Short-to Medium-Term Strategies

	Objective	EPA Issue(s) Addressed	Proposed Actions
1	Ensure Woodlawn remains a zero-discharge site.	1, 2	Develop revised contingency measures to minimise the chance of discharges occurring (detailed below).
2	Ensure Veolia engages with the community in a timely manner regarding leachate and water management matters.	6	Veolia should continue to engage with the community in a timely manner regarding leachate and water management matters as required.
3	Determine revised and practical dates for emptying ED3N (and replacement of dam liners) and ED1.	10	Use the revised WBM to determine practical dates for emptying ED3N dams and ED1.
			Seek approval of revised date with the EPA and DPIE.
4	Measure evaporation on site to better inform future WBMs (recommendation from the 2022 LWMSA).	-	A class A pan evaporimeter with automatic refill, bird cage and telemetry is to be installed to measure evaporation at the site. This will allow for more accurate modelling of evaporation in future WBMs and better long-term calibration of assisted evaporators.
5	Update the assisted evaporation systems so that it is more efficient (recommendation from the 2022 LWMSA).	-	Investigate methods to improve utilisation of evaporators for varying wind directions.
			Installation of flow meters on mechanical evaporators will allow the WBM evaporation parameters to be updated so that more accurate forecasts can be provided.
6	Reduce the volume stored in all leachate dams.	9, 11, 12, 25	Transfer treated effluent from ED1 Coffer 1 to ED1 Coffer 2 upon its completion so that the volume of ED1 Coffer 1 is reduced to below minimum freeboard.
			Leachate (3N and 3SS) dams that have exceeded freeboard should be dewatered via the leachate treatment system to be treated in the LTP and transferred to ED1 Coffer 2 upon its completion.
			Consider developing a program to enable the reuse of treated leachate for usage on site. Protocols to contain runoff so that it doesn't leave the site should be included in this process.
7	Address ED3S seepage related issues.	17, 18, 19, 20	A suitably qualified professional should be employed to: i. Determine whether there are any points of leakage from ED3S as well as the nature and extent of any leakage, ii. Assess the current nature and extent of groundwater and surface water pollution from ED3S, and iii. Identify control and remediation measures to improve the integrity of ED3S and any ground or surface water pollution caused by ED3S. Subsequent actions are to be proposed pending the results of this investigation.
8	Reduce the volume of water stored in ED3S.	21	Continue current contingency measures (the use of assisted evaporation and spraying water over the walls of the bioreactor) to reduce the volume of water stored in ED3S.
			ED3S should be dewatered to ED1 as a last resort to prevent exceedance of freeboard levels.
			Consider developing a program to enable the reuse of water in ED3S for usages on site. Protocols to contain runoff so that it doesn't leave the site should be included in this process.
9	Consider measures to improve water and leachate management on site that were put forward in the Long-Term Leachate Treatment Solution Submission Report.	25	Consider whether the use of heat to enhance evaporation rates to reduce treated leachate volumes is feasible.
10	Prevent further pumping from ED3S to ED1.	31	All reasonable attempts to reduce the volume of water stored in ED3S should be made (see above recommendations).
11	Address ED1 Seepage related issues.	34, 35, 37, 38, 39, 40, 41	A suitably qualified professional should be employed to: i.Assess trends in seepage from ED1 to determine the effect on seepage rates of increased water levels in ED1 ii.Conduct groundwater testing to determine whether pollution is occurring iii.Determine whether the integrity of ED1 should be inspected more frequently (currently inspected once per year) due to increased hydraulic heads
			A revised monitoring program for ED1 will be developed pending the results of the above investigation and consider water quality, dam levels over time, storage utilised and remaining capacity in ED1.
			Lodge a request to modify the current EPL to incorporate additional monitoring bores that have been installed.

Long-Term Strategies			
12	Empty ED3N dams.	10	Assisted evaporation sprays should continue to be utilised in the ED3N dams.
			Seek relevant approvals to construct a third coffer dam do reduce the amount of leachate that is transferred to the ED3N dams. Constructability impacts of wet periods and COVID should be considered when determining timing for this to occur.
			Following the development of a third coffer dam, leachate stored in the ED3N dams should be recirculated through the LTP and transferred to the coffer dams for storage if: i. There is adequate capacity available in the coffer dams to receive leachate processed through the LTP while not exceeding 80% capacity.
			The WBM developed for the site should be used to continue to inform the site when transfers from the ED3N dams to the coffer dams can occur based on updated dam volumes.
			ED3N dams should be relined as soon as possible once they are emptied. A construction Quality Assurance and Material Quality Assurance Validation Report should be provided to the EPA so that storage of leachate in the ED3N dams can be recommenced.
			Consider options to process water from the ED3N dams and ED3SS through the .LTP
13	Provide a Construction Quality Assurance and Material Quality Assurance Validation Report for ED2 to the EPA to gain approval for the dam to be used as a stormwater store.	16	Confirm ongoing availability of ED2. If no longer available, remove from WMS and related documents.
			Strategies to reduce the volume in stored in ED1 and ED3S will be revised if ED2 unavailable.
14	Reduce volume stored in ED1.	32 and ED1 seepage related issues.	Installation of evaporation sprays in ED1
			Rehabiliation of the of old plant areas between ED1 and the bioreactor to reduce the catchment for ED1
			Consider developing a program to enable the application of stored volume in ED3S to land for dust suppression. Protocols to contain runoff so that it doesn't leave the site should be included in this process.
			Consider developing a program to enable the application of stored volume in ED1 to land via irrigation. Protocols to contain runoff so that it doesn't leave the site should be included in this process.
15	Empty ED3S so that an appropriate liner can be installed to prevent seepage into the underground Woodlawn mine workings.	17, 18, 19, 20	Additional strategies to empty ED3S will be explored following further discussion with Veolia.
		N/A	Treating of MBT leachate through Bioreactor system.