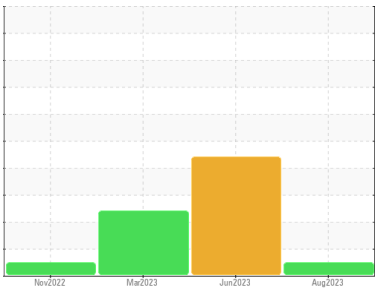
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Area
Paper Side
Machine Id
PM 1 Turbo Shaker Bowser
Component
Bearing Lube
Fluid
SHELL PM S2 M 220 (--- GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

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 INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PE0000967**	PE0000985	PE0000229
Sample Date		Client Info		**15 Aug 2023**	28 Jun 2023	07 Mar 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				**NORMAL**	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184		**14**	12	12
Iron	ppm	ASTM D5185m	>120	**4**	<1	<1
Chromium	ppm	ASTM D5185m	>5	**0**	0	0
Nickel	ppm	ASTM D5185m	>20	**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>4	**<1**	<1	0
Lead	ppm	ASTM D5185m	>30	**0**	0	<1
Copper	ppm	ASTM D5185m	>17	**1**	<1	2
Tin	ppm	ASTM D5185m	>10	**0**	0	0
Vanadium	ppm	ASTM D5185m		**0**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	0	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	0	0
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**<1**	0	<1
Manganese	ppm	ASTM D5185m		**0**	0	0
Magnesium	ppm	ASTM D5185m		**2**	2	3
Calcium	ppm	ASTM D5185m		**62**	44	39
Phosphorus	ppm	ASTM D5185m		**535**	482	362
Zinc	ppm	ASTM D5185m		**780**	680	576
Sulfur	ppm	ASTM D5185m		**4997**	5200	3625

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**2**	3	<1
Sodium	ppm	ASTM D5185m		**<1**	<1	<1
Potassium	ppm	ASTM D5185m	>20	**<1**	<1	1

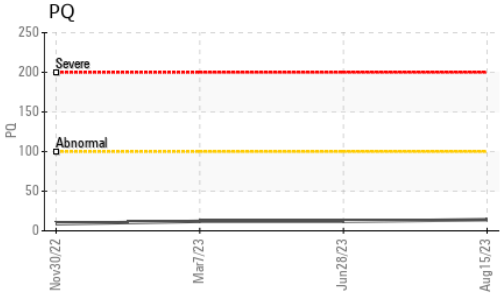
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>10000	**8391**	▲ 10005	923
Particles >6µm		ASTM D7647	>2500	**1217**	▲ 5450	265
Particles >14µm		ASTM D7647	>160	**24**	▲ 928	98
Particles >21µm		ASTM D7647	>40	**9**	▲ 312	90
Particles >38µm		ASTM D7647	>10	**0**	▲ 48	6
Particles >71µm		ASTM D7647	>3	**0**	▲ 5	1
Oil Cleanliness		ISO 4406 (c)	>20/18/14	**20/17/12**	▲ 21/20/17	17/15/14

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.64**	0.74	0.77

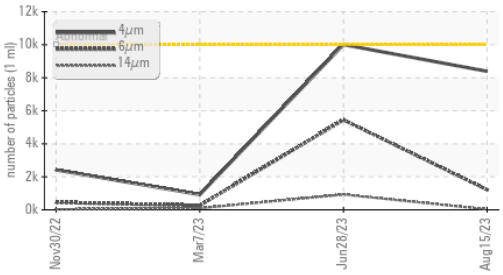
OIL ANALYSIS REPORT

PetroCard MORE THAN JUST FUEL.

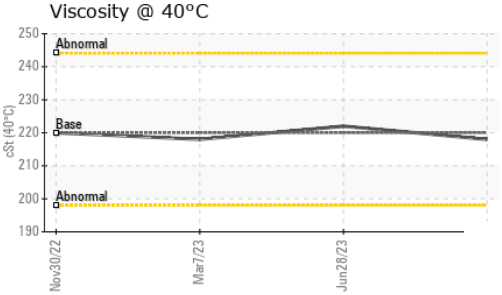
PQ



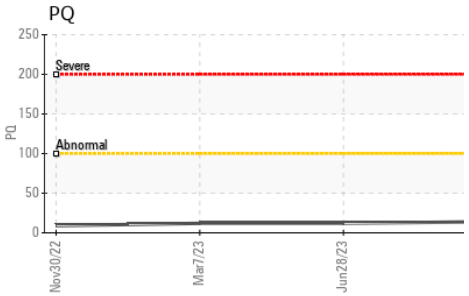
Particle Trend



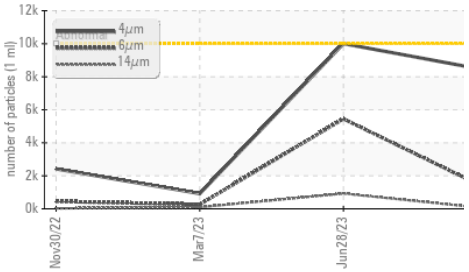
Viscosity @ 40°C



PQ



Particle Trend



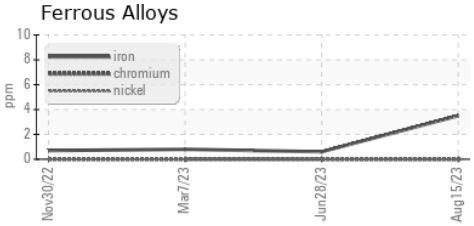
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	220	**218**	222	218

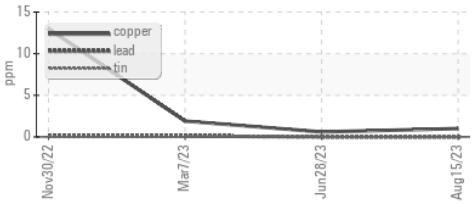
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

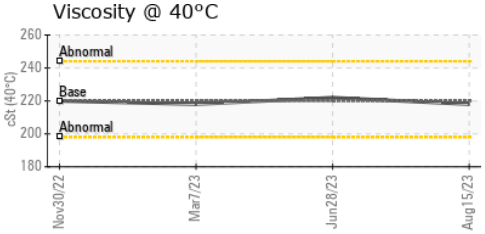
Ferrous Alloys



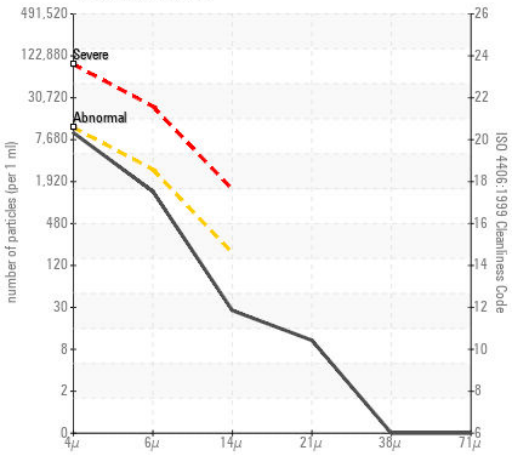
Non-ferrous Metals



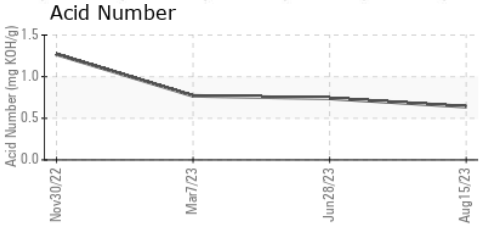
Viscosity @ 40°C



Particle Count



Acid Number



ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PE0000967 **Received** : 18 Aug 2023
Lab Number : 05928716 **Diagnosed** : 21 Aug 2023
Unique Number : 10608663 **Diagnostician** : Angela Borella
Test Package : PLANT (Additional Tests: ICP, KV40, PQ, PrtCount, SCREEN)

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)

MCKINLEY PAPER COMPANY
1902 MARINE DR
PORT ANGELES, WA
US 98363
Contact: CHAD GALLAUHER
chad.gallauher@biopappel.com
T: (360)457-4474
F:

Report Id: MCKPOR [WUSCAR] 05928716 (Generated: 08/21/2023 16:30:35) Rev: 1

Submitted By: DUANE DENOTTA