

Level Fawr Sett

The Level Fawr Sett is located in the village of Pont-Rhyd-y-Groes in Ceredigion, 17km West of Aberystwyth. The Level Fawr Sett is composed of 5 separate lead mining areas; Level Fawr, Logaulas, Logaulas Taylors Shaft, Pen-y-Gist, Glog Fach, and Glog Fawr, historically referred to as the Lisburne mines. These mines have been collated due to the underlying drainage of the Level Fawr Adit, in Pont-Rhyd-y-Groes. The Level Fawr Adit, started in 1785 finished in 1815 runs for 1.7km south terminating at Glog Fawr mine, and was constructed to be the main drain for the Lisburne mines. Across these 5 mines the Level Fawr Adit drains an extensive system of underground workings.

The Level Fawr Adit runs into the River Ystwyth to the north; while a small proportion of ephemeral surface flow from Glog Fawr may run into the Nant Marchnant to the South, part of the Teifi catchment. The Lower Ystwyth is a WFD failing waterbody based on Pb, Zn, and Cd.

In June 2022, Arup completed a desk study at the Level Fawr Sett as part of the Catchment & Mines 2020/2021 Project. The objective was to gather information on a previously unvisited site in order to improve understanding of the site conditions and potential issues.

As part of the study water sampling was undertaken; this showed that there are exceedances of EQS of metal concentrations in the discharge from the Level Fawr Adit into the River Ystwyth. From the limited flow data recorded at Level Fawr, this is estimated to contribute 900Kg of Zinc and 200kg of Lead per year to the Afon Ystwyth. Along with the exceedance in EQS at Level Fawr Adit, exceedance was also seen in a number of ephemeral streams entering shafts throughout the Sett.

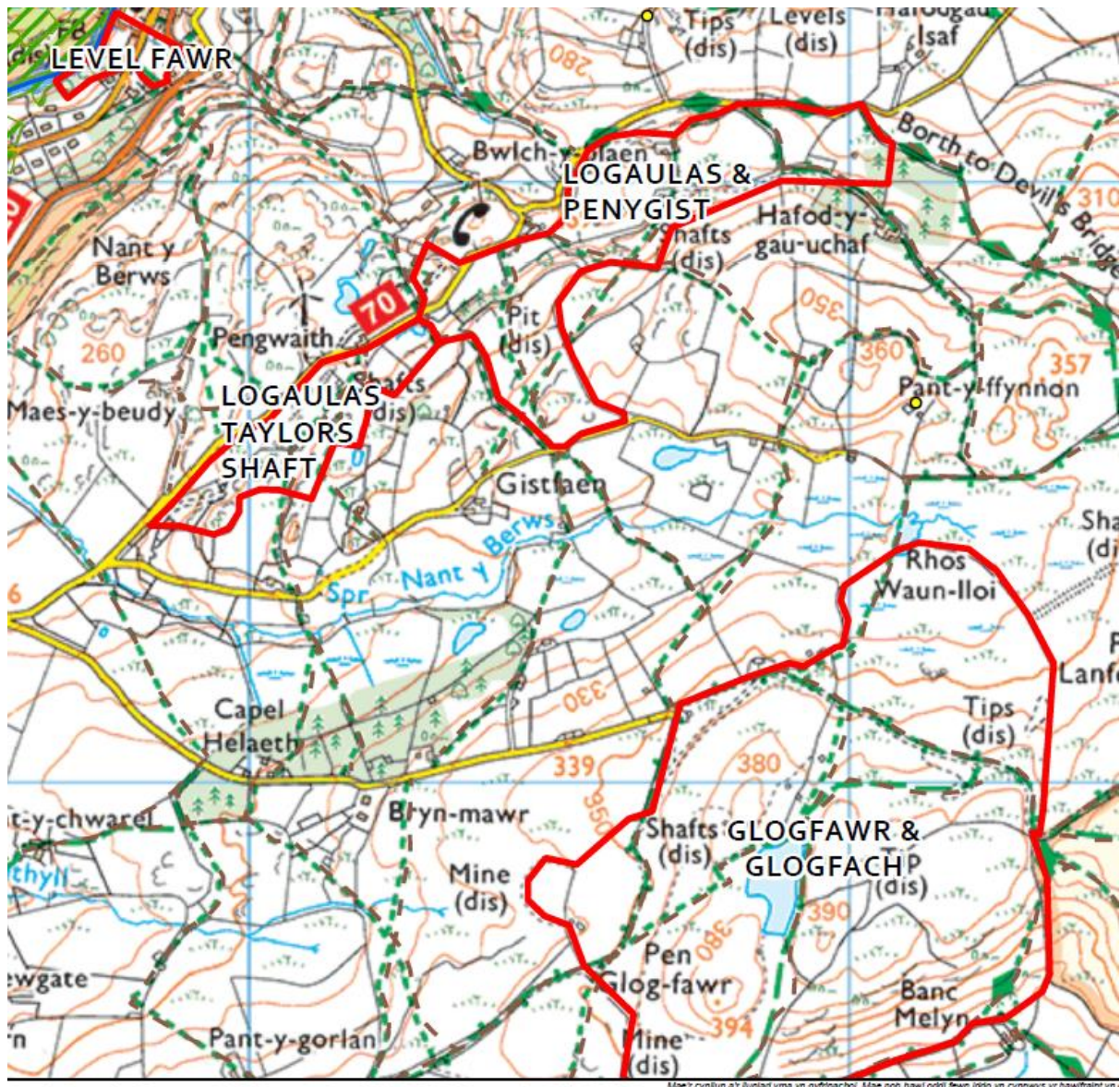
To address the identified risks, it is proposed the following works are undertaken as part of the project, with primary objective of reducing dissolved metal loading into the Afon Ystwyth;

