



:Project Closure :Site Assessment – Maximising value

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Agenda

01 Project Closure

02 Maximising Value: GME reports

- Site Setting - Geology
- LNAPL Presence
- Conceptual Site Model

Tips & Tricks on how to create and deliver effective presentations

Site Closeout

- ❑ Site operation stopped for site divestment
- ❑ Desk top study was conducted
 - Initial Environmental Site Evaluation
- ❑ Borehole installations
- ❑ Soil Contamination investigations and Sampling
- ❑ GW monitoring and sampling for 3yrs
- ❑ Reports presented to DWS for closure.
 - DWS requested a further 3yrs of monitoring after a closeout presentation to them.
- ❑ Final report presented to DWS, and the closeout was referred to (DEA) DFFE
- ❑ Further engagements with DWS and DEA led to the final report in 2017.

Site Closeout cont'd

- ❑ Shell organised a meeting with DWS and DEA to discuss closure.
 - Further info requested
- ❑ A further meeting with DEA and DWS agreed for a closeout.
 - Shell received a letter from DWS advising that Shell had complied with all DWS requirements as stipulated in the terms that had been set for the project.

02

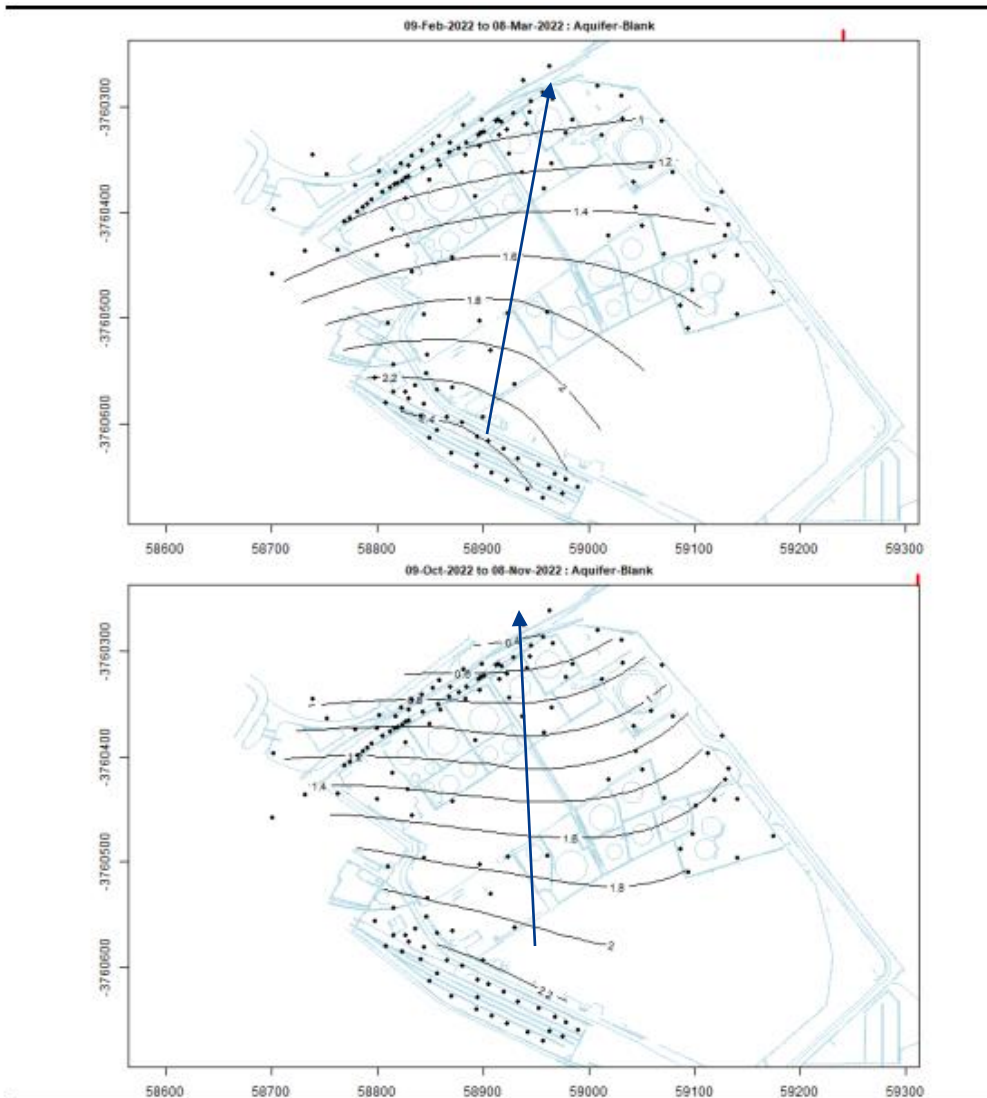
Maximising Value: GMEs, etc.

Site Geology

- Southeast and central parts of the Site
 - Light /dark/yellow brown, sandy FILL to ~ 2.0m bgl
 - White grey SAND with marine deposits, marine origin (only some locations in central portion) ~ up to 2.5m bgl
 - Dark grey, SAND with shells, marine origin ~up to 5.5m bgl
- Northern part of the Site
 - Yellow brown sand/ coarse grained quartzitic sandstone, highly variable FILL of varying depths up to ~3.6m bgl
- Pipelines
 - Varying depths of Fill material from less than 0.5 m to 1.0 m bgl
 - Grey brown SAND (Colluvium) up to 1.80 m bgl

Groundwater Flow Direction

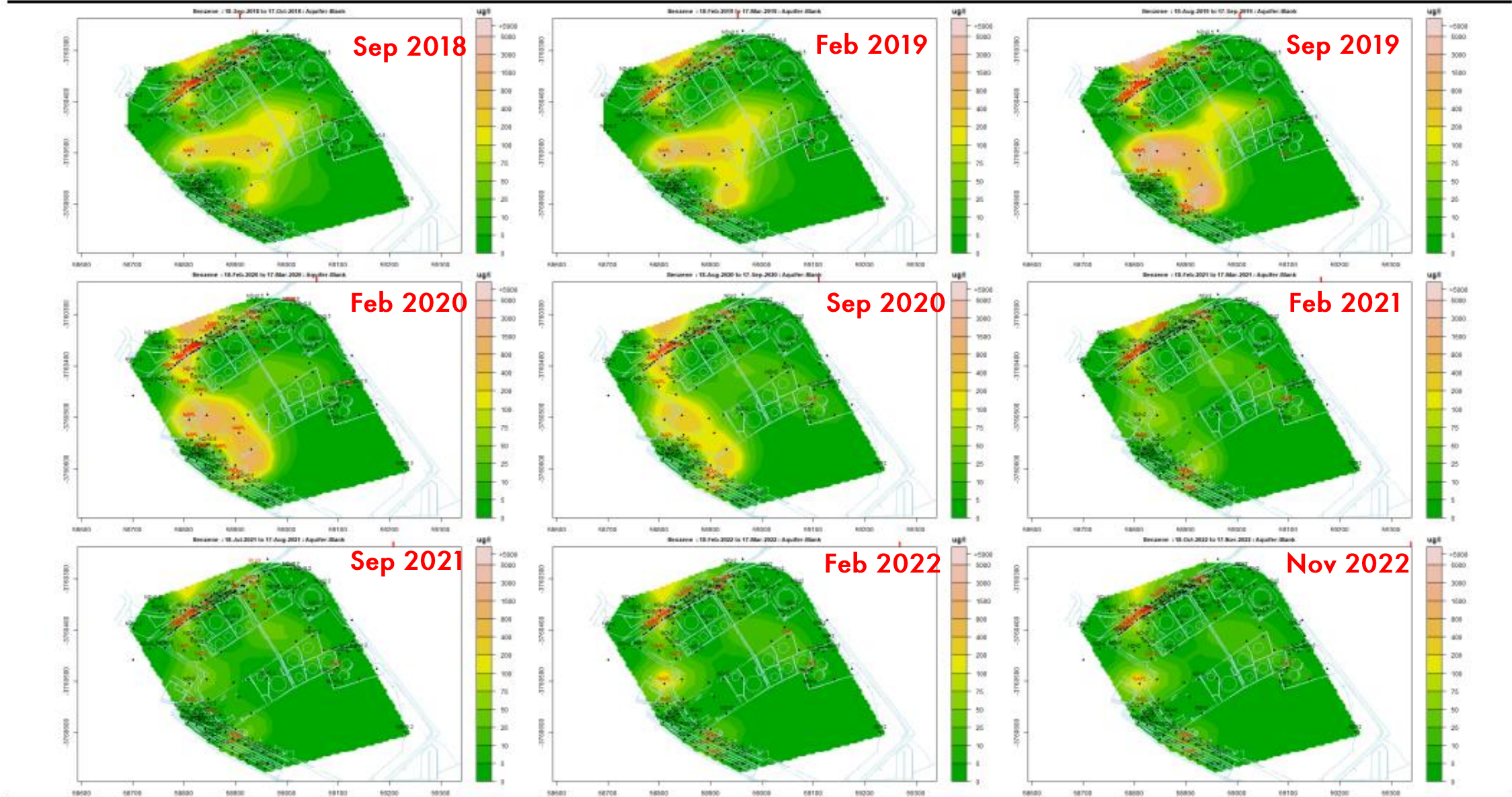
- Groundwater levels across the Site are shallow and vary between 1 m and 4.5 m bgl with a seasonal variation of approximately 1 m – 1.5 m



LNAPL Presence

- Several wells at the Site have consistently had Light Non-Aqueous Phase Liquid (LNAPL)
- Four LNAPL plumes were inferred at the Site, and these include:
 - **Plume 1**
 - No LNAPL detected in November 2022
 - **Plume 2**
 - LNAPL detected in 17 wells in November 2022
 - Average LNAPL apparent thickness was 0.08 metres (m)
 - Average groundwater elevation was 0.88 metres above mean sea level (m amsl)
 - **Plume 3**
 - LNAPL detected in 6 wells in November 2022
 - Average LNAPL apparent thickness was 0.23 m
 - Average groundwater elevation was 1.93 m amsl
 - **Plume 4**
 - LNAPL detected in 1 well in November 2022
 - Average LNAPL apparent thickness was 0.05 m
 - Average groundwater elevation was 1.57 m amsl

Dissolved Phase Hydrocarbons (Benzene)



Conceptual Site Model

- The following potentially complete source-pathway-receptor (S-P-R) linkages were observed for soil, LNAPL and groundwater impact at the Site:
 - Indoor vapour inhalation of hydrocarbons from LNAPL
- Risk assessment of the indoor and outdoor vapour inhalation from LNAPL was not performed as the LNAPL is either degraded and/or weathered, and is expected to contain limited volatiles
- Risks to construction workers was noted for risk assessment as it is considered a short-term risk to be mitigated through appropriate occupational health and safety measures

Q&A





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