SEWAGE TREATMENT AND DISPOSAL, ONLINE COURSE
3-5 MARCH 2021
DAILY PROGRAMME

Time	Activity	Location	Resp
3 March 8.30-8.45	Introductions and Welcome.	Online	Kevin Campbell (SMS)
8.45-9.45	Sewage Treatment and Disposal – An Overview • Sources of sewage – the activities that generate sewage and other wastewater • What is in sewage and other wastewater • Treatment processes • The environment and how sewage and other wastewater affect the environment and PH • An overview of sewerage systems, particularly as they influence sewage • Treatment and disposal options • Conventional sewage treatment and disposal systems • Alternatives to conventional treatment systems and emerging treatment technologies • Technical treatment options that exist, advantages and disadvantages of each given the context • Trends & innovations in community sewage treatment and disposal systems e.g. greywater • The public health drivers for choosing one technology over another, e.g. pathogen removal, odour control etc • Examples of smaller community schemes and treatment considerations	Online	John Cocks (Engineer)
9.45-10.00	Morning Tea.	Online	All
10.00-11.45	Achieving Bottom Line Public Health Requirements for Wastewater Management Through Effective Use of RMA Processes, including a hypothetical case history exercise	Online	Jim Bradley (Stantec NZ)
11.45-11.50	Break.	Online	All
11.50-12.20	Wastewater Outfalls	Online	Jim Bradley
12.20-12.25	Break.	Online	All
12.25-1.25	Alternative Reticulation (Sewerage) Systems: Systems for conveying sewage • What popular alternative reticulation systems exist to conventional methods • Examples of smaller community reticulation systems and consideration of their place within reticulation options e.g. cost, space, population • Examples of their use and outcome (success & failures, risks & opportunities) • Resilience of the sewerage infrastructure – Christchurch example	Online	Kathryn Jessamine (Ministry of Health)

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4 March 8.30-9.30	Wastewater Sludge Management: - Types of sludge - Common treatment technologies - Biosolids disposal pathways and regulatory aspects.	Online	John Cocks
9.30-9.40	Break.	Online	All
9.40-10.40	On-Site Sewage Treatment and Disposal: An Overview • On-site sewage management concepts • On-site land-based treatment technologies – conventional and alternatives • Land based effluent disposal technologies AS/NZS 1547:2012 On-site Domestic Wastewater Management: its approach to: • Achieving public health, environmental and technical performance objectives • Managing the site investigation, design and installation procedures • Managing the operation, maintenance and monitoring procedures?	Online	John Cocks
10.40-10.55	Morning Tea.	Online	All
10.55-11.55	Site investigation – soil texture assessment interactive exercise. Soil types & Characteristics	Online	John Cocks
11.55-12.05	Break.	Online	All
12.05-12.50	The important elements in selecting an on-site system appropriate to the site and soil conditions, and the principal design considerations if the system is to work to optimal parameters e.g. pre-treatment levels; land application rates related to soil type and structure, limitations of soils, surface/ground water influences on capacity of soils to assimilate wastewater?	Online	John Cocks
12.50-	**Written Assessment – to be completed and returned by end of Friday 5 March**		All

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5 March 8.30-9.30	Case Study – Wairoa Wastewater Treatment Plant	Online	Cameron Ormsby (Hawke's Bay DHB)
9.30-9.35	Break.	Online	All
9.35-10.05	Coronet Peak Ski Area Wastewater Treatment Plan – The Alpine Challenge	Online	Annika Grant (Stantec)
10.05-10.20	Break.	Online	All
10.20-10.35	Case Study – Urenui (Public Health Risk Assessment in relation to a septic tank vs estuary contamination issue)	Online	Lauren Woollard (Taranaki DHB)
10.35-10.40	Break.	Online	All
10.40-11.25	COVID-19 and Wastewater	Online	Brent Gilpin (ESR)
11.25-11.30	Break.	Online	All
11.30-12.15	What's new in on-site wastewater and what are the risks: case study – instrumenting an on-site wastewater management system in Canterbury	Online	Louise Weaver and Bronwyn Humphries (ESR)
12.15-12.20	Break.	Online	All
12.20-1.00	Greywater Reuse.	Online	Margaret Leonard (ESR)