IND II

Hilcorp Alaska, LLC

OIL ANALYSIS REPORT

WEAR	ATTENTION
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Area
IRIG [7166390]
Machine Id
IRIG-PRM-PMUD-0301 IRIG-PRM-PMUD-0301 #1 MUD PUMP
Component
Pump
Fluid
MOBIL SHC 634 (140 GAL)

RECOMMENDATION

We advise that you check all areas where dirt can enter the system. Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

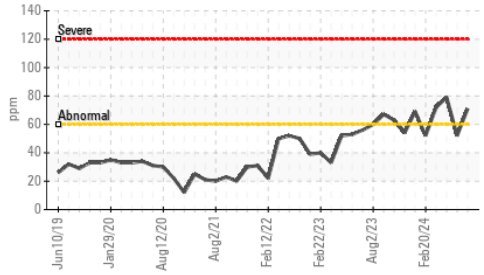
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

FLUID CONDITION

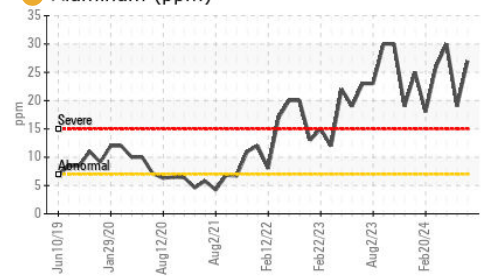
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		HLC0003344	HLC0003386	HLC0003073
Sample Date		Client Info		08 Jun 2024	15 May 2024	15 Apr 2024
Machine Age	hrs	Client Info		21091	20926	20571
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>90	50	36	42
Chromium	ppm	ASTM D5185m	>5	2	1	2
Nickel	ppm	ASTM D5185m	>5	<1	0	0
Titanium	ppm	ASTM D5185m	>3	2	1	2
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>7	27	19	30
Lead	ppm	ASTM D5185m	>12	<1	0	0
Copper	ppm	ASTM D5185m	>30	4	3	5
Tin	ppm	ASTM D5185m	>9	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>60	71	52	79
Potassium	ppm	ASTM D5185m	>20	24	15	32
Water		WC Method	>.1	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>320000	---	---	239187
Particles >6µm		ASTM D7647	>40000	---	---	98052
Particles >14µm		ASTM D7647	>640	---	---	1155
Particles >21µm		ASTM D7647	>160	---	---	226
Particles >38µm		ASTM D7647	>40	---	---	3
Particles >71µm		ASTM D7647	>10	---	---	0
Oil Cleanliness		ISO 4406 (c)	>25/22/16	---	---	25/24/17
Silt	scalar	*Visual	NONE	NONE	MODER	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	>.1	NEG	NEG	NEG
Sodium	ppm	ASTM D5185m		27	20	35
Boron	ppm	ASTM D5185m		0	0	0
Barium	ppm	ASTM D5185m		11	8	18
Molybdenum	ppm	ASTM D5185m		<1	0	0
Manganese	ppm	ASTM D5185m		1	<1	1
Magnesium	ppm	ASTM D5185m		6	3	7
Calcium	ppm	ASTM D5185m		9	12	21
Phosphorus	ppm	ASTM D5185m		533	442	412
Zinc	ppm	ASTM D5185m		6	4	0
Sulfur	ppm	ASTM D5185m		0	62	62
Acid Number (AN)	mg KOH/g	ASTM D8045		0.33	0.33	0.26
Visc @ 40°C	cSt	ASTM D445	436.4	483	485	486

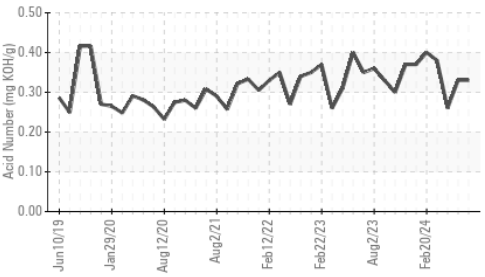
Silicon (ppm)



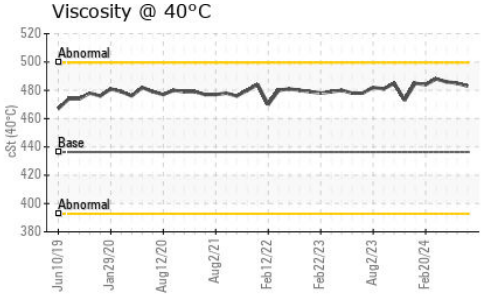
Aluminum (ppm)



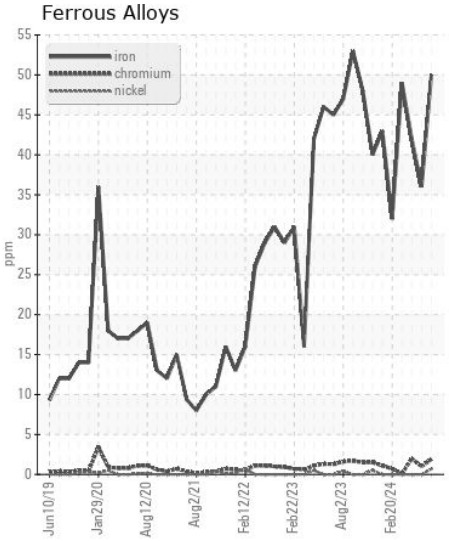
Acid Number



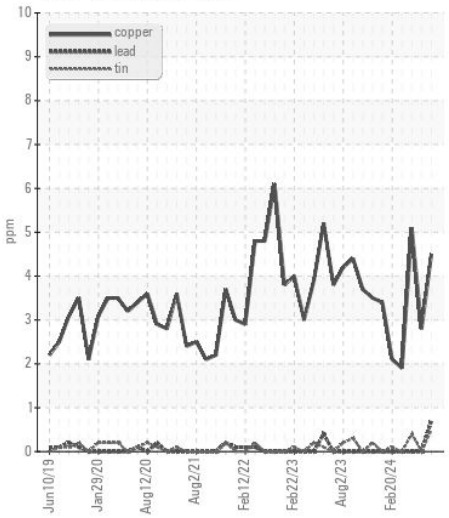
Viscosity @ 40°C



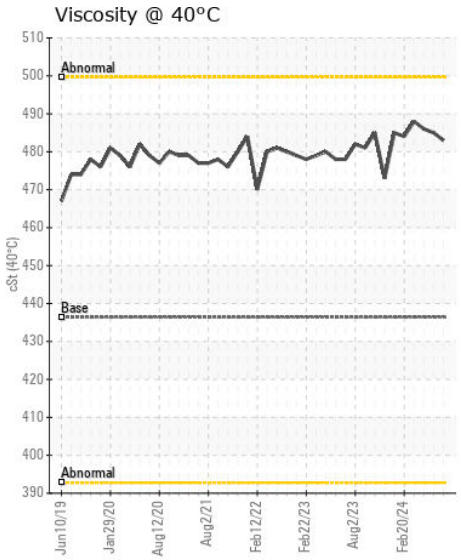
Ferrous Alloys



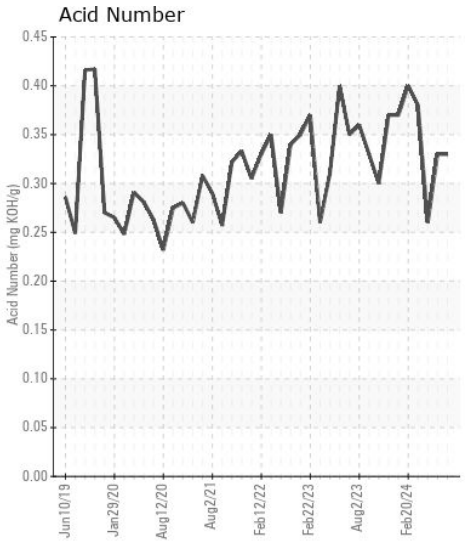
Non-ferrous Metals



Viscosity @ 40°C



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : HLC0003344
Lab Number : 06218835
Unique Number : 11097032
Test Package : IND 2 (Additional Tests: PrtCount)

Received : 24 Jun 2024
Tested : 26 Jun 2024
Diagnosed : 26 Jun 2024 - Jonathan Hester

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)

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