The title

Developed a factory of production petroleum coke and diesel

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the project to Pave

The scientific benefit of the project

This idea is in itself scientific progress in our country because it is an innovative design for the production of coal, unlike the current design of the major companies in the design of refineries because it applies only at high costs such as design (fluidized Coker) and (delayed coking), Currently in force, But this design enables companies where the plant can be installed and connected to an amount of approximately 800,000 dollars and benefits science and society.

Introduction

Oil planners studies if they can benefit from petroleum coke that now going without advantage with asphalt's material ,residues refinery , after the high demand for this article in more industrial's like ,Tire industries, aluminum smelters, dry batteries, and many important industries. In our factory we can achieves a maximum benefit of residue petroleum products.

Equipment details Manufacturer Components,

1- Feed tank, heating by coil to 50°C.
2- First heating tank to 110°C.
3-cooling condenser.
4-light gas oil tank.
5-Steam` boiler.
6-Main reactor heating to 400°C.
7-Gas oil tank use for factory.
8- Catalyst drum.

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9- Heat exchangers.
10-First filter .
11-second filter .
12-3rd filter .

13- Product tank .
14-Vacuum vessel .
15- Heavy gas oil tank.
16-Vacuum pump.
17- Coke drum.
18- Coke area.

Civil work

Water well, pump, room, tank & - 1
all accessories.
BRC fence and gate. - 2
3- Office with accessories.
4- Concrete walkway.
5- One store.
6- Power transformer& generator.
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4

Detailed study

The method;

I'm a chemical engineer
,managed with God's help developing a
technology to isolate coke from residue oil .
The process begin heating feed to 50°C ,
by steam,in another step
material pumped by special oil pump to second step that will be heating to 110°C , after this it pumped to the
main reactor to heating to 400°C it takes several hours with mixing ,After when it finish and we had extracted light diesel and coke remain in the reactor as a
liquid we can pumped in a last and another drum when it hot in this drum remain until coke hardening , at the end had a gate ,we open agate and take out the coke by loader .

On the other side of the factory the diesel filtering is done, by many stages in 1st passes through the catalyst ,in 2nd
go to
heat exchangers
condensers
, filters ,
Finaly toproduct tank ,the
diesel save. The equipment of this factory is expensive, but we made it a cheap because we made more important equipment's with our hand, only some equipment's we buy it from the market that we connected it with some.

The factory contain that shown in the diagram :

1- Equipment and control room.
2- Tank's.
3- Area & equipment to load the product.
4- Factory's office.
5- Area to contain coke.
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The importance of the plant in general

- This factory is surrounded by (BRC)fencing & the main door.
- It use land have area 5000 m
2
.
- The cost of the project approximates 800,000 dollars
- The factory is environmentally friendly , because ;
1- For lack of emissions of gases ,have a(AC) filters.
2- It use the residue oil to made it useful material .

Project information:

1- Equipment's made with our hand, just buy raw materials.
2- Boiler ,burner , oil pumps …. etc , buy it from the market.
3- staff consists of ;Two engineers work, one electrician and two workers.
4- The factory need a feed **100% fuel oil (AR)** that residue from most oil refinery in Iraq .

5- The factory product the **(30% Petroleum Coke)** .
6- The factory product the **(40% light diesel ,**
20% heavy diesel) .
7- Total daily output **(10,000 litters)** .
8- Total power need **(100 hp)** .
9- Total gasoil burn **(10% from the product).**
10-Our product (**required in the market).**
11-Factory work **(300 Day in year).**

Summary of important details in factory

Main reactor:

That use to heating feed to 400 °C that reach coke degree by use diesel burner.

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Coke drum:

It's a drum that receives coke when it finish in main reactor, the drum capacity is 20 ton, final we exhaust coke by loader machine.

Factory control room:

This building contain chamber of control factory well and continuous work, in this room engineer, technical equipment. It contain (temperature, press) gages, equipment control keys, main power box.

Improvement vessels:

That use to improve the product diesel, going through stages catalysts drum, first filter (AC)
Second filter (Z), 3
rd
filter (C).

Pipe set:

Where fluid and products are transported by various measurements; pipes, fittings, flange, valves, and other accessories by location.

Tanks;

They are tanks expensive 25-50 m
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for feed
tank and they are 5 tanks with accessories.

Heat exchangers & condensers;

That work to cooling the product material and on the other hand heating feed that contain 5 units.

Power unit

In this unit, factory supply powered it contain from;

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- One transformer power
- two generator

Water

Water supply
It use water from the well and small room for water pump and tanks and all accessories …… etc.

Area for contain coke;

it is area for coke collected by conveyer or loader in piles as shown in figure above.

Store;

Store for equipment and backup materials …..etc.

Conclusion and results

In thermal breaker, the heavy organic material is converted into light by the auxiliary factors (alumina silicate) remaining in the bottom of the reactor and remaining the heavy material in the end, A liquid that is taken out to another tank through the cold and then transported solidly to the coke drum.
We also conclude that waste is not wasted and is used with good industrial materials.

References & sources

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