



Fuelco®

Fuel Resources Development Co.

Developing Environmentally Responsible Energy Resources

Fuel Resources Development Co., (Fuelco), a Denver, Colorado-based company has recently unveiled a new technology called Synhytech (Synthetic Hydrocarbon Technology) and is currently building the first commercial plant in Pueblo, Colorado. Synhytech recycles landfill gas and converts natural gas into naphtha, waxes, CO₂ and most importantly, a very clean-burning diesel fuel.

Synhytech diesel fuel is environmentally superior to all current and proposed diesel fuels, and can be used in any diesel engine without any special equipment or engine alterations. Synhytech diesel fuel is sulfur free, has less visible smoke and fewer harmful emissions than #1 diesel fuel. In heavy duty engines (bus engines), Synhytech diesel fuel emits, at minimum, 18% less particulates, 15% less hydrocarbons, 14% less carbon monoxide.

A Synhytech facility can be a permanent or portable structure and costs less to construct than natural gas pipelines necessary to capitalize on natural gas and landfill gas located in remote areas.

Fuelco is a wholly-owned subsidiary of Public Service Company of Colorado, the state's largest utility and one of the United States 500 largest companies as ranked by *Forbes* magazine. Fuelco was incorporated in 1970 and has traditionally been involved in oil and natural gas exploration, production and marketing. In 1985, Fuelco became involved in the development of the synthetic fuels technology that led to Synhytech.

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Synhytech

Developing Environmentally Responsible Energy Resources

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**An Update on
Synhytech
Developing
Environmentally
Responsible Energy
Resources**

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Fuelco Background

- A Wholly Owned Subsidiary of Public Service Company of Colorado
- A Natural Gas and Oil Exploration and Development Company
- Over 20 Years Experience
- 495 Producing Wells
- A 73% Drilling Success Rate

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**Synthetic
Hydrocarbon
Technology**

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Synhytech Background

- Fischer-Tropsch Synthesis
- Rentech, Inc.
- Pilot Project
- Two Commercial Plants

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Two Types of Feedstock

- Natural Gas
- Landfill Gas



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Five Major Uses for Landfill Gas

- As Fuel for Boilers
- As Fuel for Turbines at Cogeneration Plants
- To Upgrade to Pipeline Quality Gas
- To Produce Methanol
- To Produce Clean-Burning Diesel Fuel



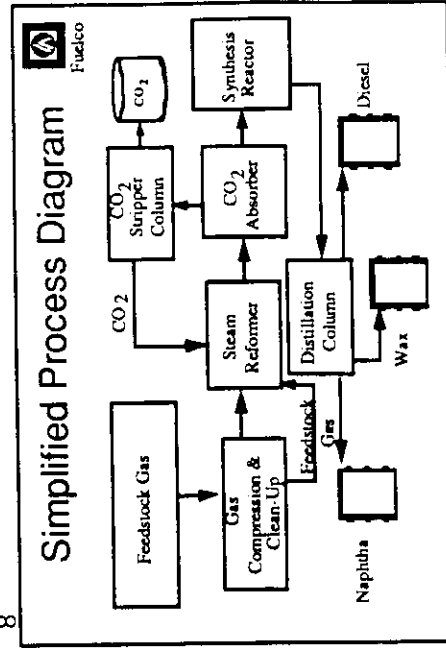
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Major Benefits

- Capitalizes on Remote Natural Gas Reserves
- Costs Less to Construct than Pipelines
- Recycles Potentially Harmful Landfill Gas
- Produces Environmentally Responsible Fuel
- Can be Permanent or Portable Structure



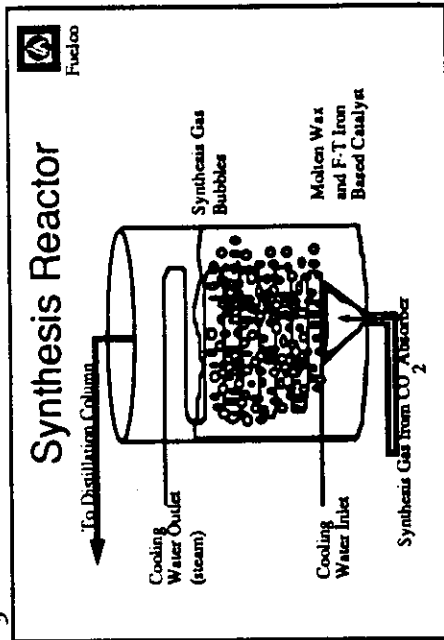
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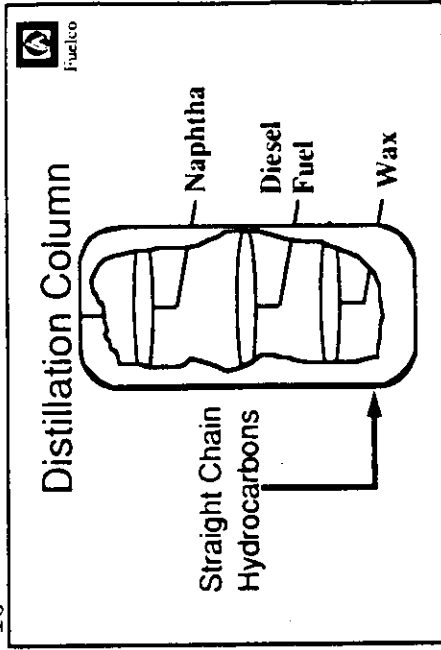
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Proprietary Catalyst

