

Consultancy Reports

1. One (1) Report on Physico-chemical and Bacteriological Quality of Boreholes and Tap Water for the Oyibi Area Water and Sanitation Development Board.
 - a. Project staff: Akrong, M.O., Darko H.F., Banu, R., Amoah, D.K., Bobor, S., Jude Quansah, Micahel Afram.
2. Four (4) Reports on Final Effluent Quality Assessment for the Phyto-Riker (GIHOC) Pharmaceuticals.
 - a. Project staff: Darko H.F., Appiah, S.
3. One (1) Report on Final Effluent Quality Assessment for Pioneer Food Cannery (PFC).
 - a. Project staff: Darko H.F., Appiah, S.
4. Ecological assessment and monitoring for Newmont Akyem Mine
5. Ammonia toxicological assessment for Newmont Akyem Mine
6. Fish depopulation for Newmont Akyem Mine
7. Fish depopulation for Newmont Ahafo Mine
8. Kintampo Health Review Report for Newmont Ahafo Mine
9. **Duah, A.A.** and Tagoe, R. (January, 2020). Geophysical exploration for borehole siting at Tema, Greater Accra Region. A report for GTP Tex Styles Gh. Ltd. **CSIR/WRI/ACR/DAA/2020/1**
10. **Duah, A.A.**, Habadah, R., Boadu, N.A.B. and Debrah, S.K. (January, 2020). Borehole drilling, pumping test and water quality analysis at Tema, Greater Accra Region for GTP Tex Styles Gh. Ltd. **CSIR/WRI/ACR/DAA/2020/2**
11. **Duah, A.A.**, Ayizemi, E.A., Boadu, N.A.B., Debrah, S.K. Sarpong, O and Mends, L.G. (May, 2020). Pumping Test and Water quality analysis of boreholes at the Tema General Hospital in the Greater Accra Region of Ghana. **CSIR/WRI/ACR/DAA/2020/3**
12. Tagoe, R. and **Duah, A.A.** (June, 2020). Geophysical exploration for borehole siting at Volta Hall, University of Ghana in the Greater Accra Region. **CSIR/WRI/ACR/RT/2020/1**
13. **Duah, A.A.** (June, 2020). Report on pumping test and water quality analysis at GTP Tex Styles at Tema in the Greater Accra Region. **CSIR/WRI/ACR/DAA/2020/4**
14. Tagoe, R, **Duah, A.A.** and Darko. E. (August, 2020). Geophysical exploration for borehole siting in Kumasi (Nkoransa) in the Ashanti Region (Otumfour Project). **CSIR/WRI/ACR/RT/2020/2**
15. **Duah, A.A.**, Boadu, N.A.B and Ofosu, J.F. (August, 2020). Report on post-hydrofracturing Pumping test and water quality analysis of 2 Boreholes at GTP Tex Styles at Tema in the Greater Accra Region. **CSIR/WRI/ACR/DAA/2020/5**

16. Mainoo, P.A., **Duah, A.A.**, Agyekum, W.A., Ofori-Agyeman, C. and Manu, E. (October, 2020). Hydrogeological investigations for borehole siting and construction supervision of twenty-six (26) boreholes in West Mamprusi District of the North East Region of Ghana. **CSIR/WRI/ACR/PAM/2020/...**
17. Tagoe, R. and **Duah, A.A.** (Nov, 2020). Geophysical exploration for borehole siting for additional boreholes at GTP Tex Styles, Tema in the Greater Accra Region. **CSIR/WRI/ACR/RT/2020/3**
18. Tagoe, R. and **Duah, A.A.** (Nov, 2020). Geophysical investigation for sub-surface characterization at Tema in the Greater Accra Region for Thai Union. **CSIR/WRI/ACR/RT/2020/4**
19. Obuobie, E., Osei-Owusu, M., and Darko, D. (2020). Overview of existing national flood event databases in Benin, Burkina Faso, Cote D'Ivoire, Ghana and Nigeria. A technical Report of the MiFFMASS Project, 42p.
20. Physico-chemical and Bacteriological Quality Assessment of Boreholes and Tap Water for the Oyibi Area Water and Sanitation Development Board.
21. Final Effluent Quality Assessment for Phyto-Riker (GIHOC Pharmaceuticals).
22. Final Effluent Quality Assessment for Pioneer Food Cannery (PFC).
23. Drinking Water Quality Assessment in the Central Region of Ghana for the Public Utilities Regulatory Commission (PURC).
24. One (1) Report on Physico-chemical and Bacteriological Quality of Boreholes and Tap Water for the Oyibi Area Water and Sanitation Development Board. Project staff: Akrong, M.O., Darko H.F., Banu, R., Amoah, D.K., Bobor, S., Jude Quansah, Micahel Afram.
25. Four (4) Reports on Final Effluent Quality Assessment for the Phyto-Riker (GIHOC) Pharmaceuticals. Project staff: Darko H.F., Appiah, S.
26. One (1) Report on Final Effluent Quality Assessment for the for-Pioneer Food Cannery (PFC). Project staff: Darko H.F., Appiah, S.
27. Working on Malaria Transmission project with collaborators at Noguchi Memorial Institute for Medical Research -University of Ghana and Uniformed Services University of Health Sciences -USA.
28. Coordinating malaria research with collaborators in the medical schools at University of Botswana -Botswana, Copperbelt University -Zambia, and University of Namibia - Namibia.
29. Amisigo, B., Obuobie, E., Darko, D., and Agyekum, W. (2020). A technical review of Ahafo North Project water documents. A consultancy report, 69p.
30. Monitoring and maintenance of water treatment facility at the Regional Office of Bank of Ghana, Tamale from October 2019 to September 2020
31. Disaster Risk Reduction Practice Research and Capacity Building Support to ECOWAS (ECOWAS-DRR), funded by the World Bank and led by WASCAL
 - a. **Consultancy Staff:** Dr. Emmanuel Obuobie (Leader), Mr. Frederick Logah, Dr.

