

Integrated Statement of Commitments

The Environmental Assessment (EA) process has resulted in a number of identified and predicted issues in relation to the Four Arrows' development and all have been examined in detail through expert investigation and consultation. The results of these actions have been included within the original EA document and further additions have also been made and included with the Preferred Project Report (PPR).

These findings have translated into the Statement of Commitments (SOC) that are contained within each of the submitted documents. This is a legislative requirement however they contain the guarantees that a proponent intends to pursue once project approvals have been obtained.

Although these have been completed for both the EA document and the PPR submission the DoP have requested that the two relevant sections from the two documents be merged in order to complete their review and compile conditions of consent for this application. This has been completed as follows being an aggregation of the two containing a total of 298 guaranteed commitments which the proponent proposes to pursue upon approval.

Although the resultant table is a combination of the two separate submissions the purpose remains the same being:

"A Statement of Commitments has been included as part of this EA as per requirements of Part 3A of the EP & A Act 1997 [Division 2, 75F (6)]. The following sections detail the proponent's intent to address those issues identified throughout the development of this Environmental Assessment (EA) including those proposed by relevant agencies and stakeholders. The process has been comprehensive to ensure that all potential issues have been identified and addressed however not restricted to those included within the Director General's (DG) specifications.

Upon approval the proponent will commission the formulation of an Environmental Management Plan (EMP) that will include a Construction Environmental Management Plan (CEMP) and an Operational Environmental Management Plan (OEMP), to achieve a state of maintained and/or improved environmental integrity initiated by the EA process. The detailed commitments described within the following sections will form the basis of these plans."

The table spread over the following pages is from the original EA document with introduction of the appropriate PPR commitments. Attention is drawn to the following points:

- Applicable EA and PPR section numbers are listed along side each commitment as well as their corresponding commitment number. Commitment numbers 1-250 are from the original EA document whilst number 251-298 are merged commitments from the PPR document.
- The PPR commitments are either reaffirmed, expanded, inclusions or amended the definitions of which are explained in Section 6.0 of that document.
- Reaffirmed commitments in the table are denoted by two commitment numbers as they have been included in the original EA and for the purpose of conformation been revisited in the PPR document. Those that contain only one commitment number are more specific and may refer to several commitments in that section so have been given a unique ID.
- Expanded and inclusive commitments are listed separate by in their appropriate sections. Some may apply to a number of sections however they have only been included once in this SOC to alleviate confusion and repeated conditions of consent.

- Any amended commitments are included within the same commitment box as the original to reveal this amendment.
- Any superfluous commitments have been highlighted in white to indicate that they no longer specifically apply due to the revised proposal as contained within the PPR submission.

There have been other slight modifications to the original table including project phases. It is suggested that this final SOC submission supersedes those supplied in the EA and PPR when being utilised to formulate conditions of consent for this project.

Table of Merged Commitments

Air Quality					
Issue	EA Section No.	PPR Section No.	Commitment	Ref No.	Project Phase
General	4.2 5.1.1 5.1.2 5.2		Four Arrows commits to the development of a Construction Environmental Management Plan (CEMP) and an Operational Environmental Management Plan (OEMP) that addresses recommendations made by the Department of Planning (DOP) and other relevant agencies, and the grievances of stakeholders through the consultation process, that contains air quality monitoring and management strategies that will address the sources of air quality impacts and detail mitigation measures that will achieve air quality goals.	1	Post approval
		2.3.6	Four Arrows reaffirms its commitment to develop an <i>air quality management plan</i> .	256	Post approval
		2.3.7	Four Arrows includes a commitment within its air quality management plan and this is to <i>use on-site weather data for modelling purposes</i> , once a sufficient sample database has been retrieved.	258	Design
Dairy Sheds	3.3.2 3.4.2 5.2.1		Four Arrows commits to the design and the placement of dairy cattle sheds in order to minimise the drift of particulate and odours from the development site.	2	Design Construction
Distillers Grain	3.3.2 3.4.1 5.2.1		Four Arrows commits to the design of holding and storage facilities that minimises the drift of odours from wet distillers grain awaiting transport.	3	Design Construction
	4.1.2 5.2.1		Four Arrows commits to an ethanol production volume that will ensure that all by-product, which includes wet distillers grain, will not be over and above that which results in the unnecessary storage of derivatives on site.	4	Operation
	4.1.2 5.2.1	3.5.5	Four Arrows commits to secure contracts that will ensure the expeditious movement of unrequired wet distillers grain offsite and develop strategies that make provision for unexpected dropouts or terminations of agreements.	5 270	Ongoing
	4.1.2 5.2.1		Four Arrows commits to the suspension of ethanol production in the event that mechanisms for the collection of wet distillers grain are interrupted or negatively affected until other disposal arrangements can be implemented.	6	Operation
		3.5.5	Four Arrows expands upon its commitment to an air quality management plan to include <i>the incorporation of excess WDG not consumed by general markets</i> also into the soils of "Tubbo" as worst case commercial scenario but still a responsible environmental scenario.	271	Operational
Dust	5.2.2		Four Arrows commits to conducting construction activities that minimises the affects of dust on surrounding areas particularly towards the Kidman Way.	7	Construction
	5.2.2		Four Arrows commits to the operation of water trucks, and various sedimentation and dust capture systems, to ensure that the generation of dust is kept to a minimum as not to affect surrounding areas particularly towards the Kidman Way.	8	Construction
	4.11.1 5.2.2		Four Arrows commits to the installation of misting and sprinkler type systems within cattle yards, dry pens and exercise yards etc. to minimise the drift of dust to surrounding areas.	9	Operation
	5.2.2		Four Arrows commits to the installation of hooded augers and screened areas at grain transfer sites to capture and minimise the amount of dust drifting from the project site.	10	Operation
	4.11.1 5.2.2 5.5.1.10		Four Arrows commits to the sealing of all appropriate surfaces including roads, paths, yards and pens that may be the potential sources of dust.	12	Design Construction
		2.3.6	Four Arrows reaffirms its commitment to develop an air quality management plan that <i>specifically targets the generation and management of dust</i> throughout the site.	257	Post approval

Ethanol Plant	4.1.2 4.2.3.1 4.2.3.2 5.2.1		Four Arrows commits to the design and placement of the ethanol plant and associated infrastructure in order to minimise the drift of gaseous and particulate emissions from the project site.	13	Design Construction
		3.5.2.4 3.5.2.5	Four Arrows expands upon its commitment to an air quality management plan to include the installation of air pollution control equipment and operational procedures at the ethanol facility as described.	264	Design Construction Operation
Manure	4.1.4 4.8.4 5.5.2.13		Four Arrows commits to the design and construction of a manure collection system involving flood wash-down channels and sedimentation basins that minimises the production and drift of odours from the development site.	14	Design Construction
	4.1.5 4.1.6 5.5.2.14 5.5.2.15		Four Arrows commits to the design and construction of anaerobic and aerobic ponds to facilitate the rapid breakdown of effluent produced by the dairy enterprise and to minimise the amount of odours that drift from the development site.	15	Design Construction
	4.1.4 4.8.4 4.14 5.5.2.18		Four Arrows commits to the regular removal of manures from sedimentation basins, and the dry down and cleaning of anaerobic ponds when required, in order to minimise the drift of odours from the development site.	16	Operation
		3.5.3	Four Arrows reaffirms its commitment to an air quality management plan and this includes the regular removal of manures from sedimentation basins to "Tubbo" irrigation to minimise the drift of odours from the project site.	266	Operation
	4.1.4 4.1.8 4.8.4 5.5.1.8		Four Arrows commits to the regular removal of manures from open penned areas to reduce the drift of odours from the development site.	17	Operation
	4.1.4 4.1.8 4.8.1 5.5.1.8 5.5.2.18		Four Arrows commits to the acceptance of all manures onto its neighbouring Tubbo Station property and the expeditious incorporation of these manures into the soil profile to minimise the drift of odours from this source.	18	Operation
		3.5.3	Four Arrows includes a commitment within its air quality management plan and this is the composting of short term stored manures prior to spreading .	269	Operation
		3.5.3	Four Arrows includes a commitment within its air quality management plan and this is the gravelling of the road into "Tubbo" Station to ensure all weather daily access for the transportation of manures. The intended plan continues to include all applicable strategies described therein, accompanied by all monitoring and review, reporting and auditing commitments.	267	Construction Operation
Monitoring and Review	4.2.2, 5.2.1 5.2.2		Four Arrows commits to the installation of sensors and additional equipment including anemometers etc. to allow for the monitoring and modelling of particulate and odour movements to ensure that air quality goals are being achieved	19	Construction Operation
		3.5.2.5	Four Arrows expands upon its commitment to an air quality management plan to include key testing methodologies and record keeping requirements at the Ethanol facility as described.	265	Operation
	4.2.2, 5.2.1 5.2.2		Four Arrows commits to appointing designated officers/consultants to monitor air quality and to implement improvements necessary to ensure ongoing compliance to air quality standards.	20	Construction Operation
	4.2.2 5.1.2 5.2.2		Four Arrows commits to providing a process where grievances regarding air quality can be registered and addressed in an effective and expeditious manner.	21	Operation
Reporting	4.2 5.1.2		Four Arrows commits to environmental performance reporting that will be forwarded as required to relevant agencies and allow for the updating of CEMP's and OEMP's	22	Construction Operation

			Air Quality		
Issue	EA Section No.	PPR Section No.	Commitment	Ref No.	Project Phase
Auditing	4.2.2 5.1.2		Four Arrows commits to allowing third parties to audit air quality records and review management strategies in order to ensure compliance to air quality standards	23	Construction Operation
	5.1.1		Four Arrows commits to the upgrading of structures to mitigate odours and if necessary the relocation of affected residents currently inhabiting the company's neighbouring property; Farm 641	24	Construction Pre-operation
Mitigation	4.2.6 5.2.1 5.2.2		Four Arrows commits to implementing all mitigation measures in relation to the management of air quality identified throughout the EA process.	25	Design Construction Operation

Nutrients					
Issue	EA Section No.	PPR Section No.	Commitment	Ref No.	Project Phase
General	4.1.8 5.1.1 5.1.2 5.5		Four Arrows commits to the development of a CEMP and an OEMP that addresses recommendations made by the Department of Planning (DOP) and other relevant agencies, and the grievances of stakeholders through the consultation process, that contains nutrient monitoring and management strategies that will address the sources of nutrient impacts and detail mitigation measures that will achieve minimal movement of nutrients produced by the development into the environment.	26	Post approval
	4.1.8 5.5		Four Arrows commits to a site design and management strategy that will result in minimal net losses of nutrients into the environment from sources including runoff which will contaminate the environment and in particular groundwater systems.	27	Operation
	4.1.5 4.1.8		Four Arrows commits to a management strategy that ensures that all liquid waste is collected and contained in ponds with the removal of residue solids once alternate ponds are dried out.	28	Operation
	4.1.8		Four Arrows commits to a management strategy that ensures that no high nutrient laden water will be used for the purposes of irrigation unless prior concurrence of the relevant agency is obtained in writing.	29	Operation
	4.1.8 4.8.1 4.14 5.5.1.8 5.5.2.18		Four Arrows commits to maintaining ownership of farms throughout the CIA; the land area and suitability of which can accommodate volumes of manure produced by the dairy enterprise and damaged grain unable to be utilised in ethanol production.	30	Ongoing
	4.1.8		Four Arrows commits to promoting the use of manures on affiliate company owned irrigation enterprises throughout the CIA in order to create a demand for manure from other producers.	31	Operation
Monitoring & Review	4.1.8		Four Arrows commits to regularly conduct soil nutrient status testing, and modelling comparisons to nutrient export data, to ascertain soils potential to continue to bind nutrients for further crop exploitation at Tubbo Station.	32	Operation
	4.1.8		Four Arrows commits to appointing designated officers/consultants to monitor nutrient movements throughout the system, and to assist with implementation of any improvements necessary in order to ensure minimal nutrient movement into the environment.	33	Operation
	4.1.8		Four Arrows commits to working closely with relevant agencies to design and implement monitoring programmes that will assist with the detection of the leaching of nutrient into the environment.	34	Design Operation
Reporting	5.1.1		Four Arrows commits to environmental performance reporting that will be forwarded as required to the relevant agencies and allow for the updating of CEMP's and OEMP's.	35	Operation

Auditing	5.1.1		Four Arrows commits to allowing third parties to audit nutrient monitoring records and review management strategies in order to ensure minimal nutrient movement into the environment.	36	Operation
Mitigation	5.1.1		Four Arrows commits to implementing all mitigation measures in relation to the management of nutrient movements identified throughout the EA process.	37	Design Construction Operation

Noise/Vibration					
Issue	EA Section No.	PPR Section No.	Commitment	Ref No.	Project Phase
General	4.3 5.1.1 5.1.2 5.3		Four Arrows commits to the development of a CEMP and an OEMP that addresses recommendations made by the Department of Planning (DOP) and other relevant agencies, and the grievances of stakeholders through the consultation process, that contains noise and vibration monitoring and management strategies that will address the sources of noise impacts and detail mitigation measures and will achieve noise and vibration goals.	38	Post approval
	4.3.2.4		Four Arrows commits to construction periods that will result in the least possible noise impact on surrounding receptors.	39	Construction
	4.3.2.4 5.3.1		Four Arrows commits to taking all possible steps towards mitigating construction noise that will impact on surrounding receptors.	40	Construction
	4.3.3.1 4.3.3.2 5.3.2		Four Arrows commits to taking all possible steps to mitigate the noise produced by plant and equipment associated with the development through acoustic dampening.	41	Design Operation
	4.3.3.1 5.4		Four Arrows commits to reducing noise impacts created by increased vehicle movements on access and egress roadways servicing the development, by encouraging car pooling, maximizing the back loading of heavy vehicles, and supplying group transportation if assessed to be a viable option and/or encouraging local bus companies to provide a transportation service.	42	Operation
	4.4.4 5.4		Four Arrows commits to reducing noise impacts created by increased vehicle movements on access and egress roadways servicing the development by limiting heavy transport movement to daylight hours (7.00am – 10.00pm).	43	Operation
	4.3.1 5.3.1		Four Arrows commits to the design and construction of a sound proofing barrier to mitigate the affect of noise on the companies neighbouring property Farm 641.	44	Design Construction
	4.3.1 5.3.1		Four Arrows commits to the upgrading of structures to mitigate noise and if necessary the relocation of affected residents currently inhabiting the companies neighbouring property Farm 641.	45	Design Construction
Monitoring & Review	4.3.2 5.3.2		Four Arrows commits to the installation of sensors and additional equipment, to allow for the monitoring and modelling of noise levels and types, to ensure that noise goals are being achieved.	46	Construction Operation
	4.3.2		Four Arrows commits to appointing designated officers/consultants to monitor noise and vibration levels, and to implement any improvements necessary to ensure ongoing compliance to noise and vibration standards.	47	Construction Operation
	4.3.2.2 5.4		Four Arrows commits to working closely with relevant agencies to monitor variations in noise levels in neighbouring townships, particularly Darlington Point, from increased vehicle movements.	48	Design Construction Operation
	4.3.2 5.1.2		Four Arrows commits to providing a process where grievances regarding noise and vibration levels can be registered and addressed in an effective and expeditious manner.	49	Operation
Reporting	5.1.2		Four Arrows commits to environmental performance reporting that will be forwarded as required to the relevant agencies and allow for the updating of CEMP's and OEMP's.	50	Construction Operation
	4.3.2		Four Arrows commits to allowing third parties to audit noise and vibration level	51	Construction

Auditing	5.4.2		records and review management strategies in order to ensure compliance to noise and vibration level standards.		Operation
Mitigation	5.1.1		Four Arrows commits to implementing all mitigation measures in relation to the management of noise and vibration identified throughout the EA process.	52	Design Construction Operation

Traffic/Transport					
Issue	EA Section No.	PPR Section No.	Commitment	Ref No.	Project Phase
General	4.4 5.1.1 5.1.2 5.4		Four Arrows commits to the development of a CEMP and an OEMP that addresses recommendations made by the Department of Planning (DOP) and other relevant agencies, and the grievances of stakeholders through the consultation process, that contains traffic monitoring and management strategies that will address the sources of traffic impacts and detail mitigation measures and which will achieve traffic management goals.	53	Post approval
		2.3.5	Four Arrows expands upon its commitment to a traffic management plan to include adherence to all RTA conditions of development consent that are included once reviewed by the DoP.	255	Design Construction Operation
	4.4.3.4 5.4		Four Arrows commits to operational periods that will result in the least possible traffic impact to achieve a high level of safety and reduce traffic delays (7.00am – 10.00pm).	54	Operation
	4.4.3.4 4.4.3.5		Four Arrows commits to encouraging safety and alleviating delays created by increased vehicle movements, by supporting car pooling, maximising the back loading of heavy vehicles, and supplying group transportation if assessed to be a viable option and/or encouraging local bus companies to provide a transportation service.	55	Operation
	4.4.5 5.4		Four Arrows commits to contributing towards a road upgrade, adjacent to the development site on the Kidman Way that will provide safe and efficient access and egress for heavy transport, staff and support vehicles.	56	Design Construction
	4.4.5 5.4		Four Arrows commits to the design and construction of an internal road structure that will allow for the safe and efficient movement of all vehicles onto, around and off of the development site.	57	Design Construction
	4.4.5 5.4		Four Arrows commits to a site design and construction standard that will be sufficient to allow off street parking for trucks waiting to unload and pick-up and to cater for high volume periods.	58	Design Construction
	4.4.5 5.4		Four Arrows commits to a site design and construction that will accommodate the parking of all staff vehicles and any ancillary vehicles that may be present during normal operations of the development.	59	Design Construction
	4.4.5 5.4		Four Arrows commits to incorporating into the internal roadway system, road crossings and pathways that will allow for safe pedestrian movement.	60	Design Construction
	4.4.4 5.4	3.12	Four Arrows commits to continuing its support for the upgrading and re-opening of the Willbriggie railhead to reduce the need for long distance transportation of resources and the potential transportation of product.	61 293	Ongoing
		3.12	Four Arrows includes a commitment within its traffic/transport management plan and this is to continue to negotiate with CICL for the upgrade of Eulo Road bridges to support B-Double traffic.	294	Post Approval
Monitoring & Review	4.3.2 5.4		Four Arrows commits to the installation and maintenance of sensors to maintain accurate records of vehicle movements and class.	62	Construction Operation
	5.4		Four Arrows commits to appointing designated traffic officers/consultants to monitor vehicle movements onto, around and off of the development site, and to implement any improvements necessary to ensure the effective and efficient movement of vehicles and the safety of personnel and livestock.	63	Construction Operation
	4.4.4			64	Design

	5.4		Four Arrows commits to working closely with relevant agencies to monitor traffic impacts in neighbouring townships, particularly Darlington Point and at the Willbriggie rail crossing, from increased vehicle movements.		Construction Operation
	5.1.2		Four Arrows commits to providing a process where grievances regarding traffic and vehicle movements can be registered and addressed in an effective and expeditious manner.	65	Operation
Reporting	5.1.2		Four Arrows commits to environmental performance reporting that will be forwarded as required to the relevant agencies and allow for the updating of CEMP's and OEMP's.	66	Construction Operation
Auditing	4.3.2 5.1.2		Four Arrows commits to allowing third parties to audit traffic records and vehicle movement records, and review management strategies in order to ensure efficiencies, safety and amenity.	67	Construction Operation
Mitigation	5.1.1		Four Arrows commits to implementing all mitigation measures in relation to the management of traffic/transport identified throughout the EA process	68	Design Construction Operation

Water Dynamics					
Issue	EA Section No.	PPR Section No.	Commitment	Ref No.	Project Phase
General	4.5 5.1.1 5.1.2 5.5		Four Arrows commits to the development of a CEMP and an OEMP that addresses recommendations made by the Department of Planning (DOP) and other relevant agencies, and the grievances of stakeholders through the consultation process, that contains water monitoring and management strategies that will address the sources of water impacts and detail mitigation measures and will achieve water management goals.	69	Post approval
		3.10.2	Four Arrows reaffirms its commitment to an integrated water management plan and this will include stormwater, drainage and all waste water treatments in consultation with Coleambally Irrigation Cooperative Ltd to ensure full integration with the CIA LWMP.	291	Post Approval
	5.5.2.13		Four Arrows commits to a project land and water management plan that includes contingencies for surface and stored water management in the event of an unlikely extreme rainfall period, being of the order of 150mm in a 24 hour period that will endeavour to minimise the escape of contaminated water into the CICL drainage system.	70	Design Operation
	4.5.1.1	3.10	Four Arrows commits to continue to secure water sources beyond existing entitlements to ensure adequate and consistent supplies.	71 290	Ongoing.
		5.4.12	Four Arrows includes a commitment within its water management plan (also affecting waste management plans) and this is the construction of infrastructure including recycling ponds and evaporation basins plus operational procedures to accommodate the revised water management strategy as described.	297	Design Construction Operational
Ground Water	4.1.5 to 4.1.7. 4.5.3.1 to 4.5.3.6. 5.5.2.4 5.5.2.8 5.5.2.13 5.5.2.14 5.5.2.15 5.6		Four Arrows commits to the design, placement and construction of water collection and storage systems to be consistent with the objectives of the Coleambally Land & Water Management Plan and as not to affect groundwater levels and/or quality, including the use of a 3 tier storage treatment (geosynthetic membrane liner, leakage, monitoring and capture system and compacted clay liner) for Category 3 storage areas.	72	Design Construction
	4.5.3.6 5.5.2.2 5.6		Four Arrows commits to conducting further field testing prior to construction to ensure that the design and placement of water collection and storage systems will prevent water from across the development site, both from natural and manipulated flows, from accessing the local and regional groundwater sinks.	73	Design Pre-construction
		3.3.1 3.4.1	Four Arrows includes a commitment within its water management plans and this is to supply further hydro-geotechnical data if required once a specific brief of needs and justification has been forwarded by the authority concerned.	259	Pre-design

	5.5.2.2 5.5.2.17 5.6		Four Arrows commits to the design and placement of water storages to be upon the most appropriate soil types available at the proposed site, or where not possible, to provide engineered solutions to mitigate potential risks.	74	Design Construction
	5.5.2.2 to 5.5.2.15.	3.4.4	Four Arrows commits to applying engineering methods and other technologies upon areas that are to be utilised for infrastructure including water storages, dairy free-stall sheds and heifer drylot pens, to mitigate accessions to groundwater.	75 263	Design Construction
	5.5.2.2 to 5.5.2.16. 5.5.2.18		Four Arrows commits to the bunding of all Category 2 and 3 areas so as to contain spillages and contaminated runoff escaping into the environment and accession to groundwater.	76	Design Construction
	5.5.2.3		Four Arrows commits to the design and construction of the ethanol plant that will capture, isolate and categorise water from rainfall events, mitigating accessions to groundwater.	77	Design Construction
	5.5.2.5		Four Arrows commits to the design and construction of grain bunkers that will capture, isolate and categorise water from rainfall events mitigating accessions to groundwater	78	Design Construction
	5.5.1.6 5.5.2.6		Four Arrows commits to the design and construction of truck wash down bays that will capture, isolate and categorise water from rainfall events, mitigating accessions to groundwater.	79	Design Construction
	5.5.2.7		Four Arrows commits to the design and construction of administration buildings that will capture, isolate and categorise water from rainfall events, mitigating accessions to groundwater.	80	Design Construction
	5.5.2.9		Four Arrows commits to the design and construction of the commodity shed, milking barn and milk storage that will capture, isolate and categorise water from rainfall events, mitigating accessions to groundwater.	81	Design Construction
	5.5.2.10		Four Arrows commits to the design and construction of free stall sheds, maternity, and hospital sheds that will capture, isolate and categorise water from rainfall events, mitigating accessions to groundwater.	82	Design Construction
	5.5.2.11		Four Arrows commits to the design and construction of heifer dry lot pens that will capture, isolate and categorise water from rainfall events, mitigating accessions to groundwater.	83	Design Construction
	5.5.2.12		Four Arrows commits to the design and construction of cattle yards that will capture, isolate and categorise water from rainfall events, mitigating accessions to groundwater.	84	Design Construction
		3.5.3	Four Arrows includes a commitment within its water management plans and this is the construction of a bunded compacted clay pad for the short term storage of manures at "Tubbo".	268	Design Construction
		3.7.1.2	Four Arrows includes a commitment within its water management plans and this is to adhere to a best management waste water quality programme in order to maintain waste water quality above that of current groundwater conditions, to ensure that any unpredictable or unforeseen accession will not be detrimental to existing groundwater supplies.	279	Operation
	5.5.2.4 5.5.2.8 5.5.2.14 5.5.2.15 5.5.2.17	3.7.2	Four Arrows commits to the engagement of an experienced geotechnical engineer for the design, construction commissioning and operation of storages, and other activities, which requires expert knowledge for the abatement of negative groundwater effects. Four Arrows amends its commitment to a water management plan this includes the engagement of an experienced geotechnical engineer to also partake in the assessment and selection of appropriate mortality disposal sites of which will also be included within waste management plans.	85 283	Design Construction Operation
	5.5.2.6 5.5.2.7 5.5.2.16 5.7.1 5.9.1		Four Arrows commits to landscaping and the planting of deep rooted, indigenous native flora, to assist with evapotranspiration of groundwater, and excess water which would otherwise percolate into aquifers.	86	Design Construction

Surface Water	4.5.1.1 4.5.2.1 5.5.1.1 5.5.1.7		Four Arrows commits to the inclusion of buffer storages within its development design to ensure constant supply in the event that CICL closes delivery channels for maintenance or in periods of emergency repairs to the delivery system.	87	Design Construction
	4.5.2.2 4.5.2.3 4.5.2.4 5.5.1.11		Four Arrows commits to the design and construction of drainage systems that will collect the maximum possible volumes of surface water runoff to be utilised by the production and support processes so as to not overburden or contaminate CICL drainage channels.	88	Design Construction
	4.5.2.4 5.5.1.1 to 5.5.1.11		Four Arrows commits to the design and construction of water capture systems that collect the maximum possible volumes of precipitation from roofs and hard surfaces to be reused onsite.	89	Design Construction
	4.5.2.4 5.5.1		Four Arrows commits to maximizing the recycling of water from all processes including ethanol and dairy production and the associated support infrastructure.	90	Design Construction Operation
	5.5.1.2		Four Arrows commits to the appropriate design and construction of structures and infrastructure to accommodate the storage and handling of chemicals and hazardous materials as not to contaminate or affect the quality of surface water runoff.	91	Design Construction
	5.5.1.2		Four Arrows commits to the design of procedures and protocols, and the training of staff, in the handling of chemicals and hazardous materials particularly spillage management to alleviate the risk of affecting the quality of surface water runoff.	92	Operation
	5.5.1.3		Four Arrows commits to the design and construction of workshop areas that will contain any fuel spillages, which excludes inflows from other site sources allowing for the appropriate isolation, collection and categorisation of runoff from these areas.	93	Design Construction
	5.5.1.6 5.5.2.6		Four Arrows commits to the appropriate design and construction of truck wash down bays to collect contaminants and exclude inflows from other site sources allowing for the appropriate isolation, collection and categorisation of runoff from these areas.	94	Design Construction
	5.5.1.4		Four Arrows commits to the dewatering of distillers grain and the recycling of the water back through the ethanol system as not to create unnecessary burdens on the integrated water collection systems.	95	Operation
	5.5.1.5 5.5.2.5		Four Arrows commits to the design and construction of grain storages that limits the contamination of runoff and excludes inflows from other site sources allowing for the appropriate isolation, collection and categorisation of runoff from these areas.	96	Design Construction
	5.5.1.4		Four Arrows commits to the design and construction of appropriate facilities to store wet distillers grain awaiting transport from the development site, which contains and captures gravitational water losses.	97	Design Construction
	5.5.1.1 5.5.1.7		Four Arrows commits to the design and construction of a substantial bund or containment bank, which could be used as a site access road, encompassing the entire dairy enterprise area and its associated waste treatment facilities, which also excludes inflows from other site sources allowing for the appropriate isolation, collection and categorisation of runoff from these areas.	98	Design Construction
	5.5.1.8 5.5.2.13		Four Arrows commits to the design and construction of banded areas that are collection points for manure scrapings, which also excludes inflows from other site sources allowing for the appropriate isolation, collection and categorisation of runoff from these areas.	99	Design Construction
	4.8.4 5.5.1.8 5.5.2.18		Four Arrows commits to the application of manures on its Tubbo Station at a rate that will result in minimal nutrient losses to the environment from the action of surface water.	100	Operation
	5.5.1.9 5.7.1 5.9.1		Four Arrows commits to landscaping that will assist with the flow of drainage water, that will minimise contamination due to erosion, and that will not allow free water to remain within the project site.	101	Design Construction
	5.5.1.10 5.5.2.3 5.5.2.5 5.5.2.7 5.5.2.9 5.5.2.12		Four Arrows commits to the sealing of all possible surfaces including the internal roadway system to assist with the capture of surface water and to reduce contamination due to erosion.	102	Design Construction

	5.5.1.11 5.5.2.13 5.5.2.14 5.5.2.15		Four Arrows commits to the design and construction of water storages that will accommodate waste water from production processes and increased surface water runoff in the event of high rainfall periods or repetitive storm events.	103	Design Construction
	3.3.2 3.4.3 4.1.7		Four Arrows commits to the integration of a wetlands area within the development design as part of the integrated surface runoff collection system, the water of which can be reused for dairy operations or limited landscape irrigation.	104	Design Operation
Monitoring and Review	4.5.3.6 5.5.1.1		Four Arrows commits to the installation of piezometers throughout the site prior to final design to assist with the design and placement of water collection and storage systems.	105	Pre-design
	4.5.3.6 5.5.1.1 5.5.2.4 5.5.2.8 5.5.2.14 5.5.2.15		Four Arrows commits to the installation of piezometers throughout the site to provide data to assess impacts on groundwater levels and quality.	106	Pre-construction
		3.4.4	Four Arrows expands upon its commitment to water management plans to include the installation of piezometers , at specific locations being one at each corner of the new enhanced waste water management system, one at each corner of the combined free-stall and dry lot pen areas, and a single piezometer at the north section of the ethanol plant.	262	Construction
	4.5.3.6		Four Arrows commits to appointing designated officers/consultants to monitor surface water movements and quality, and groundwater levels and quality, and to implement any improvements necessary to ensure adverse effects on groundwater levels and/or quality are not occurring.	107	Construction Operation
	5.5.1.1		Four Arrows commits to working closely with CICL and other relevant agencies to maintain and/or improve groundwater levels and quality through performance based monitoring and best management practice.	108	Construction Operation
	5.1.2		Four Arrows commits to providing a process where grievances regarding surface water runoff and quality, and groundwater levels and/or quality, can be registered and addressed in an effective and expeditious manner.	109	Construction Operation
Reporting	5.1.2		Four Arrows commits to environmental performance reporting that will be forwarded as required to the relevant agencies and allow for the updating of CEMP's and OEMP's .	110	Construction Operation
Auditing	5.1.2		Four Arrows commits to allowing third parties to audit groundwater records and review management strategies, in order to ensure that the development is not contributing adversely to surface runoff, and groundwater levels and quality.	111	Construction Operation
Mitigation	5.1.1		Four Arrows commits to implementing all mitigation measures in relation to the management of water dynamics identified throughout the EA process.	112	Design Construction Operation

Hazards and Risks					
Issue	EA Section No.	PPR Section No.	Commitment	Ref No.	Project Phase
General	4.6 5.1.1 5.1.2		Four Arrows commits to the development of a CEMP and an OEMP that addresses recommendations made by the Department of Planning (DOP) and other relevant agencies, and the grievances of stakeholders through the consultation process, that contains hazard and risk monitoring, and risk analysis and management strategies, which will address the sources of hazards and risks and detail mitigation measures that will achieve the highest levels of abatement.	113	Post approval
	4.6.1 4.6.2 5.5.1.2 5.5.1.3 5.5.1.5 5.5.1.6 5.5.2.5		Four Arrows commits to the design of buildings, structures and infrastructure, which will mitigate the hazards and risks associated with ethanol production and the dairy enterprise.	114	Design Construction
	4.6.1 5.5.1.2		Four Arrows commits to management and procedural practices that will mitigate the hazards and risks associated with ethanol production and the dairy enterprise.	115	Operation

	5.5.1.3 5.5.1.5 5.5.1.6 5.5.2.5				
	4.6.1 4.6.2		Four Arrows commits to ensuring that potentially hazardous events are contained within the development site and do not result in injury or harm to off-site individuals and/or the environment.	116	Design Construction Operation
	4.6.2 4.6.3 4.8.6 5.5.1.2		Four Arrows commits to a quality assurance program that ensures the responsible and safe storage, application, and disposal of chemicals used throughout the ethanol and dairy enterprises.	117	Operation
		3.11	Four Arrows includes a commitment to a hazard and risk management plan and this is the implementation of standard best management practice and operating procedures as part of a working policy document to ensure that appropriate HazMat and HazChem standards will be applied to all transport of product onto and off site where appropriate.	292	Operation
	4.6.2 4.6.3		Four Arrows commits to the training of relevant staff in the use of chemicals and safety procedures.	118	Operation
	4.6.3		Four Arrows commits to adherence to OH&S and other legislative requirements to ensure the safety of employees, support staff and contractors.	119	Construction Operation
Monitoring & Review	4.6.2		Four Arrows commits to the installation of sensors and early warning systems throughout the site to detect undesirable levels of dust, vapour and toxins that may give rise to and/or present as a hazardous event.	120	Construction Operation
	4.6.3		Four Arrows commits to appointing designated officers/consultants to monitor hazard reports, safety reports, processes, procedures etc. and to implement any improvements necessary to ensure the welfare of visitors and staff, the health of the environment, and continued economic security.	121	Operation
	4.6.2		Four Arrows commits to working closely with relevant agencies to ensure best management practice is being implemented and benchmarks are being achieved.	123	Construction Operation
	5.1.2		Four Arrows commits to providing a process where grievances regarding hazards and risks can be registered and addressed in an effective and expeditious manner.	124	Construction Operation
Reporting	4.6.2 5.1.2		Four Arrows commits to environmental performance reporting that will be forwarded as required to the relevant agencies and allow for the updating of CEMP's and OEMP's.	125	Construction Operation
Auditing	4.6.2 5.1.2		Four Arrows commits to allowing third parties to audit hazard and safety reports and to review processes, procedures and management strategies.	126	Construction Operation
Mitigation	4.6.2 5.1.2		Four Arrows commits to implementing all mitigation measures in relation to the management of hazards and risk identified throughout the EA process.	127	Design Construction Operation

Soils					
Issue	EA Section No.	PPR Section No.	Commitment	Ref No.	Project Phase
General	4.7 5.1.1 5.1.2 5.6		Four Arrows commits to the development of a CEMP and an OEMP that addresses recommendations made by the Department of Planning (DOP) and other relevant agencies, and the grievances of stakeholders through the consultation process, that contains soil monitoring and management strategies that will maintain and improve soil condition, and prevent erosion throughout the site.	128	Post approval
	4.7.1 5.5.2.2 5.6	3.4.1	Four Arrows commits to the design, placement and construction of buildings, structures and infrastructure only upon suitable soil types and topography, and to exclude areas deemed inappropriate for development.	129 260	Design Construction
	4.7.2 5.5.2.2 5.6	3.4.2	Four Arrows commits to conducting further soil testing including chemical analysis and geophysical assessment as part of a detailed design investigation following approval	130 261	Post approval

			of the EA.		
Monitoring & Review	4.7.6 4.7.7 5.6		Four Arrows commits to the close monitoring of soils for variations to expected types, including chemical and physical features, which may require appropriate modification to the design or layout of buildings, structures and infrastructure.	131	Design Construction
	4.7.7 5.6		Four Arrows commits to appointing designated officers/consultants to monitor soils and to implement any improvements necessary to ensure the maintenance and/or enhancement of soil condition	132	Construction Operation
	5.6		Four Arrows commits to working closely with relevant agencies to ensure soils are being managed appropriately thus avoiding negative effects including erosion.	133	Construction Operation
	5.1.2		Four Arrows commits to providing a process where grievances regarding soils and erosion can be registered and addressed in an effective and expeditious manner.	134	Construction Operation
Reporting	5.1.2		Four Arrows commits to environmental performance reporting that will be forwarded as required to the relevant agencies and allow for the updating of CEMP's and OEMP's .	135	Construction Operation
Auditing	5.1.2		Four Arrows commits to engaging third parties to audit soil monitoring records and review management strategies in order to ensure that the development is designed, constructed and managed according to soil characteristics and capability.	136	Construction Operation
Mitigation	5.1.1		Four Arrows commits to implementing all mitigation measures in relation to soil health and erosion identified throughout the EA process.	137	Design Construction Operation

Waste Management					
Issue	EA Section No.	PPR Section No.	Commitment	Ref No.	Project Phase
General	4.8 5.1.1 5.1.2		Four Arrows commits to the development of a CEMP and an OEMP that addresses recommendations made by the Department of Planning (DOP) and other relevant agencies, and the grievances of stakeholders through the consultation process, that contains waste production monitoring and management strategies that will ensure effective and efficient management of waste streams, resulting in negligible impact on society and the environment.	138	Post approval
	4.8.1 4.8.2		Four Arrows commits to attracting viable and responsible markets for wastes and derivatives created from production.	139	Ongoing
Chemical	4.6.2 4.8.6		Four Arrows commits to the use of returnable chemical containers to reduce the risk of environmental contamination.	140	Design Construction Operation
CO ₂	4.8.2		Four Arrows commits to the maximised capture and sale of CO ₂ from ethanol production and to secure long term and diverse contracts to purchase the by-product.	141	Operation
Damaged grain	4.8.3 5.5.1.5 5.5.2.5		Four Arrows commits to the design, construction and operation of effective grain storage facilities to ensure that damaged grain is kept to a minimum.	142	Design Construction
	4.8.3 5.5.1.5 5.5.2.5		Four Arrows commits to the responsible disposal and application of damaged grain onto dryland areas of surrounding company properties at a rate that will result in no nutrient losses into the environment or accession to groundwater sinks.	143	Operation
Distillers grain	4.8.2 5.5.1.4		Four Arrows commits to the expeditious removal of excess wet distillers grain to what already is a ready and keen market and to secure long term and diverse contracts to purchase the by-product.	144	Operation
	4.8.2 5.5.1.4		Four Arrows commits to the recycling of excess water collected from wet distillers grain back through the ethanol production process.	145	Operation
Effluent management	4.8.4 5.5.1.7 5.5.1.8 5.5.2.9 to 5.5.2.15.		Four Arrows commits to the design and construction of an effluent management system consisting of sediment basins and anaerobic and aerobic ponds that will be sufficient in volume to accommodate both the total effluent production and extreme rainfall events.	146	Design Construction

	4.8.8.1 5.5.1.7		Four Arrows commits to the recycling of wastewater for use in the flushing of effluent from free-stall dairy sheds.	147	Operation
	4.8.5 5.5.1.9 5.5.2.7	3.7.4	Four Arrows commits to the installation of an effluent treatment system to accommodate grey water etc, produced from staff amenities and associated support sources, which can be recycled and used to irrigate gardens etc. which results in minimal losses into the environment or accession to groundwater. Four Arrows amends its commitment to a waste management plan and this includes the segregation of grey and black water for treatment that is captured by the effluent management system within administration areas.	148 286	Design Construction Operation
	4.1.8 4.8.1 4.8.4 4.14 5.5.2.18	5.4.10	Four Arrows commits to the incorporation of manure into the soils of its properties in the vicinity of the development particularly the adjoining Tubbo Station.	149 296	Operation
		5.4.8	Four Arrows includes a commitment within its waste management plan and this is the cleaning/scraping of heifer pens and freestall loafing pens no less than monthly and the cleaning of freestall flush lanes prior to flushing .	295	Operation
Truck wash-down	4.8.7 5.5.1.6 5.5.2.6		Four Arrows commits to the segregation of materials produced from the truck wash-down areas and their responsible disposal according to best practice ruling at the time.	150	Design Construction Operation
		3.7.3	Four Arrows expands upon its commitment to waste management plans to include the capture as much truck wash material as possible (as described) and carted direct to "Tubbo" station for spreading on agricultural lands.	284	Design Operation
		3.7.3	Four Arrows reaffirms its commitment to a waste management plan and this includes the capture of truck wash waste material that will be carted direct to "Tubbo" on a regular basis for spreading upon irrigation and/or other suitable agricultural lands.	285	Design Operation
Dead Stock		3.7.2	Four Arrows includes a commitment within its waste management plans and this is to secure contracts with the "Barnawartha" biodiesel plant to accept Four Arrows deceased stock for rendering as opposed to burial at "Tubbo" station.	280	Ongoing
		3.7.2	Four Arrows includes a commitment within its specifically assessed by an experienced independent geotechnical engineer waste management plan and this includes the burial of dead stock only in suitable soils and at sites with limited life spans as described and approved by the appropriate agencies.	281	Operation
Tailings		5.4.16	Four Arrows includes a commitment within its waste management plans and this is to manage tailings after a predetermined period (10 years) by either one or a combination of methods as described.	298	Operation
Monitoring & Review	5.1.2		Four Arrows commits to the monitoring of each waste management stream using whatever methods and technologies are considered appropriate and applicable.	151	Design Operation
	5.1.2		Four Arrows commits to appointing designated officers/consultants to monitor each waste management stream to achieve optimum efficiencies and minimise impacts on the environment and society.	152	Operation
	5.1.2		Four Arrows commits to providing a process where grievances regarding wastes can be registered and addressed in an effective and expeditious manner.	153	Operation
	5.1.2		Four Arrows commits to working closely with relevant agencies including primarily the EPA to improve monitoring and review efficiencies and to minimise impacts of each identified waste management stream.	154	Design Operation
Reporting	5.1.2		Four Arrows commits to environmental performance reporting that will be forwarded as required to the relevant agencies and allow for the updating of CEMP's and OEMP's .	155	Operation
Auditing	5.1.2		Four Arrows commits to engaging third parties to audit waste production and management records and to review management strategies in order to ensure that the developments ongoing processes are not adversely affecting the environment or society.	156	Operation

Mitigation	5.1.1		Four Arrows commits to implementing all mitigation measures in relation to the management of waste streams identified throughout the EA process	157	Design Construction Operation
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Visual Impacts					
Issue	EA Section No.	PPR Section No.	Commitment	Ref No.	Project Phase
General	4.9 5.1.1 5.1.2 5.7		Four Arrows commits to the development of a CEMP and an OEMP that addresses recommendations made by the Department of Planning (DOP) and other relevant agencies, and the grievances of stakeholders through the consultation process, that contains specific details pertaining to the design and management that will maintain and improve visual impacts including amenity of the site.	158	Post approval
Landscape values	4.9.1 5.5.1.9 5.7.1 5.9.1		Four Arrows commits to the maintaining remnant vegetation and enhancement, through the establishment of a 50 metre wide perimeter planting, consisting of a mosaic groundcover with understorey and over-storey species, with additional areas of habitat restoration and wetland creation onsite.	159	Design Construction Operation
Lighting	4.9.2 5.7.2		Four Arrows commits to the design of an outdoor lighting system consistent with Australian Standard (AS4282-1977) and which considers the effects of the lighting on occupants of surrounding properties and on vehicles in the vicinity of the installation.	160	Design Construction Operation
Monitoring and Review	5.1.2		Four Arrows commits to monitoring of visual impacts to maintain and/or enhance amenity.	161	Design Construction Operation
	5.1.2		Four Arrows commits to appointing designated officers/consultants to monitor visual impacts and to implement any improvements necessary to maintain and/or enhance visual amenity.	162	Construction Operation
	5.1.2		Four Arrows commits to working closely with relevant agencies to improve the effects of visual impacts to offsite receptors.	163	Design Construction Operation
	5.1.2		Four Arrows commits to providing a process where grievances regarding visual impacts can be registered and addressed in an effective and expeditious manner.	164	Construction Operation
Reporting	5.1.2		Four Arrows commits to performance reporting that will be forwarded as required to the relevant agencies and allow for the updating of CEMP's and OEMP's .	165	Construction Operation
Auditing	5.1.2		Four Arrows commits to allowing third parties to audit any identified visual impact issues resulting from the development and the mitigation actions and strategies applied to alleviate these.	166	Construction Operation
Mitigation	5.1.1		Four Arrows commits to implementing all mitigation measures in relation to managing visual impacts and amenity identified throughout the EA process.	167	Design Construction Operation

Security					
Issue	EA Section No.	PPR Section No.	Commitment	Ref No.	Project Phase
General	4.10 5.1.1 5.1.2		Four Arrows commits to the development of a CEMP and an OEMP that addresses recommendations made by the Department of Planning (DOP) and other relevant agencies, and the grievances of stakeholders through the consultation process, that contains specific details pertaining to security and the management of the factors that affect security from a physical, site, environment, chemical/biological, economic and political perspective.	168	Post approval
Chemical-biological	4.6.2 4.6.3 4.8.6 4.10		Four Arrows commits to best management practice in relation to production, handling, storage and distribution of all chemical/biological products on site.	169	Construction Operation
	4.6.2 4.6.3 4.10		Four Arrows commits to the strict adherence of operating procedures, manuals and guidelines in reference to all chemical and biological process, procedures and operations.	170	Construction Operation

	4.6.2 4.6.3 4.10		Four Arrows commits to the constant inventory audits of chemical and biological material to ensure accidents have been reported, chemicals have not been misused, or theft has occurred.	171	Construction Operation
Economic	4.8.2 4.10 4.15 5.11.2		Four Arrows commits to continue to strengthen markets for all its products and derivatives particularly ethanol in light of the federal governments support to move away from the use of fossil fuels.	172	Ongoing
Environmental	4.10		These commitments are covered by Commitment Reference Nos 201 to 211.	173	Design Construction Operation
Political	4.6.1.6 4.10		Four Arrows commits to the development of operational and management strategies that will address the threat of terrorism and bio-hazard abuse, which may result in catastrophic events endangering staff, neighbouring communities and individuals, and the environment.	174	Construction Operation
	4.6.1.6 4.10		Four Arrows commits to the development of management strategies that address the security of intellectual property including production techniques etc that may be used in an adverse fashion to endanger society and the environment.	175	Operation
Site	4.10		Four Arrows commits to securely fencing necessary sections of the property as required to prevent access from unauthorized personnel.	176	Construction Operation
	4.10		Four Arrows commits to limiting access and egress to two main points that will be staffed 24 hours a day, supported by a monitoring system and secured by boom gates.	177	Design Construction Operation
Monitoring and Review	5.1.2		Four Arrows commits to the monitoring of security measures and procedures to ensure the safety of the facility, staff, neighbouring properties and individuals, and the environment.	178	Construction Operation
	5.1.2		Four Arrows commits to appointing designated officers/consultants to monitor security measures and procedures and to implement any improvements necessary to ensure the ongoing safety and welfare of the development, community and environment.	179	Construction Operation
	5.1.2		Four Arrows commits to working closely with state and federal agencies, including anti-terrorist organisations, to develop and implement the highest security measures and procedures, to ensure the ongoing safety and welfare of the development, community and environment.	180	Design Construction Operation
	5.1.2		Four Arrows commits to providing a process where grievances regarding security can be registered and addressed in an effective and expeditious manner.	181	Construction Operation
Reporting	5.1.2		Four Arrows commits to reporting security performance that will be forwarded as required to the relevant agencies and allow for the updating of CEMP's and OEMP's.	182	Construction Operation
Auditing	5.1.2		Four Arrows commits to engaging third parties to audit security breaches and/or abuse reports and to review management strategies in order to ensure that security measures and procedures are adequate to maintain the present and ongoing safety of the development, neighbouring properties and individuals, community and the environment.	183	Construction Operation
Mitigation	5.1.1		Four Arrows commits to implementing all mitigation measures in relation to security including site, environmental, chemical/biological, economic and political aspects identified throughout the EA process.	184	Design Construction Operation

Animal Welfare					
Issue	EA Section No.	PPR Section No.	Commitment	Ref No.	Project Phase
General	4.11 5.1.1 5.1.2 5.8		Four Arrows commits to the development of a CEMP and an OEMP that addresses recommendations made by the Department of Planning (DOP) and other relevant agencies, and the grievances of stakeholders through the consultation process, that contains livestock monitoring and management strategies that will ensure the dairy herd's constant vitality and vigour.	185	Post approval
	3.4.2 4.11.1		Four Arrows commits to a state of the art dairy design that includes features and infrastructure that provides for the comfort of cattle.	186	Design Construction
	4.11.2.1		Four Arrows commits to the design of dairy and freestall facilities that will mitigate the occurrence of disease.	187	Design Construction
	4.11.2.1		Four Arrows commits to the use of operating and biodiversity procedures based upon HACCP methods targeting metabolic disease, acidosis, lameness, mastitis and respiratory disease, as well as the concurrent use of recognized and approved protocols.	188	Operation
	4.11.2.2 4.8.4 5.5.2.17	3.7.2	Four Arrows commits the expeditious removal of dead stock to adjacent Tubbo Station where burial/incineration will be carried out in a manner that results in no significant impact to neighbours or the surrounding environment.	189 282	Operation
	3.4.2 5.8		Four Arrows commits to engaging a project veterinarian who shall work to best dairy management practice protocols.	190	Operation
	5.8		Four Arrows commits to undertake the regular training of staff for strict adherence to procedures and protocols.	191	Operation
	4.11.2.1 5.8		Four Arrows commits to a management program which maintains a herd with a genetic predisposition for health and vigour.	192	Operation
	5.8		Four Arrows commits to a management program that continually monitors individual beasts for injury or disease and immediately isolates them from the herd.	193	Operation
		3.6	Four Arrows commits to the following specific strategies to ensure the management of fly numbers: - The regular collection of manures and spilt feed which accumulates in areas that are rarely trampled. - The reduction of moisture content in manures. - The use of chemical knockdown methods. - The use of electrical eradication equipment.	272	Operation
		3.8	Four Arrows includes a commitment within its animal welfare management plan, which will be based upon cattle nutrition and is to provide feeding rations as described to minimize the loadings of nutrients and salts within waste water repositories, thus also being an aspect of an integrated waste water management plan.	287	Operation
Monitoring and Review	5.1.2		Four Arrows commits to the continual monitoring of individual beasts and the herd, through physical and technological means, to ensure health, vigour and vitality.	194	Operation
	5.8		Four Arrows commits to appointing designated officers/consultants to monitor plant, equipment and procedures, and to implement any improvements necessary to ensure the welfare of the dairy herd.	195	Operation
		3.6	Four Arrows commits to appointing a fly management officer/consultant to monitor fly numbers and implement knockdown strategies.	273	Operation
		3.6	Four Arrows commits to the setting of fly traps in order to monitor fly numbers in and around the site and production areas.	274	Operation

	5.1.2		Four Arrows commits to working closely with relevant agencies including DPI to maintain and/or improve the welfare of the dairy herd.	196	Design Construction Operation
	5.1.2		Four Arrows commits to providing a process where grievances regarding animal welfare can be registered and addressed in an effective and expeditious manner.	197	Operation
		3.6	Four Arrows commits to providing a process where <i>grievances regarding fly numbers</i> can be registered and addressed in an effective and expeditious manner.	275	Operation
Reporting	5.1.2		Four Arrows commits to herd performance reporting that will be forwarded as required to the relevant agencies and allow for the updating of CEMP's and OEMP's .	198	Operation
		3.6	Four Arrows commits to <i>performance reporting</i> that will be utilised to assess the success of operational and knockdown strategies, by management and external agencies, which will allow for the updating of environmental management plans.	276	Operation
Auditing	5.1.2		Four Arrows commits to engaging third parties to audit herd performance records, including calving and mortality statistics and injury reports, to ensure that best management practices are being pursued.	199	Operation
		3.6	Four Arrows commits to allowing third parties to <i>audit fly number records</i> to ascertain adherence to management practices and to assist with recommendations for updated strategies.	277	Operation
Mitigation	5.1.1		Four Arrows commits to implementing all mitigation measures in relation to the management of animal welfare identified throughout the EA process.	200	Design Construction Operation
		3.6	Four Arrows commits to <i>implementing all mitigation measures</i> in relation to managing fly numbers identified throughout the EA and PPR development process.	278	Operation

Flora and Fauna					
Issue	EA Section No.	PPR Section No.	Commitment	Ref No.	Project Phase
General	4.12 5.1.1 5.1.2 5.9.1		Four Arrows commits to the development of a CEMP and an OEMP that addresses recommendations made by the Department of Planning (DOP) and other relevant agencies, and the grievances of stakeholders through the consultation process, that details monitoring and management strategies which include limiting foraging pressure, limiting weedy competition, increasing connectivity and ground cover, and potentially reintroducing a flooding regime to the Black Box depression areas; that protects and enhances the natural environment and does not only include threatened species.	201	Post approval
		2.3.4	Four Arrows reaffirms its commitment to develop a flora and fauna management plan. Specifically, to <i>provide adequate protection for the significant remnants of vegetation</i> and <i>enhancing the species richness of the corridor</i> to provide valuable biodiversity outcomes.	251	Post approval
		2.3.4	Four Arrows includes a commitment within its intended flora and fauna management plan and this is the <i>appointment of a local specialist native vegetation nursery</i> , which can be engaged to collect, germinate, plant out and then independently manage the landscaped areas.	252	Design Construction Operation
		2.3.4	Four Arrows includes a commitment within its intended flora and fauna management plan and this is to <i>involve a representative from the MCMA</i> in the planning of habitat restoration works and suitable species selection and establishment.	253	Design Construction Operation
	5.7.1 5.9.1		Four Arrows commits to the exclusion of the <i>Acacia</i> , <i>Callitris</i> and <i>Eucalypt</i> communities from the site development and the enhancement of these areas which will be maintained through a conservation caveat.	202	Design Construction Operation
	5.7.1 5.9.1		Four Arrows commits to the conservation and enhancement of flora and fauna on the project site by pursuing actions and management strategies that contribute toward the goals of the Coleambally Land and Water Management Plan (CICL – LWMP).	203	Design Construction Operation

	5.9.1		Four Arrows commits to the conservation of flora and fauna on the development site by implementing the actions detailed in sections 5.9.1 that include rabbit management plans, weed management strategies, the construction of exclusion zones and the enhancement of existing areas through extended plantings.	204	Design Construction
Monitoring and Review	5.1.2		Four Arrows commits to the monitoring of flora and fauna through a variety of methods including habitat hectare assessment and targeted species observation.	205	Operation
	5.1.2		Four Arrows commits to appointing designated officers/consultants to monitor ecology on the site with ongoing flora and fauna surveys and to implement any improvements necessary to ensure the conservation of vegetative communities and the habitat of avian species.	206	Construction Operation
	5.1.2		Four Arrows commits to working closely with relevant agencies including the DEC, to ensure protection of the habitat of threatened species and the enhancement of remnant environmental aspects, within and adjacent to the development.	207	Design Construction Operation
	5.1.2		Four Arrows commits to providing a process where grievances regarding flora and fauna conservation and management can be registered and addressed in an effective and expeditious manner.	208	Construction Operation
Reporting	5.1.2		Four Arrows commits to environmental performance reporting that will be forwarded as required to the relevant agencies and allow for the updating of CEMP's and OEMP's.	209	Construction Operation
Auditing	5.1.2		Four Arrows commits to allowing third parties to audit environmental performance reports, the data from flora and fauna studies, and to review management strategies in order to ensure that the developments ongoing processes are not adversely affecting species and communities that inhabit the site.	210	Construction Operation
Mitigation	5.1.1		Four Arrows commits to implementing all mitigation measures in relation to flora and fauna management identified throughout the EA process.	211	Design Construction Operation

Heritage					
Issue	EA Section No.	PPR Section No.	Commitment	Ref No.	Project Phase
General	4.13 5.1.1 5.1.2 5.10		Four Arrows commits to the development of a CEMP and an OEMP that addresses recommendations made by the Department of Planning (DOP) and other relevant agencies, and the grievances of stakeholders through the consultation process, that contains cultural heritage monitoring and management strategies that will ensure the maintenance and preservation of those areas and artefacts identified during the EA, as well as potential areas and artefacts that may be identified during construction and operations.	212	Post approval
		2.3.4	Four Arrows reaffirms its commitment to develop a heritage management plan .	254	Post approval
Indigenous Heritage	4.13.1 5.10.1		Four Arrows will commit to a more detailed indigenous heritage survey if deemed necessary during the pre-construction stage as all potential areas of previous occupation exist within zones that are not proposed to be developed.	213	Pre-construction
	4.13.1 5.10.1		Four Arrows commits to the preservation of indigenous heritage and will protect those areas that have been identified to-date, and areas that may be encountered in the future, during the construction and operation of the development.	214	Construction Operation
	5.10.1		Four Arrows commits to the preservation of indigenous heritage within the identified areas and will conduct no further disturbances including the construction of firebreaks and vehicle access tracks without prior permission from a consent authority.	215	Construction Operation
	4.13.1 5.10.1		Four Arrows commits to a procedure of best management practice should additional sites and artefacts be identified during construction and operations which would include cessation of works affecting the area and the immediate notification of NPWS and the Griffith LALC.	216	Construction Operation
	5.10.1		Four Arrows commits to the recording and reporting of any additional sites of aboriginal heritage that may be found, for entry and registration, with the Department of Environment and Conservation/National Parks and Wildlife Service, Aboriginal	217	Construction Operation

