



CONSTRUCTION EQUIPMENT

RENT VOLVO EC750EL 314074 - DIESEL ENGINE



Sample No: VCP360563
Oil Type: MOBIL 15W40
Job No: RENT



SAMPLE INFORMATION

Sample Number	VCP360563	VCP283381	VCP133707	---
Sample Date	19 Jan 2023	01 Jul 2022	12 Jul 2021	---
Machine Hours	2963	1976	477	---
Oil Hours	500	500	477	---
Oil Changed	Changed	Changed	Changed	---
Sample Status	ABNORMAL	NORMAL	ABNORMAL	---

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 US 83401
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 F: (208)523-9918

OIL CONDITION

Visc @ 100°C	cSt	▲ 11.0	■ 13.5	■ 13.0	---
Base Number (BN)	mg KOH/g	■ 7.1	■ 8.5	---	---
Oxidation (PA)	%	67	69	59	---

CONTAMINATION

Water	%	NEG	NEG	NEG	---
Soot %	%	■ 0.9	■ 1.1	■ 0.9	---
Nitration (PA)	%	77	83	66	---
Sulfation (PA)	%	60	64	59	---
Glycol	%	NEG	NEG	NEG	---
Fuel	%	▲ 7.6	<1.0	<1.0	---
Silicon	ppm	■ 7	■ 11	■ 31	---
Sodium	ppm	■ 3	■ 2	■ 2	---
Potassium	ppm	■ <1	■ 0	■ 2	---

WEAR METALS

Iron	ppm	■ 33	■ 19	■ 37	---
Copper	ppm	■ 4	■ 13	▲ 182	---
Lead	ppm	■ 4	■ 2	■ 2	---
Tin	ppm	■ 1	■ 1	■ 6	---
Aluminum	ppm	■ <1	■ 0	■ 0	---
Chromium	ppm	■ <1	■ <1	■ 1	---
Molybdenum	ppm	■ 67	■ 59	■ 7	---
Nickel	ppm	■ 2	■ 3	■ 2	---
Titanium	ppm	<1	0	5	---
Silver	ppm	■ 0	<1	0	---
Manganese	ppm	■ <1	■ <1	■ 1	---
Vanadium	ppm	0	0	<1	---

ADDITIVES

Calcium	ppm	■ 1386	■ 1389	■ 2240	---
Magnesium	ppm	■ 741	■ 926	114	---
Zinc	ppm	■ 1214	■ 1195	■ 968	---
Phosphorus	ppm	■ 932	■ 961	■ 849	---
Barium	ppm	■ 0	■ 0	■ 0	---
Boron	ppm	■ 85	■ 12	■ 11	---

Diagnosis

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. There is a moderate amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

