



# CONSTRUCTION EQUIPMENT

## PRINCE VOLVO L90H 626547 - DIESEL ENGINE



**Sample No:** VCP452252  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3  
**Job No:** PRINCE



### SAMPLE INFORMATION

Sample Number	<b>VCP452252</b>	VCP429272	VCP422949	VCP420196
Sample Date	<b>31 Jan 2024</b>	03 Oct 2023	01 Aug 2023	02 May 2023
Machine Hours	<b>2176</b>	1571	1131	505
Oil Hours	<b>0</b>	0	500	0
Oil Changed	<b>N/A</b>	Changed	Changed	Changed
Sample Status	<b>NORMAL</b>	NORMAL	NORMAL	NORMAL

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### OIL CONDITION

Visc @ 100°C	cSt	<b>12.8</b>	12.7	13.0	12.7
Base Number (BN)	mg KOH/g	<b>10.0</b>	10.5	9.4	10.1
Oxidation (PA)	%	<b>76</b>	78	78	76



### CONTAMINATION

Water	%	<b>NEG</b>	NEG	NEG	NEG
Soot %	%	<b>0.2</b>	0.2	0.3	0.3
Nitration (PA)	%	<b>56</b>	55	60	59
Sulfation (PA)	%	<b>59</b>	58	58	60
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>&lt;1.0</b>	<1.0	<1.0	<1.0
Silicon	ppm	<b>15</b>	6	8	17
Sodium	ppm	<b>0</b>	2	3	0
Potassium	ppm	<b>3</b>	<1	2	3



### WEAR METALS

Iron	ppm	<b>11</b>	5	16	26
Copper	ppm	<b>1</b>	<1	2	9
Lead	ppm	<b>0</b>	<1	<1	1
Tin	ppm	<b>0</b>	<1	2	3
Aluminum	ppm	<b>2</b>	2	7	30
Chromium	ppm	<b>1</b>	<1	2	3
Molybdenum	ppm	<b>46</b>	42	43	45
Nickel	ppm	<b>0</b>	0	<1	<1
Titanium	ppm	<b>0</b>	0	0	<1
Silver	ppm	<b>0</b>	0	0	0
Manganese	ppm	<b>0</b>	<1	1	4
Vanadium	ppm	<b>0</b>	0	0	0



### ADDITIVES

Calcium	ppm	<b>1715</b>	1527	1727	1540
Magnesium	ppm	<b>495</b>	483	551	524
Zinc	ppm	<b>1171</b>	1036	1212	1104
Phosphorus	ppm	<b>854</b>	889	987	947
Barium	ppm	<b>5</b>	0	0	0
Boron	ppm	<b>72</b>	36	28	77

### 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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

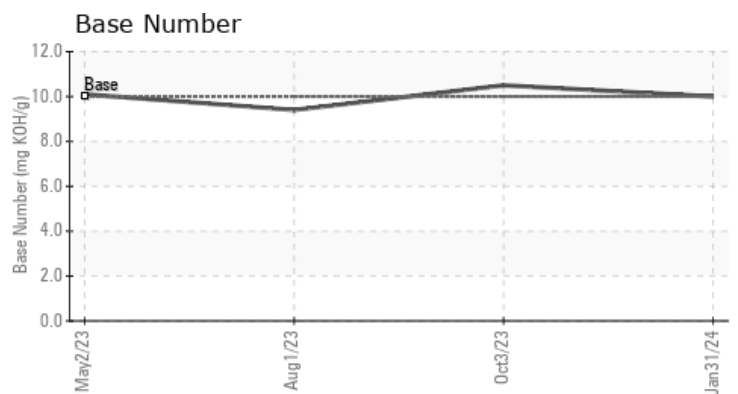
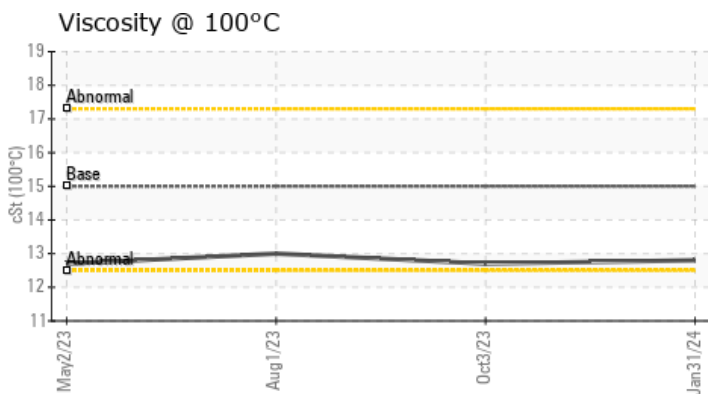
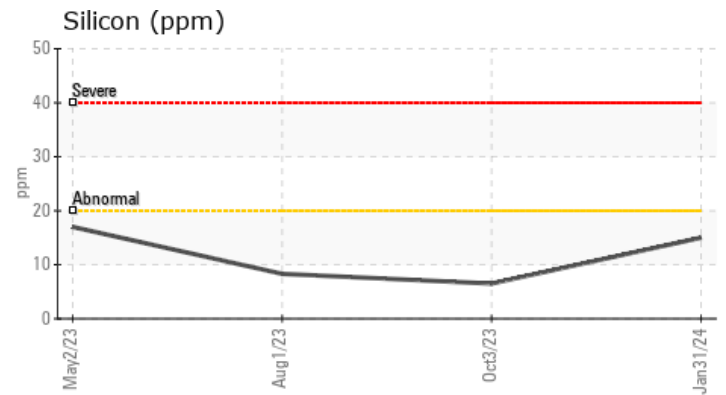
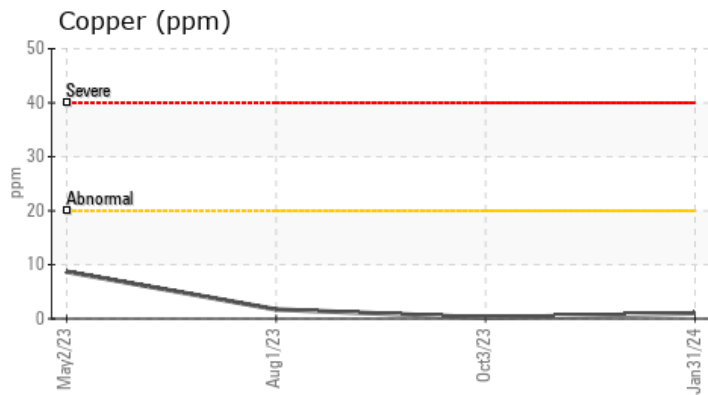
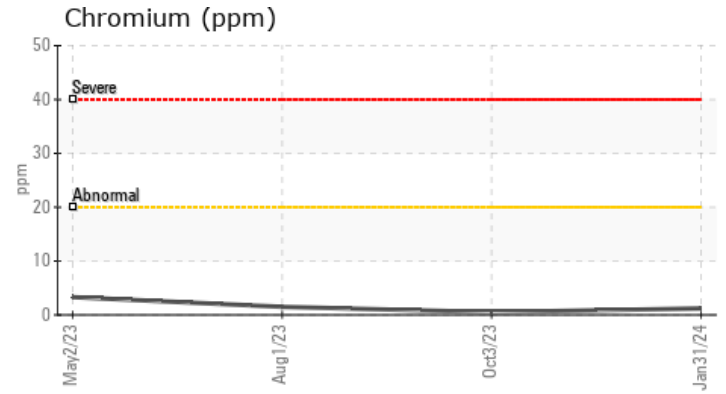
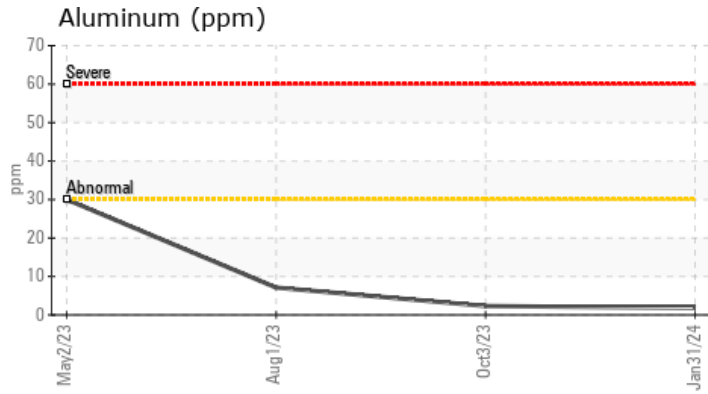
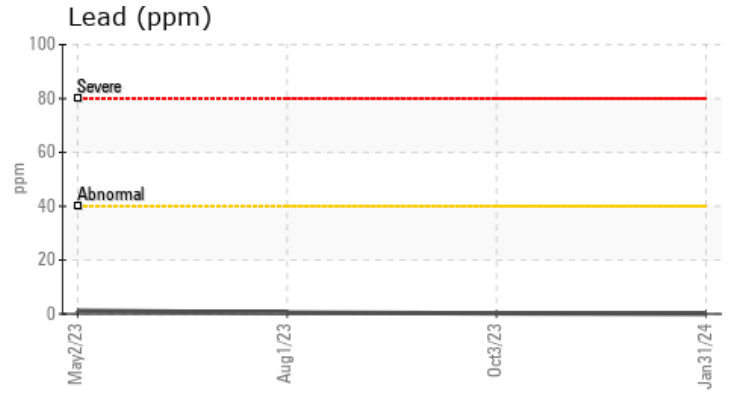
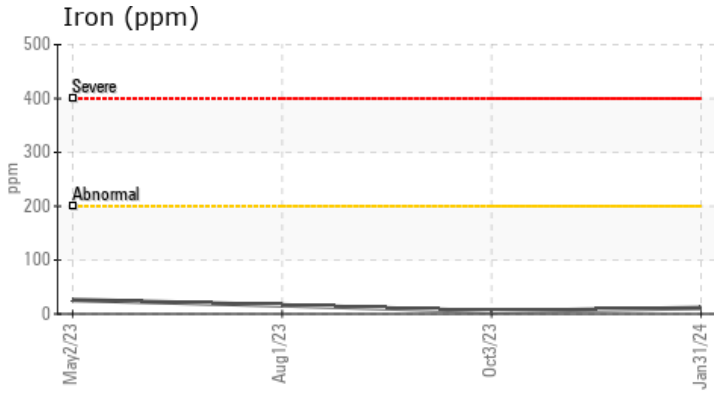
**Depot:** VOLVO0093  
**Unique No:** 10863250  
**Signed:** Wes Davis  
**Report Date:** 06 Feb 2024



# CONSTRUCTION EQUIPMENT



## GRAPHS





# CONSTRUCTION EQUIPMENT

PRINCE VOLVO L90H 626547 - TRANSMISSION (AUTO)



**Sample No:** VCP440482  
**Oil Type:** VOLVO AT 102  
**Job No:** PRINCE



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## SAMPLE INFORMATION

Sample Number	<b>VCP440482</b>	VCP429243	VCP411825	VCP411099
Sample Date	<b>07 Jun 2024</b>	03 Oct 2023	01 Aug 2023	02 May 2023
Machine Hours	<b>2696</b>	1571	1131	505
Oil Hours	<b>0</b>	0	1131	0
Oil Changed	<b>Not Chngd</b>	Not Chngd	Not Chngd	Not Chngd
Sample Status	<b>ABNORMAL</b>	NORMAL	NORMAL	NORMAL



## OIL CONDITION

Visc @ 40°C	cSt	<b>27.2</b>	27.5	27.9	28.1
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## CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Silicon	ppm	<b>9</b>	7	7	6
Sodium	ppm	<b>4</b>	5	3	2
Potassium	ppm	<b>3</b>	1	2	2



## WEAR METALS

Iron	ppm	<b>251</b>	144	145	91
Copper	ppm	<b>13</b>	8	8	7
Lead	ppm	<b>&lt;1</b>	0	<1	<1
Tin	ppm	<b>&lt;1</b>	0	0	0
Aluminum	ppm	<b>2</b>	<1	2	0
Chromium	ppm	<b>&lt;1</b>	<1	<1	<1
Molybdenum	ppm	<b>&lt;1</b>	0	<1	<1
Nickel	ppm	<b>&lt;1</b>	0	<1	<1
Titanium	ppm	<b>&lt;1</b>	<1	0	0
Silver	ppm	<b>0</b>	0	0	0
Manganese	ppm	<b>11</b>	8	9	8
Vanadium	ppm	<b>0</b>	0	0	0



## ADDITIVES

Calcium	ppm	<b>77</b>	43	74	76
Magnesium	ppm	<b>1</b>	0	1	1
Zinc	ppm	<b>40</b>	10	32	27
Phosphorus	ppm	<b>192</b>	132	185	186
Barium	ppm	<b>0</b>	0	3	2
Boron	ppm	<b>75</b>	63	78	72

## Diagnosis

No corrective action is recommended at this time. Resample at the next service interval to monitor. The iron level is abnormal. All other component wear rates are normal. There is no indication of any contamination in the fluid. The condition of the fluid is acceptable for the time in service.

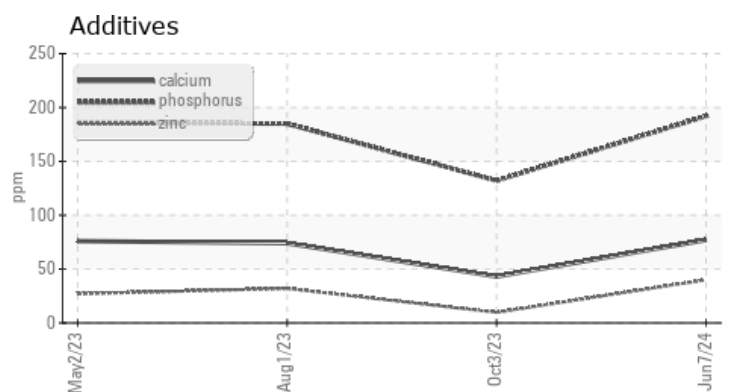
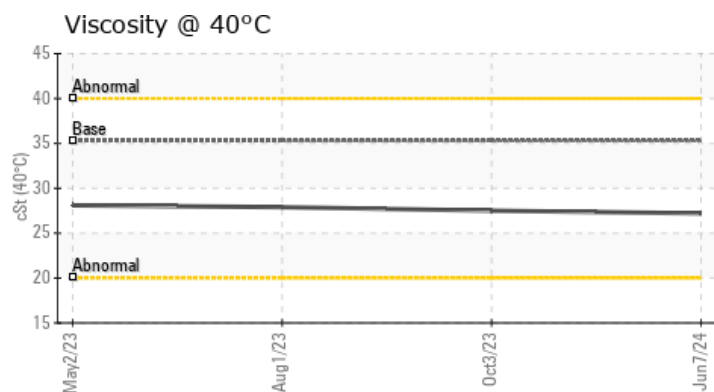
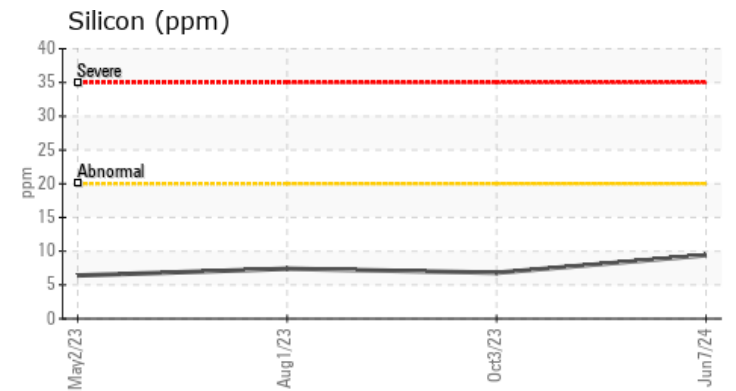
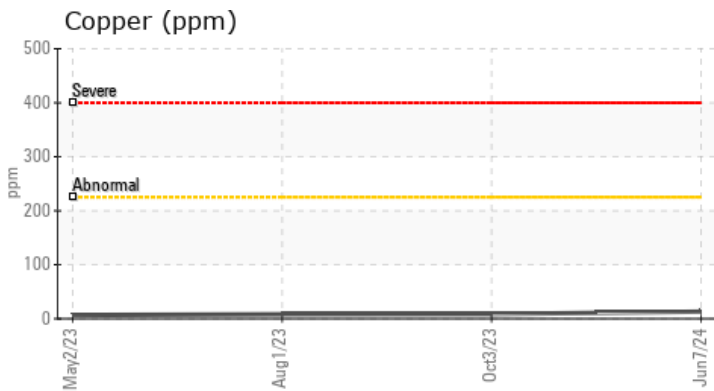
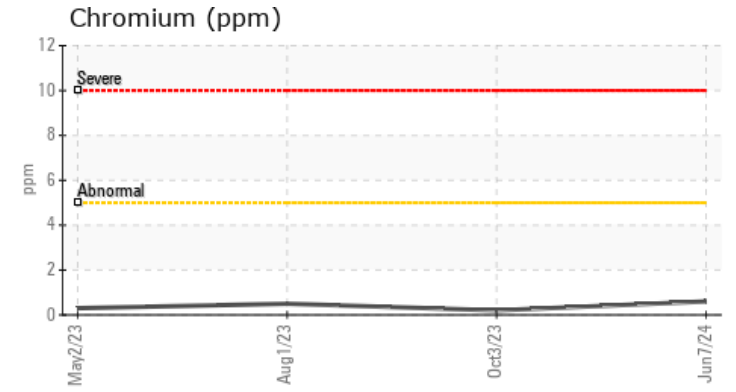
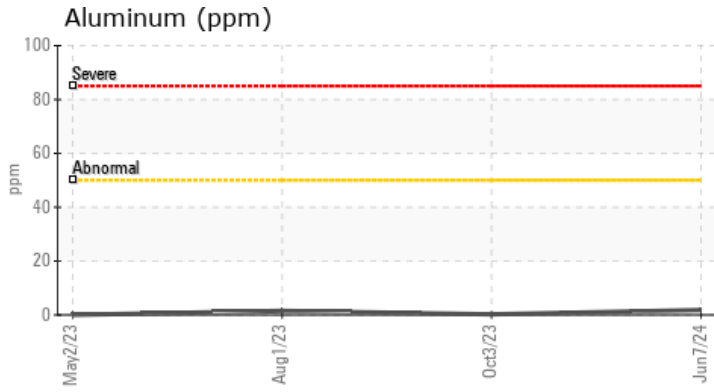
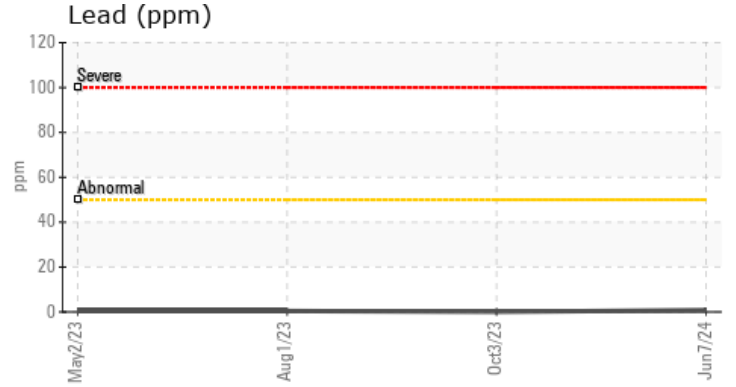
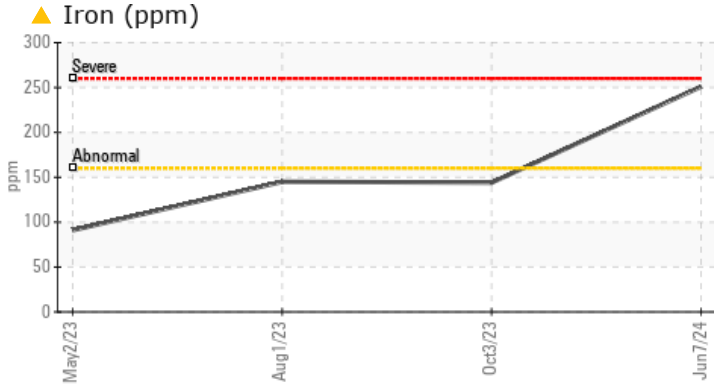
**Depot:** VOLVO0093  
**Unique No:** 11075686  
**Signed:** Angela Borella  
**Report Date:** 14 Jun 2024



# CONSTRUCTION EQUIPMENT



## VOLVO GRAPHS





# CONSTRUCTION EQUIPMENT

PRINCE VOLVO L90H 626547 - HYDRAULIC SYSTEM



**Sample No:** VCP441884  
**Oil Type:** VOLVO SUPER HYDRAULIC OIL 46  
**Job No:** PRINCE



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## SAMPLE INFORMATION

Sample Number	VCP441884	VCP411999	---	---
Sample Date	31 Jan 2024	01 Aug 2023	---	---
Machine Hours	2176	1131	---	---
Oil Hours	0	1131	---	---
Oil Changed	N/A	Not Changd	---	---
Sample Status	SEVERE	ATTENTION	---	---



## OIL CONDITION

Visc @ 40°C	cSt	43.1	43.4	---	---
Acid Number (AN)	mg KOH/g	0.34	0.39	---	---



## CONTAMINATION

Water	%	NEG	NEG	---	---
Particles >4µm		34393	8675	---	---
Particles >6µm		11419	2045	---	---
Particles >14µm		1033	146	---	---
ISO 4406:1999 (c)		22/21/17	20/18/14	---	---
Silicon	ppm	3	3	---	---
Sodium	ppm	1	1	---	---
Potassium	ppm	3	0	---	---



## WEAR METALS

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



## ADDITIVES

Calcium	ppm	66	88	---	---
Magnesium	ppm	6	4	---	---
Zinc	ppm	435	433	---	---
Phosphorus	ppm	339	344	---	---
Barium	ppm	0	0	---	---
Boron	ppm	0	0	---	---

## Diagnosis

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation. All component wear rates are normal. There is a high amount of particulates (2 to 100 microns in size) present in the oil. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

**Depot:** VOLVO0093  
**Unique No:** 10863381  
**Signed:** Wes Davis  
**Report Date:** 07 Feb 2024

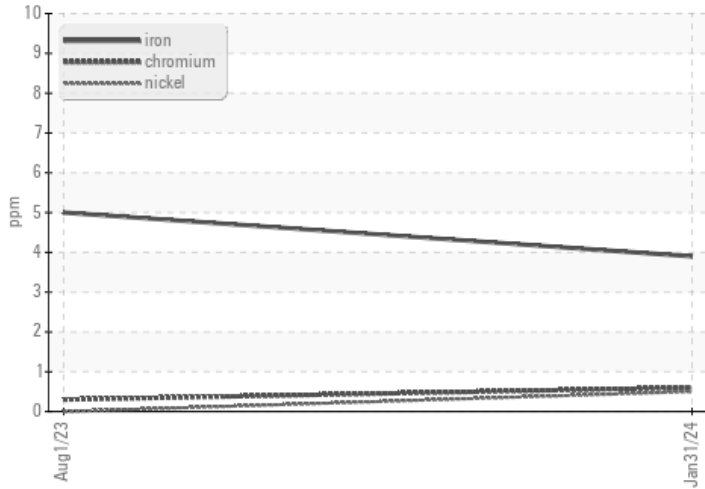


# CONSTRUCTION EQUIPMENT

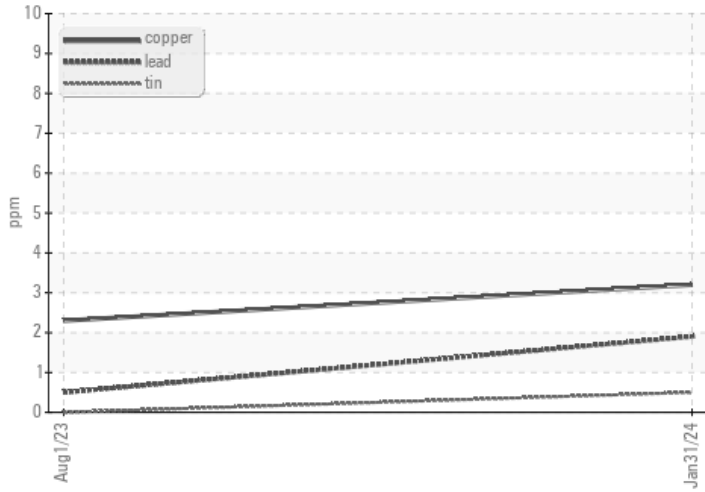


## GRAPHS

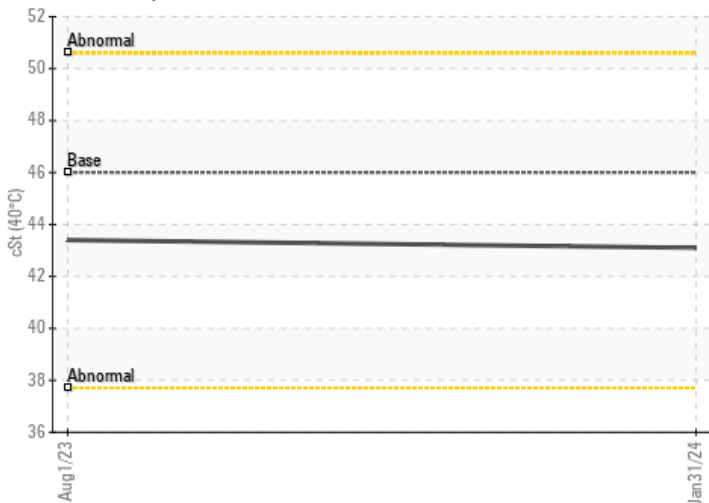
### Ferrous Alloys



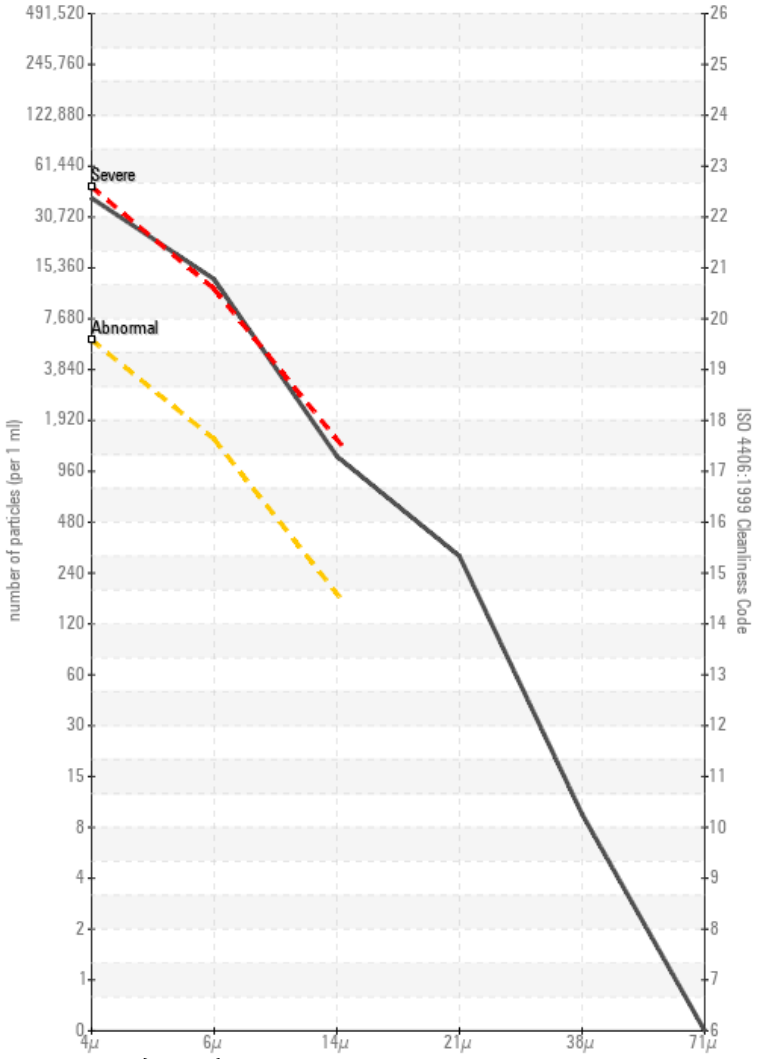
### Non-ferrous Metals



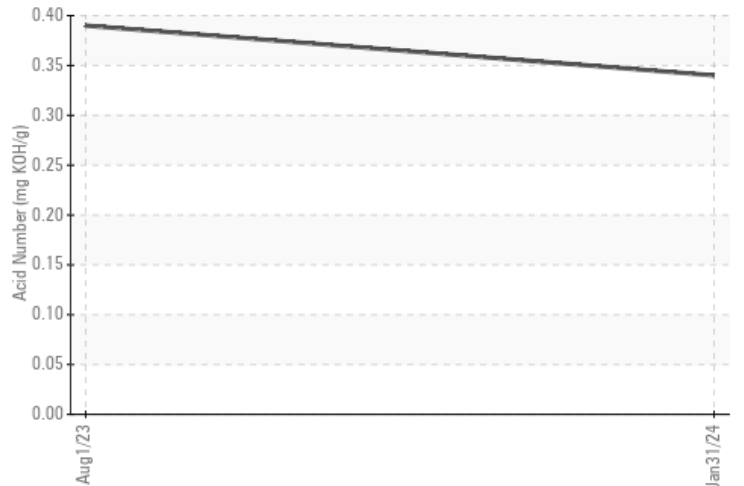
### Viscosity @ 40°C



### Particle Count



### Acid Number





# CONSTRUCTION EQUIPMENT

323806 PRINCE VOLVO L90H 626547 - FRONT AXLE



**Sample No:** VCP417307  
**Oil Type:** VOLVO WB 102  
**Job No:** 323806 PRINCE



## SAMPLE INFORMATION

Sample Number	VCP417307	---	---	---
Sample Date	01 Aug 2023	---	---	---
Machine Hours	1131	---	---	---
Oil Hours	1131	---	---	---
Oil Changed	Changed	---	---	---
Sample Status	NORMAL	---	---	---

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## OIL CONDITION

Visc @ 40°C	cSt	█ 40.8	---	---	---
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## CONTAMINATION

Silicon	ppm	█ 16	---	---	---
Sodium	ppm	█ 6	---	---	---
Potassium	ppm	█ 2	---	---	---

## 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.



## WEAR METALS

Iron	ppm	█ 53	---	---	---
Copper	ppm	█ <1	---	---	---
Lead	ppm	█ <1	---	---	---
Tin	ppm	█ 0	---	---	---
Aluminum	ppm	█ 2	---	---	---
Chromium	ppm	█ 3	---	---	---
Molybdenum	ppm	█ 15	---	---	---
Nickel	ppm	█ <1	---	---	---
Titanium	ppm	<1	---	---	---
Silver	ppm	0	---	---	---
Manganese	ppm	█ 9	---	---	---
Vanadium	ppm	0	---	---	---



## ADDITIVES

Calcium	ppm	█ 3964	---	---	---
Magnesium	ppm	█ 11	---	---	---
Zinc	ppm	█ 1620	---	---	---
Phosphorus	ppm	█ 1343	---	---	---
Barium	ppm	█ 1	---	---	---
Boron	ppm	█ 148	---	---	---

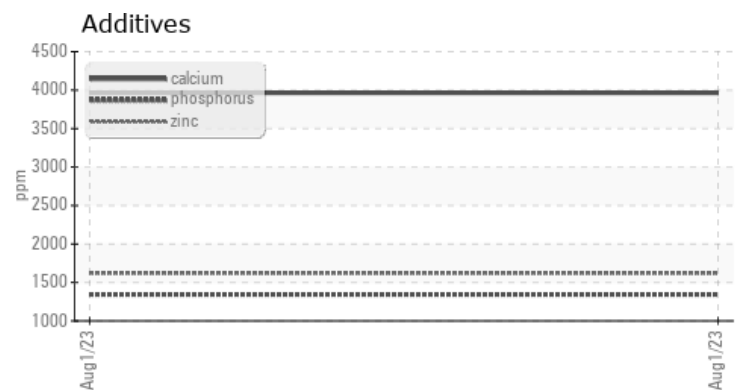
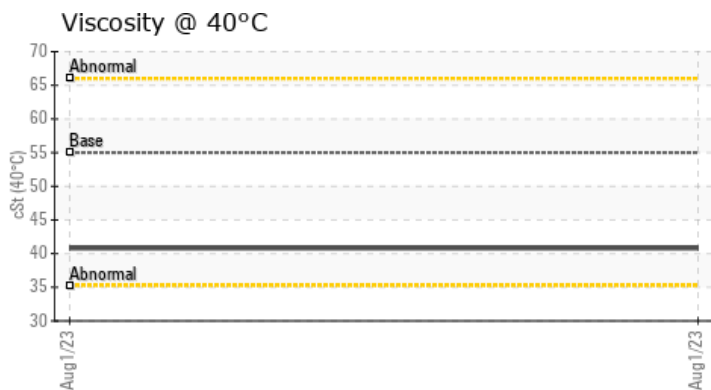
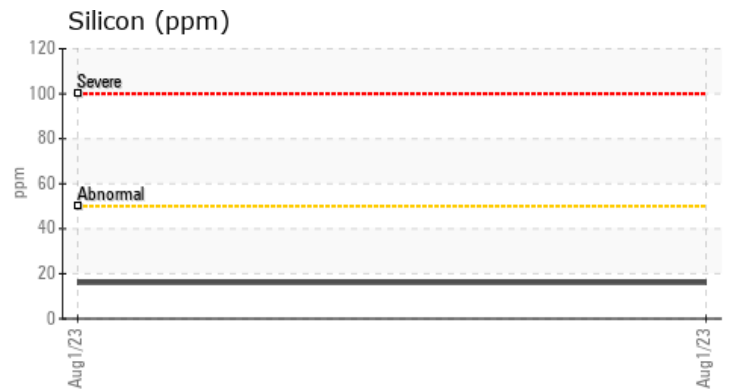
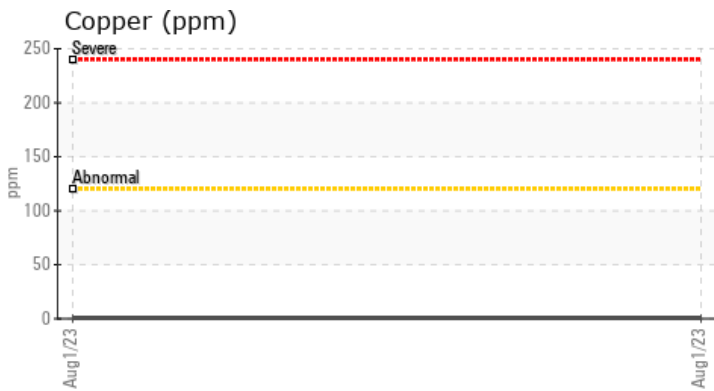
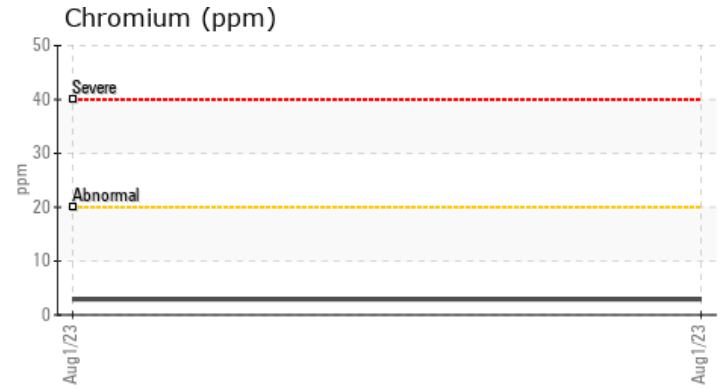
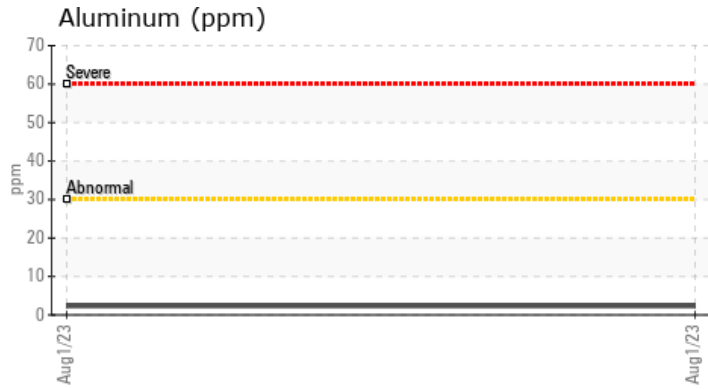
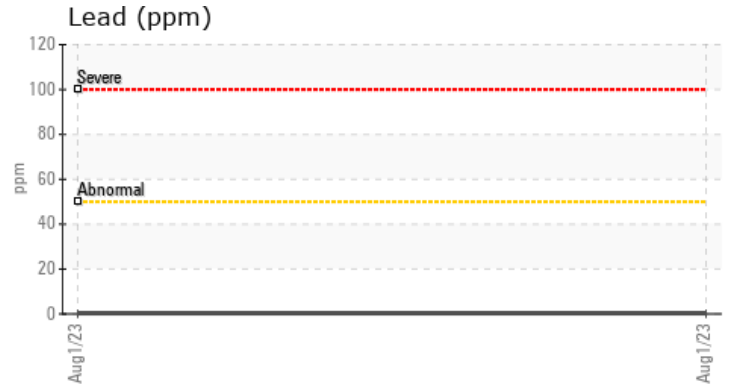
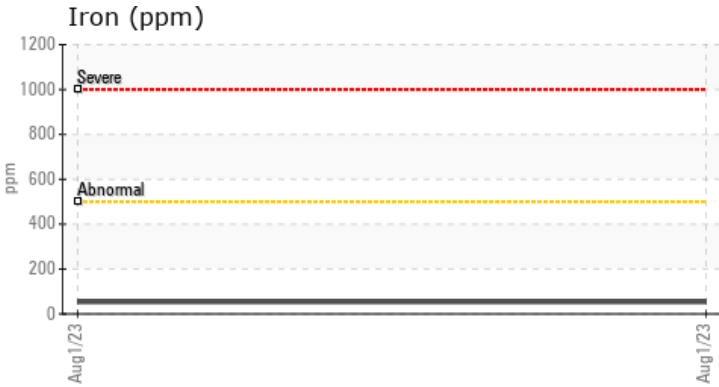
**Depot:** VOLVO0093  
**Unique No:** 10602498  
**Signed:** Wes Davis  
**Report Date:** 13 Aug 2023



# CONSTRUCTION EQUIPMENT



## VOLVO GRAPHS







# CONSTRUCTION EQUIPMENT

323806 PRINCE VOLVO L90H 626547 - REAR AXLE



**Sample No:** VCP411835  
**Oil Type:** VOLVO WB 102  
**Job No:** 323806 PRINCE



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## SAMPLE INFORMATION

Sample Number	VCP411835	---	---	---
Sample Date	01 Aug 2023	---	---	---
Machine Hours	1131	---	---	---
Oil Hours	1131	---	---	---
Oil Changed	Changed	---	---	---
Sample Status	NORMAL	---	---	---



## OIL CONDITION

Visc @ 40°C	cSt	█ 40.9	---	---	---
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## CONTAMINATION

Silicon	ppm	█ 23	---	---	---
Sodium	ppm	█ 9	---	---	---
Potassium	ppm	█ 3	---	---	---



## WEAR METALS

Iron	ppm	█ 58	---	---	---
Copper	ppm	█ 56	---	---	---
Lead	ppm	█ <1	---	---	---
Tin	ppm	█ 6	---	---	---
Aluminum	ppm	█ 2	---	---	---
Chromium	ppm	█ 4	---	---	---
Molybdenum	ppm	█ 3	---	---	---
Nickel	ppm	█ <1	---	---	---
Titanium	ppm	<1	---	---	---
Silver	ppm	0	---	---	---
Manganese	ppm	█ 7	---	---	---
Vanadium	ppm	0	---	---	---



## ADDITIVES

Calcium	ppm	█ 3941	---	---	---
Magnesium	ppm	█ 12	---	---	---
Zinc	ppm	█ 1602	---	---	---
Phosphorus	ppm	█ 1332	---	---	---
Barium	ppm	█ 1	---	---	---
Boron	ppm	█ 147	---	---	---

## 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:** VOLVO0093  
**Unique No:** 10602435  
**Signed:** Wes Davis  
**Report Date:** 12 Aug 2023



# CONSTRUCTION EQUIPMENT



## VOLVO GRAPHS