			Heritage Information Management Systems (AHIMS).		
Non-Indigenous Heritage	4.13.2 5.10.2		Four Arrows commits to the preservation of areas, buildings and items of significant non-indigenous heritage value, which may be encountered during the construction and operation of the development.	218	Construction Operation
	5.10.2		Four Arrows commits to management practices and strategies that mitigate any threats to the conservation of sites and dwellings at Tubbo Station, which have been listed on the Register of the National Estate, from activities associated with the development.	219	Operation

Heritage					
Issue	EA Section No.	PPR Section No.	Commitment	Ref No.	Project Phase
Monitoring and Review	5.1.2		Four Arrows commits to monitoring heritage sites to ensure continued maintenance under conservation agreements and that no deterioration occurs due to neglect or abuse caused by the proposed development.	220	Operation
	5.1.2 5.10.1		Four Arrows commits to appointing designated indigenous officers/consultants to monitor existing heritage sites and to identify and verify sites that may be uncovered in the future, and to implement any improvements necessary to secure, preserve and protect these sites.	221	Construction Operation
	5.1.2		Four Arrows commits to working closely with relevant agencies including the Griffith LALC to assist with the identification and conservation of indigenous heritage sites.	222	Construction Operation
	5.1.2 5.10.2		Four Arrows commits to providing a process where grievances regarding the management and conservation of indigenous heritage can be registered and addressed in an effective and expeditious manner.	223	Construction Operation
Reporting	5.1.2		Four Arrows commits to the reporting of management strategies and compliance to conservation agreements and caveats, to ensure that no infringements occur and the maintenance of these areas, buildings and items is ongoing, which will be forwarded as required to relevant agencies and allow for the updating of CEMP's and OEMP's.	224	Construction Operation
Auditing	5.1.2		Four Arrows commits to allowing third parties to audit compliance reviews and management strategies to ensure the ongoing conservation of heritage areas, buildings and items.	225	Construction Operation
Mitigation	5.1.1		Four Arrows commits to implementing all mitigation measures in relation to indigenous heritage identified throughout the EA process.	226	Design Construction Operation

Greenhouse Emissions					
Issue	EA Section No.	PPR Section No.	Commitment	Ref No.	Project Phase
General	4.14 5.1.1 5.1.2		Four Arrows commits to the development of a CEMP and an OEMP that addresses recommendations made by the Department of Planning (DOP) and other relevant agencies, and the grievances of stakeholders through the consultation process, that contains methane gas emission monitoring and management strategies that will pursue efficiencies to mitigate the impact of greenhouse gas production to within desirable emission goals.	227	Post approval
	4.14 4.8.1 4.1.8 5.5.2.18		Four Arrows commits to the expeditious removal of manures from the development site and it's spreading onto and incorporation into the agricultural soils of the company owned Tubbo Station.	228	Operation
	4.1.2 4.14 4.8.2	3.9.4	Four Arrows commits to the use of production processes that capture maximum amounts of CO ₂ gases thus reducing contributions to greenhouse loading. Four Arrows amends its commitment to a GHG emissions management plan to include that an appointed private sector company will implement carbon offset and sequestration strategies as proposed (Commercial In Confidence document), to manage total GHG emission debits produced by the combined enterprises, if a	229 288	Design Operation

			technological capture system is not adopted within the facilities design.		
		3.9.5	Four Arrows includes a commitment to a GHG emissions management plan and amending WMP (commitment 141) and this includes <i>the installation of GHG capture technology should markets for CO2 and methane provide an economically viable alternative</i> to the purchase of carbon offsets post approval.	289	Design Construction Operational
Monitoring and Review	5.1.2		Four Arrows commits to an understanding of the factors that contribute towards greenhouse gas production and the establishment of achievable emission goals.	230	Operation
	5.1.2		Four Arrows commits to the ongoing monitoring of factors that contribute towards greenhouse gas production, the data of which can be utilised to create models and influence management strategies to achieve emission goals.	231	Operation
	5.1.2		Four Arrows commits to appointing designated officers/consultants to monitor by-product and waste streams, which contribute towards the production of greenhouse gases and to implement any improvements necessary to create greater efficiencies and to ensure that emission goals are being achieved.	232	Operation
	5.1.2		Four Arrows commits to working closely with relevant agencies, including primarily the Australian Greenhouse Office, to improve efficiencies and the impact of each identified by-product and waste management stream upon greenhouse gas loading.	233	Design Construction Operational
	5.1.2		Four Arrows commits to providing a process where grievances regarding greenhouse gas production and emissions can be registered and addressed in an effective and expeditious manner.	234	Operation
Reporting	5.1.2		Four Arrows commits to environmental performance reporting, which also includes submitting information and contributing towards such programs as the Greenhouse Challenge Plus, that will be forwarded as required to the relevant agencies and allow for the updating of CEMP's and OEMP's .	235	Operation
Auditing	5.1.2		Four Arrows commits to allowing third parties to audit greenhouse gas production records and to review management strategies in order to ensure that the developments ongoing processes are being managed in such a way as to avoid excess greenhouse gas emissions.	236	Operation
Mitigation	5.1.1		Four Arrows commits to implementing all mitigation measures in relation to greenhouse gas emission management identified throughout the EA process.	237	Design Construction Operational

Economic and Social Effects					
Issue	EA Section No.	PPR Section No.	Commitment	Ref No.	Project Phase
General	4.15 5.1.1 5.1.2 5.11.3 5.11.4		Four Arrows commits to the development of a CEMP and an OEMP that addresses recommendations made by the Department of Planning (DOP) and other relevant agencies, and the grievances of stakeholders through the consultation process, that pursues economic and social benefits for the company and the greater community.	238	Post approval
	4.15 5.11.3		Four Arrows commits where possible to employ local contractors and staff in the daily operations and support of the ethanol and dairy enterprises.	239	Design Construction Operational
	4.15 5.11.3		Four Arrows commits where possible to purchase local grains from the Riverina district the demand for which will provide further commercial activity in the local economy.	240	Operation
	4.8.2 4.15 5.11.3		Four Arrows commits to supply localised intensive livestock industries with distillers grain derivative satisfying a large percentage of the current demand.	241	Operation
	4.15 5.11.4		Four Arrows commits to preferentially investing profits into the expansion of existing Riverina enterprises and the development of further areas providing a boost to the local economy.	242	Ongoing
	3.4.3		Four Arrows commits to the construction and operation of a visitors centre to provide information and education to the public and other interested parties as to the developments management, processes, and benefits to the community and	243	Design Construction Operational

			environment.		
Monitoring and Review	5.1.2 5.11.3 5.11.4		Four Arrows commits to monitoring the social and economic costs and benefits of the development and its activities.	244	Operation
	5.1.2		Four Arrows commits to integrating social and economic costs and benefits information into its ongoing analysis as to the future direction and management of the development's processes and procedures.	245	Design Construction Operation
	5.1.2		Four Arrows commits to working closely with relevant agencies including planning authorities and local councils, to improve the design and management of the development, so as to mitigate the social and economic costs and promote benefits.	246	Design Construction Operation
	5.1.2		Four Arrows commits to providing a process where grievances regarding economic and social costs can be registered and addressed in an effective and expeditious manner.	247	Construction Operation
Reporting	5.1.2		Four Arrows commits to cost and benefit reporting that will be forwarded as required to the relevant agencies and allow for the updating of CEMP's and OEMP's .	248	Construction Operation
Auditing	5.1.2		Four Arrows commits to allowing third parties to audit cost and benefit analysis reports and management records, and to review management strategies, in order to ensure that the developments ongoing processes are not adversely affecting the economy or society.	249	Construction Operation
Mitigation	5.1.1		Four Arrows commits to implementing all mitigation measures in relation to economic and social effects created by the development that have been identified throughout the EA process.	250	Design Construction Operation