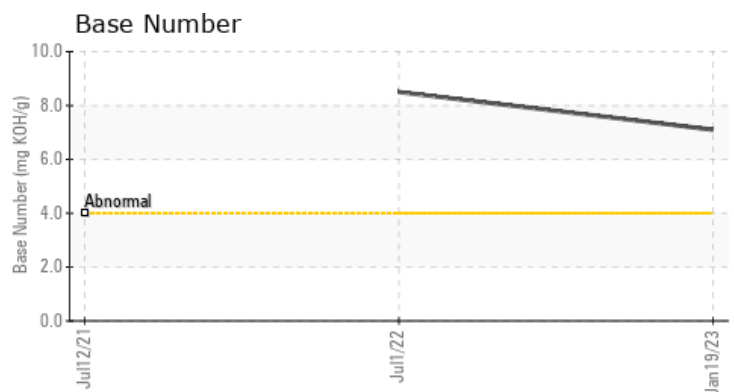
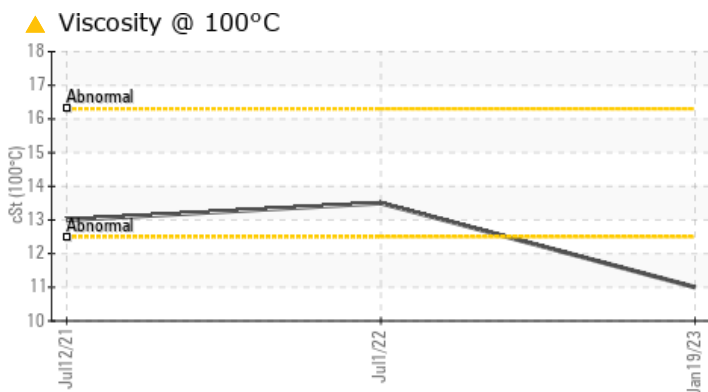
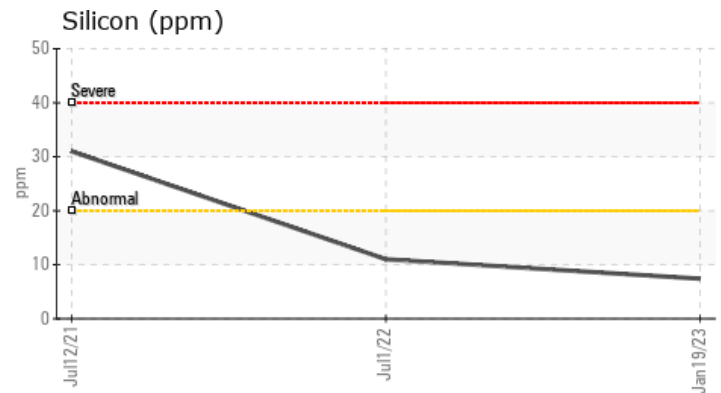
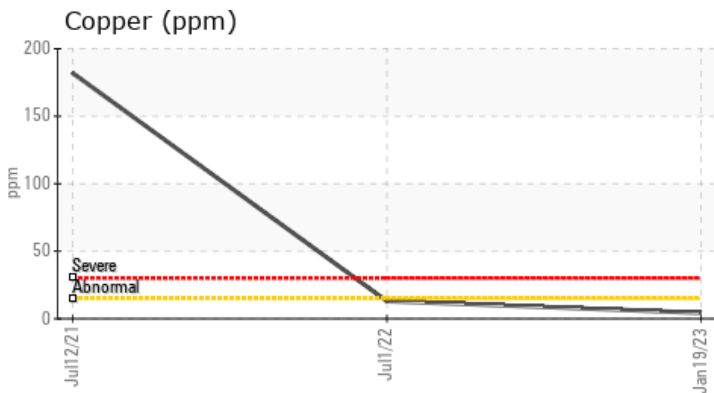
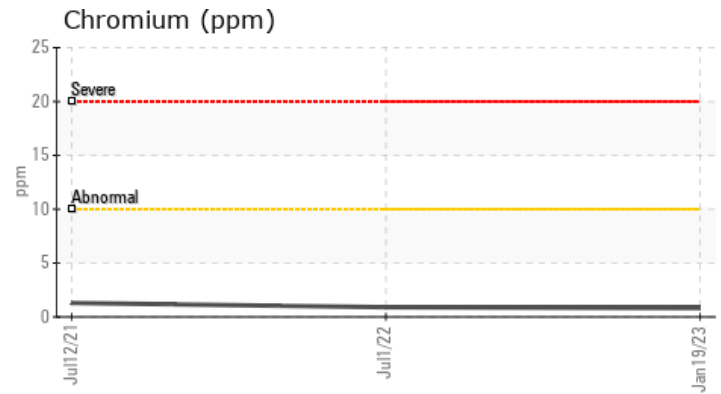
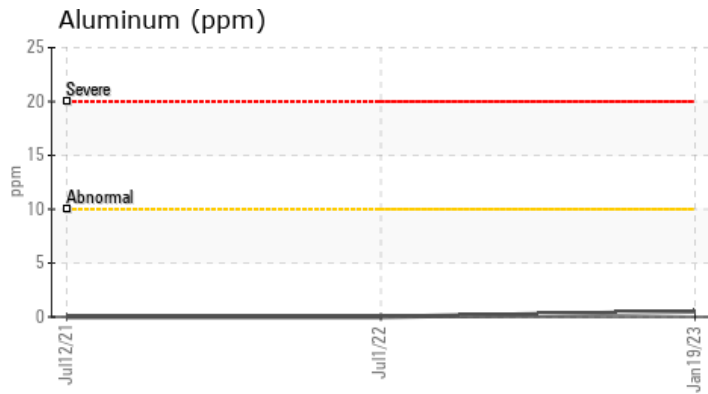
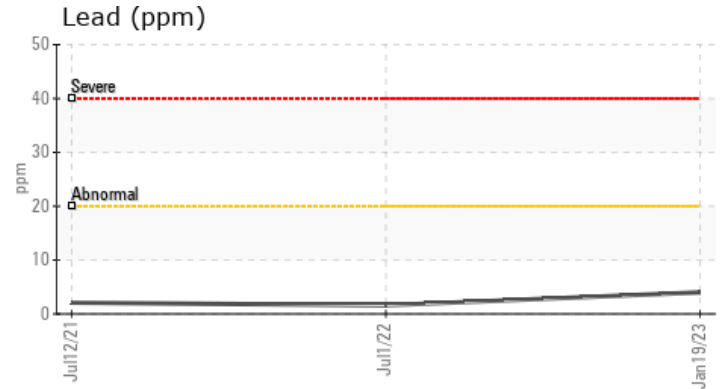
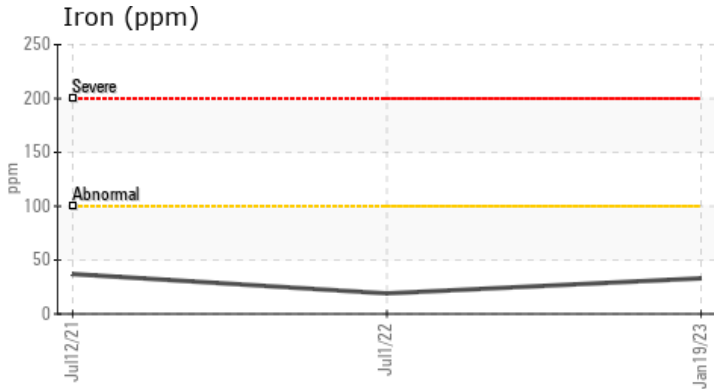
Depot: VOLVO0077
Unique No: 10311326
Signed: Jonathan Hester
Report Date: 31 Jan 2023



