















**Figure 8.** Rocks samples collected for geo-chemical analysis

## 6. CONCLUSION

Electrically resistivity imaging was successfully carried out at Bugai town in Birnin – Gwari area of Kaduna State, North western Nigeria. Results from both the 2D and 3D resistivity models reveal a heterogeneous nature of mineralization within zone of elevated resistivity that may represent silification and gold bearing quartzite vein. The results of the survey indicated N – S and NE – SW trending mineralized zones embedded in rocks with resistivity value greater than 600 ohm-m occurring at depth greater than 5 m. Geochemical analysis of rock samples collected at 5m depth complimented the geo-electrical results. This research shows that electrical resistivity techniques can be applied to map gold mineralization when the source body lies flatly in the study area.

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