Team Number: 58

School Name: San Juan College High School

Area of Science: Environmental

Language Used: NetLogo

Team Member's grade: 10th Grade

Aviendha Sena – ars.tmnt.donatello@gmail.com

Sepphora Llanes - sepphora.llanes@gmail.com

The Final Report:

Summary: Methane (CH_4) is the primary component of natural gas. It can be released in certain circumstances and they absorb the sun's heat. Absorbing of the sun's heat causes the warming of the Earth. Since Methane does this, it is considered a greenhouse gas and is said to contribute to climate change. In a survey, NASA team has identified a "hot spot" of methane emissions in the Four Corners Area of the United States. The study found that 10% of the individual methane sources are contributing half the emissions. In the Four Corners, the methane emissions are primarily associated with the production and transportation of natural gas from the coal and oil fields. Since the gas is odorless and colorless, it is difficult to detect without the proper scientific tools and instruments. Zeolites are nature's most powerful detoxifier. Zeolite absorbs very much like cat litter absorbs odor in the air. It can breakdown some Nuclear Radiations. Some current studies state that some species of Zeolites have a promising Methane sorption capacity. Our project is meant to show some of the major power plants in the Farmington area and have them release methane. We will also place zeolite towers around the area as well. The simulation will show how well the zeolite towers absorb and lessen the methane in our area.

Statement of Problem:

Methane is a greenhouse gas which contributes to climate change. Being the center for mining coal and oil, the Four Corners has the most amount of methane in the world. We used a simulation to see how to reduce the amount of Methane in the area.

Method on how to solve the problem:

Zeolite, nature's most powerful detoxifier, could possibly be the solution to reducing the amount of methane. If Zeolite towers are put around the locations on the map where the methane is released, then it should absorb the CH_4.

How we verified and validated the problem:

Results:

Conclusion from analyzation:

Software, References, Tables, and other products of our work:

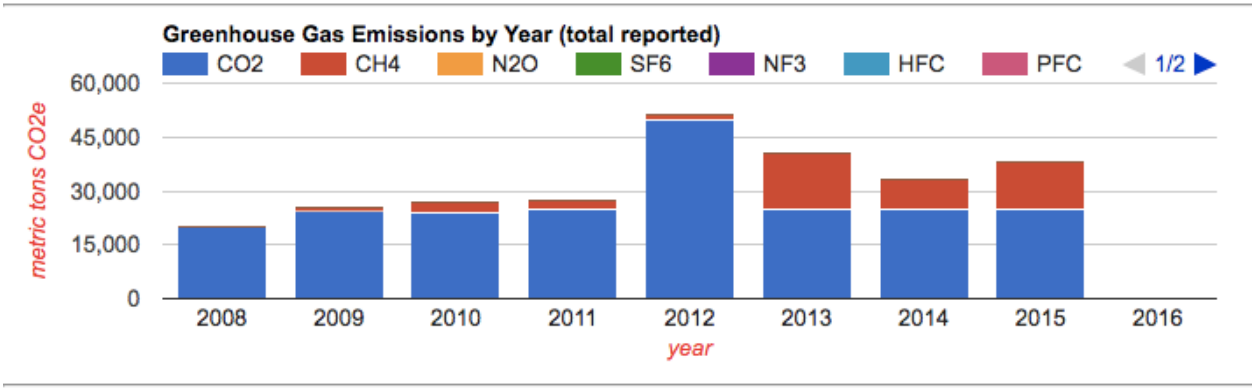
Facility Name: Thompson Compressor Station