CONSTRUCTION EQUIPMENT



GRAPHS





CONSTRUCTION EQUIPMENT

RENT VOLVO EC750EL 314074 - HYDRAULIC SYSTEM



Sample No: VCP379450
Oil Type: MOBIL HYDRAULIC OIL AW 46
Job No: RENT



ARNOLD MACHINERY COMPANY
 3330 NORTH YELLOWSTONE HIGHWAY
 IDAHO FALLS, ID
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SAMPLE INFORMATION

Sample Number	VCP379450	VCP283210	---	---
Sample Date	19 Jan 2023	01 Jul 2022	---	---
Machine Hours	2963	1976	---	---
Oil Hours	2000	1976	---	---
Oil Changed	Changed	Not Changd	---	---
Sample Status	ABNORMAL	ATTENTION	---	---

OIL CONDITION

Visc @ 40°C	cSt	█ 40.2	█ 40.2	---	---
Acid Number (AN)	mg KOH/g	█ 0.44	█ 0.53	---	---

CONTAMINATION

Water	%	NEG	NEG	---	---
Particles >4µm		▲ 82067	● 51309	---	---
Particles >6µm		█ 5480	█ 5130	---	---
Particles >14µm		█ 45	█ 38	---	---
ISO 4406:1999 (c)		24/20/13	23/20/12	---	---
Silicon	ppm	█ 3	█ 3	---	---
Sodium	ppm	█ 0	█ 0	---	---
Potassium	ppm	█ 1	█ <1	---	---

WEAR METALS

Iron	ppm	█ 8	█ 5	---	---
Copper	ppm	█ 17	█ 12	---	---
Lead	ppm	█ <1	█ <1	---	---
Tin	ppm	█ <1	<1	---	---
Aluminum	ppm	█ 0	█ <1	---	---
Chromium	ppm	█ 0	█ 0	---	---
Molybdenum	ppm	█ 1	1	---	---
Nickel	ppm	█ 0	█ 0	---	---
Titanium	ppm	0	0	---	---
Silver	ppm	0	0	---	---
Manganese	ppm	█ 0	0	---	---
Vanadium	ppm	0	0	---	---

ADDITIVES

Calcium	ppm	707	561	---	---
Magnesium	ppm	█ 15	16	---	---
Zinc	ppm	█ 617	596	---	---
Phosphorus	ppm	█ 483	463	---	---
Barium	ppm	█ 0	0	---	---
Boron	ppm	█ 0	18	---	---

Diagnosis

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Depot: VOLVO0077
Unique No: 10311615
Signed: Don Baldrige
Report Date: 30 Jan 2023

