# Position Details

## Research Scientist/Engineer- CSOF6/CSOF7

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| The following information is for applicants | |
| Advertised Job Title | Principal Research Scientist – Reactive Transport Modeller |
| Job Reference | 96985 |
| Tenure | Indefinite  Full-time |
| Salary Range | Applications would be assessed across two capability levels, and the successful candidate will be appointed at the level commensurate with their skills and experience, as assessed by the Selection Panel.  **CSOF6:** AU$ $126,313 – AU$148,014 per annum (pro-rata for part-time) plus up to 15.4% superannuation  **CSOF7:** AU$152,055 – AU$168,238 per annum (pro-rata for part-time) plus up to 15.4% superannuation |
| Location(s) | Waterford (WA) or Waite Campus (SA) |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | All Candidates |
| Position reports to the | Team Leader, Fate & Transport |
| Client Focus – Internal | 40% |
| Client Focus – External | 60% |
| Number of Direct Reports | N/A  (Please note this position will be expected to have leadership duties in future) |
| Enquire about this job | Dr Jason Kirby via email at [jason.kirby@csiro.au](mailto:jason.kirby@csiro.au) or phone +61 8 8303 8478 |
| How to apply | Apply online at <https://jobs.csiro.au/>  Internal applicants please apply via **Jobs Central**  If you experience difficulties when applying, please email [careers.online@csiro.au](mailto:careers.online@csiro.au) or call 1300 984 220. |

**Acknowledgement of Country**

CSIRO acknowledges the Traditional Owners of the land, sea and waters, of the areas that we live and work on across Australia. We acknowledge their continuing connection to their culture and pay our respects to their Elders past and present. View our [vision towards reconciliation](https://www.csiro.au/en/about/Indigenous-engagement/Reconciliation-Action-Plan).

**Child Safety**

CSIRO is committed to the safety and wellbeing of all children and young people involved in our activities and programs. View our [Child Safe Policy](https://www.csiro.au/en/about/policies/child-safe-policy).

### Role Overview

The Commonwealth Scientific and Industrial Research Organisation (CSIRO) is Australia’s national science agency and innovation catalyst. Our purpose is to work with industry, government, and the community to turn science into solutions to address Australia’s greatest challenges, including food security and quality; clean energy and resources; health and wellbeing; resilient and valuable environments; innovative industries; and a secure Australia and region.

The ‘Contaminants and Mitigation’ Research Group within CSIRO’s ‘Industry Environments’ Research Program is a national leader in detection and assessment of contaminants of concern for rapid response and targeted management strategies to ensure responsible industries and protection of human and environmental health. The Group delivers science and technologies to major clients including the Australian Department of Defence, United States Department of Defense – Strategic Environmental Research and Development Program, Gas Industry Social and Environmental Research Alliance, Australian Department of Climate Change, Energy, the Environment and Water, State Environmental Protection Agencies, waste facilities and agencies, oil and gas, chemical and plastics industries.

The ‘Contaminants and Mitigation’ Group has a continuing strategy to develop innovative detection, modelling tools and technologies to prioritise contaminants of concern, assess and predict environmental risks and optimise management strategies to ensure sustainable industries, prevent contamination legacies, and ensure the protection of human and environmental health. A critical aspect of this strategy is an ability to develop and apply innovative models of contaminant fate and transport at sites and regions. The position will provide Senior Leadership in the Group to develop and grow our science in reactive transport modelling for the protection of soil and water quality and effective management of contaminated sites.

The role of Research Scientist staff is to conduct innovative research leading to scientific achievements that are aligned with CSIRO’s strategies. The Research Scientist may be engaged in scientific activity ranging from fundamental research to the investigation of specific industry or community problems. They will have the opportunity to build and maintain networks, play a lead role in securing project funds, provide scientific leadership and pursue new ideas and approaches that create new concepts.

### Duties and Key Result Areas

* Initiation, development, and management of projects to deliver science and impact on the assessment and management of contaminants of concern in Australian environments for responsible and sustainable industries.
* Undertake leading edge scientific research and maintain active collaborations in order to access/share leading edge concepts and technology to advance project goals.
* Undertake feasibility studies, demonstrating a considerable degree of originality, creativity, and innovation in solving problems and introducing new directions and approaches.
* Identify and secure projects with clients and collaborators to understand and address national and international environmental pollutant challenges.
* Engage and communicate with key clients and organizations to identify challenges, prioritise science and deliver impact for a range of stakeholders.
* Maintain active national and international research collaborations in order to access/share leading edge concepts and technology to advance projects, achieve scalability, new opportunities, and impact.
* Work collaboratively as part of collaborative and multi-disciplinary teams to successfully deliver science and impact.
* Publish science finding in national and international recognized journals and communicate findings to a range of internal and external government, industry, and community stakeholders.
* Undertake project risk assessments as required to identify hazards and risk mitigation measures and comply with safe operating procedures to work safely without compromising own and others’ safety.
* Communicate openly, effectively, and respectfully with all staff, clients, and suppliers in the interests of good business practice, collaboration, and enhancement of CSIRO’s reputation.
* Adhere to the spirit and practice of CSIRO’s Values, Code of Conduct, Health, Safety and Environment procedures and policy, Diversity initiatives and Making Safety Personal goals.
* Other duties as directed.