Richard Ampadu-Ameyew (CSIR-STEPRI)

b. **Objectives:**

- Conduct a baseline study on trans-boundary floods and disasters in the ECOWAS region;
 - Develop a regional flood forecasting system integrating existing regional and national systems and provide guidance on open data management;
 - Develop a policy note on a regional (ECOWAS) approach for post disaster recovery and reconstruction planning (including Post Disaster Needs Assessments), capacity building and support through institutions in the region, such as universities;
 - Facilitate training and capacity enhancement for the ECOWAS Commission and experts from member states related to flood forecasting, disaster preparedness and post disaster recovery planning; and
 - Provide guidance on strengthening the academic network related to disaster risk management across different disciplines in West Africa and contribute to relevant regional conferences
 - CSIR-WRI is the lead consortium member for the delivery of objectives (i) and (iii).
- **Other consortium members:** WASCAL (Ghana/Burkina Faso), FUTA (Nigeria), HKV (Netherlands), UNITAR (Switzerland/Kenya).
- **Period:** August 2018 – June 2020 (extended to March 2021 due to covid-19 challenges).
- **Activities carried out during reporting period:**
- **Finalization of reports:** the CSIR-WRI team finalized three technical reports that were prepared by the team in 2019, after incorporation comments and edits provided by the World Bank, ECOWAS and WMO. The reports are: (i) Policy Note on Strengthening the Academic Network for Disaster Risk Reduction in West Africa, (ii) Regional Post Disaster Recovery Planning, and (iii) Policies, Mandates and Legislations for flood risk management in West Africa. The last report was merged with a technical report produced by the FUTA team, to form a joint report (Transboundary Floods and Disasters in West Africa) for the CSIRWRI/FUTA teams.
32. **Training of ECOWAS Member states:** contributed to the training of 54 staff of relevant disaster management organizations in ECOWAS member states in a ‘regional technical webinar series on flood forecasting, early warning systems and geographic information technology for flood risk management.’ The training, which was conducted via a virtually platform, was held on 14th - 21st September 2020. The CSIR-WRI team prepared training materials in texts, PowerPoint, and webinar formats in English and French languages for one of the training modules (introduction to flood early warning practices in the ECOWAS Region) and facilitated the module.
33. Review of Ahafo North Project Water Management Reports
- **Consultancy Staff:** Dr. Emmanuel Obuobie, Dr. Deborah Darko, Dr. William Agyekum, Dr. Barnabas Amisigo.
 - **Objectives:**
 - ✓ Review relevant documentation supplied by the Newmont’s Ahafo North Project including Ahafo North surface water design, dam breach analysis, water balance, river diversion,

watershed water use survey, hydrology and hydrogeological reports and other baseline reports;

- ✓ Review and advice on (a) appropriateness of the scope and methodology of the studies per regulatory and international standards; (b) validity of predicted/identified impacts; (c) feasibility of proposed mitigation measures for short-term, residual and cumulative impacts; and (d) gaps in the reports from technical/engineering, environmental and regulatory perspectives.
- ✓ Identify potential opportunities and provide recommendations to address any identified gaps;
- ✓ Set up a meeting to discuss review comments; and
- ✓ Submit assessment reports (draft and final) incorporating review comments.

-Other consortium members: None.

Period: August – December 2020.

Activities carried out during reporting period:

Review of documents and preparation of report: the consultancy team reviewed 14 documents provided by the Newmont Ahafo North project and prepared 9 standalone reports on the 9 key documents and in addition a consolidated report that incorporated all the standalone reports. The consolidated report was finalized after field validation and addressing feedback from the Newmont team.

