IND II

Hilcorp Alaska, LLC

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Area
IRIG [7008221]
Machine Id
IRIG-PRM-HPU-0301 IRIG-PRM-HPU-0301 HPU MUD MODULE
Component
Hydraulic System
Fluid
MOBIL DTE 10 EXCEL 32 (--- GAL)

RECOMMENDATION

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

WEAR

All component wear rates are normal.

CONTAMINATION

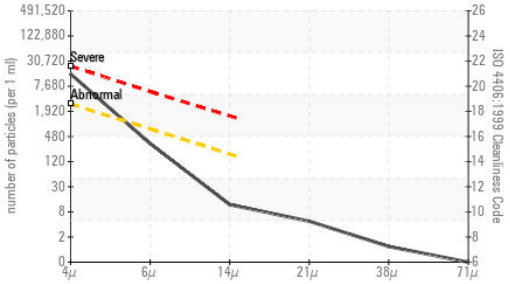
There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code.

FLUID CONDITION

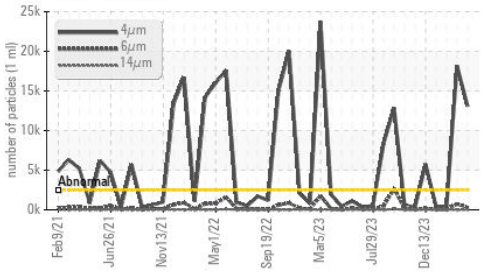
The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		HLC0003038	HLC0003068	HLC0003052
Sample Date		Client Info		27 Apr 2024	09 Mar 2024	06 Feb 2024
Machine Age	hrs	Client Info		1119	1106	1053
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Filtered	N/A	N/A
Filter Changed		Client Info		Not Changd	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	NORMAL
Iron	ppm	ASTM D5185m	>20	0	0	<1
Chromium	ppm	ASTM D5185m	>20	0	<1	0
Nickel	ppm	ASTM D5185m	>20	<1	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>20	0	<1	0
Lead	ppm	ASTM D5185m	>20	<1	0	0
Copper	ppm	ASTM D5185m	>20	4	6	6
Tin	ppm	ASTM D5185m	>20	0	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>15	<1	<1	<1
Potassium	ppm	ASTM D5185m	>20	2	2	0
Water		WC Method	>0.05	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>2500	▲ 13071	▲ 18170	455
Particles >6µm		ASTM D7647	>640	286	● 743	54
Particles >14µm		ASTM D7647	>160	10	5	7
Particles >21µm		ASTM D7647	>40	4	1	2
Particles >38µm		ASTM D7647	>10	1	0	0
Particles >71µm		ASTM D7647	>3	0	0	0
Oil Cleanliness		ISO 4406 (c)	>18/16/14	▲ 21/15/10	▲ 21/17/10	16/13/10
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	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.05	NEG	NEG	NEG
Sodium	ppm	ASTM D5185m		4	4	4
Boron	ppm	ASTM D5185m		0	0	0
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		0	0	0
Manganese	ppm	ASTM D5185m		0	<1	0
Magnesium	ppm	ASTM D5185m		1	0	0
Calcium	ppm	ASTM D5185m	120	103	102	90
Phosphorus	ppm	ASTM D5185m	475	427	449	408
Zinc	ppm	ASTM D5185m		45	48	34
Sulfur	ppm	ASTM D5185m	1275	1557	1700	1236
Acid Number (AN)	mg KOH/g	ASTM D8045		0.04	0.125	0.07
Visc @ 40°C	cSt	ASTM D445	32	32.5	32.5	32.5

