

OIL ANALYSIS REPORT

Sample Rating Trend



FLEET/Dillon Machine Id VOLVO TRACTOR 07864

Component 1 Diesel Engine

Fluid PETRO CANADA DURON ADVANCED 10W30 (34 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.

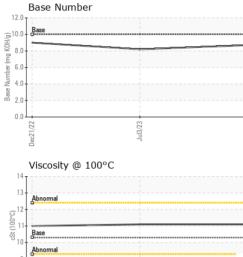
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0108137	PCA0100148	PCA0088365
Sample Date		Client Info		02 Nov 2023	03 Jul 2023	21 Dec 2022
Machine Age	mls	Client Info		715294	697095	697095
Oil Age	mls	Client Info		715294	697095	3000
Oil Changed		Client Info		Changed	N/A	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>6.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	4	8	6
Chromium	ppm	ASTM D5185m	>20	0	<1	0
Nickel	ppm	ASTM D5185m		0	<1	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	<1	6	0
Lead	ppm	ASTM D5185m	>40	0	5	0
Copper	ppm	ASTM D5185m	>330	0	6	1
Tin	ppm	ASTM D5185m	>15	0	2	0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES						
		method				history2
Boron	ppm		limit/base	current 11	history1 6	history2 7
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	11	6	7
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	11 0	6 0	7 2
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	11 0 58	6 0 56	7 2 60
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	11 0 58 0	6 0 56 2	7 2 60 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	11 0 58 0 861	6 0 56 2 1030	7 2 60 0 898
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	11 0 58 0 861 983	6 0 56 2 1030 1106	7 2 60 0 898 1134
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	11 0 58 0 861 983 931	6 0 56 2 1030 1106 1113	7 2 60 0 898 1134 1031
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	11 0 58 0 861 983 931 1168	6 0 56 2 1030 1106 1113 1376	7 2 60 0 898 1134 1031 1193
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	11 0 58 0 861 983 931 1168 2963	6 0 56 2 1030 1106 1113 1376 4047	7 2 60 0 898 1134 1031 1193 2915
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	11 0 58 0 861 983 931 1168 2963 current	6 0 56 2 1030 1106 1113 1376 4047 history1	7 2 60 0 898 1134 1031 1193 2915 history2
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	11 0 58 0 861 983 931 1168 2963 current 2	6 0 56 2 1030 1106 1113 1376 4047 history1 4	7 2 60 0 898 1134 1031 1193 2915 history2 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm 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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base >25	11 0 58 0 861 983 931 1168 2963 current 2 2 2	6 0 56 2 1030 1106 1113 1376 4047 history1 4 3	7 2 60 0 898 1134 1031 1193 2915 history2 <1 <1
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 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	11 0 58 0 861 983 931 1168 2963 current 2 2 2 0	6 0 56 2 1030 1106 1113 1376 4047 history1 4 3 8	7 2 60 0 898 1134 1031 1193 2915 history2 <1 <1 <1 <1 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >3	11 0 58 0 861 983 931 1168 2963 current 2 2 2 0 0	6 0 56 2 1030 1106 1113 1376 4047 history1 4 3 8 8 history1	7 2 60 0 898 1134 1031 1193 2915 history2 <1 <1 <1 <1 <1 <1 <1 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >3	11 0 58 0 861 983 931 1168 2963 <u>current</u> 2 2 2 0 <u>current</u> 0.1	6 0 56 2 1030 1106 1113 1376 4047 history1 4 3 8 <i>history1</i> 0.2	7 2 60 0 898 1134 1031 1193 2915 history2 <1 <1 <1 <1 <1 <1 history2 0.1
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> >25 >20 <i>limit/base</i> >3 >20	11 0 58 0 861 983 931 1168 2963 <i>current</i> 2 2 2 0 <i>current</i> 0.1 5.6	6 0 56 2 1030 1106 1113 1376 4047 history1 4 3 8 history1 0.2 5.9	7 2 60 0 898 1134 1031 1193 2915 history2 <1 <1 <1 <1 <1 <1 <1 history2 0.1 5.3
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 >25 imit/base >3 >20	11 0 58 0 861 983 931 1168 2963 current 2 2 2 0 current 0.1 5.6 17.7	6 0 56 2 1030 1106 1113 1376 4047 history1 4 3 8 <u>history1</u> 0.2 5.9 18.5	7 2 60 0 898 1134 1031 1193 2915 history2 <1 <1 <1 <1 <1 <1 <1 0.1 5.3 17.3
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 D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 220 20 20 20 33 20 20 20 20 20 20 20 20 20 20 20 20 20	11 0 58 0 861 983 931 1168 2963 <i>current</i> 2 2 2 0 <i>current</i> 0.1 5.6 17.7 <i>current</i>	6 0 56 2 1030 1106 1113 1376 4047 history1 4 3 8 history1 0.2 5.9 18.5 history1	7 2 60 0 898 1134 1031 1193 2915 history2 <1 <1 <1 <1 <1 <1 <1 0.1 5.3 17.3 history2



