

**REPORT ON LOCAL VISUAL EMISSION
OBSERVER TRAINING
JULY 23 to 25 2013**



**Prepared by
Environmental Management Subdivision
National Environment and Planning Agency
August 2013**

Background

The Visual Emission Observer Training in method 9 (opacity), which was held on the 23-25 of July 2013 is one of the prescribed methods of monitoring opacity to verify compliance under the Natural Resources Conservation Authority (Air Quality Regulations 2006). Under this regulation the Agency has licensed thirty one (32) facilities whom all are required to maintain a 20% to 40% opacity standard for their air emission points.

On the 13 October 2010 the Agency received funding from the NRCA to send two of its officers on this specialize training which was previously only offered overseas. The method also requires the individual to be recertified every six month so this cost would become recurrent on the Agency's budget. In order for the Agency to be effective in its monitoring and enforcement of this opacity standard it was necessary to have a greater portion of the Agency's field officers trained in this method.

As mentioned before 32 Air Pollutant Discharge licenses have been issued to the various industries across the island. In all the Licences issued the licensee is required to monitor and report Opacity to the Agency. The reference method 9 is also the prescribed method to be used by each licensee and hence the cost to train one of their employees would basically equate to the same cost experienced by the Agency when it trained its officers in October 2010.

Opacity of exhaust air emissions from a stack or any other source is directly related to the release of Criteria Air Pollutants, Lead, Hydrogen Sulphide, Green House Gases and Priority Air Pollutants that will contribute to a rise in ambient air concentrations which intern will affect human health and the environment negatively. The reduction and control of Opacity levels from exhaust emissions into the air will result in reduced air pollution and the reduction of our annual ambient air quality particulate matter (PM10) measurements which have been in the high $50\text{ug}/\text{m}^3$ (Jamaica's Ambient Air Quality Standard for annual averages is $50\text{ug}/\text{m}^3$) for the past three years especially in the Kingston and St. Andrew region.

The five major goals of this project are:

1. Expand Agency's and other government department's capacity in Method 9 at a reduced cost so that the necessary monitoring and enforcement of the regulations can be effective.
2. Reduce the recurrent cost for recertification every six months for training of government employees.

3. Provide training in method 9 for license facilities at a reduced cost so that they can maintain the National standard of 20% Opacity by monitoring, reporting and taking corrective action.
4. A reduction in emissions and the improvement of our ambient air quality.
5. Raise the general awareness of operators of air pollutant sources to the importance of proper source management to reduce emissions, improve efficiency of their process and save energy by better fuel use.

Goals 1- 5 were achieved upon completion of the successful training workshops in 2011-2013.

Strategy to achieve goals

The strategies remained the same as were presented in the first report on the January 2011 installment of this workshop.

Training Logistics Details

The Agency's target of forty five (45) private sector participants was achieved at the July workshop. A total of forty five (45) private sector employees participated in this training.

