



GROUNDWATER
TREATMENT SOLUTIONS

CAPABILITY STATEMENT

The background is a dark, textured surface resembling cracked earth or soil. Overlaid on the left side are several teal-colored geometric lines, including a large arc and several straight lines that form a partial circular or sector-like shape.

**DELIVERING PRACTICAL
AND COST EFFECTIVE
TREATMENT SOLUTIONS
FOR GROUNDWATER AND
VAPOUR CONTAMINATION.**



Groundwater Treatment Solutions (GTS) is an exciting new initiative established by McMahon Services to deliver practical and cost effective treatment solutions for groundwater and vapour contamination. The new business unit complements the wide range of existing environmental services provided by McMahon Services and offers our clients a complete solution for site remediation.

McMAHON
SERVICES



GROUNDWATER
TREATMENT SOLUTIONS



OUR SOLUTION

Groundwater Treatment Solutions specialises in the treatment of contaminated groundwater and soil vapour.



Our team of engineers and scientists have extensive experience in treatment of a wide variety of contaminants in a range of different environments.

We have the specialised equipment, engineering workshops and in-house laboratory facilities to enable turn-key treatment services.

We will identify your treatment needs and provide a practical solution that is tailored to meet required remediation goals, budget and time frame.

Our experience spans across a wide variety of industry sectors including petroleum, mining and resources, industrial and manufacturing, maritime, building and construction and agricultural.

- ▶ Soil and Groundwater Remediation Solutions
- ▶ Vapour Treatment and Management Solutions
- ▶ Construction Solutions (Soil and Water Management)
- ▶ Site Management Solutions (Risk Management / Risk Minimisation)
- ▶ Industrial Services Solutions (Waste Streams)



**GUARANTEED,
COMMERCIALY
DRIVEN OUTCOMES**



TREATMENT SERVICES

Groundwater Treatment Solutions work collaboratively with our clients to provide water and vapour treatment, containment and management solutions. Our approach to delivering a complete range of practical and cost effective services includes:



DEVELOPING A SOLUTION

- ▶ Site and Feasibility assessment;
- ▶ Water sampling and lab analysis;
- ▶ Pilot trials – on site or lab scale;
- ▶ Existing plant optimisation reviews;
- ▶ Detailed design – process control, piping, electrical, telemetry, hazardous areas, discharge requirements, reagent requirements, application plans;
- ▶ Risk based and statutory closure plans.

**PATENTED
TECHNOLOGY**



TREATMENT SOLUTIONS

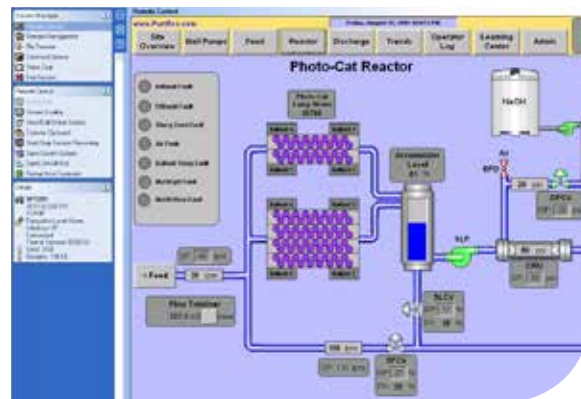
- ▶ In-situ chemical oxidation or reduction;
- ▶ Multi-phase extraction (mobile and semi-permanent);
- ▶ Soil vapour extraction;
- ▶ Bioremediation;
- ▶ Chemical fixation;
- ▶ Neutralisation (PASS/ASS);
- ▶ Suspended solids and sediment removal;
- ▶ Air sparging;
- ▶ Ion exchange;
- ▶ Reverse osmosis;
- ▶ Permeable reactive barriers;
- ▶ Flocculation / precipitation.

INSTALLATION AND OPERATION

- ▶ Plant installation – system installation, piping installation, services connection;
- ▶ Maintenance – equipment servicing;
- ▶ Trade waste agreements;
- ▶ Performance monitoring;
- ▶ System optimisation.

