Test Plan

We will create and conduct black box tests based upon our functional and non-functional requirements, to test if the different aspects of the application have been implemented according the specification.

The development team, alongside and individual who has not been involved in the development, will perform black box tests, allowing us to verify that our tests have been performed correctly. Any discrepancies (due to tests being performed or recorded incorrectly) will be identified and consequently rectified.

We will also be performing white box testing, ensuring individual functions return correct values, along with branch testing to check that logical decisions are correct. Furthermore, we will also perform integration testing to check that individual components of our application interact as expected. We will aim for a high code coverage percentage, although the focus will be that individual functions and interactions between functions perform as expected. Even though code coverage does not provide any information about the number of bugs that may exist, it will provide us with indication of how much of the application we have tested.

1. Functional Black Box (conducted 22 February 2018)

Testing categories:

1. Installation and set up
2. Location and data collection
3. User interface and settings
4. Sensor screen

Test Number	Test Description	Expected Result	Actual Result	Pass/Fail	Comments/ Corrective action
1.	Present loading screen	A loading screen should be displayed while the app is loading	As expected	Pass	
2.	Locate user locations coordinates	Pollution levels are shown at the user's location	As expected	Pass	
3.	Collect pollution, temperature and humidity user defined locations	Show pollution levels at the locations input by the user	As expected	Pass	
4.	The navigation bar remains consistent across the different screens in the app	Navigation bar remains in the same location and design at the bottom of the screen	As expected	Pass	
5.	The navigation bar can be used to navigate the application	The user is immediately taken to the screen they tap the icon for	As expected	Pass	
6.	The user can refresh the data displayed on screen manually via the refresh button	The data will update as appropriate	As expected	Pass	

7.	Activate colour blind mode	The colour schemes of the app change to meet colour blindness guidelines	As expected	Pass	
8.	Swipe on the sliding carousel to change what location data is being presented for	The data is updated and displayed for the given location	As expected	Pass	
9.	Display the sensors in their correct location over a google maps interface	Sensors are displayed in their correct location	As expected	Pass	
10.	Map - Bubbles around the sensors should represent the pollution level at that sensor	Sensors show correct colour for corresponding pollution level	As expected	Pass	

2. Non-Functional Tests

Test Number	Test	Pass/Fail	Comments
1.	Home background colour complies with government-regulated pollution colour palette	Pass	We have researched the government regulations and guidelines considering colour schemes for colour blindness which we have complied with
2.	Colours comply with WCAG 2.0 Accessibility Standard	Pass	We had multiple people view the app in a variety of lighting conditions at an arm's length distance, and determined that all individuals we had conduct the tests could distinguish between the different colours

3.	Bold text fonts that can easily be read	Pass	We had multiple people attempt to read text from the app at an arm's length distance, all individuals we had conduct the test could read the text
4.	Consistent navigation bar across all screens	Pass	The navigation bar remains consistent