Dec21/22

OIL ANALYSIS REPORT

VISUAL



White Metal /ellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROP /isc @ 100°C GRAPHS Ferrous Alloys Ferrous Alloys Mon-ferrous Met	cSt	*Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual method ASTM D445	NONE NONE NONE NONE NORML NORML >0.2 10.3	NONE NONE NONE NONE NORML NORML NEG NEG Current 11.1	NONE NONE NONE NONE NORML NORML NEG NEG history1 11.1	NONE NONE NONE NONE NORML NORML NEG NEG 111.0
Vellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROP Visc @ 100°C GRAPHS Ferrous Alloys Visc Mon-ferrous Met	scalar scalar scalar scalar scalar scalar scalar scalar ERTIES cSt	*Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	NONE NONE NONE NONE NORML >0.2 Iimit/base	NONE NONE NONE NONE NORML NORML NEG NEG	NONE NONE NONE NONE NORML NORML NEG NEG history1	NONE NONE NONE NONE NORML NORML NEG NEG history2
Precipitate Silt Debris Sand/Dirt Appearance Ddor Emulsified Water Free Water FLUID PROP /isc @ 100°C GRAPHS Ferrous Alloys	scalar scalar scalar scalar scalar scalar scalar ERTIES cSt	*Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual method	NONE NONE NONE NORML NORML >0.2 Iimit/base	NONE NONE NONE NORML NORML NEG NEG	NONE NONE NONE NORML NORML NEG NEG history1	NONE NONE NONE NORML NORML NEG NEG history2
Silt Debris Sand/Dirt Appearance Ddor Emulsified Water Free Water FLUID PROP /isc @ 100°C GRAPHS Ferrous Alloys	scalar scalar scalar scalar scalar scalar ERTIES cSt	*Visual *Visual *Visual *Visual *Visual *Visual *Visual method	NONE NONE NORML NORML >0.2 limit/base 10.3	NONE NONE NORML NORML NEG NEG	NONE NONE NORML NORML NEG NEG history1	NONE NONE NORML NORML NEG NEG history2
Debris Sand/Dirt Appearance Ddor Emulsified Water Free Water FLUID PROP Visc @ 100°C GRAPHS Ferrous Alloys	scalar scalar scalar scalar scalar ERTIES cSt	*Visual *Visual *Visual *Visual *Visual *Visual method	NONE NORML NORML >0.2 limit/base 10.3	NONE NORML NORML NEG NEG	NONE NORML NORML NEG NEG history1	NONE NORML NORML NEG NEG history2
Appearance Ddor Emulsified Water Free Water FLUID PROP Visc @ 100°C GRAPHS Ferrous Alloys	scalar scalar scalar scalar scalar ERTIES cSt	*Visual *Visual *Visual *Visual *Visual method	NONE NORML >0.2 limit/base 10.3	NONE NORML NORML NEG NEG current	NONE NORML NORML NEG NEG history1	NONE NORML NORML NEG NEG history2
Appearance Ddor Emulsified Water Free Water FLUID PROP Visc @ 100°C GRAPHS Ferrous Alloys	scalar scalar scalar scalar ERTIES cSt	*Visual *Visual *Visual method	NORML NORML >0.2 limit/base 10.3	NORML NORML NEG NEG current	NORML NORML NEG NEG history1	NORML NORML NEG NEG history2
Ddor Emulsified Water Free Water FLUID PROP /isc @ 100°C GRAPHS Ferrous Alloys	scalar scalar ERTIES cSt	*Visual *Visual method	>0.2 limit/base 10.3	NORML NEG NEG current	NORML NEG NEG history1	NEG NEG history2
Free Water FLUID PROP /isc @ 100°C GRAPHS Ferrous Alloys	scalar scalar ERTIES cSt	*Visual *Visual method	>0.2 limit/base 10.3	NEG NEG current	NEG NEG history1	NEG NEG history2
FLUID PROP Visc @ 100°C GRAPHS Ferrous Alloys	ERTIES cSt	method	limit/base 10.3	current	history1	history2
Visc @ 100°C GRAPHS Ferrous Alloys	cSt		10.3			
GRAPHS Ferrous Alloys	EZ/EInf	ASTM D445		11.1	11.1	11.0
Ferrous Alloys			Nov2233			
CZ7112240 Non-ferrous Met			Nov2/23			
Non-ferrous Met			Nov2233			
22/1239 Non-ferrous Met			Nov2/23			
Non-ferrous Met			Nov2233			
Non-ferrous Met			Nov2/23			
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Abnormal						
			B 8.0			
			E 6.0			
Base				1		
Abnormal						
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sc21/2	13/2		v2/2	21/2	Jul3/2	
-	Abnormal Base Abnormal	Viscosity @ 100°C Abnormal Base Abnormal	Abnormal Base Abnormal Base	Abnormal 100°C Abnormal 10.0 Base 6.0 Abnormal 2.0 Abnormal 0.0	Abnormal	Abnomal Abnoma