Air Purification in Wastewater Treatment Plants, Industrial Enterprises and Livestock Complexes

- +7 903 6692012 (WhatsApp)
- E-mail: RK@grandhillscapital.com

General Principle and Capabilities of the EMB Electromagnetic Unit

- With the use of our developed "EMB" for air purification around sewage treatment plants and livestock complexes, it is now possible to remove bad odors and make the surrounding area more environmentally friendly.

- Treatment of "EMB" territories can be carried out remotely from a drone or by contact from a car, on stationary installations.
- It brings the parameters of storm and fecal water to the same level and eliminates odors.
- Characteristics of the industrial sample of our generator It is possible to manufacture it in a vandal-proof version.
- The range is 4-10 kilometers.
- The minimum power consumption is up to 10 watts per hour. Environmentally friendly – there is no waste that affects the environment.
- Technically safe – there are no rotating parts, aggregates and units under pressure or high temperature.
- Repairable – quick replacement can be made if necessary.
- Easy to operate.
- Maintenance – replacement of the battery once a year The service life is 10 years.

Air purification in factories and surrounding areas.

- The main problem associated with air pollution is poor diffusion of air masses.
- The natural feature of the area, multiplied by densely populated industrial cities with high rates of dangerous emissions, has led to significant pollution, which the country's environmental services have so far managed to cope with with difficulty. Some cities in Russia periodically declare the highest level of danger due to the smog, called "Black Sky". This is if both factors - calm weather and humidity - come together over an industrial city, it means that all emissions from production will accumulate in the air. They will be joined by car exhausts along with dust and smoke. The authorities declare NMU or "black sky mode" - another, more well-known name for unfavorable weather conditions over the city.
- In such situations, the government gives the population standard recommendations: leave the city (if possible); if it is not possible to leave, try not to go outside; do not ventilate the premises; Use saline to rinse the nose and throat. As a rule, the "black sky mode" lasts up to four days. But there are special cases when the declared NMUs have to be extended. Most often, residents of Krasnoyarsk face such a regime. When smog forms over a city, it can be seen with the naked eye. That is why the name "black sky" appeared. Although its color is not black, but gray with brown undertones.

- NMUs are very harmful to health. Residents of the city may have exacerbated or manifested pulmonary, cardiovascular and other diseases, especially chronic ones.
- Due to the accumulation of harmful substances, smoke, various chemicals, various toxic fumes and fumes in the atmosphere, a regime of unfavorable weather conditions is introduced over the settlement. An important point of the introduction of such a regime is the fact that there is no dispersion of accumulated smog. If there is no wind outside, the concentration of harmful impurities reaches the limit.
- If forecasters have declared a "black sky mode", this indicates an actual environmental disaster. Large industrial cities know about the problem of NMU firsthand. For example, on 24.04.2017 in Krasnoyarsk (not for the first time) a special environmental situation was introduced due to the "black sky". The regime lasted until seven o'clock in the evening on April 26, 2017. The Krasnoyarsk Territory most often announces such a situation, even more than once a year. In this region, this mode is announced most often. In addition, in addition to working industrial enterprises, grass is catching fire in the city. There were times when the city was in smoke for three weeks in a row.
- The territory of ecological disaster is the name of the city in this case.

- This is not surprising! The city itself is home to the world's largest aluminium plant. There are a large number of metallurgical enterprises here. In addition, they are adjacent to a cement plant, three large thermal power plants and numerous boiler houses. The thermal power industry of the city is built entirely on coal. And the transport system leaves much to be desired. In general, there is a lot to smoke and pollute the atmosphere. In summer, residents do not often open the windows. If you decide to ventilate, then instead of fresh air, a pungent smell will immediately appear in the apartment.
- In the rating of the All-Russian environmental organization, Krasnoyarsk is one of the 12 most polluted cities in Russia in terms of emissions into the atmosphere. According to experts, the dirtiest cities in Russia are, of course, Moscow and St. Petersburg, although they do not occupy the top line of the rating. Volgograd, Tomsk, and Nizhny Novgorod were also included in the list of environmentally unfriendly cities. The dirtiest cities in Russia are also settlements where oil refining, chemical, and metallurgical industries are developed. These primarily include Cherepovets, Lipetsk, Asbest, Magnitogorsk, Omsk and Angarsk. In all the above-mentioned geographical locations, experts noted an increased concentration of harmful impurities in the atmosphere, which leads to air pollution.

Our Technology

- We bring to your attention a description of a unique Russian technology that allows you to minimize the negative impact of humans on the environment.
- Works carried out both in Russia and abroad show that
  The methods we have developed make it possible to drastically reduce the content of the main pollutants in the air (nitrogen oxides, carbon monoxide, sulfur dioxide, dust, soot, etc.), that is, to eliminate smog.
  - The required number of generators for complete smog removal in Krasnoyarsk is about 200 generators. To completely eliminate smog in the city, it will be necessary to install one generator at each industrial enterprise, which is much cheaper than the construction of air treatment plants and their conversion to natural gas, which, as it is commonly believed, is less dangerous for the environment compared to coal. According to the U.S. Department of Energy, when one megajoule of energy is obtained from the combustion of natural gas, 13.7 g of carbon (as part of CO2) is released into the atmosphere; from gasoline, oil or coal – 18.6, 18.9 or 24.0 g of carbon, respectively.
    However, Cornell University is confident that the assessment of environmental danger only by the level of carbon dioxide is one-sided, causes some confusion and does not allow an objective assessment of the real threat. It turned out that when one megajoule of energy is obtained from natural gas, greenhouse gases are released into the atmosphere, the damage of which is equivalent to 33 g of carbon dioxide. In the case of petroleum products, this harm is equivalent to 20 g of carbon dioxide.

REPORT

- On the results of work at the Cherepovets Metallurgical Plant.
- By agreement with the chief ecologist of the Cherepovets Metallurgical Plant V.A. Shatunin, in the period from February 6 to February 8, 2012, the plant carried out work on the impact on the environment by the generator "Volna".
- This complex Used in agriculture to increase yields,
improving the quality of agricultural products, for pest control, as well as in livestock, poultry and timber processing industries.
  - In the past, our company has conducted research and experiments to have a continuous impact on the environment. As a result of these studies, a frequency range that is harmless to the human body for purifying the air and water environment was determined and experimentally verified.
  - Prior to the start of the work, the situation with emissions was characterized by a powerful plume of smoke from the chimneys of the thermal power plant, up to several tens of kilometers long. converter production, coke oven and by-product shop and blast furnace, which had a color from brown at the beginning of the plume to dark gray and whitish at the end.
  - The work was carried out on February 7 and 8 in the period from 9.00 to 16.00 with periodic switching on of the generator for 135 minutes.

REPORT

- During the operation of the equipment, the following changes were noted visually and with the help of the camera:
- a) There was a gradual reduction in the plume with each complex exposure.
- b) the color of the smoke changed from dark brown to light brown to whitish (section 2 of the foundry), the dark gray color turned into light gray and then into whitish (section 3 of the coke chemistry)
- c) Changes in the color of the smoke emitted from red to whitish were noticed.
- d) a pronounced layer-by-layer separation of the smoke components began to occur: in the lower part, the dark color quickly turned into light with disappearance, in the upper part, the white color quickly dissolved along the length of the smoke plume.
- e) during the first day of treatment, the transparency of the atmosphere increased and odors decreased in the area of the coke oven and by-product shop and the converter shop
- Actual emissions of pollutants into the atmosphere of OAO Severstal amount to more than 80 chemical substances of organic and inorganic composition of steelmaking and coke production.
- Conventionally, these substances can be divided into 4 groups: paramagnets, diamagnets, ferromagnets and vapor-water dipoles.

- The name of these groups of substances is related to how these substances behave in the presence of a weak magnetic field in the state of a smoke-vapor gas mixture (paramagnets are drawn in the direction of the magnetic field, diamagnets are pushed out of the magnetic field, dipoles form clusters around positively and negatively charged particles (ions).
- It is these properties of the multicomponent mixture of substances formed in the production process and contained in emissions that were used for their subsequent mixing with atmospheric air and subsequent effective (active) separation. Thus, in steelmaking and coke production, a multicomponent "smoke-vapor gas mixture" is divided into a light part (steam) and a dark part (concentrated smoke) over a relatively short run.
- The light part (steam), mixing with the atmospheric air, "dissolves" to the level of natural humidity, and the dark part (smoke) is intensively deposited on the short arm and does not pollute the territory at a long distance.
- Another part of the solids remains (precipitates) in the furnaces and turns into slag, which reduces the concentration of emissions from the pipes.

- **Findings:**
  The results of the work carried out convincingly demonstrated the possibility of the use of the "Volna" generator for environmental cleaning of the air basin over the Cherepovets Metallurgical Plant. Severstal Chief Ecologist V.A. Shatunin

Animal husbandry and EMB

- The impact of the electromagnetic field on biological objects, both micro- and macrostructures, makes it possible to carry out a whole range of measures for the prevention and treatment of animals, disinfection of premises where animals are kept (including the prevention and treatment of animals). and "tired"), feed and water, as well as to increase the efficiency of production.
- In the process of processing, electromagnetic waves are applied to the premises, on the territory around the farms where the animals are kept, the feed and water given to them, as well as on the animals themselves during the entire period of their rearing and use.

A Hands-On Approach to Technology Implementation

As a result of the application of the technology, mortality and culling are repeatedly reduced, the daily increase in live weight increases, the uniformity of the livestock is observed, the cost of purchasing veterinary drugs is reduced, the consumption of feed per unit of live weight gain is reduced, and the productivity of the breeding herd increases. Increasing production efficiency is achieved without the use of potent chemicals, hormonal drugs and antibiotics. The resulting products have a low cost, high quality and do not contain substances harmful to the human body and pathogenic microflora. Which speaks of its environmental cleanliness.

- Likewise:

In the premises, the content of ammonia is reduced by 5-10 times, there are no mold and fungal plaques on the walls and ceilings, the air is purified, the smell of ammonia is slightly perceptible; animals and poultry have no pulmonary, skin and gastrointestinal diseases, there is practically no mortality and culling, and no drugs are used; with constant work (from 3 months) there are no diseases of rhinitis, leukemia, tuberculosis; With the use of a full range of therapeutic and preventive measures (disinfection of premises, treatment of animals and mixed feed), weight gain in pigs increases by 20-25%, egg production of poultry by 20%, milk yield in cows in the range of 10-15%, milk does not sour for at least 3-5 days at room temperature, and weight gain reaches 40%

Room Treatment

The "EMB" treatment of the premises where animals are kept is carried out in order to destroy harmful microorganisms, pathogens, mold fungi, reduce the content of ammonia in the air (treatment can be carried out remotely, without removing animals from the premises). As a result, the incidence, mortality and culling of animals are reduced. Daily weight gain increases.

Effective treatment of rooms with the so-called "fatigue", in which animals, including sick animals, have been for a long time, can also be carried out, and the infestation with harmful microflora is extremely stable and high, therefore, it is not possible to carry out disinfection by conventional means.