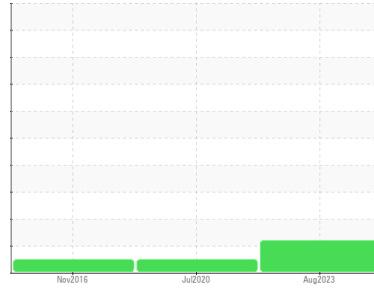




OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id
E140687252 - PUTNAM CO 841 FAIR E140687252

Component
Front Diesel Engine

Fluid
DIESEL ENGINE OIL SAE 15W40 (5 GAL)

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of fuel present in the oil.

Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	WC0748889	WC0349524	WCM1370384
Sample Date	Client Info	20 Aug 2023	24 Jul 2020	26 Nov 2016
Machine Age	hrs	Client Info	245	44
Oil Age	hrs	Client Info	0	0
Oil Changed	Client Info	N/A	Changed	Changed
Sample Status		ABNORMAL	NORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m >90	3	4	6
Chromium	ppm	ASTM D5185m >20	<1	<1	0
Nickel	ppm	ASTM D5185m >2	<1	<1	0
Titanium	ppm	ASTM D5185m >2	0	2	25
Silver	ppm	ASTM D5185m >2	4	<1	0
Aluminum	ppm	ASTM D5185m >20	1	1	2
Lead	ppm	ASTM D5185m >40	<1	1	<1
Copper	ppm	ASTM D5185m >330	<1	1	0
Tin	ppm	ASTM D5185m >15	<1	0	12
Antimony	ppm	ASTM D5185m	---	0	5
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	<1	0	0

ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m 250	17	36	1
Barium	ppm	ASTM D5185m 10	0	<1	6
Molybdenum	ppm	ASTM D5185m 100	72	48	43
Manganese	ppm	ASTM D5185m	<1	<1	1
Magnesium	ppm	ASTM D5185m 450	1054	886	943
Calcium	ppm	ASTM D5185m 3000	1332	1353	1187
Phosphorus	ppm	ASTM D5185m 1150	1217	1103	955
Zinc	ppm	ASTM D5185m 1350	1425	1159	1183
Sulfur	ppm	ASTM D5185m 4250	4150	2962	3147

CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >25	4	6	7
Sodium	ppm	ASTM D5185m >158	2	12	12
Potassium	ppm	ASTM D5185m >20	1	0	1
Fuel	%	ASTM D3524 >3.0	▲ 4.6	<1.0	<1.0

INFRA-RED

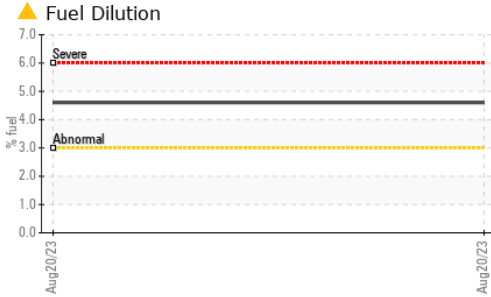
method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844 >6	0	0.1	0
Nitration	Abs/cm	*ASTM D7624 >20	4.4	5.1	5.
Sulfation	Abs/.1mm	*ASTM D7415 >30	16.6	18.7	14.

FLUID DEGRADATION

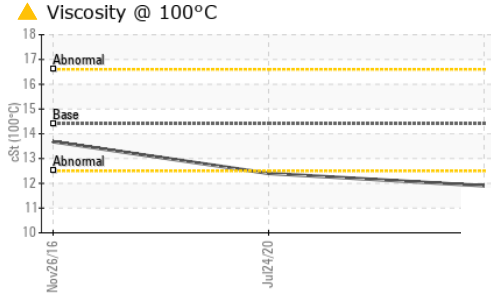
method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414 >25	12.1	13.6	10.
Base Number (BN)	mg KOH/g	ASTM D2896 8.5	9.0	---	---



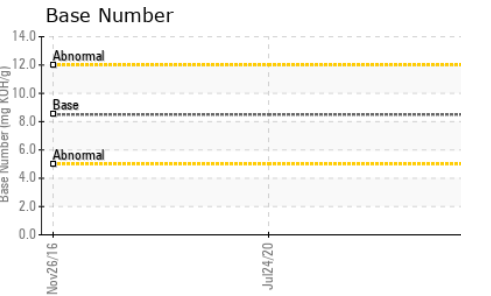
OIL ANALYSIS REPORT



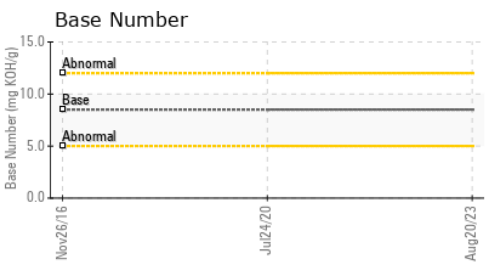
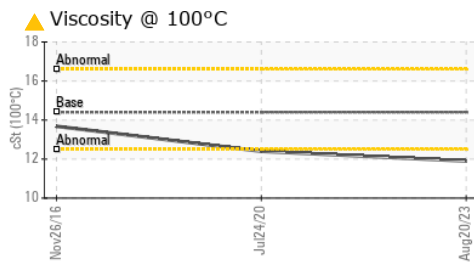
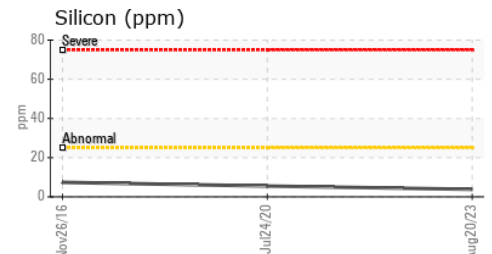
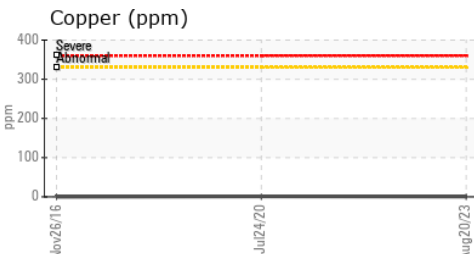
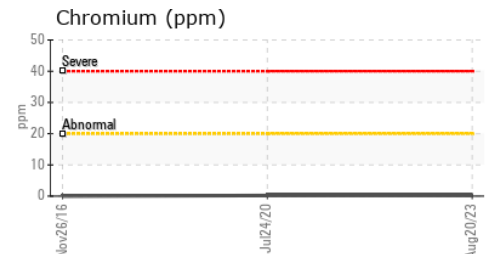
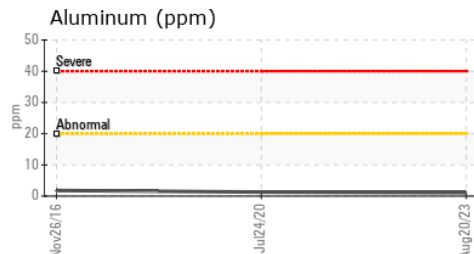
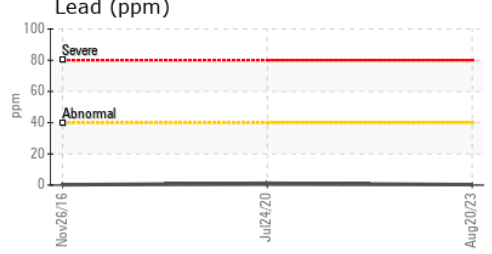
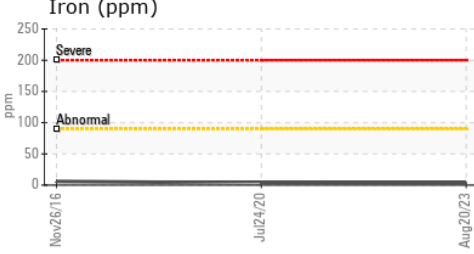
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG



FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4 ▲ 11.9	12.4	13.68



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0748889 **Received** : 21 Aug 2023
Lab Number : 05929330 **Diagnosed** : 23 Aug 2023
Unique Number : 10609277 **Diagnostician** : Jonathan Hester
Test Package : MOB 1 (Additional Tests: FuelDilution, PercentFuel, TBN)

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 NEW WINDSOR, NY
 US 12553
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Certificate L2367
 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)