

# Petr Kuranov, M.Sc., P.Eng.

HYDROGEOLOGIST / GROUNDWATER MODELER



## EDUCATION

B.Sc. and M.Sc., Hydrogeology and Engineering Geology, Moscow  
M.V. Lomonosov State University, 1998

## PROFESSIONAL REGISTRATION

Professional Engineer, Engineers and Geoscientists BC

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## EXPERIENCE

### SUMMARY

Petr Kuranov is a Hydrogeologist / Groundwater Modeler with over 10 years of experience in groundwater resources assessments, seepage analysis, dewatering evaluations, groundwater flow and transport modeling, surface water-groundwater interaction and groundwater contamination studies.

Petr has been involved in numerous projects for oil and gas and mining clients throughout Western Canada, in South America, Europe and Western Asia. His responsibilities include hydrogeological field program planning and execution, hydrogeological mapping, development of conceptual site models, numerical modeling of groundwater flow and solute transport, interpretation of model results, and reporting.

He is proficient in the use of numerical modeling, GIS and office software including FEFLOW, Visual MODFLOW, HydroGeoSphere, AlgoMesh, ArcGIS, Surfer, Leapfrog and AutoCAD.

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## PROFESSIONAL HISTORY

2019-present: Hydrogeologist/Groundwater Modeler, Robertson GeoConsultants Inc.  
2017-2019: Hydrogeologist, Groundwater Modeler, Golder Associates Ltd.  
2007-2015: Hydrogeologist, DAR/VODGEO Ltd.

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## PROJECT EXPERIENCE

### MINE HYDROGEOLOGY

#### ***Faro Mine, Yukon (2019-present) for CIRNAC***

- Assisted in planning and supervised pumping well drilling and installation
- Supervised hydraulic testing and analyzed hydraulic testing results
- Updated 3D hydrostratigraphic model (Leapfrog Geo) for the Down Valley area
- Updated and calibrated groundwater flow model (FEFLOW) and used model to design and assess performance of a seepage interception system for Down Valley area

**Former Bouchard Hebert Mine Site, QC (2019) for Breakwater Resources Ltd.**

- Contributed to development of a conceptual site model to characterize baseline groundwater flow regime in the former Industrial Area
- Analysed and interpreted slug and pumping tests

**New Afton Mine, BC (2019) for New Gold Inc.**

- Updated and calibrated groundwater flow model to assess seepage to the underground and open pit and future groundwater impact for post-closure conditions

**Red Dog Mine, AK, USA (2018 - 2019) for Teck Resources Ltd.**

- Developed 3D geological model to assess waste rock pile volume and develop conceptual groundwater flow model
- Evaluated acid rock seepage volume
- Assisted in acid rock drainage efficiency assessment

**Jackpine Mine, AB (2018 - 2019) for CNRL**

- Developed 3D groundwater flow and solute transport model to assess long-term contaminant migration from various closure facilities to discharge locations
- Assessed design decisions to provide input for sustainable mitigation measures development
- Evaluated far-future seepage rates and load from mine closure facilities to rivers and streams

**Gediktepe Mine, Turkey (2018) for Polimetel Madencilik**

- Developed and performed transient calibration of 3D groundwater flow model to assess groundwater seepage to the pit
- Completed forecast simulations for mine dewatering at operational, closure and far-future conditions
- Provided input to support the design of a diversion channel

**Turnbull West Mine, BC (2018) for Teck Coal Ltd.**

- Developed and calibrated 3D groundwater flow model to assess groundwater seepage to the pit at end-of-mining and groundwater seepage to and from the flooded pit at far-future conditions
- Assessed baseflow reduction for rivers and streams adjacent to the mine site

**Fort Hills Mine, AB (2017 - 2018) for Suncor Energy Ltd.**

- Developed and calibrated 3D groundwater flow and solute transport model to support decision analysis for selecting a preferred saline water management plan
- Evaluated dewatering system design for saline water storage pond at construction and operation period
- Evaluated saline water storage pond design options, assessed magnitude and fate and transport of pond seepage

**Base Mine Extension, AB (2017-2018) for Suncor Energy Ltd.**

- Assisted in management and performed groundwater quality sampling to provide input for EIA study
- Analysed the results and performed hydrogeological mapping for pre-mining conditions

**Bayovar Potash Brine Mining, Peru (2017) for Americas Potash Peru.**

- Compiled and analysed available data and existing conceptual models
- Developed and calibrated 3D groundwater flow model to evaluate the potential of the brine resource
- Evaluated brine production scenarios by estimating the change in concentration of water extracted from the pumping wells

**Elk View Operations, BC (2017) for Teck Coal Ltd.**

- Developed 3D groundwater flow and solute transport model to simulate groundwater flow and solute concentrations in the valley bottom sediments aquifer
- Simulated the extent of the zones affected by seepage from waste rock spoils and the zones with minimal influence of mine-contact water
- Evaluated changes in the affected area based on the proposed mine plan and future mitigations

## SITE INVESTIGATION AND REMEDIATION

**Novokuibyshevsk Refinery, City of Novokuibyshevsk, Russia (2015) for NK NPZ Ltd.**

- Evaluated the existing monitoring system efficiency, designed the site characterization program (drilling and installation of monitoring wells) to delineate LNAPL lens below and downstream of the Refinery
- Supervised drilling, analysed and interpreted pumping tests
- Developed groundwater and surface water monitoring program

**Troitsko-Varnitsky Monastery, Rostov Velikiy, Russia (2013) for Systema-Gals Ltd.**

- Reviewed and analyzed hydrogeological data, developed conceptual groundwater flow model
- Developed and calibrated 3D groundwater flow model to evaluate design, construction and operation of dewatering system

**City of Dzerzhinsk, Nizhny Novgorod Region, Russia (2010-2011) for OVO Ltd.**

- Developed the conceptual hydrogeological site model for the Industrial Area
- Developed a 3D groundwater flow and mass transport model to assess current groundwater conditions and to assess hydrogeological risks and the impact of a reservoir water level fluctuations on groundwater regime in the Industrial Area
- Contributed to Data Review and Gap Analysis to assess groundwater conditions and groundwater-surface water interactions

**Rosneft Oil Fields, Samara Region, Russia (2008-2014) for Rosneft Ltd.**

- Designed, managed and performed field programs (drilling and installation of monitoring wells, groundwater and surface water sampling, streamflow measurement) to provide input for contaminant source evaluation studies

- Developed and calibrated 3D groundwater flow and solute transport model to evaluate the sources of surface water contamination
- Conducted groundwater resource assessments, ensured regulatory support for groundwater management planning

***Oil Fields Brine Disposal Study, Samara Region, Russia (2007-2008) for the Ministry of Natural Resources.***

- Reviewed and analyzed hydrogeological data, historical and current brine disposal rates
- Assisted in field program design, performed soil, groundwater and surface water sampling, brine injection rate measurements
- Developed conceptual water and load balance models

**DEWATERING SYSTEM DESIGN**

***Various Sites, Russia (2007-2015)***

- Designed site investigation programs, supervised monitoring wells drilling and installation
- Developed and calibrated 3D groundwater flow models to evaluate design, construction and operation of dewatering system
- Communicated with clients and regulatory agencies, ensured regulatory support for construction projects