**Table. S1. Selected regions for sample collection and total number of samples collected.**

| S.No | Region of Sample collection | Place of Sample Collection | Source of sample | Type of sample Soil + Water | Total |
|---|---|---|---|---|---|
| 1 | Madhya Pradesh (M.P) | Rajnandgaon | Water Supply Station | 2+2 | 4 |
| 2 | | Abandoned Mining area Khairi | Borewell | 1+1 | 2 |
| 3 | | Abandoned mining area Kaudikasa | Borewell | 1+1 | 2 |
| | | | | Total | **08** |
| 4 | Jharkhand (JKD) | Rajmahal | Drinking water Pond | 1+1 | 2 |
| 5 | | Udhawa | Abandoned Mining area Borewell | 2+2 | 4 |
| 6 | | Dehari | Abandoned Mining area Tubewell | 2+1 | 3 |
| 7 | | Barhait | Abandoned Mining area Handpump | 1+2 | 3 |
| | | | | **Total** | **12** |
| | | | | **Grand Total** | **20** |

**Table. S2. Water quality index of ground water.**

| S.no | Region of Sample collection | Source of sample | Water Quality Index |
|---|---|---|---|
| 1 | Madhya Pradesh (M.P) | Water Supply Station | 125.3 |
| 2 | | Borewell Khairi | 93.7 |
| 3 | | Kaudikasa Borewell | 95.6 |
| 4 | Jharkhand (JKD) | Drinking water Pond | 126.8 |
| 5 | | Abandoned Mining area Borewell | 122.7 |
| 6 | | Abandoned Mining area Tubewell | 193.7 |
| 7 | | Abandoned Mining area Handpump | 103.7 |

**Table. S3. Water Quality Index (WQI) of various ground water samples collected from study area.**

| WQI Value | Water Quality | Category | % of water sample safe for use |
|---|---|---|---|
| <50 | Excellent | A | Nil |
| 50 – 100 | Good water | B | 28.5 |
| 100 – 150 | Poor water | C | 57.14 |
| 150 – 200 | Very poor water | D | 14.28 |

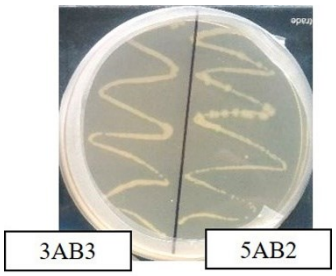


**Fig. S1. Standardized colonies of bacterial isolates (3AB3 and 5AB2) grown on LA plate.**

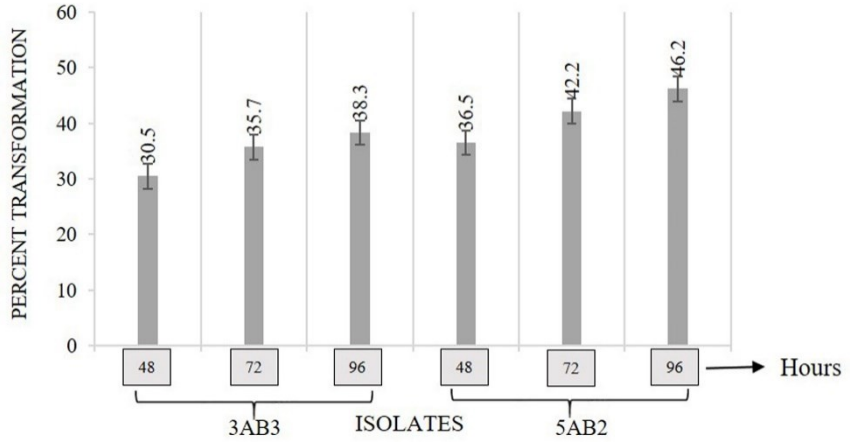


**Fig. S2. Arsenate and arsenite transformation of bacterial isolates (3AB3 and 5AB2)**