

OIL ANALYSIS REPORT

IRON WORKS 0160069187

Component **Diesel Engine** DIESEL ENGINE OIL SAE 15W40 (--- GAL)

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

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.



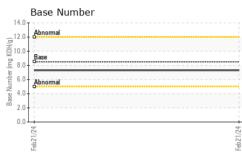
Sample Rating Trend

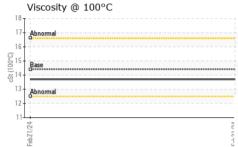


SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0912066		
Sample Date		Client Info		21 Feb 2024		
Machine Age	hrs	Client Info		0		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				NORMAL		
CONTAMINATION	٨	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0		
Water		WC Method	>0.2	NEG		
Glycol		WC Method	,	NEG		
-						
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	4		
Chromium	ppm	ASTM D5185m	>20	0		
Nickel	ppm	ASTM D5185m	>4	0		
Titanium	ppm	ASTM D5185m		<1		
Silver	ppm	ASTM D5185m	>3	0		
Aluminum	ppm	ASTM D5185m	>20	2		
Lead	ppm	ASTM D5185m	>40	1		
Copper	ppm	ASTM D5185m	>330	<1		
Tin	ppm	ASTM D5185m	>15	0		
Vanadium	ppm	ASTM D5185m		<1		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	119		
Barium	ppm	ASTM D5185m	10	0		
Molybdenum	ppm	ASTM D5185m	100	88		
Manganese	ppm	ASTM D5185m		<1		
Magnesium	ppm	ASTM D5185m	450	123		
Calcium	ppm	ASTM D5185m	3000	1881		
Phosphorus	ppm	ASTM D5185m	1150	1006		
Zinc	ppm	ASTM D5185m	1350	1160		
Sulfur	ppm	ASTM D5185m	4250	3674		
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	8		
Sodium	ppm	ASTM D5185m	>158	2		
Potassium	ppm	ASTM D5185m	>20	2		
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.1		
Nitration	Abs/cm	*ASTM D7624	>20	6.6		
Sulfation	Abs/.1mm	*ASTM D7415	>30	16.2		
FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	11.7		
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.3		



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White Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual NONE NONE Precipitate scalar *Visual NONE NONE Sitt scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual NORML NORML NORML Free Water scalar *Visual >0.2 NEG Free Water scalar *Visual Free Water scalar *Visual	VISUAL		method	limit/base	current	history1	history2
Precipitate scalar *Visual NONE NONE Sitt scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Appearance scalar *Visual NORML NORML Cdor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual >0.2 NEG Free Water scalar *Visual NORML NORML NORML Free Water scalar *Visual >0.2 NEG Free Water scalar *Visual NORML NORML NORML Free Water scalar *Visual >0.2 NEG Free Water scalar *Visual >0.2 NEG Free Water scalar *Visual Free Water scalar *Visual Free Water scalar *Visual Free Water scalar *Visual Free Water scalar *Uisual Free Water	White Metal	scalar	*Visual	NONE	NONE		
Sitt scalar Visual NONE NONE Scalar Visual NONE NONE	Yellow Metal	scalar	*Visual	NONE	NONE		
Debris scalar *Visual NONE NONE	Precipitate	scalar	*Visual	NONE	NONE		
Sand/Dirit scalar *Visual NONE NONE Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual >0.2 NEG Free Water scalar *Visual NEG FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 14.4 13.7 GRAPHS Ferrous Alloys Mon-ferrous Metals Mon-ferrous Metals	Silt	scalar	*Visual	NONE	NONE		
Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual NEG FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 14.4 13.7 GRAPHS Ferrous Alloys Mon-ferrous Metals Mon-ferrous Metals		scalar	*Visual				
Odor scalar *Visual NORML Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual >0.2 NEG FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 14.4 13.7 GRAPHS Ferrous Alloys Mon-ferrous Metals Mon-ferrous Metals	Sand/Dirt	scalar	*Visual		NONE		
Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual NEG FLUID PROPERTIES method imit/base current history1 history2 Visc @ 100°C cSt ASTM D445 14.4 13.7 GRAPHS Ferrous Alloys Mon-ferrous Metals					-		
Free Water scalar *Visual NEG FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 14.4 13.7 GRAPHS Ferrous Alloys Mon-ferrous Metals Non-ferrous Metals		scalar					
FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 14.4 13.7 GRAPHS Ferrous Alloys 00 01 02 03 04 05 04 05 05 05 04 05 05		scalar		>0.2			
Visc @ 100°C cSt ASTM D445 14.4 13.7 GRAPHS Ferrous Alloys	Free Water	scalar	*Visual		NEG		
GRAPHS Ferrous Alloys	FLUID PROPERT	IES	method	limit/base	current	history1	history2
Ferrous Alloys	Visc @ 100°C	cSt	ASTM D445	14.4	13.7		
Non-ferrous Metals	GRAPHS						
Non-ferrous Metals							
Non-ferrous Metals	iron						
Non-ferrous Metals							
Non-ferrous Metals							
Non-ferrous Metals							
Non-ferrous Metals	4 -						
Non-ferrous Metals	2-						
Non-ferrous Metals	0						
Non-ferrous Metals				1/24			
10 copper 8 copper 6 copper	Feb2			Feb2			
8 - copper lead		5					
6	copper						
α dd							
	6						
4							
2	2						
	1	*****	****				
				/24			
Feb.21/24	Feb 21.			Feb21,			

Base Number

14.0 12.0 (B/HOX Bu).

mber 6.0

Base 4 (

Feb21/24.

: 23 Feb 2024

: 26 Feb 2024

2.0

0.0

Feb21/24

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Lab Number : 06099008 Unique Number : 10897238 Diagnosed : 26 Feb 2024 - Wes Davis Test Package : CONST (Additional Tests: TBN) Contact: BYRON CHAPUIS Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. BYRON@FORKLIFTSELECT.COM * - 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)

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

Received

Tested

Viscosity @ 100°C

18

16

cSt (100°C)

13

12

11

Laboratory Sample No. Feb21/24

: WC0912066

B

Abnorma

FORKLIFT SELECT

DENVER, CO

US 80239

12875 E 42ND AVE, SUITE 50

Feb21/24

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F: