

LIEBHERR

CONSTRUCTION EQUIPMENT



024016-935 - Diesel Engine

Sample No: LH0276283

Oil Type: PETRO CANADA 10W40



Sample Information

Sample Number	LH0276283	LH0155152	LH0124228	LH0115472
Sample Date	08 Apr 2024	29 Nov 2019	16 May 2018	25 May 2017
Machine Hours	21501	17886	17138	16600
Oil Hours	0	0	0	0
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	ABNORMAL	ABNORMAL

American Iron and Metal

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Oil Condition

Visc @ 40°C	cSt	---	---	---	103
Visc @ 100°C	cSt	12.4	13.4	13.0	14.3
Viscosity Index (VI)	Scale	---	---	---	142
Oxidation (PA)	%	60	71	70	73

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.



Contamination

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.3	1.2	1	1.4
Nitration (PA)	%	64	99	83	89
Sulfation (PA)	%	52	74	62	74
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	4	8	10	17
Sodium	ppm	4	3	6	18
Potassium	ppm	2	4	4	2



Wear Metals

Iron	ppm	11	43	35	61
Copper	ppm	2	7	18	26
Lead	ppm	<1	7	4	4
Tin	ppm	0	2	2	3
Aluminum	ppm	2	3	3	6
Chromium	ppm	<1	1	1	2
Molybdenum	ppm	61	60	69	2
Nickel	ppm	0	<1	<1	<1
Titanium	ppm	0	<1	<1	<1
Silver	ppm	0	0	0	0
Manganese	ppm	0	<1	<1	<1
Vanadium	ppm	0	0	0	0



Additives

Calcium	ppm	1089	1414	1275	2543
Magnesium	ppm	993	906	1044	31
Zinc	ppm	1227	1311	1400	1248
Phosphorus	ppm	1014	1089	1153	978
Barium	ppm	0	<1	<1	3
Boron	ppm	2	1	2	24

Depot: BAKOTT
Unique No: 5760937
Signed: Wes Davis
Report Date: 10 Apr 2024



Graphs