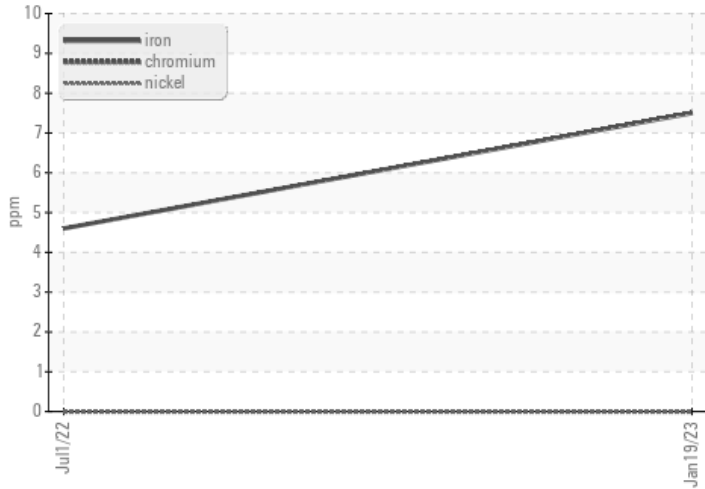


CONSTRUCTION EQUIPMENT

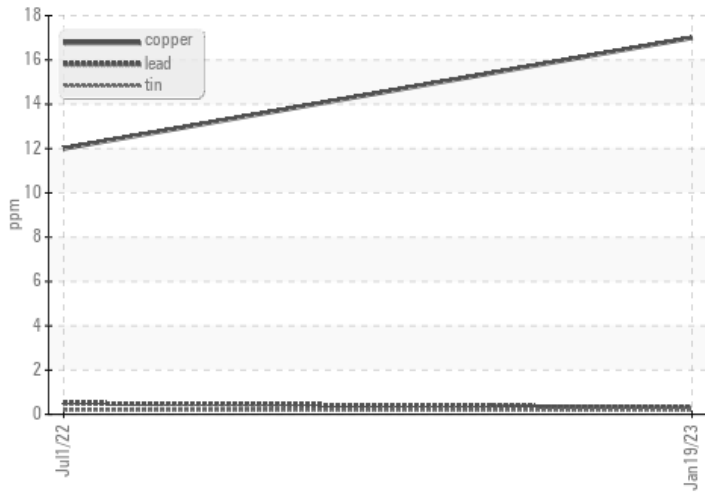


VOLVO GRAPHS

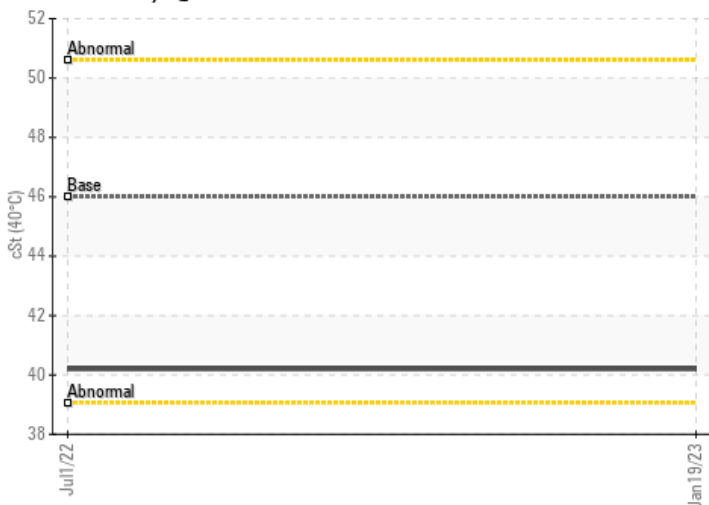
Ferrous Alloys



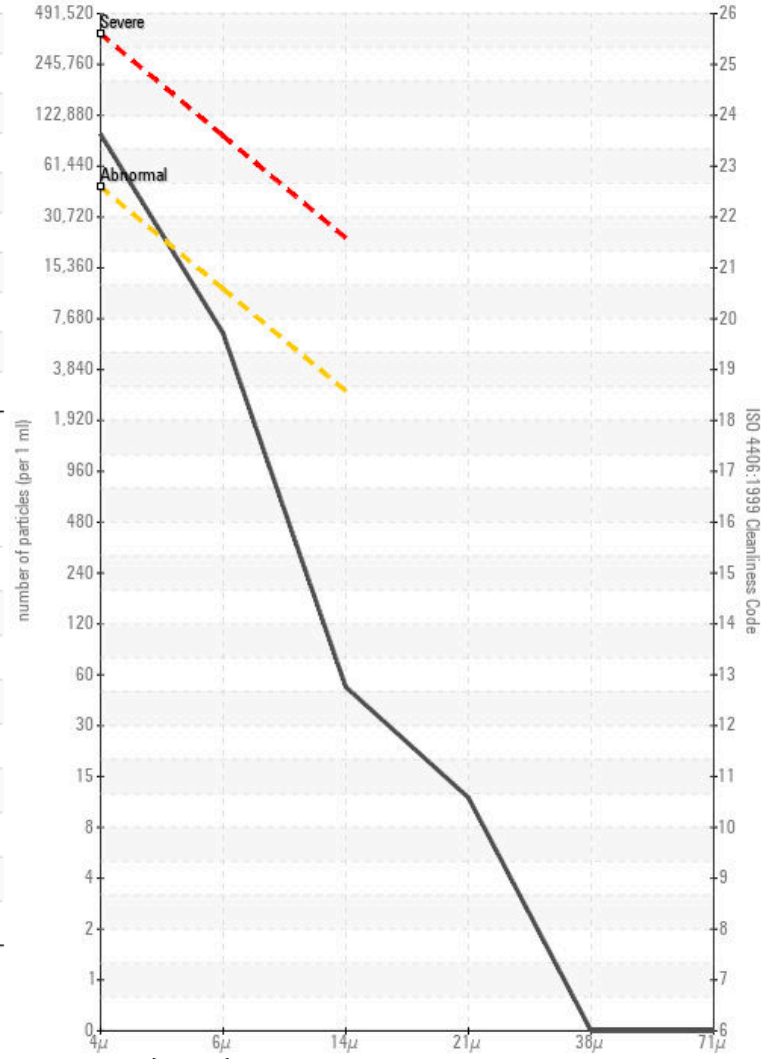
Non-ferrous Metals



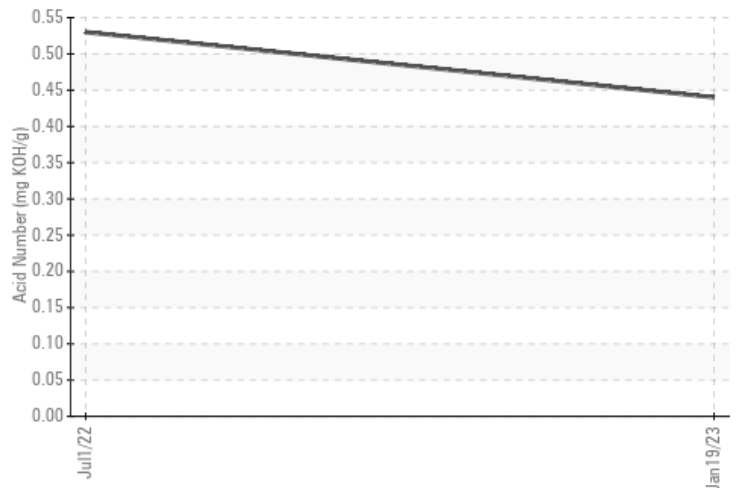
Viscosity @ 40°C



Particle Count



Acid Number





CONSTRUCTION EQUIPMENT

VOLVO EC750EL 314074 - SWING DRIVE



Sample No: VCP360562
Oil Type: MOBIL MOBILUBE HD 85W140
Job No:



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SAMPLE INFORMATION

Sample Number	VCP360562	VCP283269	---	---
Sample Date	19 Jan 2023	01 Jul 2022	---	---
Machine Hours	2963	1976	---	---
Oil Hours	2963	1976	---	---
Oil Changed	Changed	Not Changd	---	---
Sample Status	NORMAL	NORMAL	---	---



