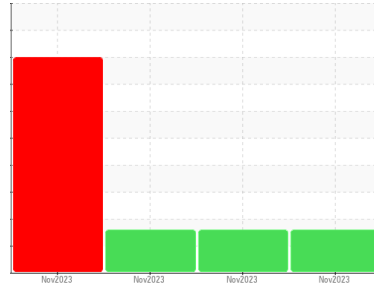




OIL ANALYSIS REPORT

Sample Rating Trend



WATER



Area
RIG 244
 Machine Id
R244-MP-03
 Component
Gearbox
 Fluid
NOT GIVEN (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check for the source of water entry. Resample at the next service interval to monitor. There is too much water present in this sample to perform a particle count.

Wear

All component wear rates are normal.

Contamination

There is a moderate concentration of water present in the oil.

Fluid Condition

The AN level is acceptable for this fluid.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		KL0013158	KL0013026	KL0013135
Sample Date	Client Info		21 Nov 2023	14 Nov 2023	09 Nov 2023
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

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >200	77	75	76
Chromium	ppm	ASTM D5185m >10	<1	<1	<1
Nickel	ppm	ASTM D5185m >10	2	<1	1
Titanium	ppm	ASTM D5185m	<1	<1	<1
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >25	10	10	11
Lead	ppm	ASTM D5185m >50	0	0	0
Copper	ppm	ASTM D5185m >200	9	10	8
Tin	ppm	ASTM D5185m >10	0	0	<1
Vanadium	ppm	ASTM D5185m	0	<1	0
Cadmium	ppm	ASTM D5185m	<1	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	8	6	8
Barium	ppm	ASTM D5185m	33	23	37
Molybdenum	ppm	ASTM D5185m	1	0	0
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	18	0	14
Calcium	ppm	ASTM D5185m	87	65	79
Phosphorus	ppm	ASTM D5185m	139	124	151
Zinc	ppm	ASTM D5185m	7	7	11
Sulfur	ppm	ASTM D5185m	9132	7643	8247

CONTAMINANTS

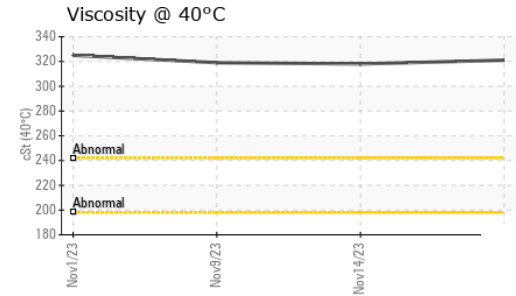
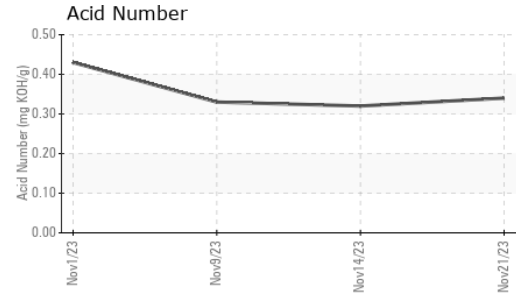
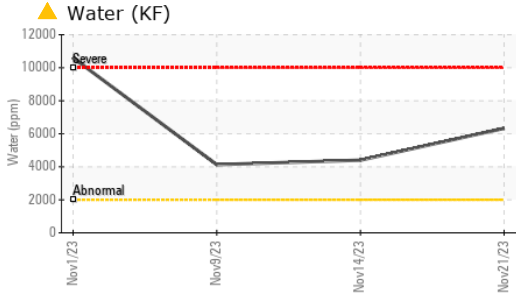
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	49	44	48
Sodium	ppm	ASTM D5185m	412	144	146
Potassium	ppm	ASTM D5185m >20	34	14	16
Water	%	ASTM D6304 >0.2	▲ 0.633	▲ 0.440	▲ 0.413
ppm Water	ppm	ASTM D6304 >2000	▲ 6330	▲ 4400	▲ 4130

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.34	0.32	0.33



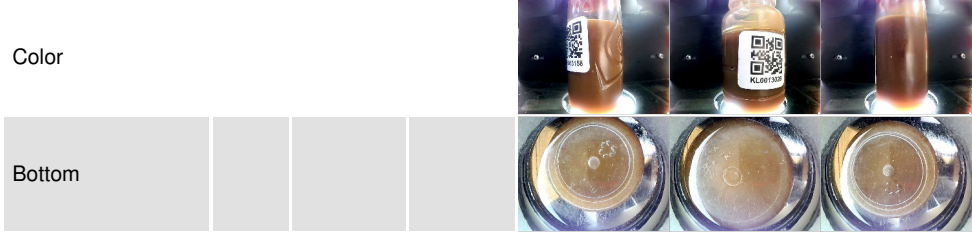
OIL ANALYSIS REPORT



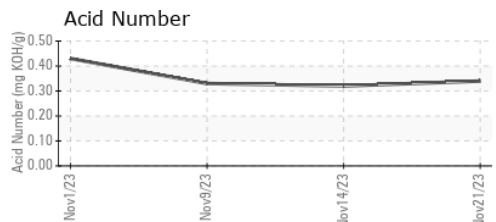
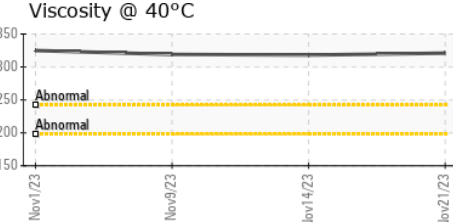
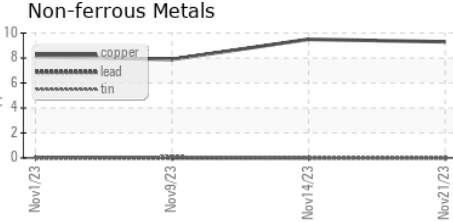
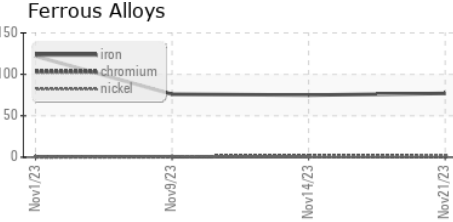
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	321	318	319

SAMPLE IMAGES



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0013158 **Received** : 07 Dec 2023
Lab Number : 06027705 **Diagnosed** : 08 Dec 2023
Unique Number : 10777496 **Diagnostician** : Doug Bogart
Test Package : MOB 2 (Additional Tests: KF, PrtCount)

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

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)