

MUSHROOM SUBSTRATE PLANT, MULGRAVE APPLICATION TO MODIFY APPROVALS FOR PROJECT AND CONCEPT PLAN (08_0255 MOD 1) REVISED STATEMENT OF COMMITMENTS

The statement of commitments previously submitted by the applicant and included in the project approval has been reviewed and amended to include revised wording for items 3.6, 4.4, 4.5, 4.6 and 4.7. These changes are necessary for consistency with the proposed modification, including revised odour management system and noise assessment.

1. Mushroom Farm - Construction

Outcome	Commitment		Timing
Environmental management	1.1	Prepare and subsequently implement an environmental management plan for construction, consistent with this environmental assessment and conditions of approval.	Prior to issue of construction certificate
	1.2	Identify and clearly mark vegetation to be retained.	Prior to construction
	1.3	Instruct all construction personnel of the requirements for environmental management on the site.	Prior to and during construction
Minimise soil erosion and sediment deposition	1.4	Implement erosion and sediment controls consistent with the erosion and sediment control plan and keep in place with adequate maintenance until work is complete or they are no longer required.	Prior to commencement of earthworks and thereafter as long as necessary
	1.5	Progressively rehabilitate areas disturbed during construction with grass or landscaping as designed	During construction
Control nuisance dust	1.6	Implement dust mitigation measures as follows: <ul style="list-style-type: none"> • restrict vehicles to a defined route within the site; • limit vehicle speeds on unsealed surfaces; • maintain haul routes for fill trucks in a damp state; • apply temporary stabilisation to any exposed surface that is unlikely to be further disturbed for a period of one month or longer; and • rehabilitate finished surfaces as soon as possible to limit wind-generated dust. 	During construction
Minimise construction noise	1.7	Implement construction noise mitigation measures as follows. <ul style="list-style-type: none"> • Construct the northern acoustic mound as early as practicable in the construction program; • adopt construction practices recommended by DECCW for best management and best available technology economically achievable; • select construction plant and equipment having regard to controlling noise emissions, including reversing alarm noise; 	During construction

Outcome	Commitment		Timing
		<ul style="list-style-type: none"> • reduce operating speeds of equipment where practical and switch off idle plant when not in active use; • arrange vehicular access to work areas to allow for forward vehicle travel, minimising reversing or manoeuvring wherever possible; • provide site induction and personnel/ contractor training in correct use of plant and equipment to minimise noise; • develop and implement a program to inspect and maintain mobile plant to ensure noise performance criteria are met; • comply with the standard construction hours of working; • establish a noise complaints procedure with contact phone number and logging and response protocols; and • review the use of mobile plant reversing alarms including altering work practices and/or replacing with less intrusive devices where practicable. 	
Manage construction traffic	1.8	Prepare in consultation with the RTA and implement a traffic management plan for construction, including signs warning traffic on The Northern Road of the heavy vehicle entry.	Prior to commencement of construction work.
	1.9	Construct the intersection of the site access road and The Northern Road to Type AU in accordance with the RTA <i>Road Design Guide</i>	Prior to issue of occupation certificate
Minimise visual impact	1.10	<p>Implement the following measures to reduce visual impact:</p> <ul style="list-style-type: none"> • select external building finishes and colours to reduce glare and minimise visual obtrusiveness. • construct and landscape the mound along The Northern Road frontage and the northern site boundary as soon as possible after site activities commence; • plant a mixture of semi-advanced trees, shrubs and groundcover on the mound to achieve early coverage and height enhancement; • maintain and nurture the landscaping on the mound with appropriate mulching, frequent watering at first and frequent inspections to correct any wind or animal damage and to replace failed plantings; • plant additional trees in the south eastern corner of the site to further restrict diagonal views from northbound vehicles on The Northern Road; • plant additional trees in the southern section of the site to further restrict views from the adjoining residence to the south towards the development area; • during each stage of the development, when the frame of the main building or building extension has been erected, undertake a visual assessment from The Northern Road and with the agreement of 	During construction and prior to issue of occupation certificate

Outcome	Commitment	Timing
	<p>owners, from adjoining properties. Where it is practicable to reduce visual impact:</p> <ul style="list-style-type: none"> • plant additional screening vegetation in strategic locations on the property, such as in the southern area, to further reduce visibility from The Northern Road and the residence to the south; • offer to residents on properties to the north to plant screening vegetation on their properties at locations agreed with them and if the offer is accepted, undertake the plantings for the residents to maintain; • during construction, minimise the area of physical disturbance to the land at any one time and revegetate any disturbed areas visible from beyond the site that are not required as hardstand. 	
Protect cultural heritage	<p>1.11 Implement the following protocols as required:</p> <ul style="list-style-type: none"> • should any Aboriginal object be identified during construction, work should cease and notification given to the NSW OEH, a qualified archaeologist and Aboriginal representatives of the Deerubbin LALC. The archaeologist is to develop an appropriate mitigation or management strategy in consultation with OEH and DLALC and the EMP is to be amended accordingly; • should skeletal remains be discovered, cease work at the location and report the find to the police. If the remains prove to be of Aboriginal origin advise DECCW, a qualified archaeologist and Aboriginal representatives of the Deerubbin LALC. 	During construction
Protect flora and fauna	<p>1.12 Implement flora and fauna protection measures as follows:</p> <ul style="list-style-type: none"> • avoid removing remnant trees wherever possible; • install temporary fencing to protect woodland remnants when undertaking construction work in the immediate vicinity that does not require disturbance of the woodland; • collect stormwater from the development in dams rather than directing it into woodland areas; • plant local native species from the Castlereagh Woodlands along The Northern Road frontage and elsewhere for landscaping to enhance the remnant of this community. A suitable species list has been provided. • manage the rural property during construction to maintain pasture and suppress weeds; • separately fence the groupings of threatened species located in the asset protection zone west of the spent substrate store and avoid disturbance to the fenced areas. 	Prior to and during construction

2. Mushroom Farm - Operation

Outcome		Commitment	Timing
Environmental management	2.1	Prepare and subsequently implement an environmental management plan for operation consistent with this EA and conditions of approval.	Prior to issue of occupation certificate for each stage
Minimise operational noise	2.2	Operate the farm in a manner to maintain noise levels at nearby sensitive receptors within DECCW criteria.	During operation
	2.3	<p>Implement operational noise mitigation measures as follows:</p> <ul style="list-style-type: none"> • undertake detailed design of buildings and structures to meet specified noise attenuation criteria as indicated in Table 10 of the mushroom farm noise assessment report; • select mechanical plant and equipment to meet sound power levels and/or acoustic performance indicated in Table 10 of the noise assessment report (see below); • construct a noise mound along the northern boundary with finished level at least 2.5 metres above the floor level of the main building; • construct a noise mound along the eastern boundary with finished level at least 2.5 metres above existing ground level; • modify moving floor substrate trucks to incorporate acoustic enclosures for trailer motors and residential grade mufflers to achieve a minimum 3 dB(A) noise reduction and result in a sound power level in the order of Lw100 dB(A); • maintain truck airbrake release discharge noise levels to Lw115 dB(A) or less; • require trucks to operate on the access roads at speeds not exceeding 20 kph; • fit “quacker” reversing alarms to mobile plant where practicable; and • incorporate the noise management protocols within the environmental management plan for the site. 	During operation
Avoid offensive odour	2.4	<p>Implement odour controls as follows:</p> <ul style="list-style-type: none"> • keep spent substrate retained on the site for refining under cover to prevent further wetting during rainfall; • turn and blend spent substrate from time to time to assist aeration; • remove collected solids from pit filters each week using a telescopic loader; and • manage and maintain the wash down water recycling system to prevent odour generation. • include in the environmental management plan a procedure for recording and responding to any complaints that may be received pertaining to operation of the facility 	During operation

Outcome		Commitment	Timing
Effectively manage operational water	2.5	Manage the operation to prevent discharge of process water from the site and to maximise use of collected and recycled water.	During operation
	2.6	Adequately maintain the sewage treatment plant to ensure satisfactory operation.	During operation
	2.7	Adequately maintain the wash down water recycling system to ensure satisfactory operation.	During operation
	2.8	Maintain 100% ground cover over parts of the site not subject to building work or operations.	During operation
	2.9	Maintain perimeter mounds so that rainfall runoff will continue to flow to natural drainage without ponding.	During operation
Protect flora and fauna	3.0	Continue to suppress weeds on the development site and protect remaining trees.	During operation
Bushfire Protection	3.1	<p>Implement the following measures to minimise bushfire risk:</p> <ul style="list-style-type: none"> • establish and maintain a defendable space of 10 metres to the west, north and south of each building. The defendable space is to be a clear area with unimpeded access for fire fighting; • on sides of the spent substrate store where there is no concrete apron, include a three-metre hardstand area as part of the defendable space; • provide a static water supply (water tank, not dependent upon electricity for pumping) to supplement the reticulated supply; • use non-combustible external cladding to the main building; • provide ember protection to the spent substrate store in the form of drencher sprays to keep the contents damp during a bushfire event; • design the structures to have concrete floors, steel roof cladding, non-combustible flashing at roof intersections with no gaps and non-combustible gutters and downpipes; • fit steel mesh screens to all windows and personnel doors on the northern and western elevations; • maintain an asset protection zone for 24 metres to the north, east and western aspects of the buildings with shrub layer managed so as not to exceed five tonnes per hectare. Existing trees do not require removal, but branches should not come within five metres; • provide a reticulated water supply compliant with relevant standards capable of providing emergency supply for fire fighting; • provide a rubber fire hose of minimum diameter 18 millimetres capable of reaching all elevations of all buildings; 	During operation

