



SPECTRO | JET-CARE
LABORATORIES

LANDFILL GAS GROUP

4 July 2018



COMPANY HISTORY

1976

Spectro® is founded by David Glass. Laboratory opens in London

1981

Jet-Care® Trend Monitoring by Gas Path Analysis begins

1996

Jet-Care laboratory opens in New Jersey

2000

Spectro Oil AG laboratory opens in Switzerland

2015

The UK offices and laboratory move to Hatchwood Place

2016



Today:

The company remains privately owned and serves customers in over 140 countries.



COMPANY LOCATIONS



Jet-Care International Inc, NJ, USA



Spectro | Jet-Care, Hampshire, UK



Spectro Oil AG, Basel, Switzerland



WHAT WE DO



LABORATORY ANALYSIS

Oil
Hydraulic Fluid
Fuel
Debris & Filter



ENGINE TREND MONITORING

The monitoring of engine data by
Gas Path Analysis



THE MARKETS WE SERVE



AVIATION

- Business Aviation
- General Aviation
- Defence
- Emergency
- MRO
- Offshore
- Airlines
- Cargo



INDUSTRIAL

- Gas Engines
- Wind Turbines
- Steam/Gas Turbines
- Generator Sets
- Diesel Marine Power Plant
- Automotive
- Off Highway



MARINE

- Offshore Support Vessels
- Cruise Ships
- Ferries
- Tugs & Towage
- Superyachts
- Megayachts
- Launches



LANDFILL GAS I

- Earliest engines samples in UK - 1990
 - Converted Rolls Royce Tank Engines at Judkins Quarry
 - 4 CAT 3516's at Blue Circle / Britannia Refined Metals – Stone
- Earliest problems high chlorines and sulphurs
- Silicon a feature as acidic content reduced over time
- Significant engine lacquers
- Liner scuffing
- Short oil hours



LANDFILL GAS II

- Engine outputs have increased – early CAT 3516 ran at only 600 Kw – now over 1 Mw
- Larger engines used
- Higher BMEP
- OEMs provided enhanced guidelines / TI's
- Increasing use of Group II base stocks
- Lubricant additives changing i.e. boron



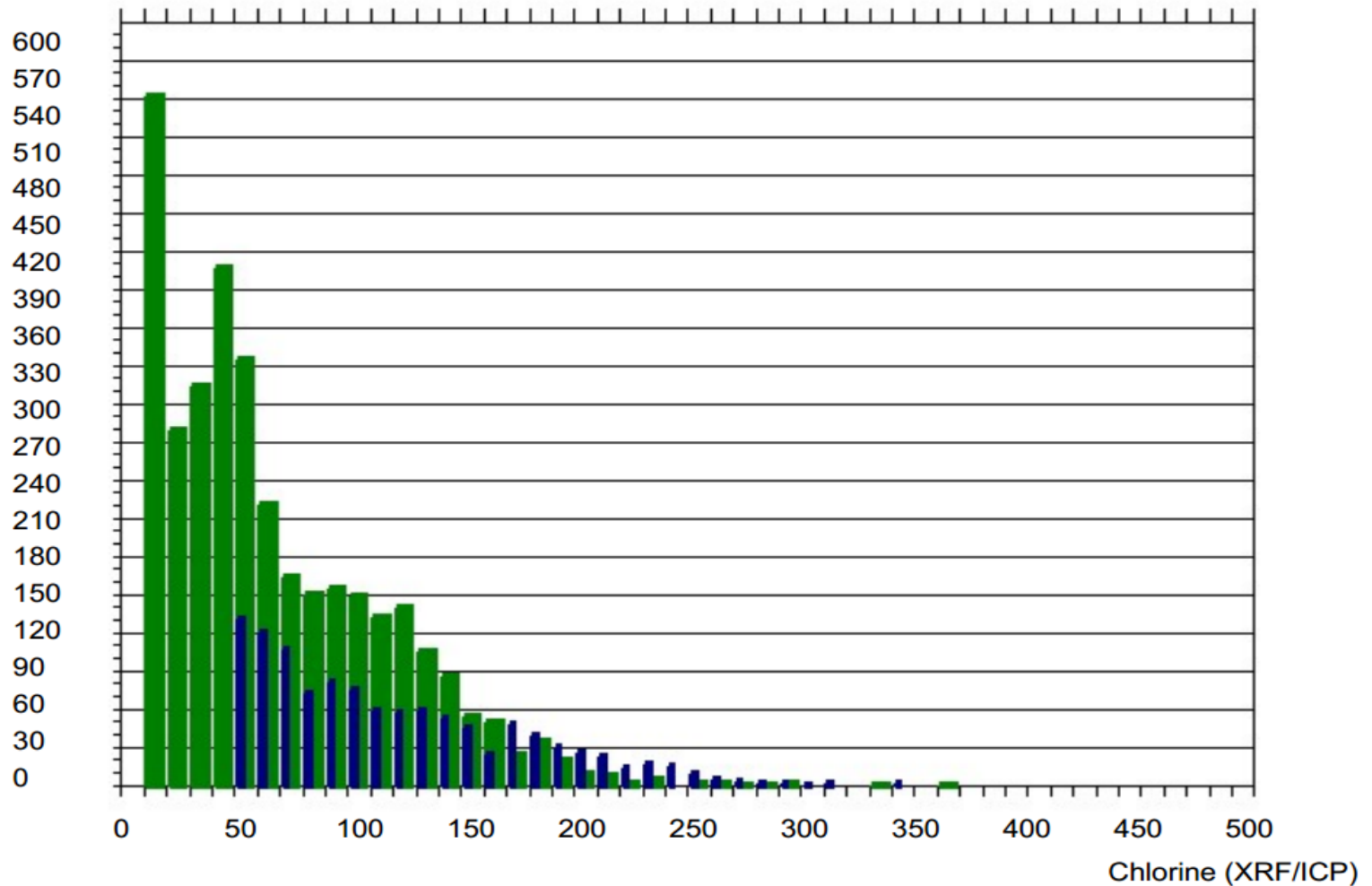
LANDFILL GAS III

- Many of the products sampled in 1990 are still in use today
- Aggressive LFG components seem to have reduced significantly
- Greater use of gas treatment – activated carbon, etc
- Many more gas engine lubricant suppliers
- Oil life still limited by silicon
- Where silicon is not high some oil life extension has been possible.



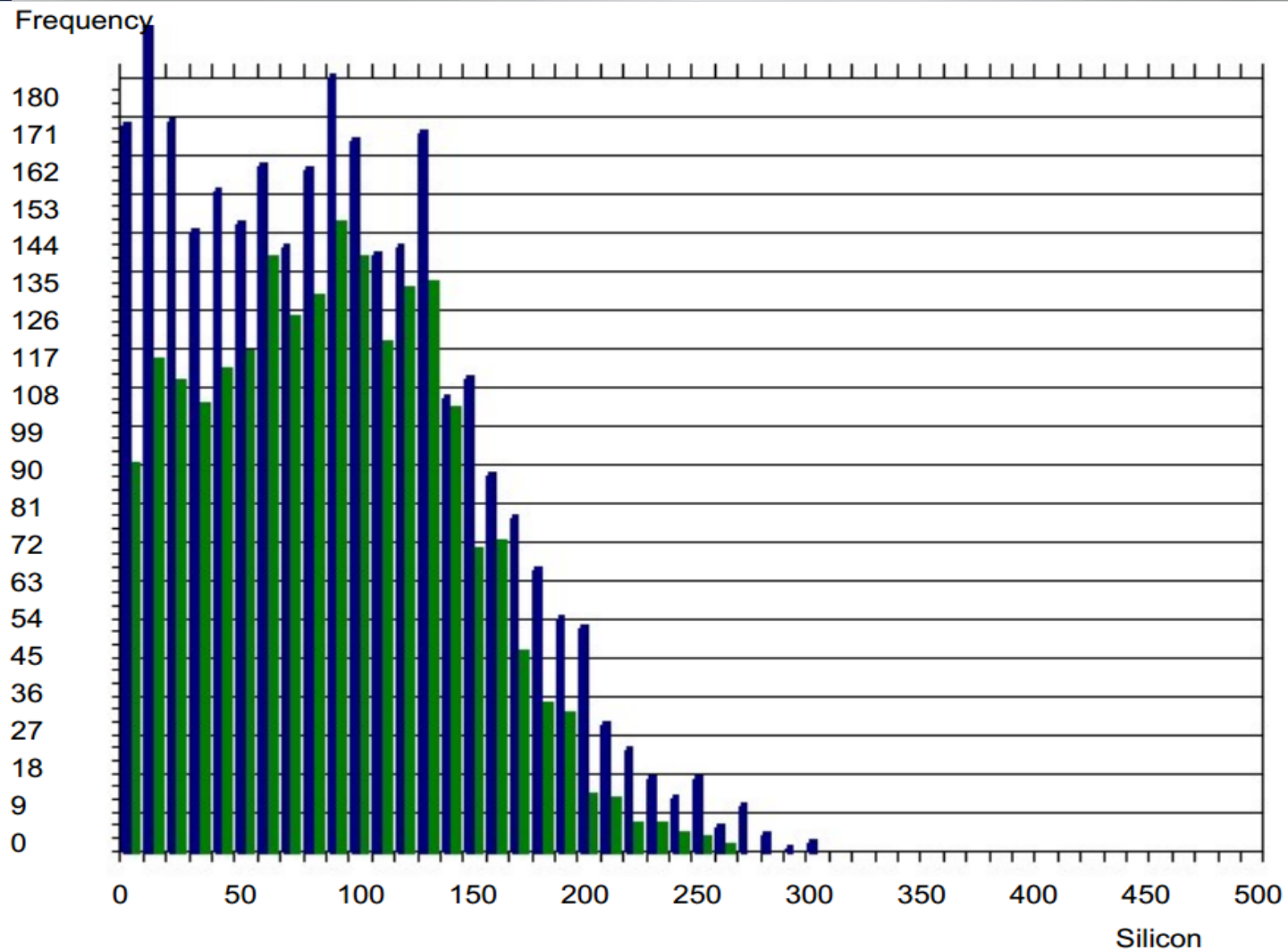
Chlorine 2010 to 2017

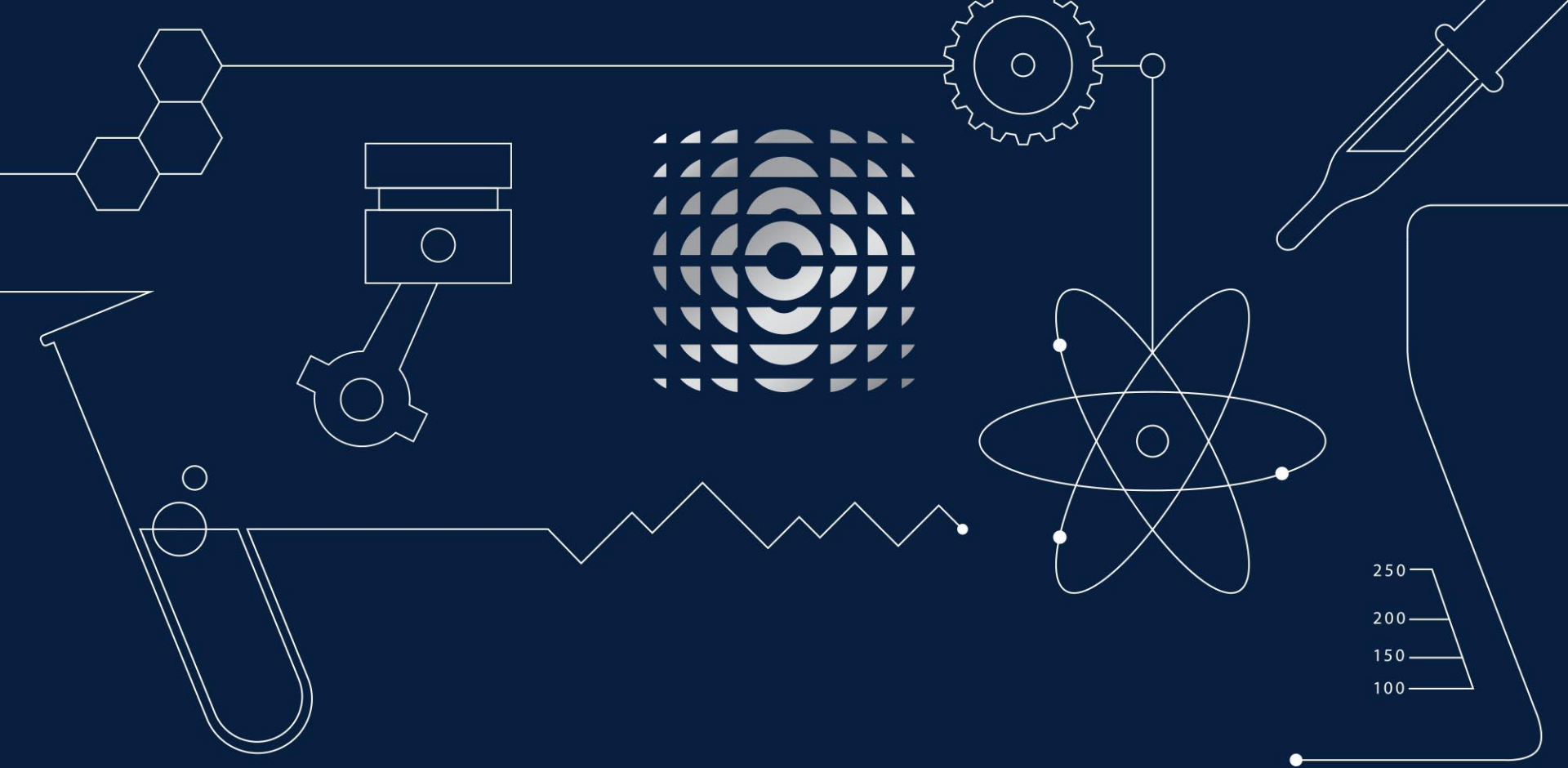
Frequency





Silicon 2011 - 2017





Thank you