34. UK BRAVE Project: Stakeholder Consultative Workshop on “Building understanding of climate variability into planning of Groundwater supplies from low storage aquifers in Africa”. Role: Research Officer (Fieldwork, Report Preparation and Management Support).
35. Provision of mechanized borehole with water treatment facilities for selected SSNIT Offices in Ghana. Role: Project Leader (project management; fieldwork; report preparation; client engagement; etc.)
36. Hydrogeological Survey at various offices and management staff bungalows in Sunyani, Hohoe and Takoradi. Role: Project Officer (Proposal writing; Project management; Fieldwork; Report preparation; etc.)
37. Carried out geophysical survey, analyzed and interpreted data to select suitable drilling locations to supply underground water for several private individuals and organizations throughout the country.
38. Pumping test data analyses and interpretation for the determination of aquifer characteristics.
39. Pump installation and water treatment advisory services.

40. Asmah, R. & Quarcoopome, T., Fish Depopulation Report. Consultancy Report Prepared for Newmont Golden Ridge Limited, Akyem Mine.
41. Asmah, R. & Quarcoopome, T., Fish Depopulation Report. Consultancy Report Prepared for Newmont Ghana Gold Limited, Ahafo Mine.
42. Asmah, R., Quarcoopome, T., Asante, K., Addico, G., Armoo, S. & Banu, R. (2020).
Ecological
43. Monitoring of Water Storage Dam and other Water Bodies in the Newmont Akyem Mine Catchment Area. Consultancy Report Prepared for Newmont Golden Ridge Limited, Akyem Mine.
44. **Anani, F.A.**, Agbeko, E., Mensah, E.T.D., Ofori-Boateng, L., Teye, J., Johnson-Ashun, M., Kusorgbor, J.K. and Atsakpo, P.D.K. (2020). Production and supply of mono-sex male Nile tilapia fingerlings to Dagan Farms Ghana Limited. CSIR-WRI-ARDEC, Akosombo.
45. Asmah R., Asante K. A., and Nyarko, F. (2020). Kintampo Health Report Review. Consultancy Report Prepared for Newmont Ghana Gold Limited, Ahafo.
46. Asmah R., Quarcoopome T. and Addo, A. (2020). Fish depopulation of Newmont Ahafo Mine. Consultancy Report Prepared for Newmont Ghana Gold Limited, Ahafo.
47. Asmah R., Quarcoopome T. and Acheampong Addo (2020) Fish depopulation and fish quality assessment of Newmont Akyem Mine. Consultancy Report Prepared for Newmont Golden Ridge Limited, New Abirem.
48. Asmah R., Quarcoopome T., Asante K. A., Banu R., Addico G. and Armoo S. (2020) Surface water ecological studies and monitoring of Newmont Akyem Mine. Consultancy Report Prepared for Newmont Golden Ridge Limited, New Abirem.
49. Asmah R. and Addo A. (2020). Quality assessment of dead fish in sediment control structure 5 of Newmont Akyem Mine. Consultancy Report Prepared for Newmont Golden Ridge Limited, New Abirem.
50. Asmah R. Karikari A.Y. and Mante V. (2020) Ammonia toxicological assessment for the Akyem Mine water treatment program. Consultancy Report Prepared for Newmont Golden Ridge Limited, New Abirem.
51. Ametefe W., Allotey E., and Asmah R. (2020) Water management strategy for the Akyem Mine site. Newmont Golden Ridge Limited, New Abirem.
52. Asmah, R., **Karikari, A. Y.** and Mante, V. (2020). Ammonia Toxicological Assessment for Newmont Golden Ridge. A CSIR-WRI Consultancy Report, Accra, 11pp. CSIR/WRI/ACR/RA/2020/1.
53. **Karikari, A. Y.** and Amoah, D. (2020). Assessment of streams water quality along the Agona Nkwanta - Tarkwa Highway for PSS Urbania. A CSIR-WRI Consultancy Report, Accra, 12pp. CSIR/WRI/ACR/AYK/2020/4
54. **Karikari, A. Y.** and Amoah, D. (2020). Assessment of Kpeshie and Sakumo Lagoons water quality for PSS Urbania. A CSIR-WRI Consultancy Report, Accra, 12pp. CSIR/WRI/ACR/AYK/2020/3

55. **Karikari, A. Y.** and Amoah, D. (2020). Assessment of streams water quality along the Ashaiman- Akosombo Highway for PSS Urbania. A CSIR-WRI Consultancy Report, Accra, 13pp. CSIR/WRI/ACR/AYK/2020/2
56. **Karikari A. Y.** and Adu-Ofori, E. (2020). Assessment of effluent quality for TSL Logistics Ghana Limited. A CSIR-WRI Consultancy Report, Accra. 32pp. CSIR/WRI/ACR/AYK/2020/1
57. **Karikari A. Y.** Nfojoh, C. J., and Hawa, A. (2020). Physico-chemical and microbiological tests of potable and swimming pool water from Golden Tulip Hotel, A CSIR-WRI Consultancy Report, Accra. 7pp. CSIR/WRI/ACR/AYK/2020/5
58. **Karikari A. Y.** and Nfojoh, C. J (2020). Final Effluent quality monitoring for Golden Tulip Hotel. A CSIR-WRI Consultancy Report, Accra. 7pp. CSIR/WRI/ACR/AYK/2020/6