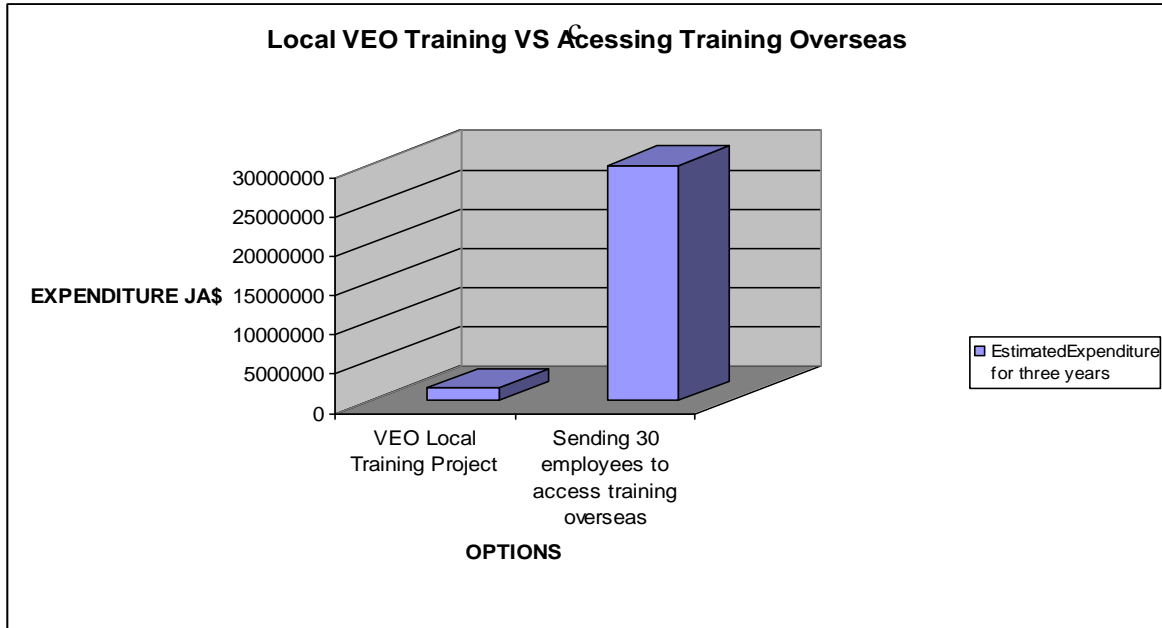
Workshop Results

A total of seventy (70) Participants attended the workshop. Twenty five (25) participants from the public sector and universities combined were trained at no cost amounting to a savings of over JA\$4.3M to the Government of Jamaica. Forty five (45) private sector employees attended the training and all received field certification. All twenty five (25) public sector participants received field certification.

A total of thirty (30) participants attended the classroom session of the workshop which was hosted by the Chemistry Department of the University of the West Indies Mona. Fourteen (14) participants from Government and Universities (Public Sector) and sixteen (16) from the private sector attended the classroom session. All seventy 70 participants participated in the field training for two days hosted on the front field of the university of Technology

All seventy (70) participants received field certification and are qualified to use Method 9 to make and report measurements to the Agency. There were twenty two (20) new participants. The training achieved a 100% certification rate which is higher than the 98% achieved at the January 2013 workshop where two persons failed.

Graph 1 Below emphasizes the Opportunity Cost saved from the project as currently



The above analysis does not include the revenue recovery aspect which the project had entailed. The registration fee charged by the Agency to each private sector participant attending each training schedule for the last three years resulted in a surplus of income recovered at each training event and allowed the training project to be self sufficient and did not require any capital input for its continuity. Table 4 below shows the expenditure over the three years and the income from registration fees.

Conclusion

The three year Visual Emission Observer workshop training was a great success. All the Goals set out for this project were achieved. The Agency benefitted from significant cost savings of approximately JA\$25M and the private sector has also benefitted from an 80% reduction in their cost to access this specialized training. Over the life of the programme the Agency has recorded 100% compliance with the regulatory requirement to conduct opacity monitoring by industry. It has also seen a reduction in the quantity of air emissions being released by industry based on its 2012 annual air emissions data. Increased vigilance in industry has also been observed with positive feedback from industry on emission reduction and fuel savings from better combustion practices. The agency has also been able to conduct more VEO inspections and audits with over 40 VEO measurement completed between 2011 and 2012. To date over 5 warning notices have been served on various industries for breaches of opacity standards. This has lead to quick action on the part of these industries to correct combustion equipment problems. These actions by the enforcement branch would not have been possible without the VEO training workshop project.

Proximately 438 certifications were completed during the life of the project with approximately 200 public and private sector employees and universities lectures and students trained to visual analyze stack emissions for opacity. This represents a greater awareness of air emissions and air quality management in general as these persons not only are capable of determining when a source is having a significant impact and breaching a national standard but they are able to appreciate environmental management and encourage environmental stewardship in industry. This has been noted from the various questions and discussions that have taken place with the Eastern Technical Associates Trainers over the three years of the project.

Recommendations and follow up actions:

1. The Agency seek to resign the fruitful agreement that has seen the successful partnership between Eastern Technical Associates and NEPA
2. The routine monitoring schedule for all trained certified Agency staff is amended to include the new observers.
3. Routine Opacity readings will be added to the work plans of all trained staff in the coming 2013-2014 year.
4. Data gathered from routine monitoring will be used in Air Shed modeling and added to the National Air Emission Inventory Data base being compiled by NEPA
5. Data gathered should be used to inform policy and standards..

APPENDIX B

ACTUAL PRIVATE SECTOR ATTENDEES AT TRAINING

COMPANIES	TRAINEES CERTIFIED
1. Redstripe	1
2. Jamaica Public Service Company limited	14
3. Jamaica Private Power Company Limited	4
4. CEMEX Jamaica Ltd.	1
5. Caribbean Products Company limited	2
6. Jamaica Broilers Group Limited	4
7. Caribbean Cement Company limited	1
8. Petrojam limited	4
9. Noranda Jamaica Bauxite partners	3
10. JAMALCO	2
11. J. Wray and Nephew	3
12. WINDALCO Bauxite	4
13. Jamaica Energy partners	2

TOTAL

45

Government Attendance at the Training

1. NEPA	16
2. JBI	2
3. EHU	1
4. WMHU	1

TOTAL

20

University Attendees

1. UWI	4
2. UTECH	1

TOTAL

5

TOTAL ATTENDEES AT FIELD AND LECTURE

70