



Empowering the Public: Spot the Smoke

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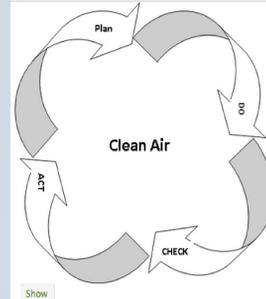
Introduction

The Spot the Smoke campaign was created in partnership with Virtual Technology, LLC. and Sustainable Skys. It is a campaign designed to raise community involvement in air pollution awareness, as well as empower people to document emission sources in their community. The application, Spot the Smoke, allows the public to upload an image taken with their cell phone of visible air pollution and submit it for an opacity analysis. Spot the Smoke uses opacity measurements, the same scale used by air quality specialists and industry alike. Opacity is the measurement of a pollution plume's ability to obscure its background, represented in increments of 5 on a scale of 0-100 percent. After submission of an image, a certified digital opacity analyst will then determine the plumes opacity and send it back to the interested party. With this tool, the public can now play a role in protecting our environment on a greater level than ever before.

Application Methodology



Step 1: Take picture of emission source



Step 2: login

Step 3: Name and describe what it is you see



Step 4: Allow GPS access and tap where the source is on the screen



Step 5: Attach image from gallery



Step 6: Click generate report and an analyst will receive an opacity request notification

REPORT
OBSERVATION NAME: DUST DEVIL
DATE: 8/11/2014
NAME: ALLISON DOLAN
COMMENTS: DUST SPIRALING UP TO THE SKY

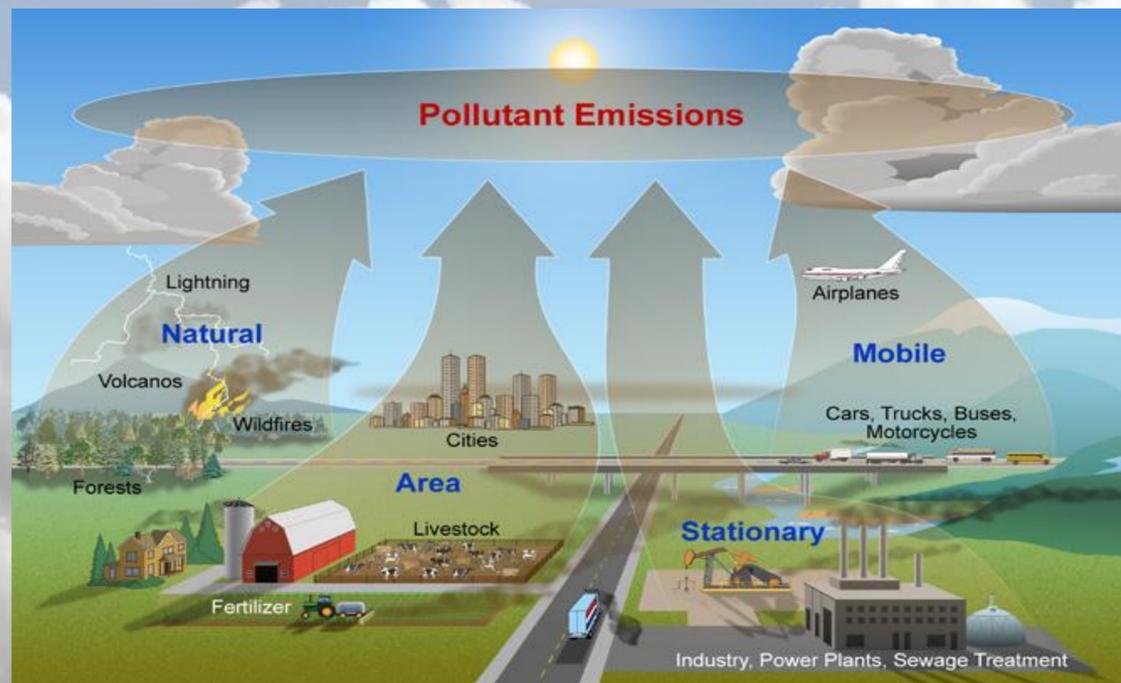
HEIGHT OF EMISSION POINT: N/A
HEIGHT OF EMISS. PT. REL. TO OBSERVER: N/A
DISTANCE TO EMISS. POINT: 123.09
DIRECTION TO EMISS. POINT (DEGREES): 79.45
VERTICAL ANGLE TO OBS. POINT: N/A
DIRECTION TO OBS. POINT: 79.29
DISTANCE TO OBSERVATION POINT FROM EMISSION POINT: 2.64
DIRECTION TO OBSERVATION POINT FROM EMISSION POINT: 43.29

LONGITUDE: 111.03.05.230 W
LATITUDE: 31.28.20.292 N

Step 7: Wait for an email back from an analysis with a link that connects you to a full copy of your report

Objective

The main objective is for an individual to have an all Inclusive report to send in as a informative complaint to their air inspector. This will also enhance their ability to identify different stationary, mobile, natural and area sources within their environment. After learning about the different forms of emissions, the public is able to identify and document air pollution. The applications ability to gather all the necessary information for a formal Method 9 reading allows the user to have a better understanding of how visible emissions are monitored. A finalized report includes: the users location, the height of the emission point, the distance and direction to the emission point, the angle to observation point, the sun position at the time the photo, and an opacity percentage of the plume



Discussion

Proactive community involvement will increase air pollution awareness and improve source watch significantly. The community will now be able to identify different pollutant emissions and document them in the form of a photograph. With Spot the Smoke there will be a better understanding of what is and what is not a violation. Spot the Smoke allows the public to participate in environmental protection more than even before. In turn, this application will improve the air quality within a community. There will now be a better understanding of how visible emissions are monitored and regulated.

Literature Cited

- "Sources of Air Pollution." *NPS: Explore Nature, Air Resources, Air Quality, Air Basics* -.N.p.,n.d. Web 07 Aug. 2014. <http://www.nature.nps.gov/air/aqbbasics/sources.cfm>.
- Federal Register 40 (1971) "Method 9 – Visual Determination of the Opacity of Emissions from Stationary Sources" vol. 36 No. 247 December 23, 1971
- Thomas Rose, Visible Emissions Evaluation and Procedures Course, U.S. Environmental Protection Agency, Research Triangle Park, NC, APTI Course 325, January 1995.

Acknowledgments

- Pat Grieco for designing the application
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- Families for Clean Air for inquiring about Virtual Technology's Digital Opacity Compliance System second generation (DOCS II) public capabilities