

## CHAPTER V

### CONCLUSION

Almost complete extraction of uranium from sandstone was obtained by acid leaching at the selected optimum conditions. The ground sandstone of - 200 mesh was allowed to react with 270 g sulphuric acid per 1 kg of ore in the presence of manganese dioxide 11.25 g/kg of ore. The solid to liquid ratio was 1 : 1. The leaching was carried out for 8 hours at  $80 \pm 5^{\circ}\text{C}$  in a batch agitation system. The leaching yield was found to be 92 %. Copper, vanadium and yttrium were the valuable by products obtained from the process.

Uranium was purified by amine extraction using 7.5 volume percent Alamine 336 in Solvent 3040. A recovery yield of 86 percent was obtained by a single extraction, two scrubbing and two stripping stages. The precipitation of yellow cake from the strip solution was achieved by adding ammonium carbonate solution until the pH was 7.5. The purity of the yellow cake was found to be nearly 100 %.