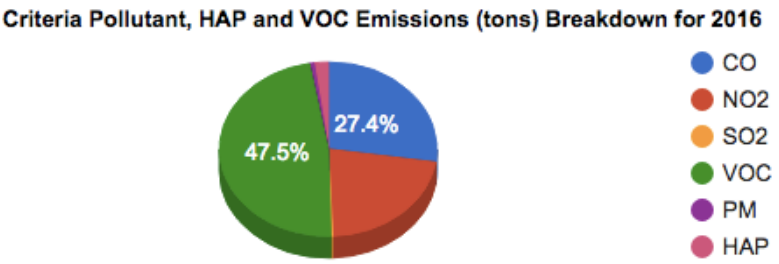
Facility Type: Oil & Gas

Organization Name: Williams Four Corners LLC

City Name: Aztec

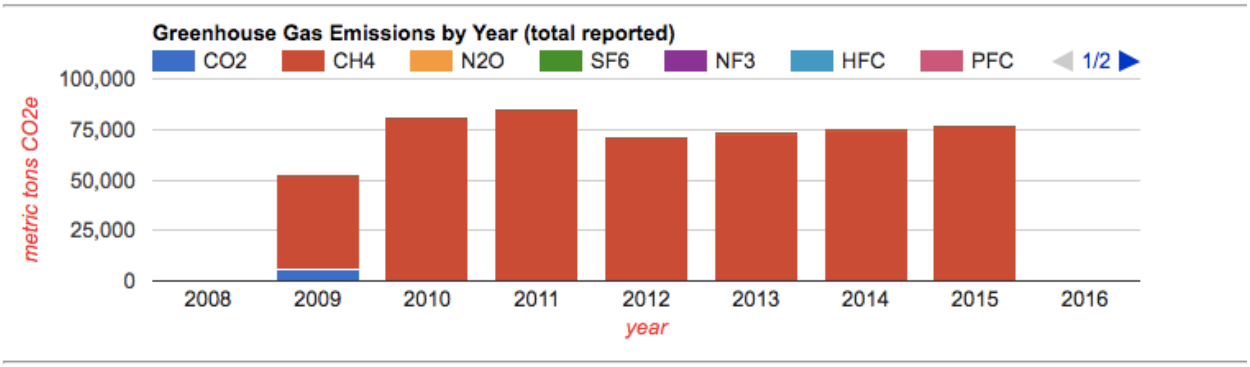
Facility Name: San Juan County Regional Landfill

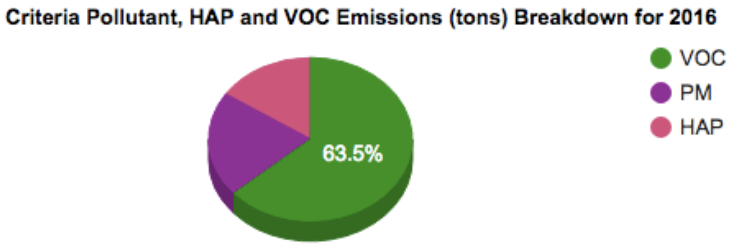




Facility Type: Solid Waste

Organization Name: San Juan (County of)



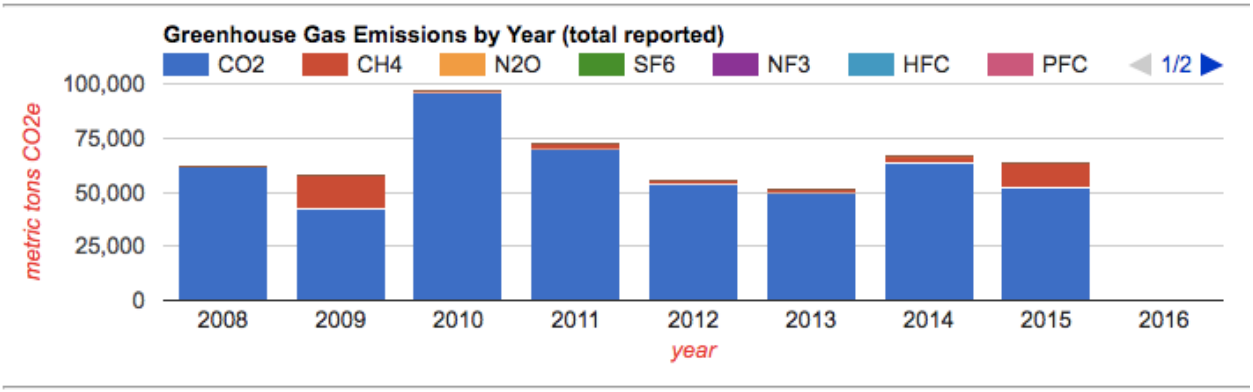


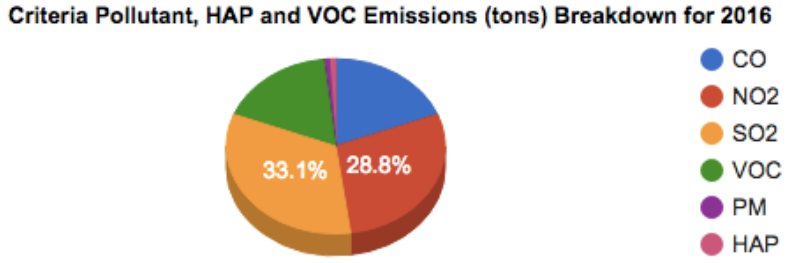
City Name: Aztec

Facility Name: San Juan River Gas Plant

Facility Type: Oil & Gas

Organization Name: CCI San Juan LLC





City Name: Kirtland

Significant Achievement:

Acknowledgement of people and organizations that helped:

- Brian Seavey - San Juan College IT
- Geizi Llanes - Science Teacher
- Peter Craig Lamborn - Mentor

Source Code: