Megan Richardson
Process Engineer

Profile

A chemical engineer with over four years experience in environmental and process engineering roles Megan has a strong passion for process engineering and is especially interested in water treatment. Her experience includes working in environmental and process engineering in the power, manufacturing and water treatment industries. Megan has qualifications in Chemical Engineering and Law enabling her to apply her knowledge and skills to investigate and regulate compliance with environmental and safety legislation.

Project Experience

Fourayes Farm Effluent Treatment Plant – Sittingbourne, UK (2019 - 2020)

Megan designed an activated sludge water treatment plant for factory effluent to decrease COD, BOD and suspended solids ensuring discharge requirements for trade waste. For the client she prepared a proposal outlining the system design and operation highlighting capital and operational costs so the client could successfully apply for a government grant.

DuPont Legacy Lands EDC Remediation – Maydown, UK (2019 - 2020)

Megan designed a water treatment system for removal of volatile organic compounds from groundwater contamination. The water treatment system included an air stripper and activated carbon (liquid and vapour phase) to ensure discharge requirements.

Cheshire East Council Leachate Treatment System – Malkins Bank, UK (2019 - 2020)

Megan designed a water treatment system to treat leachate contaminated with petroleum hydrocarbons, cyanide, heavy metals and salts. For the client Megan also investigated alternative discharge options for the water treatment system, including British Salt, to decrease the capital and operational expenditure on the system.

Pilkington Glass Remediation – Saint Helens, UK (2019)

Megan designed, installed and commissioned a water treatment system on the client's site to ensure temporary works could be undertaken. The system ensured leachate contaminated with petroleum hydrocarbons was captured and treated prior to discharge to trade waste under the client's discharge consent.

Sunshine Sugar – Harwood, NSW (2017 - 2018)

Megan supervised operation and maintenance of the following water treatment systems at the sugar mill and refinery in Harwood.

1. Activated sludge treatment for COD, BOD and suspended solids removal from factory effluent prior to discharge to the river under the site EPA licence.
2. Suspended solids clarification through sedimentation and filtration.
3. pH correction systems using CO2 and lime dosing.
4. Disinfection using UV treatment.

Megan performed investigation/troubleshooting on water quality and efficiency drops on the systems listed.

Cape Byron Power – Condong and Broadwater, NSW (2015 - 2017)

Megan implemented the Environmental Management System (EMS) to ISO14001 standard across two biomass fired cogeneration plants. She performed all reporting in accordance with the EPA licence and EMS requirements. Megan conducted training and awareness programs for environment and health and safety requirements in accordance with the site EMS. Megan also identified,

Qualifications

- B Chemical Engineering
- B. Laws
- Grad Dip Legal Practice

Certifications

- Confined Space Certificate
- Working at Heights Certificate
- First Aid

Specialisations

- Water treatment systems designs, operation and maintenance
- Process optimisation and waste minimisation
- Continuous improvement
- Regulatory investigation and compliance
- Root cause analysis investigations
- Development and implementation of environmental management systems

Work History

June 2020 - Present

Viridis Consultants Pty Ltd
Process Engineer

December 2018 to April 2020

RSK Group
Environmental Engineer

July 2017 to September 2018

Sunshine Sugar
Production Shift Supervisor

December 2015 to July 2017

Cape Byron Power
Environmental and Process Engineer

January 2015 to July 2015

Sunshine Sugar
Process Engineering Internship

categorised and rated environmental risks to focus resources and budget to meet obligations and improve the sustainability of the business.

Cape Byron Power – Condong and Broadwater, NSW (2015 - 2017)

Megan provided technical support for the operation and maintenance of the following water treatment systems/equipment at both biomass fired cogeneration plants.

1. Clarification of inert solids in the ash scrubber system using flocculation (polymer dosing) and settling.
2. Solids removal using rotary screen prior to clarification.
3. Vacuum belt filtration of inert solids from ash scrubber system.
4. Disinfection using chlorination.
5. Iron and manganese precipitation using aeration and chlorine oxidation.
6. Filtration using sand, multimedia and ultrafine filters.
7. Reverse osmosis.
8. Ion exchange (anion and cation resin for demineralisation).
9. pH correction through acid dosing and ammonia dosing.
10. Dosing of antiscalant and corrosion inhibitors.

Megan performed investigation/troubleshooting on water quality and efficiency drops on the systems listed.

Cape Byron Power – Broadwater, NSW (2016 - 2017)

Megan designed the water treatment system for the bleed from the ash water system to treat dissolved salts, allowing discharge to trade waste. She prepared the application for discharge to trade waste, including water analysis, process flow diagrams for site water cycles, mass balance on water cycles, treatment system specification and P&ID, economic analysis and environmental impact statement.

Cape Byron Power – Condong, NSW (2016 - 2017)

Megan designed, installed and commissioned the first flush system on site to remove solid sediment from storm water during a rainfall event. This project was identified as part of the environmental risk analysis and an initiative approved by the EPA.

August 2013 to November 2015

University of Queensland
Thermodynamics Tutor

March 2009 to January 2012

Winchester, Young and Maddern Solicitors
Contract Law Solicitor