OIL CONDITION

Visc @ 40°C	cSt	255	278	---	---
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CONTAMINATION

Water	%	NEG	NEG	---	---
Silicon	ppm	8	18	---	---
Sodium	ppm	0	0	---	---
Potassium	ppm	<1	0	---	---



WEAR METALS

Iron	ppm	288	126	---	---
Copper	ppm	12	9	---	---
Lead	ppm	0	0	---	---
Tin	ppm	0	0	---	---
Aluminum	ppm	3	5	---	---
Chromium	ppm	2	<1	---	---
Molybdenum	ppm	0	0	---	---
Nickel	ppm	0	<1	---	---
Titanium	ppm	0	0	---	---
Silver	ppm	0	0	---	---
Manganese	ppm	4	2	---	---
Vanadium	ppm	<1	0	---	---



ADDITIVES

Calcium	ppm	7	19	---	---
Magnesium	ppm	1	4	---	---
Zinc	ppm	55	63	---	---
Phosphorus	ppm	197	229	---	---
Barium	ppm	<1	<1	---	---
Boron	ppm	0	0	---	---

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

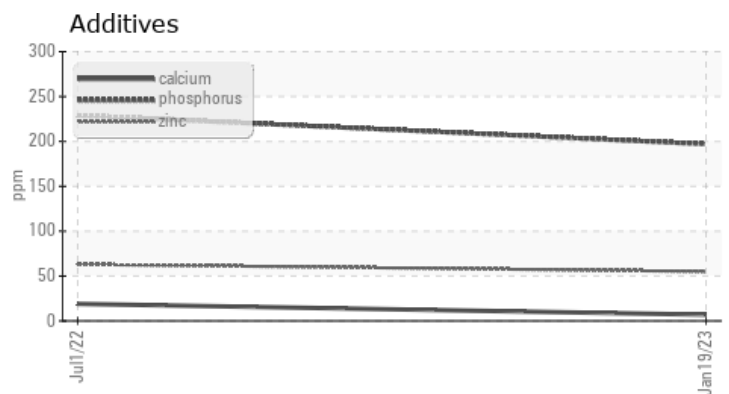
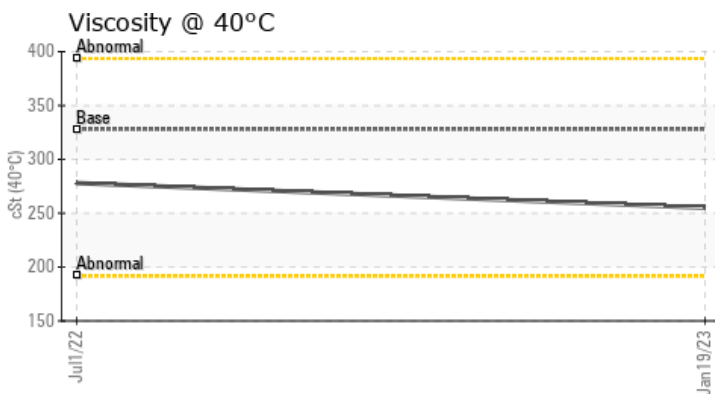
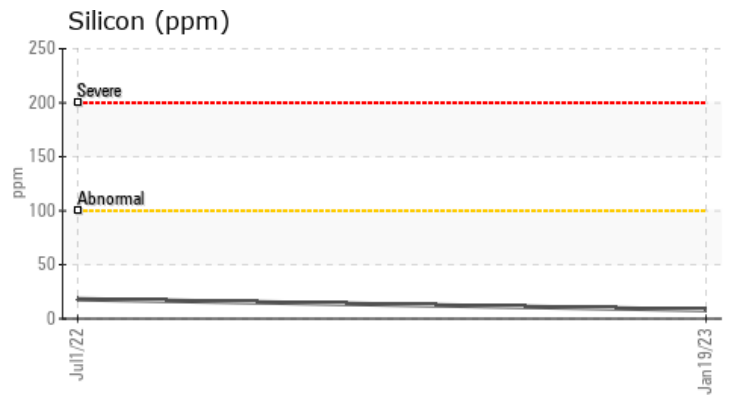
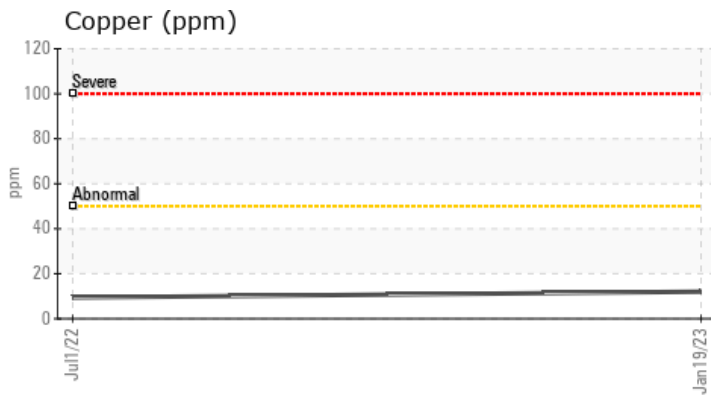
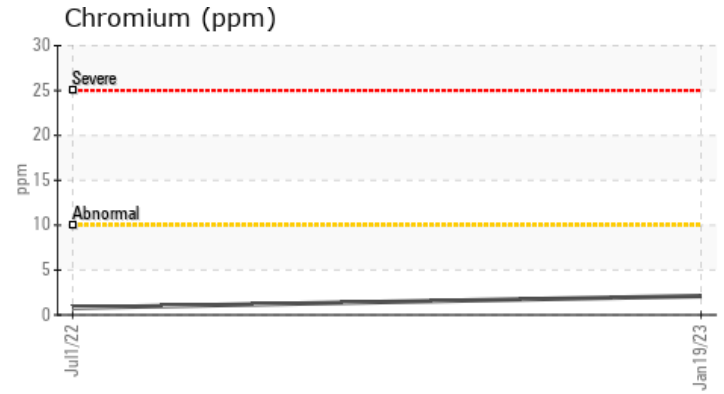
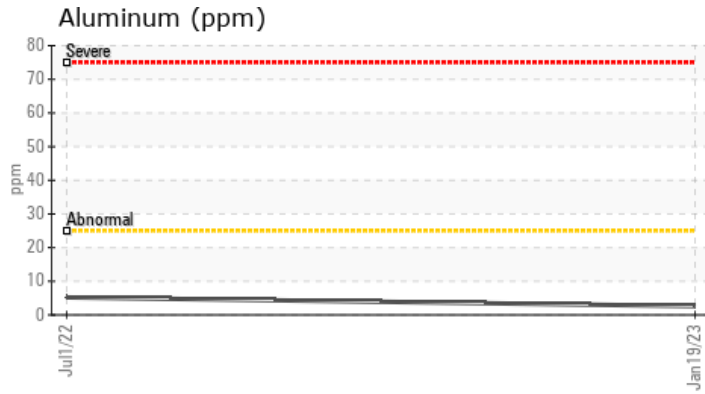
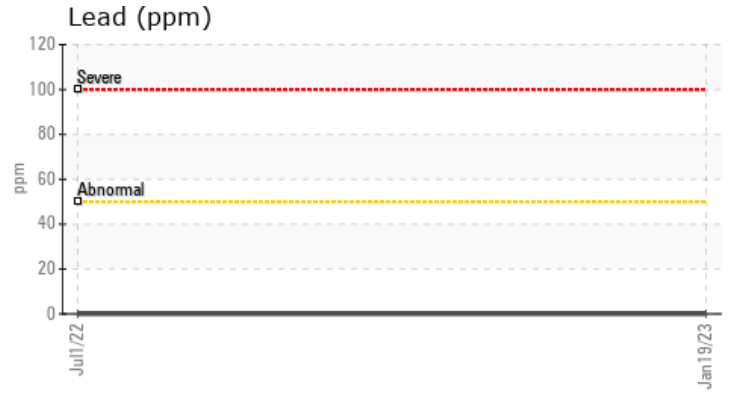
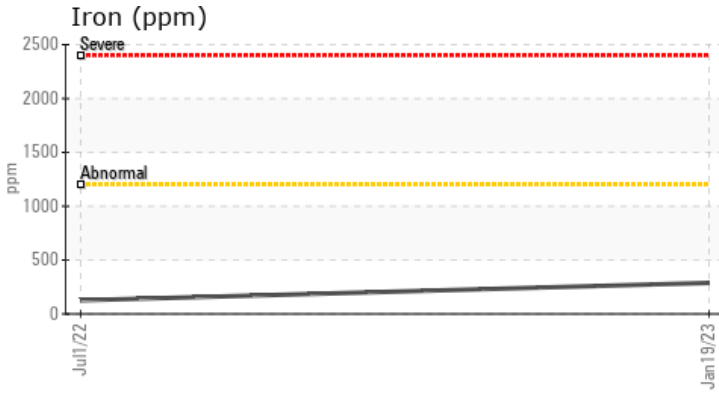
Depot: VOLVO0077
Unique No: 10312121
Signed: Jonathan Hester
Report Date: 31 Jan 2023



CONSTRUCTION EQUIPMENT



GRAPHS





CONSTRUCTION EQUIPMENT

VOLVO EC750EL 314074 - FRONT LEFT FINAL DRIVE



Sample No: VCP360564
Oil Type: MOBIL MOBILUBE HD 85W140
Job No:



SAMPLE INFORMATION

Sample Number	VCP360564	VCP283387	---	---
Sample Date	19 Jan 2023	01 Jul 2022	---	---
Machine Hours	2963	1975	---	---
Oil Hours	2963	1500	---	---
Oil Changed	Changed	Changed	---	---
Sample Status	SEVERE	SEVERE	---	---

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 F: (208)523-9918



OIL CONDITION

Visc @ 40°C	cSt	355	251	---	---
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CONTAMINATION

Silicon	ppm	1069	862	---	---
Sodium	ppm	23	19	---	---
Potassium	ppm	69	47	---	---



WEAR METALS

Iron	ppm	2346	1608	---	---
Copper	ppm	5	4	---	---
Lead	ppm	<1	0	---	---
Tin	ppm	1	<1	---	---
Aluminum	ppm	120	120	---	---
Chromium	ppm	13	14	---	---
Molybdenum	ppm	2	2	---	---
Nickel	ppm	2	1	---	---
Titanium	ppm	14	12	---	---
Silver	ppm	0	0	---	---
Manganese	ppm	23	18	---	---
Vanadium	ppm	<1	<1	---	---



ADDITIVES

Calcium	ppm	199	199	---	---
Magnesium	ppm	48	37	---	---
Zinc	ppm	11	14	---	---
Phosphorus	ppm	596	201	---	---
Barium	ppm	6	6	---	---
Boron	ppm	74	0	---	---

Diagnosis

We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition. Gear wear is indicated. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The oil is no longer serviceable due to the presence of contaminants.

