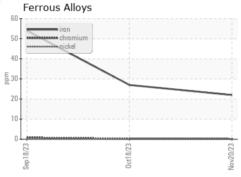


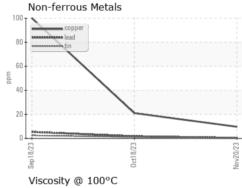
OIL ANALYSIS REPORT

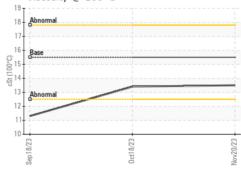


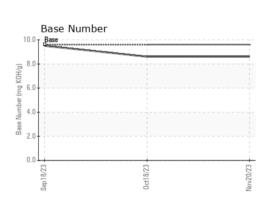
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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 PROPERT	TES	method	limit/base	current	history1	history2

FLUID PHOPER HES			memod			riistory i	HIStory2	
	Visc @ 100°C	cSt	ASTM D445	15.5	13.5	13.4	11.3	













Laboratory Sample No. Lab Number Unique Number : 10775974

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0879401 : 06026183

Received Diagnosed

: 07 Dec 2023 Diagnostician : Wes Davis

: 06 Dec 2023

Test Package : CONST (Additional Tests: TBN) 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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