

**siteLAB** Petroleum Hydrocarbon Solutions  
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# TPH-Oil Applications

These case studies illustrate the performance generated from customers who have used Sitalab's UVF-3100 analyzer for testing total petroleum hydrocarbons in the C10 to C50 range.

Sitalab's TPH-Oil calibration kit is designed to correlate well to laboratory "Oil and Grease" test methods. This includes EPA Methods 1664 and 9071B by Gravimetric, EPA Method 418.1 by Infrared and others. Most regulatory agencies have now switched to TPH methods using Gas Chromatography (GC) instrumentation. For applications where oil and grease is still required, Sitalab's TPH-Oil test produces accurate results and is available in methanol or hexane solvents.

**TPH-OIL: CAL-057**  
 Prepared in methanol solvent.  
 Use for oil in soil analysis.

**TPH-OIL: CAL-057H**  
 Prepared in hexane solvent.  
 Use for oil in water analysis.

# Crude Oil & Waste Oil Sites

## U.S. DOE Bioremediation Sites



U.S. Dept. of Energy's National Energy & Technology Laboratory in Pittsburgh use their UVF-3100 to field screen soils on-site for TPH-Oil.

Sitalab UVF-3100 is used to monitor bioremediation projects in Northwest Pennsylvania, where historic oil fields are contaminated with crude oil around abandoned and plugged oil wells. DOE conducted an evaluation study testing soils from different sites. Field results correlated well to split samples sent to a certified laboratory using EPA Method 1664.

UVF-3100 Results	vs. Certified Lab Results
79,780	55,900
48,360	48,300
24,390	20,400
17,261	14,400
14,310	12,900
1,385	1,110

Concentrations in ppm (mg/Kg)  
*Examples of data presented by H. Edenborn & K. Schroeder of NETL at PITTCON 2003.*

## Brownfield Redevelopment Site



A contractor working for U.S. EPA Region 2, rented the UVF-3100 to test soils during a site assessment on an old industrial property in New Jersey. Confirmatory samples were tested by a certified lab using EPA Method 418.1 by IR, which at the time was required for TPH cleanup. Correlation was good, even at non-detect levels.

UVF-3100 Results	vs. Certified Lab Results
13,720	14,700
1,850	1,980
826	1,310
570	314
9	ND
ND	ND

Concentrations in ppm (mg/Kg)

## Auto Scrap Yard Recycling Facility



"Fluff" contains rubber, plastic, seat cushions, etc.

A scrap yard in Rhode Island shreds thousands of old cars to recycle the metal. Stockpiles of all the ground up non-metal waste called "fluff," is contaminated with engine oil and must be tested for off-site disposal. The landfill's TPH limit is 20,000 ppm.

UVF-3100 Results	vs. Certified Lab Results
28,770	37,400
19,490	21,600
17,940	18,600
14,400	14,400
13,800	13,300
9,850	10,400

Concentrations in ppm (mg/Kg)