

WEAR CONTAMINATION FLUID CONDITION

NORMAL ATTENTION NORMAL

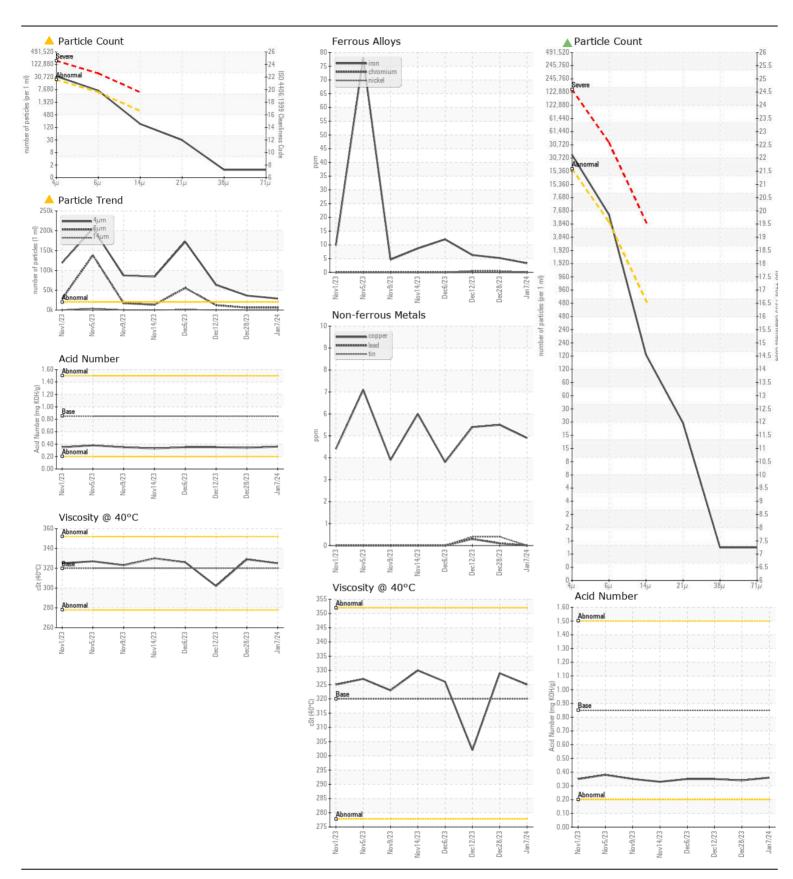
Area

RIG 565
Machine Id

R565-MP-02

Component **Gearbox**

RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
We recommend you service the filters on this component. Resample at the next service interval to monitor. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) GEAR OIL ISO 320. Please confirm. Please specify the component make and model with your next sample.	Sample Number	OOW	Client Info	LITTIO/ NOT	KL0013949	KL0013039	KL001394
	Sample Date		Client Info		07 Jan 2024	28 Dec 2023	12 Dec 202
	Machine Age	hrs	Client Info		0	0	0
	Oil Age	hrs	Client Info		0	0	0
	Filter Age	hrs	Client Info		0	0	0
	Oil Changed	0	Client Info		N/A	N/A	N/A
	Filter Changed		Client Info		N/A	N/A	N/A
	Sample Status				ATTENTION	ATTENTION	ABNORMA
VEAR	Iron	ppm	ASTM D5185m	>200	3	5	6
	Chromium	ppm	ASTM D5185m	>10	0	<1	<1
All component wear rates are normal.	Nickel	ppm	ASTM D5185m		0	<1	<1
	Titanium	ppm	ASTM D5185m		0	0	0
	Silver	ppm	ASTM D5185m		0	0	0
	Aluminum	ppm	ASTM D5185m	>25	0	1	1
	Lead	ppm	ASTM D5185m		0	<1	<1
	Copper	ppm	ASTM D5185m		5	6	5
	Tin	ppm	ASTM D5185m		0	<1	<1
	Vanadium	ppm	ASTM D5185m		0	0	0
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
CONTAMINATION	Silicon	ppm	ASTM D5185m	<u></u>	6	6	6
CONTAININATION	Potassium	ppm	ASTM D5185m		<1	<1	<1
There is a light amount of silt (particulates < 14 microns in size) present in the oil.	Water	ppiii	WC Method		NEG	NEG	NEG
	Particles >4µm		ASTM D7647		▲ 28950	▲ 36455	▲ 63349
	Particles >6μm		ASTM D7647		▲ 6056	▲ 6006	▲ 12158
	Particles >14µm		ASTM D7647		155	136	206
	Particles >21μm		ASTM D7647		26	21	25
	Particles >38µm		ASTM D7647		1	1	0
	Particles >71µm		ASTM D7647		1	0	0
	Oil Cleanliness		ISO 4406 (c)		<u>22/20/14</u>	▲ 22/20/14	<u>A</u> 23/21/1
	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
	Appearance	scalar	*Visual	NORML	NORML	NORML	NORM
	Odor	scalar	*Visual	NORML	NORML	NORML	NORM
	Emulsified Water		*Visual	>0.2	NEG	NEG	NEG
LUID CONDITION	Sodium	ppm	ASTM D5185m		2	3	2
LOID CONDITION	Boron	ppm	ASTM D5185m	50	0	0	0
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.	Barium	ppm	ASTM D5185m		0	2	2
	Molybdenum	ppm	ASTM D5185m		0	<1	<1
	Manganese	ppm	ASTM D5185m		<1	0	0
	Magnesium	ppm	ASTM D5185m	50	0	1	1
	Calcium	ppm	ASTM D5185m		3	5	5
	Phosphorus	ppm	ASTM D5185m		150	152	145
	Zinc	ppm	ASTM D5185m		0	0	0
	Sulfur	ppm	ASTM D5185m		8780	9531	9461
	Acid Number (AN)	mg KOH/g		0.85	0.36	0.34	0.35





Certificate L2367

Unique Number

Laboratory Sample No. **Lab Number**

: KL0013949 : 06056637 : 10822586

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved : 10 Jan 2024 Diagnosed

: 11 Jan 2024 : Wes Davis Diagnostician Test Package : MOB 2 (Additional Tests: PrtCount)

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)

PATTERSON - UTI DRILLING

9915 WEST INDUSTRIAL MIDLAND, TX US 79706

Contact: RICKY MATA ricky.mata@patenergy.com T: (832)219-4559

Submitted By: Mike Richardson

F: (432)561-9388