- Catalyst Plant In Boulder, Colorado
- Iron Based
- Life Expectancy 30+ Days

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Products

- Naphtha
- Wax
- Clean-burning diesel fuel
- Carbon Dioxide

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Synhytech Naphtha

- Varnish Maker & Paints
- Type IV Mineral Spirits
- Petroleum Ether
- Textile Spirits
- Ink Oil

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Synhytech Wax

- Paraffin Fractions
 - candle type wax
- Microcrystalline Fractions (C 33+)
 - laminating agents
 - cosmetic creams
 - lubricants
 - printing inks

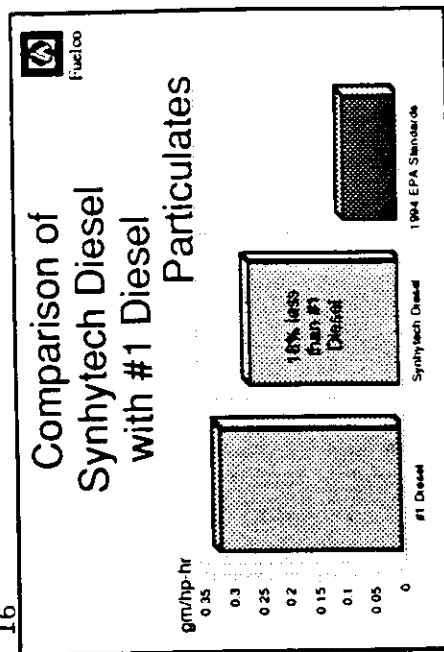
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Synhytech Diesel Fuel