CONTAMINANTS

- ▶ Aromatic and aliphatic hydrocarbons
- ▶ Aqueous Film Forming Foam (AFFF) constituents
- ▶ Pesticides and herbicides
- ▶ Chlorinated compounds
- ▶ Acid sulphate soil
- ▶ Heavy metals – hexavalent chromium, copper, nickel, zinc and cadmium





RESOURCES

Groundwater Treatment Solutions have the combined resources to provide a complete treatment solution from highly experienced personnel, in-house laboratory facilities, engineering workshops and state of the art treatment systems and equipment.



**MULTI-TREATMENT,
MASS FLUX
APPROACH**



IN-HOUSE LABORATORY

Our in-house laboratory allows us to undertake a range of treatment trials on water, sludge and solid materials utilising a range of treatment methods.

Trials are undertaken to meet technical, regulatory and financial objectives and directly link to full-scale treatment.



PLANT & EQUIPMENT

Groundwater Treatment Solutions is supported by McMahon Services' \$70 million network of company-owned plant and equipment that includes specialist remediation and treatment systems such as:

- ▶ Skid, truck and trailer mounted water treatment units;
- ▶ Containerised PLC water treatment systems;
- ▶ Solar powered, remote telemetry systems;
- ▶ Tanks, pumps and filters;
- ▶ Reactors and adsorbers;
- ▶ Chemical injection skids;
- ▶ Industrial vacuum recovery units;
- ▶ Komatsu BZ210-1 RETERRA G-Mode - mobile soil blending system;
- ▶ VecLoader HEPA VAC - industrial vacuum system.

ENGINEERING WORKSHOPS

Our engineering workshops extend over a number of sites across Australia, with an extensive array of equipment and skilled trades to enable the construction and modification of treatment systems.



MORE THAN A "PUMP AND TREAT" SOLUTION



SPECIALISED TEAM

Groundwater Treatment Solutions have formed a team of industry professionals with the in-depth knowledge, diverse skillsets and relevant experience to provide a complete treatment solution for the most complex groundwater and soil vapour contaminated sites.

Our team of engineers and scientists have extensive experience in the treatment of a wide variety of contaminants in a range of different environments, working together with our site personnel to deliver guaranteed outcomes for our clients.

Groundwater Treatment Solutions can undertake projects anywhere in Australia and the South Pacific utilising our network of equipment, offices and support staff.

Our personnel have undertaken work for clients such as Exxon Mobil, Rio Tinto, Transport and Main Roads - QLD, Energex, 7-11, Arrium, Department of Defence, Environment and Heritage Protection - QLD, ANZ Bank, Queensland Rail, BP, Caltex, Freedom Fuels Australia, Shell (Viva), and a range of building and construction firms.





RISK MANAGEMENT

Groundwater Treatment Solutions has a strong focus on risk management to ensure the identification, assessment, and prioritisation of risks is effectively mitigated through the implementation of systems and resources to control the probability of unforeseen events.

WHSEQ

Groundwater Treatment Solutions provides exceptional quality services, a strong safety culture and commitment to the preservation and protection of the environment. All projects are carried out under third party accreditation management systems, resulting in the highest standards of project management and delivery.

Groundwater Treatment Solutions works under McMahon Services' third party accreditations to AS/NZS 4801:2001 (Occupational health and safety), ISO 9001:2008 (Quality Assurance) and ISO 14001:2004 (Environmental Management).

McMahon Services are also Federal Safety Accredited, the first multi-disciplinary construction services company in Australia to achieve this accreditation.



INSURANCES

Groundwater Treatment Solutions is covered by McMahon Services' extensive insurance program. McMahon Services has purchased the most all-embracing insurance cover available in Australia to not only protect themselves and it's other entities as Contractors, but also where required, to transmit to clients the benefits that have been secured by incorporating the client's interests under the policies.





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TREATMENT SOLUTIONS

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