

Natural Gas Engine Oil



# HDAX<sup>®</sup> 6500 LFG Gas Engine Oil SAE 40



## Our focus drives your performance.

To compete in today's industrial world, you have to be more enterprising and more aggressive than ever. You have to use advanced equipment and push it faster and harder. To succeed at this pace, we know you must find innovative ways to boost reliability, minimize downtime and optimize performance across your operation. That's why we're here.

Chevron Lubricants is a dedicated team that combines focused expertise, advanced products and tailored programs to create comprehensive lubrication solutions for today's industries. We work with you to take a holistic approach to improving productivity – an approach that helps you solve critical challenges, reach for your goals, and compete to win.

## Our premium, high performance gas engine oil for landfill gas, biogas, digester gas and sour gas applications.

### Take Advantage of our Extended Service, Low Ash Gas Engine Oil for Landfill, Digester and Sour Gas Applications

HDAX® 6500 LFG Gas Engine Oil SAE 40 is specifically formulated using a combination of high performance, premium base oils and a robust additive package offering potential for extended drains compared to competitive capability, even with poor quality fuel often found in landfill, biogas, digester and sour gas applications.

**Outstanding Oxidation and Nitration Resistance** helps provide potential for long oil life and maximum flexibility in maintenance scheduling.

**TBN Retention and low rate of TAN** increase provides potential for extending drain intervals furthering maintenance scheduling flexibility.

**Low Oil Consumption and Piston Deposit Control** provide potential to extend equipment life and reduce down time.

**Corrosion** caused by the nature of poor fuel quality in the landfill, biogas and digester industries is appropriately managed.

**Catalyst Compatibility** — can be used with exhaust emission reduction systems.

### HDAX 6500 LFG helps control:

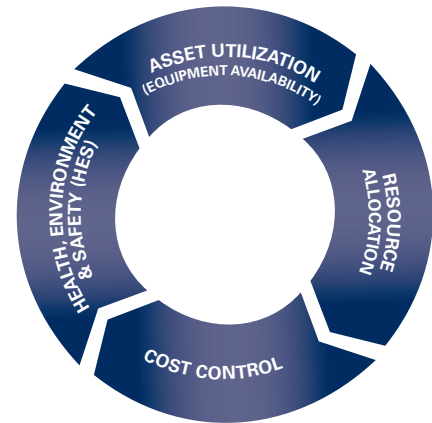
TBN Retention	Corrosion
Oxidation and Nitration	Valve Train Wear
Sludge Formation	Filter Plugging

*HDAX 6500 LFG Gas Engine Oil SAE 40 is approved for GE Jenbacher gas engines, types 2, 3 and 6 versions C and E burning gas containing acid forming trace elements (Classes B and C). Additionally, it is suitable for Caterpillar and Waukesha four-cycle engines burning landfill or biogas.*



## HDAX® 6500 LFG Gas Engine Oil SAE 40 Means Reliability

The gas engine oil that promotes potential for longer drain intervals, extended equipment life, reduced down time and savings in the maintenance budget.



Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

### As landfill, biogas, digester and sour gas application industries evolve and develop around the world, the need to keep equipment running reliably increases.

Being able to count on a brand means lots of things. Performance and reliability are what it is all about. Chevron formulates products around the latest technologies and industry needs.

HDAX® 6500 LFG Gas Engine Oil SAE 40 features premium performance and capability to help potential for extended drain intervals. TBN retention/lower TAN increase, relative to a tested competitor's oils, help define the extended drain interval potential.

#### Natural Gas Engine Lubricant Functions

Critical Lubricant Functions	Required Lubricant Properties
Provide long oil life to minimize engine downtime and a safety margin when operating constraints require postponing routine maintenance.	Oxidation and nitration resistance help potential to provide long oil life.
Minimize high temperature deposits from forming on components.	Detergents help to minimize harmful deposits from forming on piston crowns and ring grooves.
Minimize low temperature deposits on the top deck and in the crankcase.	Dispersants help minimize sludge particles from accumulating on top decks.
Inhibit corrosion	Alkaline additives neutralize acids increasing the potential for long oil service intervals.

### Understanding Value Drivers in Maintenance of Natural Gas Engines

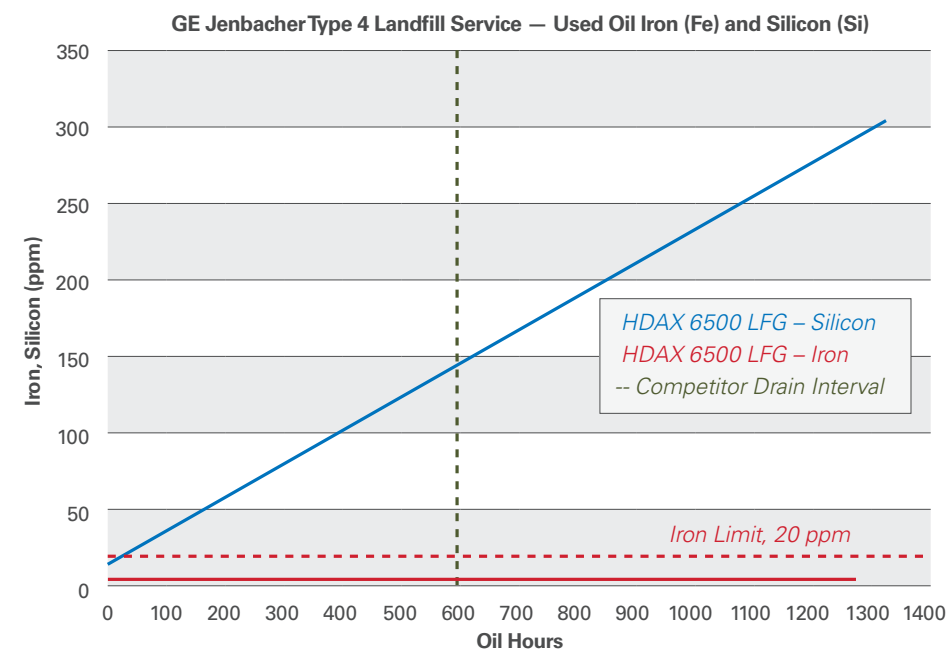
#### For Typical Operations:

- Downtime directly impacts production and revenue
- Unscheduled downtime costs due to engine failures are significant due to complexity involved with repairs
- Lubrication preventative maintenance tasks are difficult to manage in remote locations
- Due to size of engines, lock-out process and remote locations, safety is often a major concern for the mechanics
- Engine overhaul costs are expensive – extending time to overhaul by one year or more is significant to lowering total cost of ownership (TCO)

### HDAX® 6500 LFG Gas Engine Oil SAE 40 Field Tests

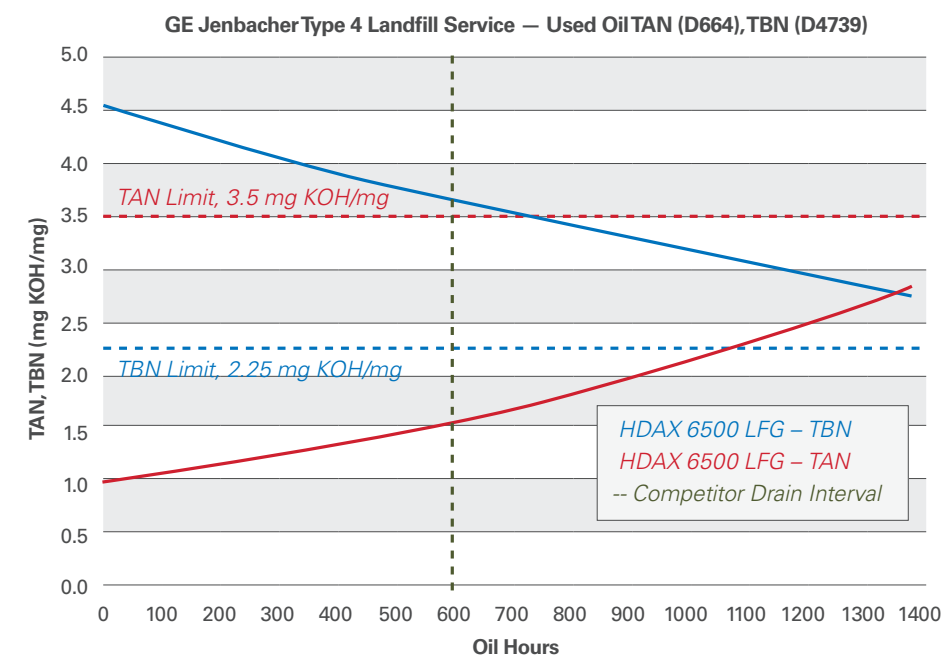
Our development program of this product included extensive field testing. Some examples of outstanding performance despite severe gas conditions are shown below.

#### HDAX 6500 LFG Gas Engine Oil SAE 40– GEJ Type 4 Landfill Site – Excellent Wear Control with High Siloxane Content



- The oil was changed at about 600 hour oil service intervals with the competitor's product when used oil samples exceeded GE Jenbacher's maximum recommended iron limit and siloxane contents were greater than 200 ppm.
- HDAX 6500 LFG Gas Engine Oil SAE 40 allowed site to double oil drain intervals compared to previously used product

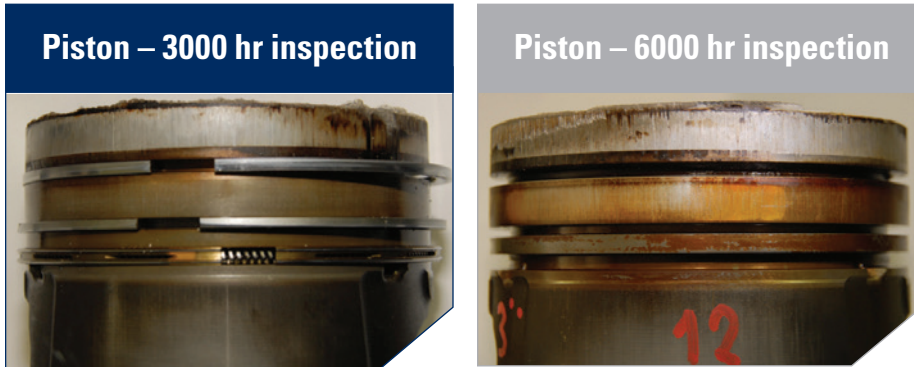
#### HDAX 6500 LFG Gas Engine Oil SAE 40– GEJ Type 4 Landfill Site – Improved TBN Retention, Low TAN Increase



- Excellent detergent and dispersant technology leads to enhanced base number retention

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**HDAX 6500 LFG Gas Engine Oil SAE 40 –  
GEJ Type 4 Landfill Site Low Ash Deposits on Pistons**



- Pistons are very clean
- Piston rings are free, with only a few spots of carbon deposits in the first groove – very good GE Jenbacher rating of 77 and 79.5 demerits
- Minimum carbon deposit on the backside of the top piston ring

**HDAX 6500 LFG Gas Engine Oil SAE 40– GEJ Type 4 Landfill Site – Summary**

- Drain interval increased from 600 hours to over 1200 hours
- Low levels of iron and retention of the cylinder crosshatch marks indicate excellent cylinder liner protection even with long drain interval
- Minimal signs of cylinder liner wear and low wear metals as measured by used oil analysis, despite significant increases of silicon content from the gas stream during the field test
- Increased consistency of ipH and TAN/TBN levels indicate stable, robust lubricant formulation
- Site converted from competitor’s oil to HDAX 6500 LFG Gas Engine Oil SAE 40 after 1500 hours of trial due to increased performance

HDAX 6500 Gas Engine Oil SAE 40 has shown similar outstanding service in other landfill and digester applications.

**A Name You Can Trust Everywhere**

Chevron, a leader in the oil industry for over 125 years, designed HDAX 6500 LFG Gas Engine Oil SAE 40 with performance and reliability in mind.

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**Learn more at [chevronlubricants.com](https://chevronlubricants.com)**

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