- Sulfur Free
- Less Visible Smoke
- Fewer Harmful Emissions

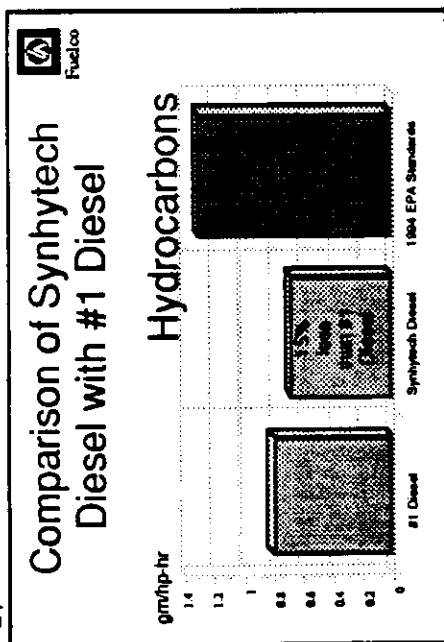
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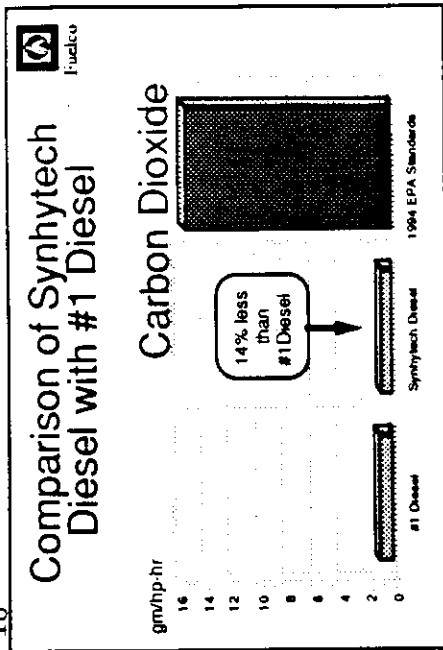
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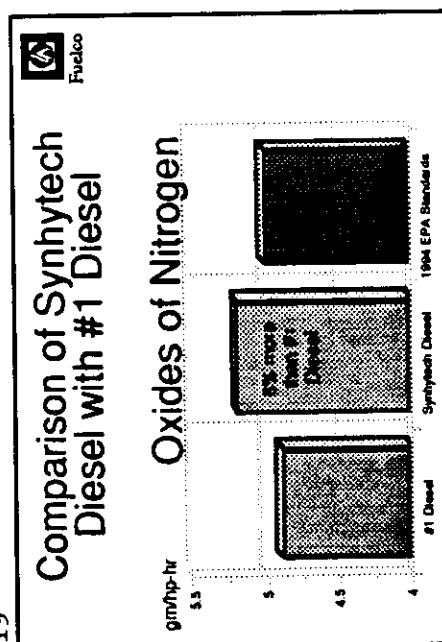
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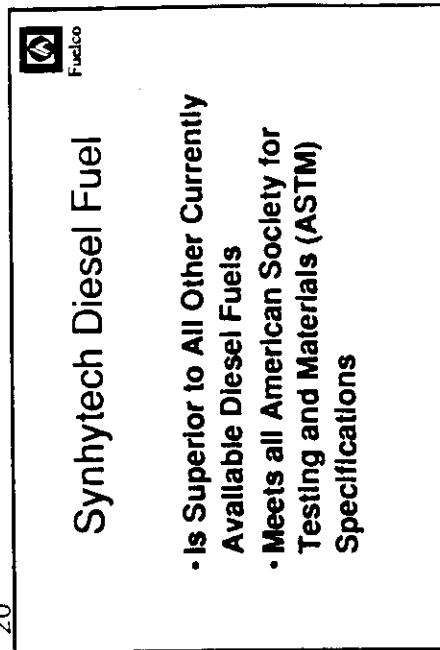
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Proposed Improvements to Diesel Fuel Characteristics				
Fuel Characteristics	NAS	Recommendations	Common	Synhytech
Cetane Index, min	>48	—	46	73
Sulfur Content	<.25%	<0.05%	.35%	<.001%
90% Distillation °F	<600°	—	617°	639°
Aromatic Content	<20%	<20%	32%	0.0%

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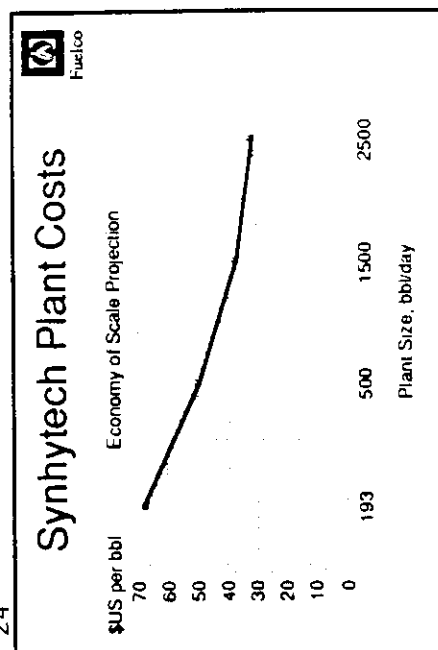
Synhytech Diesel Fuel

Requires no special equipment or engine alterations.

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Plant Costs		
Base Case	\$US	Notes
193 bbl / day	\$68,000	1 reformer, Two, 6'-diameter reactors
500 bbl / day	\$50,000	1 reformer, Two, 8'-diameter reactors
1,500 bbl / day	\$37,000	2 reformers, Six, 8'-diameter reactors
2,500 bbl / day	\$33,000	3 reformers, Eight, 10'-diameter reactors

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Expenses (\$U.S.)		
Assumption:	363 M3 methane = 1 bbl product	
Production Volume:	500 bbls/day = 177,500 bbls/year	
Methane Costs:	-0-	
Labor & Overhead:	\$15.00/bbl	
Catalyst:	\$3.75/pound	
Maint. & Supplies:	\$2.00/bbl	
Royalty:	\$2.50/bbl	

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Product Prices (\$U.S.)		
	• \$53/bbl, \$0.40/Kg, soft wax	
	• \$160/bbl, \$1.25/Kg, hard wax	
	• \$0.19/Liter, Diesel	
	• \$0.21/Liter, Napththa, Weight C2 - C11	

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Benefits		
	• Capitalizes on Remote Natural Gas Reserves	
	• Costs Less to Construct than Pipelines	
	• Recycles Potentially Harmful Landfill Gas	
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Synhytech		
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