1. Scope and Application

1.1 The scope of this SOP provides resources to design random sampling procedures that can be used in the field or laboratory.

1.2 This SOP can be applied to any circumstances where a sampling universe is spatially defined, including stratfied random sampling.

2. Summary of Method

2.1 This SOP does this...

Contents

3. Acknowledgements

4. Definitions

4.1 Term1: is...

5. Biases and Interferences

5.1 Representative sampling, where population estimates are the goal, can be obtained with random sampling procedures.

6. Health and Safety

6.1 Describe the risk...

Safety and Personnnel Protective Equipment

7. Personnel & Training Responsibilities

7.1 Researchers training is required before this the procedures in this method can be used...

7.2 Researchers using this SOP should be trained for the following SOPs:

- SOP01 Laboratory Safety
- SOP02 Field Safety

8. Required Materials and Apparati

8.1 Item 1 w/catalog number!

8.2 Item 2

9. Reagents and Standards

10. Estimated Time

10.1 This procedure requires XX minutes...

11. Sample Collection, Preservation, and Storage

12. Procedure

12.1 Define the area to be sampled and if it will be stratified.

12.2 To obtain a random sample from a known x and y distance, using the following Rmd file: XY_Random.R, where I defined a grid area of 100 x 100 with 15 random samples. Then I ordered the sampled by the x-ordinate. This is useful so you don't have to run accross the field in every direction randomly – it would be nice to optimize this on nearest neighbor but that's another project.

Xordinate	Yordinate	GridID
2	7	107
5	75	475
7	71	671
10	36	936
16	60	1560
38	4	3704
38	76	3776
42	82	4182
44	19	4319
52	48	5148
54	20	5320
56	53	5553
59	96	5896
60	30	5930
73	65	7265

12.3 Next, I'd like to develop a stratified sampling regime.

12.4 Finally, it would be good to do this via a map, where areas are off limits, then we could really have a powerful tool!

13. Data Analysis and Calculations

14. QC/QA Criteria

15. Trouble Shooting

16. References

16.1 APHA, AWWA. WEF. (2012) Standard Methods for examination of water and wastewater. 22nd American Public Health Association (Eds.). Washington. 1360 pp. (2014).