Outcome		Commitment	Timing
		<ul style="list-style-type: none"> maintain vehicle access to the site in compliance with the standard and fire brigade access to the northern and western asset protection zones; develop and adopt an emergency bushfire plan. 	
Monitor performance	3.2	Continue to monitor operations as specified in the environment management plan	During operation

3. Substrate Plant - Construction

Outcome		Commitment	Timing
Environmental management	3.1	Prepare and subsequently implement an environmental management plan for construction, or modify the existing EMP, consistent with this EA and conditions of approval.	Prior to issue of construction certificate
	3.2	Instruct all construction personnel of the requirements for environmental management on the site.	Prior to and during construction
Minimise soil erosion and sediment deposition	3.3	Implement erosion and sediment controls consistent with the erosion and sediment control plan and keep in place with adequate maintenance until work is complete or they are no longer required.	Prior to commencement of earthworks and thereafter as long as necessary
	3.4	Progressively rehabilitate areas disturbed during construction with landscaping or hardstand as designed	During construction
Control nuisance dust	3.5	Implement the following dust mitigation measures: <ul style="list-style-type: none"> limit vehicle speeds on unsealed surfaces; maintain unsealed haul routes for fill trucks in a damp state; and rehabilitate finished surfaces as soon as possible either with landscaping or hardstand, according to intended use. 	During construction
Minimise construction noise	3.6	Implement construction noise mitigation measures as follows: <ul style="list-style-type: none"> avoid operating the bulldozer and compactor simultaneously during filling operations; when concrete pours are taking place, locate concrete trucks and pumps in a manner that will maximise screening to residential properties to the south and west; construct the southern boundary wall or provide alternative noise attenuation in this location as early as practicable in the construction program; adopt construction practices recommended by DECCW for best management and best available technology economically achievable; select construction plant and equipment having regard to controlling noise emissions, including reversing alarm noise; 	During construction

Outcome		Commitment	Timing
		<ul style="list-style-type: none"> where practicable schedule the noisiest activities to occur during parts of the day when ambient noise levels are higher; undertake audits at receiver locations to monitor noise from site construction; establish a noise complaints procedure with contact phone number and logging and response protocols; undertake construction activities in accordance with AS 2436:1981, <i>Guide to Noise Control on Construction, Maintenance and Demolition Sites</i>, with all equipment demonstrating compliance with the noise levels recommended in the standard. 	
Manage construction traffic	3.7	Maintain the intersection of the site access road and Mulgrave Road in a safe condition suitable for heavy construction traffic including vehicles delivering fill.	During construction
Minimise visual impact	3.8	<p>Implement measures to reduce visual impact of the development as follows:</p> <ul style="list-style-type: none"> commence screen planting around the periphery of the extended platform area as early as possible during the project; during construction, minimise the area of physical disturbance to the land at any one time and revegetate any disturbed areas visible from beyond the site that are not required as hardstand; mulch fill batters as soon as possible after completion and maintain them to achieve total vegetation cover; continue to maintain previous landscaping and screen planting on the site to maximise screening of the plant; incorporate building materials of the same colour and texture as used in the existing plant, which minimise glare and visual obtrusiveness. 	During construction
Protect cultural heritage	3.9	<p>Implement the following protocols as required:</p> <ul style="list-style-type: none"> should any Aboriginal object be identified during construction, work should cease and notification given to DECCW, a qualified archaeologist and Aboriginal representatives of the Deerubbin LALC. The archaeologist is to develop an appropriate mitigation or management strategy in consultation with OEH and DLALC and the EMP is to be amended accordingly; should skeletal remains be discovered, cease work at the location and report the find to the police. If the remains prove to be of Aboriginal origin advise DECCW, a qualified archaeologist and Aboriginal representatives of the Deerubbin LALC. 	During construction
Protect flora and fauna	3.10	Suppress weeds on the construction site and protect existing landscape planting that is to be retained.	During construction

4. Substrate Plant - Operation

Outcome		Commitment	Timing
Environmental management	4.1	Prepare and subsequently implement an environmental management plan for operation, or modify the existing EMP, consistent with this EA and conditions of approval.	Prior to issue of occupation certificate for each stage
Production limit	4.2	Maintain average weekly production of Phase 1 substrate within upper limits as follows: <ul style="list-style-type: none"> • Stage 1 1600 tonnes • Stage 2 2400 tonnes • Stage 3 3,200 tonnes 	During operation
Minimise operational noise	4.3	Operate the plant in a manner to maintain noise levels at nearby sensitive receptors within DECCW criteria.	During operation
	4.4	Implement the following noise mitigation measures: <ul style="list-style-type: none"> • undertake detailed design of buildings and structures to meet requirements specified in section 7.4 of the substrate plant noise assessment report and where relevant, the assumptions in the acoustic review for modification 1, as follows: <ul style="list-style-type: none"> – Building walls (materials storage shed and bale breaking area) shall consist of concrete to a height of 2 metres above FFL followed by galvanised steel frame and galvanised wall/roof sheeting nominally 0.6 mm BMT and a minimum of Rw22; – Fan plant rooms for new pre-wet processing tunnels to south (Tunnels 1-6) and north (Tunnels 7-10) constructed with concrete walls (min Rw50) and composite roof/ceiling OR in situ concrete (min Rw40) – Penetration of fan rooms to be reviewed by acoustic consultant and appropriately detailed to avoid de-rating the structure; – New processing tunnels to be of concrete construction; – Construction materials of working hall between processing tunnels (1-6 and 7-10) typically concrete wall construction nominal installed noise reduction in the order of 40 dB (min Rw46) and composite roof/ceiling nominal installed noise reduction in the order of 25 dB (Rw31); – Proposed external fans identified on current design drawings (No 41, 42, 43, 44, 52, 53, 66, 67, and 68) to incorporate inlet/discharge attenuators; – Fan room intake for new Phase 2/3 building (Fan No 110-134 inclusive, 25 fans) subject to acoustic review; – Internal walls and roof of tunnels within phase 2/3 building precast or cast in situ concrete and/or hebel panels/blocks; 	During operation

Outcome		Commitment	Timing
		<ul style="list-style-type: none"> – Building wall cladding (Phase 2/3 building) consisting of insulated colorbond sandwich panels consistent with existing Phase 2/3 building proving a nominal installed noise reduction in the order of 23 dB(A) (Rw28 or greater). – Building roof cladding consisting of sheet metal (min 0.42 BMT) over fibreglass building blanket and medium duty thermofoil or similar and insulated colorbond sandwich panel (ceiling) consistent with existing Phase 2/3 tunnel building providing a nominal installed noise reduction in the order of 28 dB(A) (Rw34 or greater). – Final details of building designs subject to acoustic review prior to final specification – Final design/tender specification to be reviewed by an acoustic consultant; • select mechanical plant and equipment to meet acoustic performance and where relevant, sound power levels and/or acoustic performance in Table 10 of the acoustic assessment report for the substrate plant (see below); • require trucks to operate on the access roads at speeds not exceeding 20 kph; • fit “quacker” reversing alarms to mobile plant where practicable; and • incorporate noise management protocols within the environmental management plan for the site. 	
Avoid offensive odour	4.5	<p>Design, build, operate and maintain the plant in a manner:</p> <ul style="list-style-type: none"> • that does not cause offensive odour; • that restricts odour emissions to remain within limits specified in the environment protection licence. 	During operation
	4.6	<p>Continue to implement existing odour controls at the plant except where superseded by the modified proposal:</p> <ul style="list-style-type: none"> • under-cover storage for raw materials to keep them dry; • fully enclosed processing areas for all potentially odour-generating activities; • air-under system in the pre-wet and Phase 1 tunnels to improve aeration of composting material; • automatic control system for fans to maintain optimum air supply and extraction; • enclosed conveyor transport for tunnel loading, dispatch loading and transfer to Phase 2/3 tunnels; 	During operation

Outcome		Commitment	Timing
		<ul style="list-style-type: none"> a monitoring system to detect any faults or operational anomalies and immediately send an alarm to the Duty Manager at any time of day. 	
	4.7	<p>Implement the following additional odour control measures:</p> <ul style="list-style-type: none"> construct the approved second emissions treatment plant to a new design incorporating ammonia scrubbers and biofilters, instead of constructing a second bioscrubber and second chimney; install ductwork to convey extracted air from the current Phase 1 and pre-wet operating areas of the site and deliver it to the new emissions treatment plant; enclose the raw materials courtyard to contain chicken manure dust and enable controlled air extraction from this area; install exhaust ductwork from both the existing and future Phase 2/3 buildings; provide an enclosed conveyor from the pre-wet building to the Phase 1 tunnel building replacing the vehicle passageway to speed up the material transfer process and reduce the potential for fugitive emissions from this operation; provide controlled air extraction from all external conveyors. 	
Effectively manage operational water	4.8	Manage the operation to prevent discharge of process water from the site and to maximise use of collected and recycled water.	During operation
Improve runoff water quality	4.9	Implement and maintain the stormwater modifications recommended in the stormwater management plan , including orifice plates, reed bed and bio-basin.	During construction and operation
Minimise visual impact	4.10	Continue to manage the landscaped areas to ensure the vegetation screen remains effective.	During operation
Protect flora and fauna	4.11	Continue to suppress weeds on the development site and protect remaining trees.	During construction
Monitor and report performance	4.12	Continue to monitor operations and report results as specified in the environment management plan	During operation

Table 10 of the mushroom farm noise assessment report**Table 10: Plant/Equipment Sound Power Levels L_{Aeq} re: 10^{-12} Watts**

Plant Description	Sound Power Level								
	dB(A)	63	125	250	500	1k	2k	4k	8k
Truck (moving)	101	98	102	101	97	94	94	91	80
Truck (idle)	91	88	92	91	87	84	84	81	70
Refrigerated Truck (SB310 refrig. unit)	93	90	94	93	89	86	86	83	72
JCB Telescopic Handler	105	109	99	99	100	101	99	95	93
Nufab Compost Turner	93	93	94	93	90	88	84	80	75
Head Filling Activities (truck engine, filling machine & peat loading)	103	113	107	95	100	94	96	92	85
Cooling Towers x2 (each) (AquaCool MSS 187LS3)	99	91	87	88	90	95	93	87	84
Compressors x 5 (total) (PowerPax TT400)	93	82	82	85	85	89	86	79	83
Steam Generator (ST3021)	99	89	89	94	94	96	93	87	82
Humidification Boiler (Saacke SR1000/PAG10A)	90	104	101	94	85	79	76	72	64
Plant Room (space averaged) ¹	95	84	84	87	87	91	88	81	85
North Air Intake ²	85	74	74	77	77	81	78	71	75
Roof Air Discharge ²	85	74	74	77	77	81	78	71	75
AHU Ridge Vents ³	63	66	62	60	61	59	51	46	40

Note: 1 All fixed plant in purpose designed plant room resulting in space averaged SPL of 95dB(A)

2 Noise attenuation incorporated into plant room to result in source noise level of Lw85dB(A) for intake / discharge

3 AHU would be installed wholly within roof space. Source noise level based on Lw57 at discharge for AHU connected via ducted vents comprising a total of 74 vents, adjusted for 18 ridge top source points. AHU are ducted and could incorporate insulated ducting if required prior to discharge to meet specified limits.

Table 10 of the Substrate plant Noise assessment report**Table 10: External Plant/Equipment Sound Power Levels L_{Aeq} re: 10^{-12} Watts**

Plant Description	Sound Power Level								
	dB(A)	63	125	250	500	1k	2k	4k	8k
Super Chill Condensers EWK-D680 (x6)	83	79	81	81	78	75	73	76	72
Compressor Room (external door) x2	80	79	75	77	76	76	70	69	63
Bioscrubber 2 Fans – each (x2)	107	-	106	104	107	100	98	92	-
Conveyor Drive – New Phase 3 (E-W)	80	72	74	72	77	76	72	63	55
Conveyor Belt – New Phase 3 (E-W)	70*	75	75	70	70	63	59	52	43
Conveyor Drive – New Phase 3 (N-S)	80	72	74	72	77	76	72	63	55
Conveyor Belt – New Phase 3 (N-S)	70*	75	75	70	70	63	59	52	43
Conveyor Drive – Pre Wet	80	72	74	72	77	76	72	63	55
Conveyor Belt – Pre Wet	70*	75	75	70	70	63	59	52	43
FEL – Volvo L90E	102	115	104	100	98	99	92	92	87
FEL – Volvo L150E	105	120	104	103	102	99	97	95	91
FEL – Komatsu WA320	104	114	102	100	102	99	96	93	86
Traymaster Blender	110	109	110	109	108	104	102	99	96
Pre-Wet Shed (average in shed)	85	84	85	84	83	79	77	74	71
Truck (moving)	101	98	102	101	97	94	94	91	80
Loading Activities (Phase 2/3 average in loading hall)	86	81	84	85	85	81	78	73	65
Loading Activities (Phase 2/3 external facade)	63	66	68	63	61	60	49	43	37

* sound power level per metre of conveyor