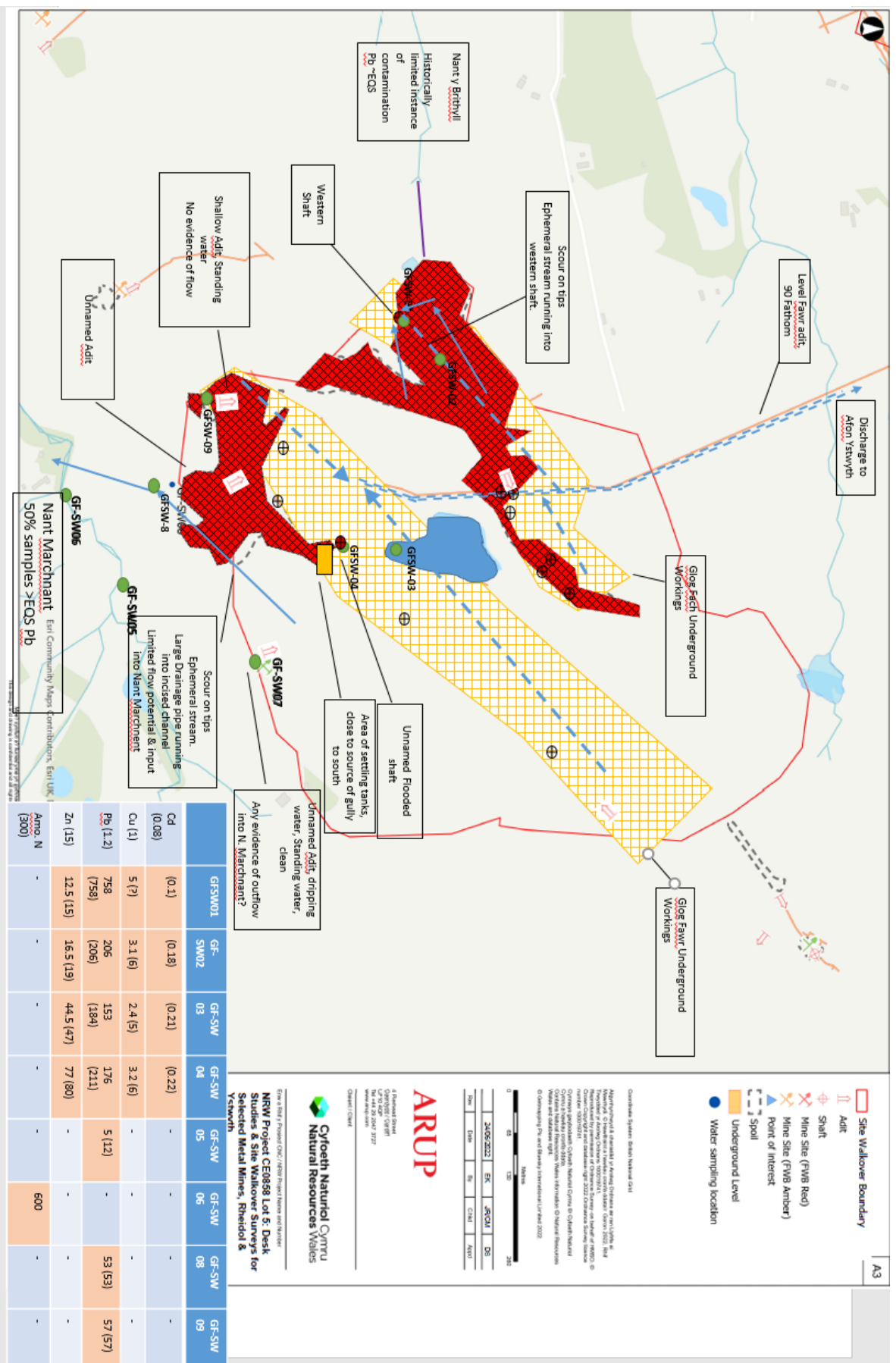
- Design and construct 3 flow gauging structures. One structure at Level Fawr Adit and 2 structures at Western shaft to measure volume of ephemeral streams running into Western Shaft. These structures could be fitted with automated and telemetered (dependant on signal assessment) level sensors to allow continuous data collection and remote monitoring; These structures could be fitted with automated and telemetered (dependant on signal assessment) level sensors to allow continuous data collection and remote monitoring;
- A water quality monitoring programme to include flow structures, mine water and surface waters;
- Optioneering, design, plan and construct Surface water intervention to prevent clean surface water becoming contaminated by open spoil at Glog Fach Mine
- Optioneering, design, plan and construct a mine water treatment facility, to treat the mine water discharges from the Level Fawr Sett, resulting in water quality improvements downstream.
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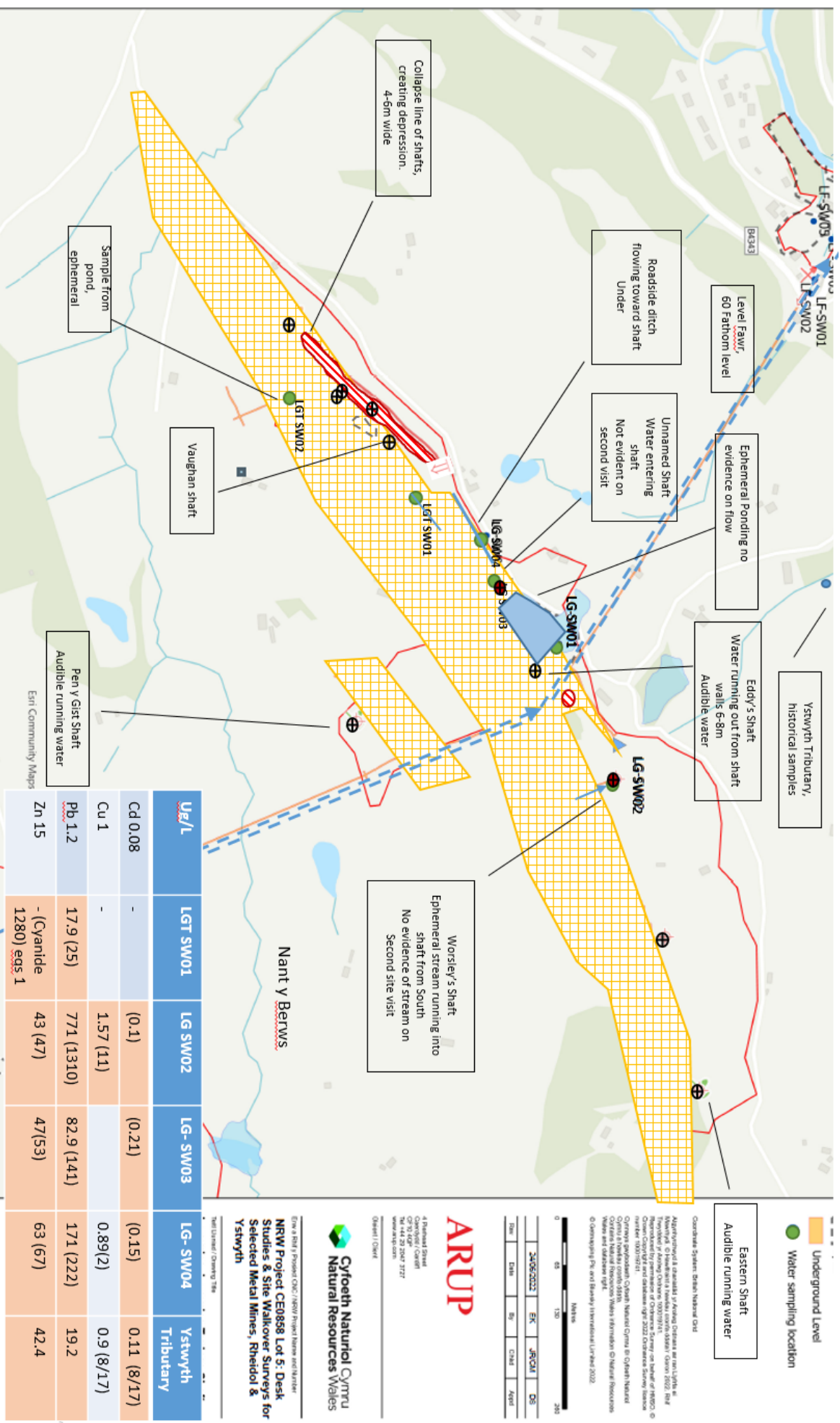
An Environmental checklist was produced by ARUP in the desk study reports;

<https://cyfoethnaturiolcymru.sharefile.eu/f/foabab37-a9a4-4f65-b311-af44270b3435>

Site Location Plan







spoil slope failure in the gardens of a residential property

waterwheel

B4343

near LIS

in channel

LF-SW05 - Small flow of water, which ponds directly up-gradient of the National Cycling track, and is located 20m south southwest of the waterwheel

	LF-SW01	LF-SW02	LF-SW03	LF-SW04	LF-SW05
Cd (0.08)	(2*)	0.0015	0.0016	0.0013	0.002
Cu (1)	1.02 (2)	1.07 (2)	1.03 (2)	-	-
Pb (1.2)	255 (260)	180 (180)	199 (200)	247 (250)	165 (170)
Zn (15)	1116 (1120)	802 (810)	849 (850)	721 (730)	991 (1000)