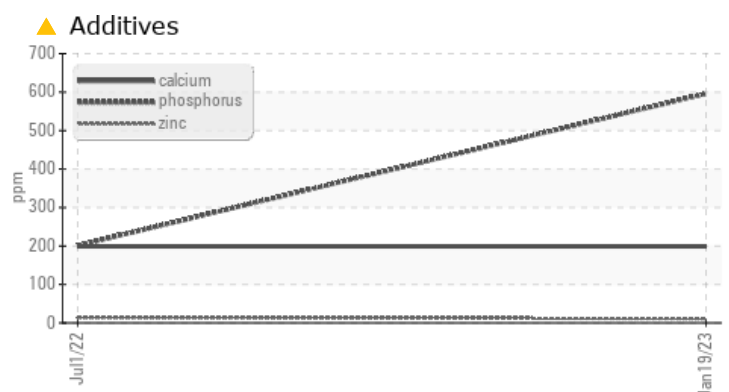
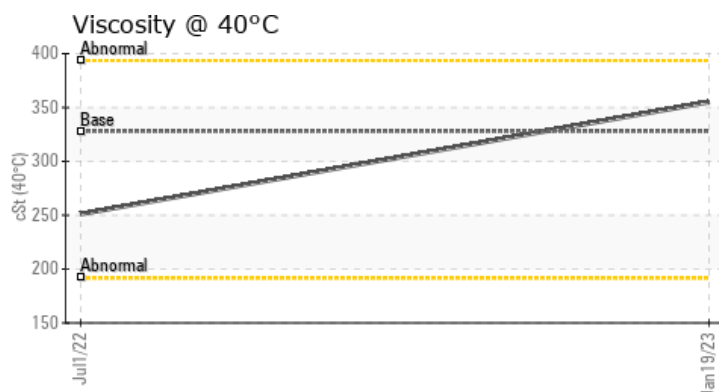
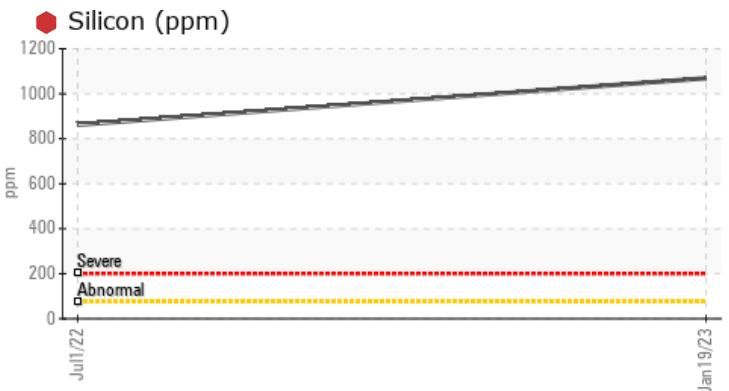
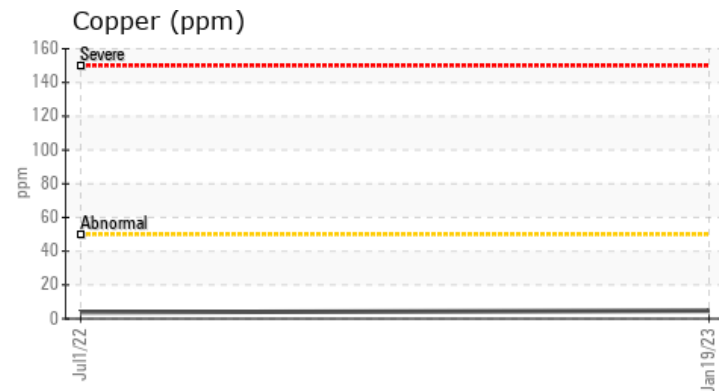
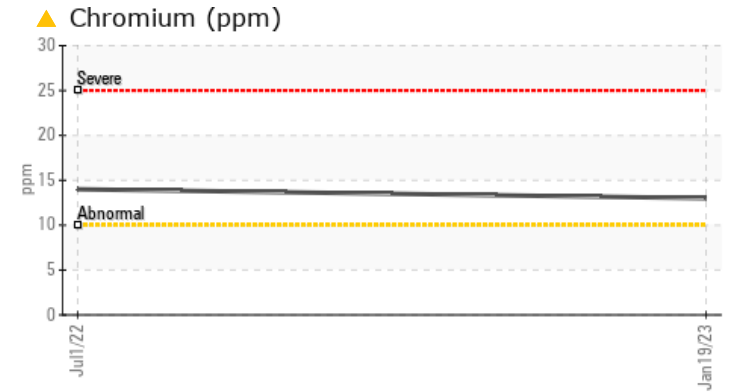
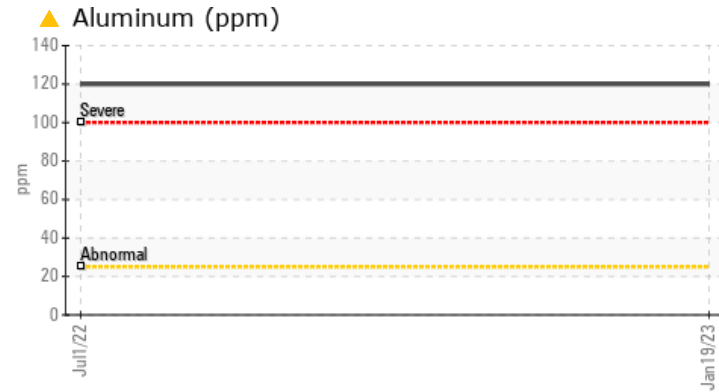
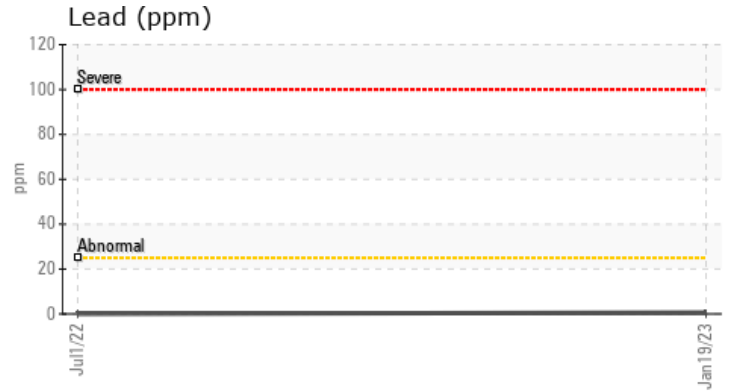
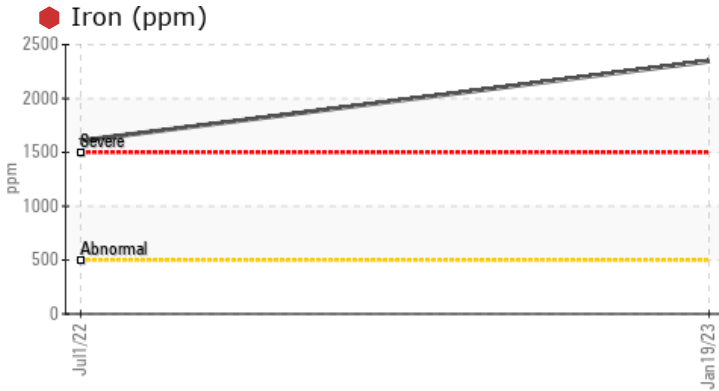
Depot: VOLVO0077
Unique No: 10312124
Signed: Jonathan Hester
Report Date: 31 Jan 2023



CONSTRUCTION EQUIPMENT



GRAPHS





CONSTRUCTION EQUIPMENT

RENT VOLVO EC750EL 314074 - FRONT RIGHT FINAL DRIVE



Sample No: VCP360568
Oil Type: MOBIL MOBILUBE HD 85W140
Job No: RENT



ARNOLD MACHINERY COMPANY
 3330 NORTH YELLOWSTONE HIGHWAY
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 F: (208)523-9918



SAMPLE INFORMATION

Sample Number	VCP360568	VCP283251	---	---
Sample Date	19 Jan 2023	01 Jul 2022	---	---
Machine Hours	2963	1976	---	---
Oil Hours	2963	500	---	---
Oil Changed	Changed	Changed	---	---
Sample Status	SEVERE	SEVERE	---	---



OIL CONDITION

Visc @ 40°C	cSt	348	253	---	---
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CONTAMINATION

Water	%	NEG	NEG	---	---
Silicon	ppm	▲ 662	▲ 607	---	---
Sodium	ppm	■ 13	■ 14	---	---
Potassium	ppm	■ 47	■ 31	---	---



WEAR METALS

Iron	ppm	▲ 1106	▲ 1182	---	---
Copper	ppm	■ 3	■ 3	---	---
Lead	ppm	■ 0	■ 0	---	---
Tin	ppm	■ <1	■ 0	---	---
Aluminum	ppm	● 120	● 116	---	---
Chromium	ppm	■ 8	▲ 10	---	---
Molybdenum	ppm	■ <1	<1	---	---
Nickel	ppm	■ <1	1	---	---
Titanium	ppm	6	8	---	---
Silver	ppm	0	0	---	---
Manganese	ppm	■ 16	13	---	---
Vanadium	ppm	<1	<1	---	---



ADDITIVES

Calcium	ppm	■ 119	148	---	---
Magnesium	ppm	■ 32	27	---	---
Zinc	ppm	■ 9	5	---	---
Phosphorus	ppm	■ 689	190	---	---
Barium	ppm	■ 4	6	---	---
Boron	ppm	■ 101	0	---	---

Diagnosis

We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Gear wear is indicated. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The oil is no longer serviceable due to the presence of contaminants.

Depot: VOLVO0077
Unique No: 10312122
Signed: Jonathan Hester
Report Date: 31 Jan 2023



CONSTRUCTION EQUIPMENT



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