ALEX TRAPP, M.Sc.

WATER RESOURCES CONSULTANT

EDUCATION

M.Sc., Water Resources Engineering and Management, University of Stuttgart, Germany, 2012
B.Eng., Civil Engineering, University of Applied Sciences, Germany, 2009

SUMMARY

Alex Trapp has a M.Sc. in Water Resources Engineering and Management and a B.Eng. in Civil Engineering. He has eight years of professional experience in mining hydrogeology and environmental analyses. Alex joined Robertson GeoConsultants Inc. in 2012 as a Water Resources Consultant and again in 2016.

His technical experience includes numerical groundwater flow and solute transport modeling ranging from 1D models for seawater intrusion and seepage analysis to complex 3D models in support of mine permitting, mine water management, and mine closure. Alex also has experience in planning and supervision of drilling programs, hydraulic testing, well installation, and water quality sampling. Furthermore, he has experience in designing and assessing seepage interception systems and has contributed to various water and load balance modeling studies.

PROFESSIONAL HISTORY

2016-present:	Water Resources Consultant, Robertson GeoConsultants Inc.
2014-2015:	Environmental Consultant, Independent
2012-2014:	Water Resources Consultant, Robertson GeoConsultants Inc.
2010:	Research Assistant, University of Stuttgart, Germany
2008:	Site Engineering Intern, Zueblin Scandinavia, Sweden
2002-2005:	Emergency Medical Technician, Red Cross, Germany

PROJECT EXPERIENCE

MINE CLOSURE & REMEDIATION PLANNING

Redbank Mine, NT, Australia (2021 - present) for NT Government

- Developed conceptual site model including hydrostratigraphic model, analysis of hydraulic testing, and conceptual flow and load balance
- Developed and calibrated 3D numerical steady-state groundwater flow model (GMS/MODFLOW) and completed groundwater flow modeling and particle tracking in support of remediation planning

Former Bouchard Hebert Mine, Quebec (2021 - present) for Breakwater Resources Ltd.

- Developed and calibrated numerical groundwater flow model (GMS/MODFLOW) in support of closure planning
- Planned hydrogeological investigation including drilling campaign, mine shaft investigation, and hydraulic testing

Faro Mine, Yukon (2014 - present) for Yukon Government/CIRNAC

- Planned and supervised waste rock drilling program including installation of monitoring and pumping wells and hydraulic testing
- Calibrated 3D groundwater flow model (FEFLOW) and completed groundwater flow modeling in support of designing a seepage interception system
- Designed seepage interception system and completed annual performance reviews of seepage interception system

Rum Jungle Mine, NT, Australia (2017) for NT Government

- Planning and supervision of hydrogeological drilling campaign

MINE PERMITTING, PRE-FEASIBILITY & BASELINE STUDIES

Browns Oxide Project, NT, Australia (2017 - 2019) for The Doe Run Company

- Planned and managed various hydrogeological and geotechnical drilling programs
- Analyzed hydraulic testing (hydraulic packer and pump testing)
- Developed conceptual site model
- Developed and calibrated steady-state 3D numerical groundwater flow model (FEFLOW)
- Used groundwater flow model to predict inflow to proposed underground mine

Magino Gold Project, Ontario (2013 - 2021) for SLR Consulting

- Supervised hydrogeological core drilling and hydraulic testing campaign including packer testing and installation of vibrating wire piezometers and monitoring wells
- Planned mine dewatering test and installed pumping and monitoring equipment
- Performed 2D vertical numerical groundwater flow modelling (FEFLOW) to estimate flows from adjacent lakes into proposed open pit
- Developed conceptual and numerical site-wide 3D groundwater flow model (GMS/MODFLOW) in support of mine permitting
- Utilized groundwater flow model to evaluate impacts of tailings seepage on receiving waterbodies and assess interception strategies
- Employed groundwater flow model to evaluate impact of pit dewatering on surrounding waterbodies in support of a Permit to Take Water application

Prairie Creek Mine, Northwest Territories (2012 - 2021) for Canadian Zinc Corporation

- Completed overburden and baseline water quality characterization study including drilling supervision, hydraulic testing, and water quality sampling
- Developed hydrostratigraphic model (GMS)
- Performed transient calibration of 3D numerical groundwater flow model (FEFLOW) and completed predictive simulations for mine dewatering and closure planning
- Developed contaminant load balance model to predict post-closure concentrations in creek

San Antonio Gold Project, Mexico (2012 - 2013) for SLR Consulting

- Constructed 2D numerical density-dependent flow model (FEFLOW) to evaluate effects of open pit mining on seawater intrusion

Sierra Gorda, Chile (2012) for Sociedad Contractual Minera

- Performed water balance modeling to determine make-up water requirements for various proposed tailings storage scenarios

GROUNDWATER IMPACT & SEEPAGE CONTROL STUDIES

Myra Falls Mine, British Columbia (2016 - present) for Nyrstar

- Performed groundwater and surface water quality sampling campaigns for compliance monitoring
- Planned and supervised various hydrogeological drilling campaigns in support of seepage management
- Completed synoptic groundwater level surveys and installed data logging equipment
- Completed study to optimize operation of system of underdrains including field testing of drain system and development of a flow and load balance model
- Development of site-wide seepage and groundwater interception plan
- Constructed 3D numerical groundwater flow model (FEFLOW) in support of designing a seepage interception system consisting of pumping wells and drain
- Performed annual performance review of seepage interception systems
- Developed conceptual groundwater flow and load balance spreadsheet model

Las Tortolas Tailings Facility, Chile (2017) for Anglo American Chile

- Reviewed geotechnical material testing and derived parameters relevant for seepage estimation
- Performed finite strain consolidation modeling to predict tailings consolidation and basal seepage rates
- Completed 2D and 3D numerical groundwater flow modeling (FEFLOW) to simulate flows to a proposed network of horizontal drains beneath the tailings management facility

El Abra Mine, Chile (2012 - 2013) for ARCADIS Chile

- Reviewed geotechnical material testing and derived parameters relevant for seepage estimation
- Developed integrated seepage model for the life of mine using finite strain consolidation (FSConsol) and spreadsheet modeling
- Developed transient unsaturated flow model (FEFLOW) to estimate basal seepage flows for post-closure period

Shell Service Station, British Columbia (2012) for NEXT Environmental

- Completed construction quality assurance and performance monitoring of a hydraulic shotcrete barrier and drainage system

GROUNDWATER RESOURCES

Various Sites (2012 - present)

- Designed, analysed, and interpreted slug and pumping tests
- Completed numerical groundwater flow modelling to provide professional opinion on aquifer yields

SITE ENGINEERING AND PROJECT COORDINATION

Citybanan, Stockholm (2009) for Swedish Transport Authority

- Supervised sheet piling, rock bolt installation, drilling, and rock and jet grouting for tunnel construction
- Monitored groundwater levels