*In addition to the duties listed above, if the successful candidate is appointed at the higher CSOF7 level, they will also be expected to:*

* Provide original contributions to science resulting in a significant influence on a field of research and/or its transfer to industry/community.
* Provide science leadership to achieve scale, identity opportunities, and achieve impact.
* Be a recognised national and expanding international authority and trusted advisor in their area of expertise.
* Develop strong and effective networks and relationships with partners and clients.
* Strategically think to develop and grow research portfolio and expanding funding base.
* Provide supervision and support to staff to successfully achieve project deliverables and outcomes.
* Other duties as directed.

## **Selection Criteria**

#### Essential

*Applications would be assessed according to the Selection Criteria listed below, and the successful candidate will be appointed at the capability level commensurate with their skills and experience, as assessed by the Selection Panel.*

*Under CSIRO policy only those who meet all essential criteria can be appointed.*

1. A PhD (or an equivalent combination of qualifications and research experience) in a relevant field such as hydrogeology, geochemistry, or civil/geoenvironmental engineering.
2. Experience in the initiating, managing, and delivering on research utilising reactive transport models to investigate water quality issues, contaminant fate and behaviour, and/or assessment of management options.
3. Demonstrated ability to conceptualise complex interactions between heterogeneous porous media (saturated and unsaturated), solute transport, and biogeochemical processes in different environments.
4. Experience in computer programming and data analysis (e.g., R, Fortran, Python and C/C++ in a Unix/Linux environment), uncertainty analysis, and knowledge of emerging tools (e.g., machine learning) for the quantification of coupled processes at bench and field scales.
5. A history of securing research funding utilising reactive transport models to answer contaminant problems.
6. A strong scientific publication record, networks and collaborations in the field, and an ability to communicate effectively with a range of stakeholders.
7. Experience in responsible and ethical behaviour in research, inclusiveness, and work health and safety practices and procedures.

**Highly Desirable**

1. Familiarity with procedures for upscaling transport parameters from core-scale to full field scale simulations in contaminant hydrology.
2. Demonstrated experience solving physicochemical problems using numerical algorithms, model calibration, sensitivity analysis and uncertainty quantification.
3. A passion for multidisciplinary research at the interface of contaminant hydrology, porous media and geochemistry.

## **Required Competencies**

**CSOF6**

* **Teamwork and Collaboration:** Cooperates with others to achieve organisational objectives and may share team resources in order to do this. Collaborates with other teams as well as industry colleagues.
* **Influence and Communication:** Identifies critical stakeholders and influences them via an influential third party, for example through an established network, to gain support for sometimes contentious proposals/ideas.
* **Resource Management/Leadership:** Sets up and maintains effective and efficient work teams and manages performance and resources, to achieve objectives. Chooses appropriate management strategies and communication styles to maintain high levels of motivation and productivity. Gives feedback for development purposes and provides support and direction for improvement.
* **Judgement and Problem Solving:** Anticipates and manages problems in ambiguous situations. Develops and selects an appropriate course of action and provides for contingencies. Evaluates, interprets and integrates complex bodies of information and draws logical conclusions, synthesises proposals and defends options with reasoned arguments.
* **Independence:** Assesses the risk and opportunity of identified strategies, options and actions. Overcomes problems and setbacks in achieving goals. Invariably includes consideration of value-added future impact on bottom line when determining the optimal and efficient use of resources.
* **Adaptability:**Demonstrates flexibility in thinking and adapts to, and manages, the increasing rate of organisational change by adjusting strategies, goal and priorities.

**CSOF7**

* **Teamwork and Collaboration:** Creates and fosters an environment in which there is a high level of cooperation within and between teams. Facilitates positive team relationships to build interactions across Business Units and the organisation.
* **Influence and Communication:** Identifies critical stakeholders and influences them via an influential third party, for example through an established network, to gain support for sometimes contentious proposals/ideas.
* **Resource Management/Leadership:** Provides leadership that fosters an environment that encourages new ideas and provides support for the development of emerging skills. Creates trust by displaying consistency, understanding, integrity and patience. Plans, seeks, allocates and monitors resources to achieve outcomes.
* **Judgement and Problem Solving:** Resolves major conceptual scientific, technical, commercial or management problems, which have a significant impact upon the field of research, professional function, the Business Unit or the Organisation. Situations faced have little or no precedent and require original concepts and approaches.
* **Independence:** Assesses the risk and opportunity of identified strategies, options and actions. Overcomes problems and setbacks in achieving goals. Invariably includes consideration of value-added future impact on bottom line when determining the optimal and efficient use of resources.
* **Adaptability:**Is flexible in response to external change or when faced with external constraints. Identifies and promotes the opportunities arising as a result of change.

Special Requirements

Appointment to this role is subject to provision of a pre-employment background check and may be subject to other security/medical/character clearance requirements.

Include if relevant:

* The successful candidate will undertake a pre-employment background check. Please note that individuals with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.
* If the successful candidate is not an Australian Citizen or Permanent Resident, they may be required to undergo additional security clearances, which may include medical examinations and an international standardised test of English language proficiency (i.e. IELTS test; <https://ielts.com.au/>)

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. Visit [CSIRO Online](http://www.csiro.au/) and [Environment Business Unit - CSIRO](https://www.csiro.au/en/about/people/business-units/Environment) for more information.

CSIRO is a values-based organisation.  In your application and at interview you will need to demonstrate behaviours aligned to our values of:

* People First
* Further Together
* Making it Real
* Trusted