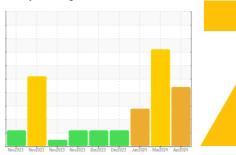


OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

RIG 816
R816-MP-02

Gearbox

GEAR OIL ISO 320 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check all areas where dirt can enter the system. We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a high amount of particulates present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition

The oil viscosity is lower than normal. The AN level is acceptable for this fluid.

		Nov2023 Nov	2023 Nov2023 Nov2023	Dec2023 Dec2023 Jan2024 Mar20	24 Apr2024	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		KL0014297	KL0013734	KL0011723
Sample Date		Client Info		03 Apr 2024	05 Mar 2024	07 Jan 2024
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
CONTAMINATION	V	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>200	91	<u>^</u> 279	92
Chromium	ppm	ASTM D5185m	>10	<1	2	<1
Nickel	ppm		>10	0	<1	0
Titanium	ppm	ASTM D5185m		0	1	<1
Silver	ppm	ASTM D5185m	0.5	0	0	0
Aluminum	ppm	ASTM D5185m		<u>12</u>	23	6
Lead	ppm	ASTM D5185m	>50	0 43	0 47	0 32
Copper Tin	ppm	ASTM D5185m ASTM D5185m	>200	0	0	0
Vanadium	ppm	ASTM D5185m	>10	0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES	ррпп	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	50	0 16	<1 26	4 0
Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m	15 15	0	<1	0
Manganese	ppm	ASTM D5185m	13	1	3	0
Magnesium	ppm	ASTM D5185m	50	12	18	8
Calcium	ppm	ASTM D5185m	50	117	194	75
Phosphorus	ppm	ASTM D5185m	350	135	149	194
Zinc	ppm	ASTM D5185m	100	26	46	31
Sulfur	ppm	ASTM D5185m	12500	8263	8507	8900
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	<u> </u>	<u> </u>	32
Sodium	ppm	ASTM D5185m		508	957	<u>▲</u> 1453
Potassium	ppm	ASTM D5185m	>20	15	46	11
FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	183224	△ 36765	
Particles >6µm		ASTM D7647	>5000	<u> </u>	<u>^</u> 20028	
Particles >14μm		ASTM D7647	>640	▲ 753	▲ 3408	
Particles >21µm		ASTM D7647	>160	47	<u>1148</u>	
Particles >38μm		ASTM D7647	>40	1	<u>▲</u> 177	
Particles >38μm Particles >71μm		ASTM D7647 ASTM D7647	>10	0	<u></u> ▲ 18	
Particles >38μm		ASTM D7647				

Acid Number (AN)

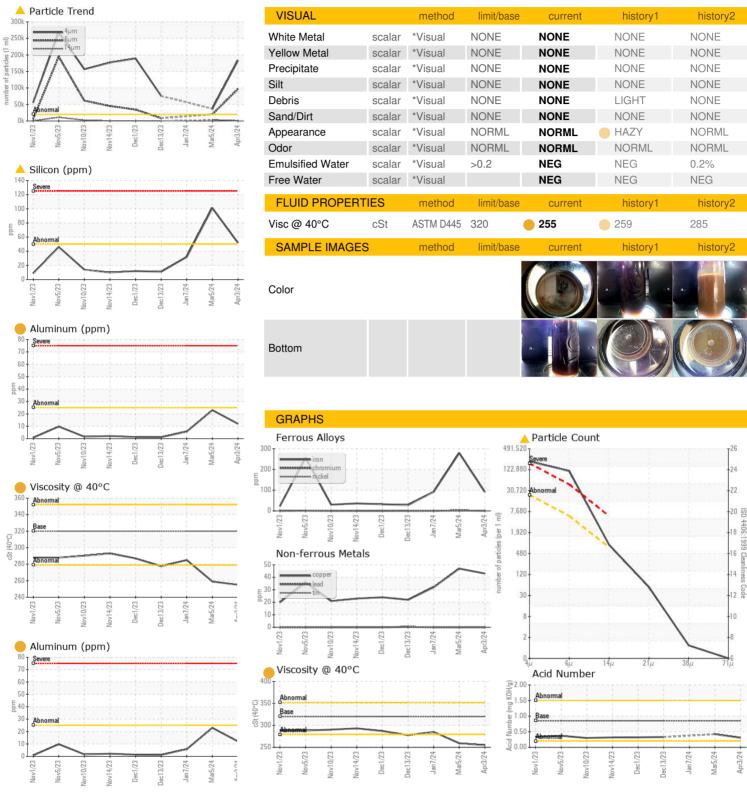
mg KOH/g ASTM D8045 0.85

0.42

Contact/Location: RICKY MATA - PATMIDTX



OIL ANALYSIS REPORT







Certificate 12367

Laboratory Sample No.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : KL0014297 Lab Number : 06145842 Unique Number : 10975920

Tested Diagnosed

Test Package : MOB 2 (Additional Tests: PrtCount) To discuss this sample report, contact Customer Service at 1-800-237-1369.

 st - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

PATTERSON - UTI DRILLING

9915 WEST INDUSTRIAL MIDLAND, TX

US 79706 Contact: RICKY MATA ricky.mata@patenergy.com

T: (832)219-4559 F: (432)561-9388

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) Contact/Location: RICKY MATA - PATMIDTX

Received

: 11 Apr 2024

: 12 Apr 2024

: 15 Apr 2024 - Don Baldridge