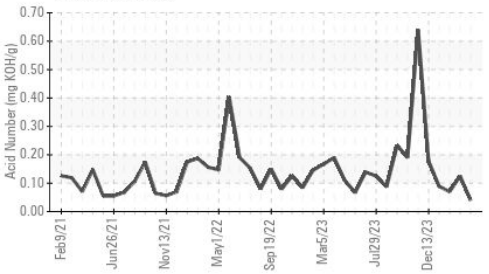
Particle Count



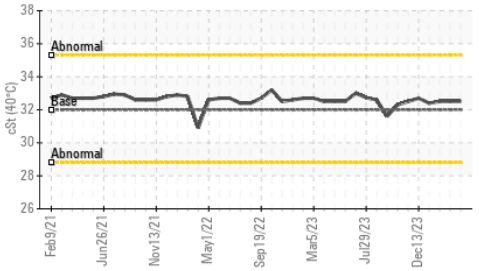
Particle Trend



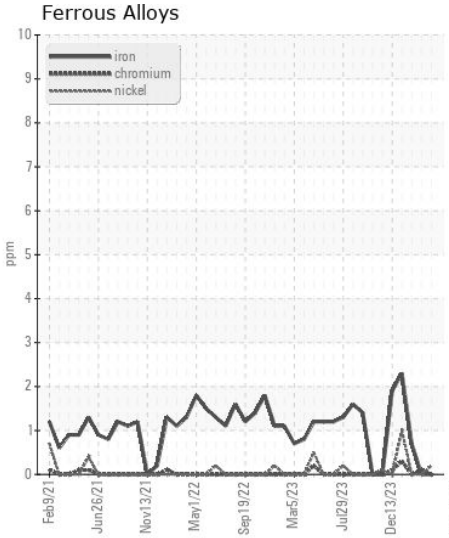
Acid Number



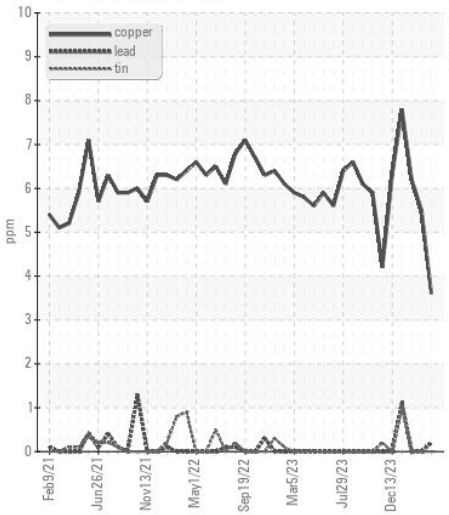
Viscosity @ 40°C



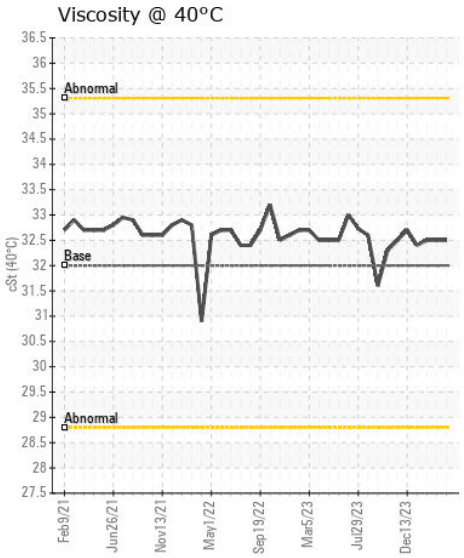
Ferrous Alloys



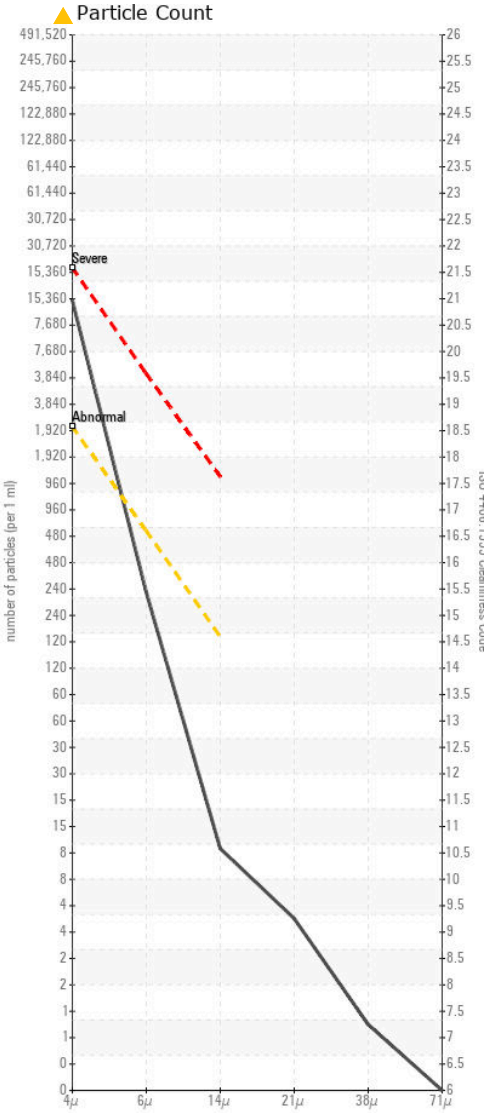
Non-ferrous Metals



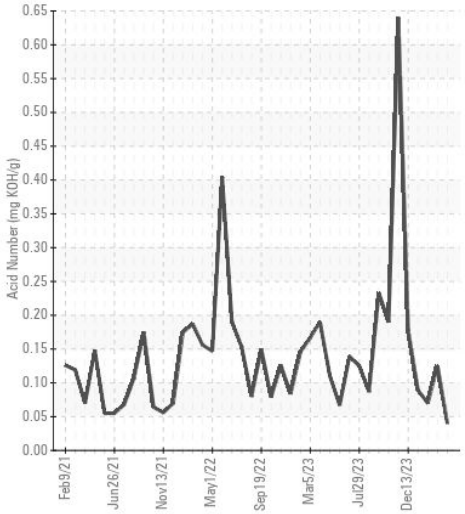
Viscosity @ 40°C



Particle Count



Acid Number



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : HLC0003038
Lab Number : 06176084
Unique Number : 11022137
Test Package : IND 2

Received : 10 May 2024
Tested : 14 May 2024
Diagnosed : 14 May 2024 - Wes Davis

Certificate L2367

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)

HILCORP EXPLORATION ALASKA - MILNE POINT
1000 MILNE POINT RD
PRUDOE BAY, AK
US 99734
Contact: Evan Reilly
evan.reilly@hilcorp.com
T: (907)670-3231
F: x: