Prepared for Flyers Creek Wind Farm Pty Ltd by Nacap Pty Ltd

Flyers Creek Wind Farm Project

CONSTRUCTION SOIL AND WATER QUALITY MANAGEMENT PLAN

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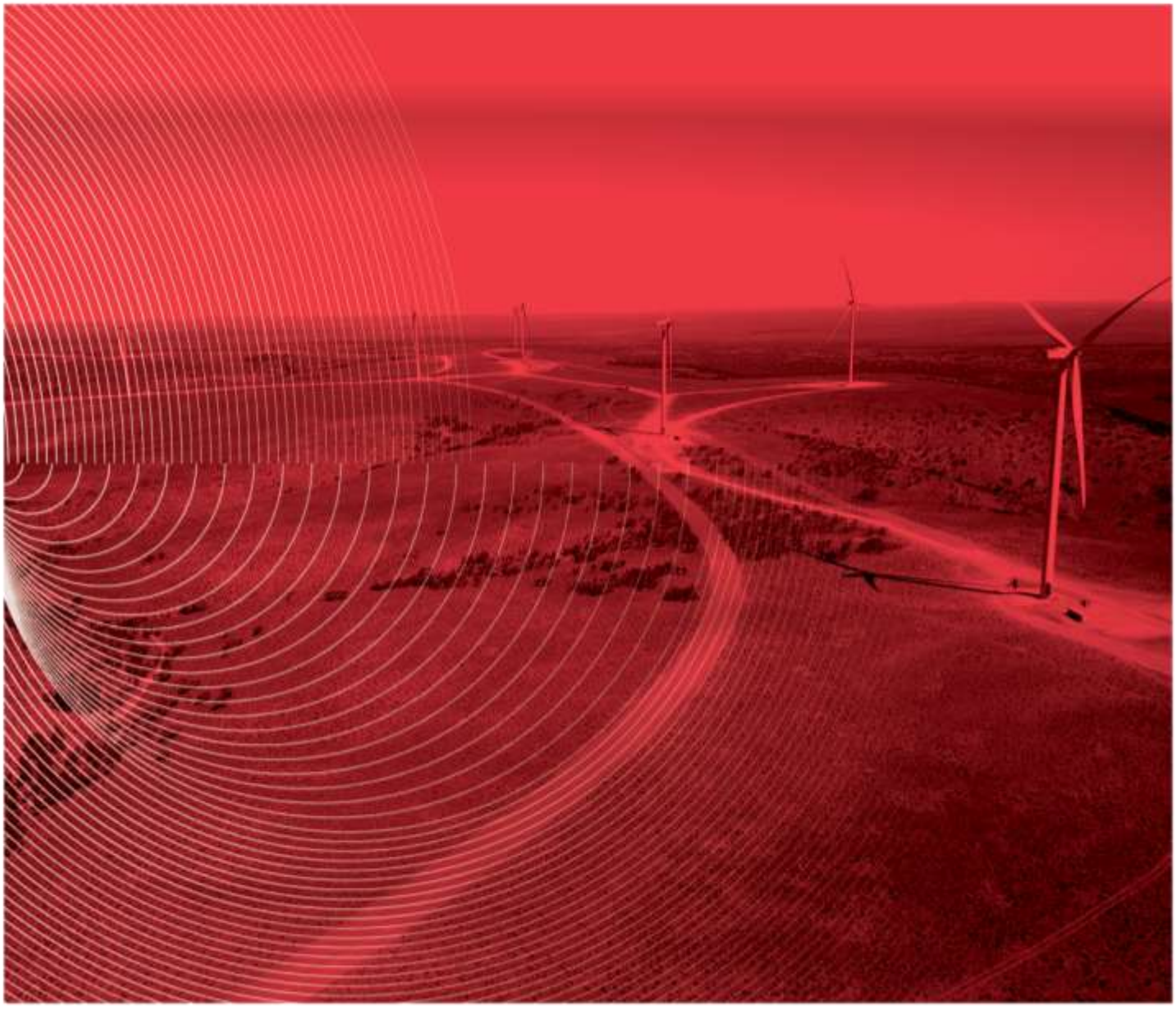

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Document prepared by:

Nacap Pty Ltd
ABN 33 006 306 994
Level 1, 601 Doncaster Road
Doncaster Vic 3108
Australia

T +61 3 8848 1888
W nacap.com.au

REVISION HISTORY

This table describes the primary reason for the production of each new revision after Rev 0

Date	Rev.	Reason for change

SIGNATURE BLOCK

Rev.	Description	*BR*	*BT*	*NF*		25th June 2020
E	**Issued for Approval**	**Prepared** Brett Rodgers	**Reviewed** Brian Treacy	**QA** Nic Fusca	**Approved** Peter Logan	**Approval Date**

The first Issued for Use version of this plan will start Revision 0. Revision numbers shall use a sequential numbering system commencing at Rev. 01, 02, etc.

This document is considered uncontrolled when printed.

Contents

ACTIVITY	DESCRIPTION	REFERENCES
1. GENERAL INFORMATION		
1.1 Purpose	This Construction Soil and Water Quality Management Plan (CSWQMP) has been prepared to satisfy the requirements of Condition F21 (d) of the Project Approval and incorporates related Conditions of Approval (CoA) and relevant commitments from the Flyers Creek Wind Farm Environmental Assessment (EA) 2011 and modifications that have been subsequently approved. This CSWQMP has been prepared to ensure construction activities are carried out in accordance with the Conditions of Approval (CoA), project regulatory requirements, relevant standards, procedures, resources and practices. The Plan has been prepared to ensure all reasonable and practical measures are implemented across all activities and works to minimise environmental harm throughout the construction phase of the project. The CSWQMP adopts an integrated approach, considering and identifying management measures overarching the sequencing of construction related activities. All works are to be implemented in accordance with the management measures and strategies contained in this Plan.	-
1.2 Conditions of Approval (CoA)	This Plan and its associated management measures have been prepared to comply with the following CoA: • F21(d) Construction Soil and Water Quality Management Plan; • D7 Water Quality and Hydrology; • D8 Water Quality and Hydrology; • F12 Construction Soil and Water Management; • F13 Construction Soil and Water Management; and • F14 Construction Soil and Water Management.	Project Approval (MP 08_0252)
1.3 CEMP Structure and relationship with sub-plans	This CSWQMP forms one of the FCWF Construction Environment Management Plan (CEMP) sub plans. The FCWF CEMP (CoA F20) comprises three Sections: • **PART A**: Provides background information and the overarching systems approach to environmental management and mitigation controls for the project • **PART B**: Comprising Appendices in support of PART A, and • **PART C**: Comprising the required series of environmental management sub-plans outlined in CoA F21 including; (a) Construction Compound and Ancillary Facilities Management Plan (b) Construction Noise and Vibration Management Plan (c) Construction Traffic and Access Management Plan (d) **Construction Soil and Water Quality Management Plan (this plan)** (e) Construction Heritage Management Plan (f) Construction Flora and Fauna Management Plan (g) Construction Air Quality Management Plan, and (h) Bushfire Management Plan.	Construction Environmental Management Plan
1.4 Scope	This CSWQMP applies to all aspects of Soil and Water Quality management for the Project. The CSWQMP will inform Project Managers, Supervisors, Construction Personnel, Subcontractors and relevant stakeholders on the management of Soils and Water during construction activities. The CSWQMP forms part of the Construction Environmental Management Plan (CEMP) and describes the mitigation and management measures and protocols derived from the EA. This management plan applies only to the Construction phase of the proposed works.	-
1.5 Objectives and Targets	The objectives and targets for the Flyers Creek Wind Farm Project in relation to Soil and Water Quality Management are listed in Table 1 Objectives and Targets. **Table 1 Objectives and Targets** **Objective** / **Target** Project construction activities minimise impacts to soil and water quality / Pre-construction soil and water quality is maintained or improved. Ensure all personnel, subcontractors and visitors are inducted, consulted and receive regular updates and information on project environmental aspects and impacts for the duration of works. / 100% completion of Inductions, Daily Pre-Start Inputs by Environment Team, and Monthly toolbox inputs by Environment Team.	-

	Ensure that personnel and subcontractors are aware of environmental hazards and risks associated with construction activities and relevant scope of work under the contract.	100% attendance recorded at SWMS workshops.
	To conduct construction activities in compliance with all relevant approvals and environmental legislation.	100% compliance No regulatory infringements, including Provisional improvement notices and prosecutions.
	Promote a positive reporting culture to minimise the occurrence and severity of environmental incidents during construction activities.	All incidents to be reported within 2 hours and investigated appropriately.
	Ensure all corrective actions are closed out by the nominated due dates.	No corrective actions outstanding past due date >7 days.

1.6 Consultation	Consultation on this Plan will be undertaken with the NSW Natural Resources Access Regulator, Lands Ministerials (Crown Lands), Blayney Shire Council and Cabonne Shire Council. Comments and feedback received during consultation will be incorporated into this Plan where appropriate. Details of the consultation associated with this Plan are available in Appendix A.	Appendix A Consultation Record
1.7 Certification and Approval	The CSWQMP required by CoA F21(d) are required to be submitted for approval by the Secretary of the Department of Planning, Industry and Environment (DPIE) at least one month prior to commencement of construction or as otherwise agreed by the Secretary.	-
1.8 Distribution	A controlled hard copy of this CSWQMP will be maintained and reside at the Project construction site office. Approved copies of this CSWQMP and supporting documentation will be distributed to the Project team, the DPIE, all relevant personnel and interested third parties as required. It will also be available to view on the Project website: www.flyerscreekwindfarm.com	-

1.9 Reference Documents	The CSWQMP applies to all aspects of Soil and Water Management for the Project and has been informed by the following:
	• Principal Project Approval Minister for Planning and Infrastructure No MP 08_0252 dated 14 March 2014 and consolidated Conditions of Approval dated June 2019;
	• Project Environmental Impact Statement prepared by Aurecon, 2011, specifically:
	  ○ Chapter 7 Existing Environment;
	  ○ Chapter 19 Statement of Commitments;
	• Modification 3 Planning Application prepared by Flyers Creek Windfarm Pty Ltd (FLWFPL), 3 May 2017; and
	• Modification 4 Planning Application prepared by FCWFPL, 27 July 2018.
		-

2. DEFINITIONS AND ABBREVIATIONS

2.1 Definitions	Aspect	An element of an organisation's activities or products or service that can interact with the environment.
	Audit	A systematic review of management systems being applied on the Project.
	Client and or Proponent	Flyers Creek Wind Farm Pty Ltd (FCWFPL)
	Form 2	The contractor will utilise a system, which acts as a project control gateway (known as a Form 2) for each construction activity to commence. The Form 2 is a document reviewed and signed off by the various Project discipline leads and Project Manager. This form is a pre-commencement gateway for each construction activity within a discrete section of works. The Form 2 is a key means of communicating to the activity supervisor management controls for any given portion of the works.
	Impact	Any change to the environment whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.
	Incident	A set of circumstances that: • causes or threatens to cause material harm to the environment; and/or • breaches or exceeds the limits or performance measures/criteria in this approval.
	Inspection	Review or check on the environment requirements being implemented.
	Obligation	A legal relationship between two entities in which one entities' right is the other entities' duty.
	Project	Flyers Creek Wind Farm Project
	Regulatory Requirements	Government acts and regulations that are environment specific which prescribe legal obligations encompassing the client and contractor and amongst other things, registration of projects and plant, certificates to operate machinery and undertake certain trades and notification of injuries.

	Statement of Commitments	Commitments outlined in Chapter 19 of the Project Environmental Assessment	
2.2 Abbreviations	ANZECC	Australia, New Zealand, Environment Conservation Council	
	ANZG	Australian and New Zealand Government	
	BCD	Biosecurity Conservation Division (Formerly OEH)	
	BGL	Below Ground Level	
	BOM	Bureau of Meteorology	
	CEMP	Construction Environmental Management Plan	
	CCAFMP	Construction Compound and Ancillary Facilities Management Plan	
	CSWQMP	Construction Soil and Water Quality Management Plan (this Plan)	
	cBOP	Civil Balance of Plant	
	CoA	Conditions of Approval	
	CTW	Central Tablelands Water	
	DoI L&W	Department of Industry, Land and Water	
	DPI	Department of Primary Industries	
	DPIE	Department of Planning, Industry and Environment	
	EA	Environmental Assessment	
	EESG	Environment, Energy and Science Group	
	eBOP	Electrical Balance of Plant	
	EPL	Environment Protection Licence	
	ESC	Erosion and Sediment Control	
	ESCP	Erosion and Sediment Control Plan	
	EMP	Environmental Management Plan	
	EP&A	Environmental Planning and Assessment	
	FCWF	Flyers Creek Wind Farm	
	IECA	International Erosion Control Association	
	kV	Kilovolt	
	LECH	Lands Environment and Cultural Heritage	
	LGA	Local Government Area	
	NRAR	Natural Resources Access Regulator (previously Department of Industry, Land and Water)	
	NSW	New South Wales	
	OEH	Office of Environment and Heritage – Now Biodiversity Conservation Division of Environment, Energy and Science Group (EESG) of the DPIE	
	PPE	Personal Protection Equipment	
	PSA	Preliminary Site Assessment	
	RTA	Roads Traffic Authority – Now Roads & Maritime Services (RMS)	
	SSD	State Significant Development	
	SWMS	Safe Work Method Statement	
	VENM	Virgin Excavated Natural Material	
	WTG	Wind Turbine Generator	
3. PROJECT INFORMATION			
3.1 Project Background and Description	Flyers Creek Wind Farm Pty Ltd (the Proponent) forms part of the Infigen Energy corporate group (Infigen). Infigen Energy is a developer, owner and operator of generation assets delivering energy solutions to Australian businesses and large retailers. The FCWF is an approved 38 wind turbine wind farm located approximately 20km south of Orange NSW. The Project is located predominantly in the Blayney Shire local government area with part of the proposed 132 kilovolt transmission line and switching station being located in Cabonne Shire Council local government area. Project approval MP 08_0252 was granted under Part 3A of the Environmental Planning and Assessment Act 1979 (NSW) (EP&A Act) to the Proponent for the Project by the NSW Planning and Assessment Commission on 14th March 2014. The Project Approval has been modified 4 times since originally being granted and was transitioned to State significant (SSD) development on 6th July 2018. The Project approval authorises the construction and operation of a wind farm and associated infrastructure including access tracks, local road infrastructure upgrades and electrical connections between the turbines (underground cable reticulation, also underground and aboveground powerlines), an on-site substation (inclusive of switch room, control room and auxiliary services building) and a 132-kilovolt transmission line and switching station to connect the Project to the grid.		-
4. EXISTING PROJECT ENVIRONMENT			
4.1 Legislation and Guidelines	The following legislation provides the primary context for management of Soil and Water Quality in NSW: • Soil Conservation Act 1938; • Contaminated Land Management Regulation 2013; • Contaminated Land Management Act 1997; • Protection of the Environment Operations Act 1997; • Protection of the Environment Operations (General) Regulation 2009; • Water Management Act 2000; • Water Management (General) Regulation 2018 • Fisheries Management Act NSW 1994; and • Natural Resources Access Regulator Act 2017		-

Relevant Guidelines and Fact Sheets:

- The Blue Book: Managing Urban Stormwater: Soils and Construction, V 1 and V2 (Landcom, 2004);
- Policy and Guidelines for Fish Friendly Waterway Crossings 2004;
- Why Do Fish Need to Cross The Road - Fish Passage Requirements For Waterway Crossings, NSW DPI (Fisheries) 2003
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality, ANZG 2018 (Available at www.waterquality.gov.au/anz-guidelines), and
- Guidelines for Controlled Activity(s) on Waterfront Land, NSW NRAR 2018.

4.2 Condition of Approval

This Plan has been prepared to comply with the consolidated COA, dated June 2019 and specifically the requirements of CoA F21(d), D7, D8, D10, F12, F13, and F14 as listed below in Table 2 Conditions of Approval.

As part of the CEMP for the Project required under Condition F20, the Proponent shall prepare and implement this CSWQMP.

Table 2 Conditions of Approval

CoA	Condition	Refer to Section within This Plan
F21 (d)	*a Construction Soil and Water Quality Management Plan to manage surface and groundwater impacts during construction of the Project. The plan shall be developed in consultation with DoI – L&W and Blayney Shire Council and include, but not necessarily be limited to:*	This Plan Appendix A – Consultation
	i) details of construction activities and their locations, which have the potential to impact on water courses, storage facilities, stormwater flows, and groundwater;	Section 4 Section 6
	ii) surface water and ground water impact assessment criteria consistent with Australian and New Zealand Environment Conservation Council (ANZECC) guidelines;	Section 6
	iii) management measures to be used to minimise surface and groundwater impacts, including details of how spoil and fill material required by the Project will be sourced, handled, stockpiled, reused and managed, erosion and sediment control measures, and the consideration of flood events;	Section 6
	iv) management measures for contaminated material and a contingency plan to be implemented in the case of unanticipated discovery of contaminated material during construction;	Section 6
	v) a description of how the effectiveness of these actions and measures would be monitored during the proposed works, clearly indicating how often this monitoring would be undertaken, the locations where monitoring would take place, how the results of the monitoring would be recorded and reported, and, if any exceedance of the criteria is detected how any non-compliance can be rectified; and	Section 6
	vi) mechanisms for the monitoring, review and amendment of this Plan.	Section 8
D7	*Except as may be provided by an EPL, the Project shall be constructed and operated to comply with section 120 of the Protection of the Environment Operations Act 1997, which prohibits the pollution of waters.*	Section 6
D8	*Waterway crossings shall be designed and constructed in consultation with DoI – L&W and DPI (Fisheries) and consistent with DPI (Fisheries) guidelines, Policy and Guidelines for Fish Friendly Waterway Crossings (2004) and Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (2004) and Guidelines for Controlled Activity on Waterfront Land (NSW NRAR 2018), or their latest version.*	Section 6
D10	*Dangerous goods, as defined by the Australian Dangerous Goods Code, shall be stored and handled strictly in accordance with:* *(a) all relevant Australian Standards;* *(b) for liquids, a minimum bund volume requirement of 110% of the volume of the largest single stored volume within the bund; and* *(c) the Environment Protection Manual for Authorised Officers: Bunding and Spill Management, technical bulletin (Environment Protection Authority, 1997).* *In the event of an inconsistency between the requirements listed from (a) to (c) above, the most stringent requirement shall prevail to the extent of the inconsistency.*	Section 6
F12	*Soil and water management measures consistent with Managing Urban Stormwater - Soils and Construction Vols 1 and 2, 4th Edition (Landcom, 2004), or its latest version, shall be employed during the construction of the Project to minimise soil erosion and the discharge of sediment and other pollutants to land and / or waters.*	Section 6

F13	*Where available, and of appropriate chemical and biological quality, stormwater, recycled water or other water sources shall be used in preference to potable water for construction activities, including concrete mixing and dust control.*	Section 4
F14	*Construction activities within 40 metres of any watercourses, shall be consistent with the Controlled Activity Guidelines (NSW NRAR 2018) including, but not limited to, 'In-stream Works', 'Outlet Structures', 'Riparian Corridors', 'Vegetation Management Plans', and 'Watercourse Crossings', or any guidelines which supersede these documents.*	Section 6

4.3 Climate

Bureau of Meteorology

The climate characteristics summarised in this section should be regarded as indicative only, as there are no Bureau of Meteorology (BOM) monitoring stations within the defined project area.

Statistics have been obtained from the following BOM stations:

- Canobolas State Forest BOM – 063018 - Representative of the northern extent of the project area
- Millthorpe BOM – 063053 - Representative of the central extent of the project area, and
- Blayney Post Office BOM – 063010 - Representative of the southern extent of the project area.

Rainfall is considered to be the primary climate contributor affecting soil and water quality. As indicated below, there are differences in historical rainfall records across the three BOM monitoring stations in proximity to the Flyers Creek Project area. These are likely influenced by the differences in elevation and localised topography around each station site. As the wider area contains many ridgelines and valleys, rainfall is influenced by these topographic features to a greater degree than if the region had less topographic relief. As such, rainfall across the project area is likely to also be variable, depending on the elevation and topography of a particular area. It is also expected to be similar to the rainfall ranges indicated by these meteorological stations, further described below and in the range of 750 mm to 1000 mm a year.

Mean monthly rainfall values at the three (BOM) sites show a trend of higher winter rainfall than summer rainfall, with the period of June to October generally having the highest monthly rainfall, as well as having the most number of days where rain can be expected to be above 10mm, which may impact on construction activities and the areas of disturbance.

The geographical location of the BOM Monitoring stations being indicative of likely weather patterns affecting the project area suggest higher rainfall in the northern section, with the southern extent of the project area likely to be driest.

Temperature range across the project area is expected to be relatively uniform without any significant changes as indicated by the mean July and January temperature records given below.

Predominant winter rainfall occurrence combined with lower soil temperatures and lower vegetation cover in winter is suggestive that soil moisture will be higher during winter periods and more likely to result in runoff where soil saturation occurs during high rainfall events. A higher risk of winter runoff is also suggested by the increased likelihood during winter of >10mm rain events compared with summer months and higher soil temperatures.

4.3.1 Rainfall

Bureau of Meteorology

Monthly rainfall statistics obtained from each of the BOM Monitoring Stations is given below:

Canobolas State Forest - Years 1949-2018
Mean Total Rainfall = 1101.8mm

	J	F	M	A	M	J	J	A	S	O	N	D
Mean	87.7	80.2	65.3	62.5	81.1	88.6	107.8	116.6	92.4	100.1	87.4	81.3
Low	4.4	2.8	0	0	3	1	0	3.8	13.6	4	6.4	0
High	361.6	351.5	242.8	393.6	298.5	295	271.4	272.4	222.6	257	213.8	382
Av No of Days >=10mm	2.7	2.2	2	2	2.8	2.7	3.5	3.6	3.1	3.3	3	2.5

Millthorpe - Years 1899-2005
Mean Total Rainfall = 806.2mm

	J	F	M	A	M	J	J	A	S	O	N	D
Mean	71.2	61.5	55.4	52.9	59.9	72.7	75.9	79.4	66.1	78	64.5	67.3
Low	0	0	0	0.5	0	1.3	1.3	1.3	8.4	1.3	1.6	0
High	285.4	293.9	247.9	269.7	199	237	202.4	258.2	160.7	248	188.7	228.3
Av No of Days >=10mm	2.3	1.8	1.8	1.7	2.1	2.1	2.3	2.6	2.2	2.6	2.1	2.2

Blayney Post Office – Years 1885-1992

Mean Total Rainfall = 765.5mm

	J	F	M	A	M	J	J	A	S	O	N	D
Mean	70.8	55.6	52.7	49.7	56.1	71.8	73.5	76.7	63.9	70.8	59.8	63.7
Low	0	0	0	0	0	4.6	3.1	0	8.4	0.8	0	0
High	346.3	200.3	164.6	189.3	225.8	193.8	221.3	148	173.5	164.1	209.8	263.7
Av No of Days >=10mm	2.3	1.9	1.7	1.7	2	2.4	2.4	2.6	2.3	2.4	2.1	2.1

4.3.2 Temperature

Mean Minimum and Maximum Temperature statistics* for each of the BOM Monitoring sites are given below:

BOM Monitoring Station	Mean Minimum Temp °C July	Mean Maximum Temp °C January
Canobolas State Forest	0.2	26.0
Millthorpe	1.1	26.6
Blayney Post Office	1.1	26.2

*Temperature Statistics are taken for the same time period of available records for rainfall at each of the stations.

Bureau of Meteorology

4.4 Soils and Landform

The EA 2011 characterised three main soil types occurring across the project area as presented in the table below:

Table 3 Soil Landscapes

Soil Landscape	Parent rock	Soil Landscape – general characteristics	Erodibility	Erosion Hazard	USCS Code
Vittoria-Blayney (Alluvial-colluvial) (REvb)	Various, many derived from older andesitic volcanics	Undulating to rolling low hills with drainage lines spaced from 800m – 1,000m apart. Red earths occur on well drained crests and side slopes, with yellow earths on moderately to imperfectly drained foot slopes. Elements of Panuara occur in this landscape.	Low to moderate	Slight to moderate	ML CL CH
Panuara (Alluvial-colluvial) (RPpu)	Andesite, tuff, limestone, siltstone and shale	Undulating low hills to rolling hills with drainage lines running west and spaced from 500m – 800m apart. Red podzolic soils are the main soils occurring on mid to upper slopes. Yellow podzolic soils occur on lower slopes with red earths or brown/red earths.	Low to moderate	Moderate to high	CL CH
Quarry (Colluvial) (SSqu)	Intermediate rocks including syenite and monzonite	Present in small areas within the Panuara district. Rolling low hills with drainage lines spaced 500 – 700m apart. Dominant soils are pale siliceous sands on midslopes, with yellow earths and podzolic soils on lower slopes. Shallow sands and red podzolic soils occur on upper slopes.	Low to moderate	Moderate to high	SP

Note: Unified Soils Classification Scheme (USCS) Codes: Group symbol / name, CL / clay, CH / clay of high plasticity, ML / silt, SP / poorly graded sand.

The structure of the basaltic rocks to the north of the site has produced a generally elevated rolling topography with low relief typical of the Forest Reefs to Millthorpe area. To the south, the Belubula River Valley and its tributaries have dissected the more elevated areas and exposed the underlying metasediments and metavolcanics. For areas of steeper slopes, slumping can be a hazard that may be initiated by heavy rain and exacerbated by poor drainage design. There is no evidence of any large-scale landslides at the site which could influence tower or access track stability. Nevertheless, attention will need to be paid to formation of any tracks on the steeper slopes and formation of associated drainage.

Along the ridgetops, the soils have been observed as being predominantly shallow, skeletal soils, with deeper soils occurring on the lower slopes, valley floors and drainage lines. The turbine sites are all located on ridgetops with varying soil characteristics, dependent on underlying and exposed parent rock characteristics, local topography, weathering and

EA 2011 Chapter 7

Appendix B

disturbance by agriculture and other activities.

The substation and some turbine sites will be located in Vittoria-Blayney soil landscape, with the majority of the turbine sites located in Panuara soil landscape. Within each soil landscape variability will be influenced by:

- the general physical variations within the underlying rock unit
- the degree of deformation, alteration, metamorphism or weathering that the rocks have undergone
- the aspect and slope of the location that influences drainage and weathering characteristics

The erodibility of the relevant soil landscapes within the project area, as outlined in the NSW Natural Resource Atlas, is indicated in Table 4.4. The Vittoria-Blayney and Panuara soil landscapes, which cover a significant proportion of the wind farm site, refer to Appendix B, have a low to moderate potential for erosion. Observations of slopes in these areas indicate reasonable stability and resistance to erosion. The areas disturbed during construction will be limited and, where practicable, steeper slopes will be avoided. Comprehensive controls as outlined in Section 6 will be applied during construction to minimise impacts of erosion.

4.5 Surface Drainage and Storage

The project area is within the Belubula River Catchment which falls within the Lachlan River Catchment Area as part of the Murray Darling Basin. Carcoar Dam, the closest significant water storage area, is located around 10 kilometres to the east of the Project area. The majority of the project site is drained by intermittent (non-perennial) drainage lines that subsequently lead to the Belubula River (below Carcoar Dam). Refer to Appendix C for Mapping of the project area and the various crossings of drainage lines. The sub catchments as detailed in the EA 2011 is presented in Table 4.

Table 4 Sub Catchment Descriptors

Sub-catchment	Description of location	Measures to prevent impacts to water quality
Slatterys and Flyers Creek	Located in the north-west part of the site, Slatterys Creek is a tributary of Flyers Creek. The ridgeline containing Wind turbine generators (WTGs) 1- 8 drain to the west towards Slatterys and Flyers Creek. The substation is also within the Slatterys Creek catchment.	Oil spill containment structures for the substation as well as erosion and sediment controls for all earthworks will manage impacts to soils and surface water quality.
Gooleys Creek	Located in the north eastern and middle portions of the wind farm, this minor tributary of Flyers Creek receives runoff from the eastern facing side of WTGs 1-8.	Erosion and sediment controls for all earthworks across the disturbance area will manage impacts to soils and surface water quality.
Cheesemans Creek	Located to the west of the wind farm, this minor creek has a catchment area that includes the slopes containing WTGs 35-38. This creek flows west and feeds into Flyers Creek.	
Kangaroo Flat Creek	Located to the south of the site, this creek has a catchment that takes in the hills containing WTGs 18-31 as well as the western side of the ridgelines with WTGs 35-38	
Dirty Hole Creek	Located in the south-east corner of the site, this creek flows south into the Belubula river. Its catchment area covers WTGs 28-32 and eastern side of WTGs 33-38	
Cowriga Creek	Located east of the project area and drains eastern side of WTGs 24-27. Only a small part of the project is within this catchment.	

The majority of remaining waterway crossings as presented in Appendix C of this plan, will be drainage lines (first order under the Strahler stream classification system). There are no significant aquatic environments or fish habitats in the vicinity of the development footprint. Whilst the turbine foundations and crane stands will be constructed on ridgetops, the network of access track connectivity and cable routes will cross intermittent drainage lines, which generally only flow after heavy rain events. These drainage lines do not provide habitat for aquatic species of conservation significance. Accordingly, all crossings will be constructed and managed during construction in accordance with the provisions of the Water Management Act 2000, and the Fisheries Management Act 1994 as outlined in Section 6 of this plan.

The layout of the wind farm and configuration of turbine locations, access track network and cable routes intersects existing agricultural use and paddock configuration. Typically, the topography of the Project area means that paddocks within the Project area contain storage dams used for stock water with many located in the lower reaches of what is typified as rolling hills. Most of the proposed infrastructure is sited on elevated locations with access tracks generally following contours to avoid steep grades and conflict with surface water storage dams and drainage lines. Whilst this will minimise crossings over drainage line, the trenching and installation of the cable network will largely follow the access roads but will also align where constraints allow, the shortest route and may be required to cross drainage lines and be in proximity of surface storage dams. Again, these crossings are described in Section 6 and will be planned to be constructed during periods of no flow (if possible) to minimise impacts to riparian zones including erosion and sedimentation. During times of flow additional mitigation measures will be implemented to maintain fish passage and to prevent pollution of waters. These are outlines in Section 6 of this plan.

In addition to the key construction processes associated with turbine locations, access tracks and cable trenches, other impacts to surface drainage and storage arising from construction disturbance across the project area include the

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Appendix C

		following: • General disturbance and vegetation removal across the landscape and the duration of soils exposure to erosion • The establishment and ongoing management of stockpiles of varying materials including topsoil, subsoil and rock associated with turbine foundations, crane pads, laydown areas, compounds and access tracks and the subsequent exposure downslope to overland flows, erosion and sedimentation, and • The increased operation of construction equipment and other activities including concrete batching and the resulting increased risk of accidental oil / fuel / chemical spills/release – leading to a reduction in water quality or contamination of air, soil and water and/or general nuisance to the community. In terms of expected rainfall (as outlined in Section 4.3.1), flood events and impacts from surface water flows during construction, turbine sites on ridgetops are unlikely to be affected however lower lying areas may be temporarily affected by swollen drainage lines or ponded water. Areas of flooding hazard are not likely to significantly affect construction or existing land use outside the construction footprint. The design and execution of erosion and sediment controls will be progressive and risk assessed taking into account ongoing assessment of rainfall risk, the extent of disturbance, slope and erosivity of disturbed soils and will address the potential for occasional short term high intensity rain events and associated flows.	
4.6	Groundwater	Impacts to groundwater resources within the Project area are expected to be minimal. There is no planned taking of groundwater for construction purposes, so the only likely impact is to intercept groundwater during planned excavation works. Geotechnical investigations across the site performed during the pre-construction early works phase identified standing water in excavations and bore drilling sites at depths greater than 8 metres (m) below ground level (BGL). The turbine foundations are proposed to be gravity formed and not rock anchored (via deep drilling) so it is unlikely that ground water will be encountered. The remaining risk to groundwater is contamination arising from unplanned release of contaminants during construction such as from leaks and spills of oils, fuels and chemicals. This will be managed in accordance with management measures outlined in Section 6 of this Plan and other measures outlined in the CEMP and Construction Compound and Ancillary Facilities Management Plan (CCAFMP).	-
4.7	Contamination	No specific areas of contamination were identified within the EA 2011. A Preliminary Site Assessment (PSA) was conducted to: • identify all past and present land use and potentially contaminating activities • identify potential contamination types • assess the site condition • provide a preliminary assessment of site contamination based on desktop analysis, and • assess the need for further investigations. The PSA determined that the land use history within the project site, comprises a range of agricultural enterprises with some potential to contaminate land through activities such as sheep and cattle dips, pesticide/herbicide application and diesel refuelling. The project has the potential to cause contamination through: • disturbance and uncovering of unidentified contaminated land leading to adverse environmental impacts and risk to public health; • release of contaminant into surrounding air, soils and waters; and • soil contamination through localised hydrocarbon or chemical spill.	-
4.8	Salinity and Acid Sulphate Soils	The EA 2011, did not identify any significant salinity or occurrence of Acid Sulphate Soils across the Project area.	-
4.9	Potable Water	Potable water for use at the construction compound will be obtained from local commercial water supply sources as required.	-
4.10	Construction Water	Construction water may be sourced from Central Tablelands Water (CTW) who handles all water accounts for Blayney Shire with the main water source being Lake Rowlands or Carcoar Dam. Groundwater and local landholder dams may be utilised for source water with existing dams used for storage in proximity to the works and concrete batch plant operations and be replenished from CTW supplies. In this event, all applicable licences, permits, approvals and agreements will be obtained. If groundwater is likely to be intercepted, consultation with NRAR is required to determine licensing requirements under the Water Management Act 2000.	-

4.11 Recommendations and Agreed Management Measures

The 2011 EA, Statement of Commitments which are relevant to this CSWQMP are outlined in Table 5.

Table 5 Statement of Commitments

SoC	Commitment	Refer to Section in this plan
Soil and Water Management Sub Plan	As part of the CEMP, a Soil and Water Management Sub Plan will be prepared by FCWFPL in consultation with relevant government departments and Blayney Shire Council. The Sub Plan will: (a) where relevant, be consistent with the RTA's Guidelines for the Control of Erosion and Sedimentation in Roadworks; (b) identify the Construction activities that could cause soil erosion or discharge sediment or water pollutants from the site; (c) describe management methods to minimise soil erosion or discharge of sediment or water pollutants from the site including a strategy to minimise the area of bare surfaces during Construction; (d) describe the location and capacity of erosion and sediment control measures; (e) identify the timing and conditions under which Construction stage controls will be decommissioned; (f) identify how the effectiveness of the sediment and erosion control system will be monitored, reviewed and updated; (g) include contingency plans to be implemented for events such as fuel spills; and (h) Disturbed areas will be required to be stabilised in accordance with the following principles: • temporary vegetation, mulch or other stabiliser will be applied to all disturbed areas, including soil stockpiles that remain exposed for a period of 30 days or more • all temporary earth diversion banks and sediment basin embankments will be seeded and fertilised as soon as practicable after construction and take into account the growing seasons • stabilisation of all batters will be commenced within ten days of completion of formation • All temporary control measures will be removed when revegetation has established on formerly disturbed areas and will be disposed of in a satisfactory manner. • Stockpile sites will be clearly identified and selected to be free from traffic and away from drainage lines and watercourses. They will be managed to minimise erosion and loss of topsoil. (i) At the conclusion of construction, all temporary tracks and areas disturbed by construction work including cable routes and hardstand areas surrounding the wind turbines will be reinstated and revegetated. Follow up maintenance will be undertaken until the areas are satisfactorily stabilised and restored. (j) An appropriately qualified soil scientist[1] will be consulted according to a schedule identified in the Soil and Water Management Sub Plan to: • undertake inspections of temporary and permanent erosion and sedimentation control devices; • ensure that the most appropriate controls are being implemented; • check that controls are being maintained in an efficient condition; and • check that controls meet the requirements of any relevant approval condition. The results of these inspections and any follow-up actions will be reported in the Construction Compliance Reports. (k) All erosion and sediment control devices will be maintained in satisfactory working order until such time as the disturbed areas have been stabilised to the satisfaction of FCWF and the respective landowners. Erosion and sediment devices will be inspected regularly after each rain period and during periods of prolonged heavy rain and any defects rectified promptly.	This Plan Section 6 MM01 MM04-61
Soil and Water Mitigation Measurements (Chapter 7)	Mitigation measures provided in Chapter 7 of the EA includes: • Divert surface runoff away from earthwork areas and soil stockpiles • Reduce the energy of surface flows in areas of potential erosion • Prevent sediment laden or contaminated water leaving the construction site • Provide containment for sediment entrained in surface flows • Reduce susceptibility of disturbed areas to erosion and include prompt revegetation of disturbed areas • In the event of water courses being crossed, appropriate measures would be employed to ensure that the natural drainage of the watercourses are not impacted • If any licenses or permits are required for extraction of water, these will be obtained by the proponent as required after consultation with the relevant authority. • Typical erosion and sediment control measures to achieve these objectives include: ○ Construction of drains and check dams ○ Construction of diversion banks, perimeter banks and level spreader sills	Section 6 MM06-26

[1] The SoC require an "appropriately qualified soil scientist" to undertake the inspections of erosion and sediment controls (ESC). This role will be fulfilled by the Environmental Coordinator or Site Engineer as these roles are filled by suitably qualified personnel. Inspections of ESC will form part of the regular site inspections which will be undertaken the Environmental Coordinator, Site Supervisor and / or Site Engineers.

		○ Use of sediment traps ○ Sediment fences around stockpiles and areas of earthworks ○ Stabilisation of temporary and permanent batters ○ Straw bale and geotextile filter fabric sediment traps and filters, and ○ Minimising periods that disturbed soil remains exposed with potential to be eroded.	
	Fuel and Oil Management Sub Plan	As part of the CEMP, a Fuel and Oil Management Sub Plan will be prepared by the Proponent in consultation with relevant Government Departments and Blayney Shire Council. The Sub Plan will include mitigation measures such as: (a) If oil filled generator transformers are used, containment measures will be incorporated to prevent any oil loss reaching local watercourses (b) The Proponent will require the design of the substation to incorporate provision for containment of any oil spillage or leakage from the 33 kV/132 kV transformers including secondary containment. (c) In the case of areas of oil or fuel storage on-site, the Proponent will provide sufficient containment to contain any spillage that may occur at the location. Such sites will be monitored periodically for integrity of containment and adequacy of handling procedures. For the substation, containment measures will also include a secondary containment dam down-slope of the substation.	Section 6 MM27-50
	Spoil and Fill Management	For the purposes of the development, the Proponent will ensure any imported fill: • will be Virgin Excavated Natural Material as defined in the Environment Protection Authority's guideline Assessment, Classification and Management of Liquid and Non-Liquid Wastes, and • will not introduce weeds that are not currently present at the locations where the fill be used.	Section 6 MM14
	No additional recommendations of management measures were identified in EA Modification 3, 2017 or EA Modification 4, 2018.		

5. ENVIRONMENTAL MANAGEMENT RESPONIBILITIES – SOIL AND WATER QUALITY

Position descriptions describe the responsibilities specific to positions on the Project. The Project Manager(s) with support from the Project Director(s) shall be responsible for providing the adequate resourcing to implement this Plan.	-

6. SOILS AND WATER QUALITY RISKS, IMPACTS, OBJECTIVES AND CONTROLS – CONSTRUCTION ACTIVITY BASED

Environmental Impacts	• Soil erosion • Sedimentation and reduction in surface water quality • Mixing, inversion or compaction of soil profiles • Spread of noxious weeds and plant or animal pathogens • Generation of nuisance dust and noise • Generation of waste • Soil contamination resulting from chemical or fuel spills, and • Contamination of surface and groundwater.
Environmental Performance Objectives and Standards	• To rehabilitate the land to a condition capable of supporting its previous use • To prevent the mixing of topsoil and subsoil • To ensure erosion and sediment control measures are installed and their effectiveness maintained • To manage surface drainage and sediment run-off from stockpiles and cleared areas • To control the spread of noxious weeds, plant and animal pathogens and pest animals • To prevent disturbance to environmental sensitivities identified in Project surveys, studies and reports • To prevent unplanned or unapproved damage to native flora and fauna • To prevent disturbance to sites of Aboriginal cultural heritage significance • To prevent soil inversion and the mixing of soil types, and • To manage waste.
Measurement Criteria	• Compliance with approvals and regulatory requirements • Compliance with the Project Environment Protection Licence (EPL) • Compliance with management measures • "No Go" areas identified and flagged off or otherwise delineated. No incursions or impacts on "no go" areas • No unplanned releases of contaminants to soil or waters • No unplanned or unauthorised damage to identified flora, fauna and habitats • No unplanned or unauthorised incursions or damage to identified cultural heritage sensitivities • Compliance with process for selection, siting and spacing of erosion and sediment control measures, and • Separate stockpiles of topsoil and subsoil.

Management Measures		Responsibility	Reference
Pre-Construction			
MM01	The contractor is responsible for ensuring impacts to soils and water quality is minimised during construction and ensuring compliance for all applicable legislation in relation to soils and water management. The preferred management approach for impacts to soils and water quality is avoidance.	Principal Contractor/ Subcontractor	F21(d) (i) (iii) Refer to CCAFMP

	The process for avoidance will be achieved through design of the wind farm layout and to microsite the location of all infrastructure to minimise the impacts to soils and water resources. The Construction Compound and Ancillary Facilities Management Plan (CCAFMP) prepared under CoA F21 (a) details the location of construction activities and ancillary facilities (such as concrete batching plants) which have the potential to impact on waterways, storage facilities, stormwater, and groundwater. Soil contamination that is discovered as unexpected finds during construction will be managed in accordance with the unexpected finds protocol as described in Appendix D		
MM02	All construction personnel and subcontractors are required to undertake a Project Environmental induction which will incorporate information on soil and water management specific to the project and field of operations and shall include the following: • Legislation and penalties for pollution and material harm of the environment; • Roles and Responsibilities for soil and water management; • Information on the location of existing soils and water sensitivities (Environmental Control Plans); • Mitigation management measures including erosion and sediment controls, storage of hydrocarbons and chemicals, waste and spill management; • Protocols for responding to unexpected finds of contamination, and • Incident reporting and record keeping. A register attendance at all inductions will be maintained.	Principal Contractor/ Subcontractor	F21(d) (iii)
MM03	All construction personnel and subcontractors will participate in Safe Work Method Statement (SWMS) development that will include information on soils and water management measures for specific construction activities.	Principal Contractor/ Subcontractor	F21(d) (iii)
MM04	• Develop and implement Erosion and Sediment Control Plans (ESCPs) progressively ahead of construction • A site-specific plan will be developed for all compounds and laydowns, the substation and switching station sites • Progressive plans will be developed for other works based on the Blue Book, Standard Drawings including earthworks and stockpiling. ESCPs will be updated as required, and • Drainage structures and erosion controls will be considered and will be incorporated into the design of hardstands, access roads and tracks to manage run-off and reduce the risk of erosion.	Principal Contractor/ Subcontractor	F12
MM05	The layout and design of WTG foundations and ancillary infrastructure will consider the volume of excavated spoil that will be generated and opportunities for reuse of the spoil in the construction of other site infrastructure will be investigated. Where practicable microsite the access tracks and other infrastructure to align with existing disturbance.	Principal Contractor/ Subcontractor	F21(d) (iii)
Ground disturbance works associated with or including but not limited to the following: • Clearing and Topsoil Stripping, Earthworks – General and Civil, Establishment of Concrete Batch Plant, access roads and other temporary works areas, Facility construction and WTG Erection, Transmission Line Establishment and Erection and Cable Installation			
MM06	Disturb soils only to the extent required in the Project specification.	Principal Contractor/ Subcontractor	F21(d) (iii)
MM07	Weather forecasts will be checked prior to commencing works and be rescheduled/reviewed if there is the likelihood of significant rainfall or water flows. Where practicable schedule / arrange works to avoid impacts of the high rainfall season.	Principal Contractor/ Subcontractor	F21(d) (iii)
MM08	Minimise the period in which the area is left exposed through works scheduling and disturbed areas shall be rehabilitated as soon as practicable.	Principal Contractor/ Subcontractor	F21(d) (iii)
MM09	Risk assess and install ESC controls to divert clean water around stockpiles and to contain, control and enable the treatment of run off from being released from works areas. Refer to Erosion and Sediment Control Section MM22-26 below.	Principal Contractor/ Subcontractor	F12
MM10	Surface water will be diverted around excavations and stockpiles and sites of chemical and hazardous material storage. All surface flow diversion, stockpile containment structures and other drainage protection measure will be regularly inspected, at least weekly and following rain events where runoff occurs (where accessible and safe to do so) and maintained in an effective condition. Drainage lines are not to be blocked / impeded by stockpiles or excavation works	Principal Contractor/ Subcontractor	F12 D10

MM11	Topsoil and subsoils will: • be stripped to the minimum depth required for the performance of the works • be stockpiled separately • not be stockpiled against fence lines or trees or in proximity to mapped environmental sensitivities or existing habitat structures • driven over when stockpiled or used for the construction of erosion and sediment measures, and • be located away from areas of weed infestation Report substantial loss of topsoil or damage to stockpiles for investigation and corrective action.	Principal Contractor/ Subcontractor	F21(d) (iii)
MM12	All spoil stockpiles from foundation excavation and access road construction will be located away from drainage lines, natural waterways, road surfaces and trees. Stockpiles will be protected against erosion and sedimentation Refer to Erosion and Sediment Control Section M22-25 below.	Principal Contractor/ Subcontractor	F21(d) (iii) F12
MM13	Prior to any subgrade improvement works being undertaken, the impact on drainage shall be considered. Subgrade improvement works shall not be constructed in a manner that restricts the flow of surface water. All watercourse and drainage line crossings shall consider fish passage and crossings to be constructed in accordance with: • Controlled Activity Guidelines (NSW NRAR 2018) • Policy and Guidelines for Fish Friendly Waterway Crossings 2004, and • Why Do Fish Need to Cross The Road - Fish Passage Requirements For Waterway Crossings, NSW DPI (Fisheries) 2003. All drainage works to be constructed in accordance with approved drawings. Drainage lines are not to be blocked / impeded by stockpiles or excavation works	Principal Contractor/ Subcontractor	D8 F14
MM14	All fill material not re-used from site and imported from outside the Project area will be required to meet the EPA requirements for classification as VENM and be certified weed free.	Principal Contractor/ Subcontractor	F21(d) (iii)
MM15	• Clearly delineate boundaries of disturbance for works crossing natural drainage lines; • Complete construction works within and near drainage lines as quickly as is practicable; • Drainage works to protect civil works should be installed as soon as practicable; and • Where ponding or pooling of water occurs, remediate works to restore surface flows.	Principal Contractor/ Subcontractor	D8
MM16	Construction of temporary causeways over drainage lines will involve either: • grading down the banks of drainage formations to allow safe movement of vehicles and equipment. This generally applies to minor crossings due to the low channel depth and width and low water flow and velocity; • grading down the banks of drainage formations to allow safe movement of vehicles and equipment and creating a rock ford within the water channel. The rock ford will involve applying clean crushed rock boxed-in on a bed of geofabric; and/or • creating a flume pipe / culvert design. This will involve grading down the approach track, laying down flume pipes on geofabric surrounded by non-erodible in-fill material (typically clean crushed rock). Where a drainage line (identified as requiring a vehicle / equipment crossing) is wet at the time of construction, clean rock material over geofabric will be used to construct a causeway and where significant flow is present flume pipes or a culvert will be installed (depending on the size of the channel). Other considerations will be by-passing the drainage line using existing access tracks or roads.	Principal Contractor/ Subcontractor	D8
MM17	The Lands Environment and Cultural Heritage (LECH) Manager will be vigilant of flood warnings, and preparatory action for floods (such as relocating plant and /or fuel to higher ground and consolidating barrier bunds) will be taken where necessary.	Principal Contractor/ Subcontractor	F21(d) (iii)
MM18	Except as may be provided by the Project EPL, all construction activities shall comply with section 120 of the POEO Act, which prohibits the pollution of waters.	Principal Contractor/ Subcontractor	D7
MM19	Bunds will be created to manage any potential spills from all pumps and other fuel consuming plant used on-site, particularly in proximity of drainage lines. Bunds will be lined with impervious material such as plastic. Self-bunded plant will be preferred. All bunded storage to be at least 110% of total volume being stored within.	Principal Contractor/ Subcontractor	D7 D10

MM20	Respond to spills immediately and in accordance with Spill Management measures below. The priorities during spill response at all times are to: • Protect human health and safety; • Protect the environment from harm; and • Consider commercial resources. Specific priorities for environmental protection are to: • Protect surface water and groundwater resources; • Protect soils; and • Protect habitat if present.	Principal Contractor/ Subcontractor	D10
MM21	• Water collected in excavations and diversion drains shall be visually and field tested to determine options for re-use. Water deemed acceptable for re-use will be stored in water tanks at the Project site. • When dewatering is approved by the LECH Manager or delegate and the water meets the following release parameters, Table 6, priority for re-use will be for dust suppression. • Ensure any dewatering approved for release to ground is via dewatering discharge points preferentially to vegetated areas adjacent to excavations and will not be directly to drainage lines or standing waters such as catchment dams • Discharge scour protection or flow dissipation measures will be installed at the release site. Refer to the dewatering protocol Appendix E Water collected in excavations, drainage and wash pits that does not meet release parameters described above will be: • Treated insitu if water has resulted from ingress of rainwater into excavations, and or • collected for remediation and re-use or disposed of to a licenced facility by a licenced waste contractor.	Principal Contractor/ Subcontractor	F21(d)(ii) F13

Table 6 – Construction Water Release Parameters*

Parameter	Unit	Sampling Method	Water Quality Release Limit
pH	%H	Aqua Probe or similar	6.0 – 9.0
Turbidity	NTU	Aqua Probe or similar	For standing receiving waters such as catchment dams where background water turbidity is above 50 NTU, release water should be no greater than 25% above background water turbidity. For receiving waters that are flowing drainage lines or watercourses, if background water turbidity is above 50 NTU, release water should be no greater than 25% above background water turbidity measured within 50m downstream of the construction activity.
			For standing receiving water such as catchment dams where background water turbidity is equal or below 50 NTU, release water should be no greater than 60 NTU For receiving waters that are flowing drainage lines or watercourses, if background water turbidity is equal or below 50 NTU when measured within 50m downstream of the construction activity, release water should be no greater than 60 NTU
Hydrocarbons	Nil	Grab	Hydrocarbons should not be noticeable as a visible film on the water surface nor should they be detectable by odour.
Salinity EC	uS/cm	Aqua Probe of similar	For standing receiving water such as catchment dams used for stock water release water EC should be <6000 For receiving waters that are flowing drainage lines or watercourses, when measured within 50m downstream of the construction activity, release water should be <2000
Dissolved Oxygen	%	Aqua Probe or similar	For receiving waters that are flowing drainage lines or watercourses, when measured within 50m downstream of the construction activity, release water should be >80 < 110

*Derived from ANZECC Guidelines relating to Irrigation and Stock Water

Erosion and Sediment Controls

MM22	Erosion and sediment control (ESC) planning and implementation shall align with the Blue Book and follow a staged process as shown below i.e. risk assessment, followed by ESC design, installation, and ESC plan review for the as-installed design to take account of unexpected aspects emerging during construction. Stage 1 - Pre-Construction Risk Assessment • Review Soil Erosion Hazard based on soil type and profile • Extent of disturbance and reduction of vegetation cover arising from construction • Duration of works • Slope Analysis - Ground slope (pre-and post-clear and grade and rehabilitation) • Soil type and profile • Extent to which soils may be reactive or dispersive • Site compaction • Likelihood of rain occurrence, intensity and frequency • Existing water levels and flow rates of water courses • Extent of vegetation cover and condition of receiving areas adjacent to the cleared disturbance area • Identify sites suitable standard ESC treatments, and • Identify higher risk sites requiring site specific ESC measures. Stage 2 - Determine ESC treatments and prepare ESC Line List and Progressive ESC Plans • Site assessment and determination and documentation of ESC treatments including specific requirements and progressive ESCPs for higher risk sites • Prepare ESC Line List for standard ESC treatments and higher risk sites • Advise of proposed ESC treatments FCWF Site Representative • Issue of ESC Line List for standard ESC treatments contractor's construction superintendent and relevant supervisors, and • Issue of progressive ESCPs and associated treatments for high risk sites. Stage 3 – ESC Installation • Construction Supervisors implement ESC treatments as per ESC Line List • Clearing Crew to undertake bulk earthworks and leave adequate breaks in topsoil, spoil and timber windrows for ESC structures where required • Install ancillary structures including coir logs, sediment fences, sumps and additional breaks in windrows where required based on post clear and grade levels and site conditions • Environmental Manager or delegate to provide on-site advice and oversight, and • Unexpected construction conditions managed through consultation between Construction Supervisor on-site, in consultation with FCWF Environment representatives where required. Stage 4 - ESC post installation review • Field inspection by LECH Manager or delegate or Construction Supervisor to review the ESC Register to reflect as-installed standard ESC treatments and or progressive ESCPs treatments for higher risk sites. Stage 5 – ESC Maintenance • Construction Supervisors shall be responsible ensuring maintenance of temporary ESC structures • LECH Manager or delegate shall undertake inspections on a regular basis and following rainfall events and record observations and required maintenance on a Site Inspection report and inform the Construction Supervisor, and Where work crews modify, or remove ESC structures for daily works, the responsible crew supervisor shall either reinstate the ESC structure at the end of the day, or inform the Construction Supervisor who shall arrange for reinstatement of the ESC structure.	Principal Contractor/ Subcontractor	F12
MM23	• Ensure inverts, berms, banks and water barriers are contoured to match as close as practicable to natural drainage lines or do not have excessive crossfalls, to ensure low velocity discharge • Ensure all silt fencing controls where required are located at toe of stockpiles, embankments and batters; • Ensure all erosion and sediment controls other than silt fencing and sediment basins structures are constructed so as to permit construction traffic to move over safely without degradation to structures • All crews are responsible for ensuring that any ESC structures modified during daily work requirements are reinstated by the end of each work day or prior to rainfall events, and providing advice to the Construction Supervisor if any ESC structures require maintenance • The Supervisor will ensure all ESC controls are maintained and in place by the end of shift on each day of works in the area in which clear and grade activities occurred • The Supervisor will inspect, clear accumulated sediments, and reinstate ESC controls after rain events • The period between clearing remediation shall be minimised to reduce the potential for erosion	Principal Contractor/ Subcontractor	F21(d) (iii) F12

	• Ensure spoil is stockpiled separately from topsoil and all stockpiles are located away from vegetation, third party infrastructure, drainage lines and imminent flood zones, and Where ESC controls are removed, or modified to provide access for works, the Supervisor shall either reinstate the controls at day's end.		
MM24	Regularly inspect all erosion sediment control and stockpile containment, including after rainfall events, to ensure they are maintained in an effective condition.	Principal Contractor/ Subcontractor	F12
MM25	Erosion controls will divert clean water to stable areas, such as vegetated areas or have measures installed to slow or spread discharges.	Principal Contractor/ Subcontractor	F12
MM26	During periods of flow, undertake visual monitoring of downstream waterways and in the event that there is visual confirmation of transport of sediments, stop works activities that may be contributing to the transport of sediments and review and amend ESC works.	Principal Contractor/ Subcontractor	F12
Spill Management			
MM27	A spill is a release of any fuel, oil, grease or other chemical substance (liquid or powder) to the environment. Spill kits will be provided and maintained in immediate proximity of work areas and stores. Vehicle spill kits will be carried on fuel trucks and vehicles (and / or plant) working near major plant and equipment. Relevant personnel will be trained in the use of spill kits	Principal Contractor/ Subcontractor	D10
MM28	The priorities during spill response are at all times to: • Protect human health and safety • Protect habitat and cultural resources • Protect rare and/or endangered flora and fauna, and • Consider commercial resources.	Principal Contractor/ Subcontractor	D10
MM29	Specific priorities for environmental protection are to: • Protect surface water and groundwater resources • Protect soils, and • Protect (endangered) species habitat.	Principal Contractor/ Subcontractor	D10
MM30	Spill management includes the following actions: • Halt the continued release of the substance being spilled to minimise the spill volume • Contain the spill if safe to do so to as small an area as possible • Containment methods shall include use of absorbent materials, earth bunds, sandbag bunds, temporary sumps and drain inlet blocks • Every effort shall be made by on site personnel to contain the spill to the smallest area possible to limit the extent of contamination, with priority being to ensure health and safety hazards and sensitive environments are avoided. Every effort will be made to avoid spills entering the surface and groundwater systems • In the event of a spill, the individual/s responsible for its detection shall notify the Supervisor as soon as reasonably practicable (see also 7.4 Environmental Incident Reporting) • Report to Supervisor and relevant parties (this depends on size and type of substance spilt) • If the spill is beyond the capacity of the immediate project resources follow the Emergency Response Procedure • Recover the spilt substance if safe to do so. Recovery methods may include suction pump and skimmers to recover liquid spills (e.g. oils) from water surfaces and areas of pooled liquid on land and absorbent materials on both land and water such as pads, straw and sawdust. Spill kits shall be carried by all fuel trucks • Clean up and remediate the spill site using appropriate PPE • Clean up and restoration methods will vary according to the extent and nature of the spill and the nature of the environment in which the spill occurred. In most cases, the appropriate action will be the removal of contaminated materials from the site for disposal at an appropriately licensed facility, and • Ensure waste tracking records where required.	Principal Contractor/ Subcontractor	D10
MM31	Report improper storage or leaks and spills, including location, size, and nature of spill, and details of clean-up/ remediation for investigation and corrective action; report substantial spills to Defence for prompt reporting to the Regulator.	Principal Contractor/ Subcontractor	D10
MM32	Environmental monitoring of significant spill sites will be undertaken to identify any potential impacts and evaluate the success of response and rehabilitation actions.	Principal Contractor/ Subcontractor	D10
Hydrocarbon and Chemical Management			

MM33	Refuel and service vehicles, plant and equipment offsite or on hardstand areas whenever practicable.	Principal Contractor/ Subcontractor	D10
MM34	Use double-hulled fuel trucks or trailers to refuel vehicles, plant and equipment.	Principal Contractor/ Subcontractor	D10
MM35	Ensure refuelling is done using containment controls such as spill mats. Report and contain all spills Refuelling shall not be unattended.	Principal Contractor/ Subcontractor	D10
MM36	Carry out refuelling as far as practicable from drainage lines, and at least 100m from waterways.	Principal Contractor/ Subcontractor	D10
MM37	Machinery will be pre-start checked and regularly maintained to minimise the risk of fuel and oil leaks. This will include cleaning / removal of surplus oils, oil impregnated dust and vegetation matter to reduce fire risks.	Principal Contractor/ Subcontractor	D10
MM38	Defective equipment / machinery will be shut down, and tagged out, until the defect has been rectified.	Principal Contractor/ Subcontractor	D10
MM39	Where scheduled maintenance of vehicles, plant and equipment occurs onsite ensure these activities are undertaken in a nominated area away from sensitive receptors and there is no risk of contaminant release to the environment.	Principal Contractor/ Subcontractor	D10
MM40	The storage and handling of fuels and chemicals will comply with all relevant legislation and Australian Standards (AS 1940: 2017) and must: • Not be located within 5m of No Go Zones; • Be bunded in accordance with AS1940:2017; • Prevent stormwater/rainwater ingress including drainage inlet pits, and Have fit-for-purpose spill kits available in proximity to works and storage sites	Principal Contractor/ Subcontractor	D10
MM41	Store hydrocarbons and hazardous chemicals in designated and bunded areas, away from busy areas or heavy traffic routes and as far as practicable from drainage lines.	Principal Contractor/ Subcontractor	D10
MM42	Where practicable ensure hydrocarbon/chemical containers are stored on drip trays/temporary bunds when not within the site store/compound defined bunded storage areas.	Principal Contractor/ Subcontractor	D10
MM43	All fuels and chemicals on the Project site will be clearly identified. A site manifest including SDSs will be maintained at the site office and at any other relevant locations.	Principal Contractor/ Subcontractor	D10
MM44	Chemical use will be minimised consistent with safe / efficient construction requirements, and the minimum practicable volume will be kept on site.	Principal Contractor/ Subcontractor	D10
MM45	Chemicals which pose lower risk to personnel and the environment will be chosen over those associated with higher risk, where viable alternatives are available and of comparable effectiveness.	Principal Contractor/ Subcontractor	D10
MM46	Workforce training will be conducted in Hydrocarbon and chemical handling and spill response and recovery procedures and will include subcontractors. Training will be targeted at members of the workforce or subcontractors routinely handling fuel delivery and transport of chemicals.	Principal Contractor/ Subcontractor	D10
MM47	Spill kits will be kept in the vicinity of all storage tanks and on fuel trucks to minimise response time.	Principal Contractor/ Subcontractor	D10
MM48	Fuel trucks will be fitted with an automatic shut off nozzle.	Principal Contractor/ Subcontractor	D10
MM49	Waste lubricants, containers with chemical/fuel residues, contaminated soil and any other oily wastes will be contained, bunded and disposed of at an approved disposal facility. Ensure copies of waste tracking forms are retained and provided to FCWFPL as required.	Principal Contractor/ Subcontractor	D10
MM50	Store used containers with residual hydrocarbons or hazardous chemicals as if full until disposed of; treat used containers as contaminated waste.	Principal Contractor/ Subcontractor	D10
Contamination and Unexpected Finds			
MM51	If project activities uncover or cause suspected soil or groundwater contamination (including asbestos), works will cease at that location and (after any necessary emergency response measures have been implemented) the contractors LECH Manager or delegate will be contacted for advice. The contractors LECH Manager or delegate will assess such sites and advise if works may continue in the area, or if the following contingency measures will be put in place:	Principal Contractor/ Subcontractor	F21(d)(iv)

	• the site will be flagged-off with a buffer of at least 10 metres all round • ensure a suitably qualified consultant is engaged to undertake further site assessments or soil sampling / analysis/characterisation as required; • develop remediation measures; and • ensure appropriate waste tracking is completed and all waste is disposed of appropriately Refer also to the Unexpected Finds Protocol – Appendix D		
MM52	All instances of soil contamination will be recorded in the Incident Register – with accompanying location information, site plan (including the mapped extent of the contaminated area), photographs (if relevant), record of notification to Defence, and action(s) taken. This will apply to both: • pre-existing soil contamination encountered during project activities, and • instances of soil contamination resulting from project activities.	Principal Contractor/ Subcontractor	F21(d)(iv)
MM53	Incidents are to be immediately reported to the Project Manager for immediate notification to Flyers Creek Pty Ltd and Regulator as required.	Principal Contractor/ Subcontractor	F21(d)(iv)
Rehabilitation			
MM54	Minimise the period in which the area is left disturbed through works scheduling; rehabilitate disturbed areas as soon as practicable.	Principal Contractor/ Subcontractor	F21(d)(iii)
MM55	Construction equipment and infrastructure will be removed progressively from the Project area after construction works are completed.	Principal Contractor/ Subcontractor	F21(d)(i)
MM56	Temporary erosion control measures (established during construction) will be removed and replaced with transitional and permanent controls.	Principal Contractor/ Subcontractor	F12
MM57	All waste / refuse from construction will be removed from the Project areas. Flagging/signage and protection used to identify environmental sensitivities will be removed and disposed of at the completion of reinstatement/rehabilitation.	Principal Contractor/ Subcontractor	D7
MM58	Ensure all work areas (lay downs, stockpile areas and access roads etc.) are restored to a state as close as practicable to their original condition, noting any specific conditions that may be associated with significant vegetation/habitat disturbance and landowner/stakeholder/Third Party requirements and commitments.	Principal Contractor/ Subcontractor	F21(d)(iii)
MM59	The principal method of regeneration and restoration of disturbed areas will be the re-spreading of the preserved topsoil containing existing seed bank stock and propagules associated with the pre-disturbance vegetation communities/pastures. Use cover crops as required to accelerate re-vegetation and stabilisation of disturbed areas.	Principal Contractor/ Subcontractor	F21(d)(iii)
MM60	Rehabilitation will commence as soon as practicable and progressively across the Project area after construction works are completed.	Principal Contractor/ Subcontractor	F21(d)(iii)
MM61	Following the re-spreading of topsoil, any cleared vegetation stockpiled for re-use will be re-spread (excluding weed material) to further encourage the propagation of native seed stock and propagules.	Principal Contractor/ Subcontractor	F21(d)(iii)
7. COMMUNICATION, CONSULTATION AND INCIDENTS			
7.1 Internal Communications	The immediate day-to-day responsibility for communication of soil and water quality protection lies with the Project management team. The following internal communication forums will occur during the execution of works: • Inductions • SWMS Workshops • Daily Pre-start meetings • Field based awareness talks regarding specific aspects and known environmental sensitivities • Regular toolbox meetings (project workforce), and • Weekly construction management team meetings.		-
7.2 External and Third Party Communications	Regular consultation with stakeholders/landholders is expected to be undertaken during construction activities. All significant stakeholder/landholder issues not readily resolved by construction personnel shall be directed to the Supervisor who will notify the Project Manager who will escalate to the FCWFPL representative as required.		-
7.3 Media Protocol	If any Project personnel have any contact with a media representative, they will: • Respond in a polite and courteous manner, and • Inform the media representative that they are not the authorised spokesperson and provide contact details of the Flyers Creek Wind Farm Project spokesperson or media contact.		-
7.4 Incident Management	Incident management and reporting shall be in accordance with Section 8 and 9 of the CEMP. In the event of an incident impacting soil and water quality as described above, a first reporting step will be the provision of a Heads-Up Notification (an Initial Report and Notification via email) detailing brief facts about the incident to be		-

		circulated to an agreed list of contractor and FCWFPL project personnel. This will be done as soon as practicable but no later than two (2) hours after the incident. The subsequent Incident Report will include: • Date, time and location details • A description of the incident and root cause • Whether the incident resulted in harm or regulatory Non-Compliance and requires reporting to Regulator or Third Party • Actions for resolution / close out, and • Corrective actions to assist in preventing recurrence. All communication with any Regulator associated with the Project will be directed through the Project Manager who will liaise with FCWFPL Representative to identify the required support and response requirements. Upon completion of an investigation, the findings and recommendations shall be distributed to the relevant work crews for discussion at prestart meetings. If the root cause analysis provides justification for amended work practices or processes a review and reissue of relevant documents (such as this CSWQMP, CEMP, SWMS and Form 2) will be undertaken.	
8.	**INSPECTIONS, MONITORING, AUDITS AND CSWQMP REVIEW**		

8.1	Inspections and Monitoring	The contractors LECH Manager or delegate shall coordinate inspections and monitoring of works during construction activities on a weekly basis and be available to provide advice and direction on the adequacy and requirement for environmental control measures throughout construction; check and record compliances with works procedures and this CSWQMP.
		Inspections and Monitoring, undertaking on a weekly basis, will include:
		• the effectiveness of topsoil and subsoil stockpiling and management;
		• the adequate installation, maintenance and effectiveness of ESC measures;
		• any erosion or sediment discharge events
		• the identification and management of any soil contamination locations.
		• exclusion zones
		• effectiveness of erosion and sediment control protection measures namely:
		  ○ Conveyance of diversion waters
		  ○ Site drainage
		  ○ Protection of high risk areas, and
		  ○ Integrity and maintenance of erosion and sediment controls.
		• In advance of forecast rain events and at the conclusion of ensuing rain the active construction works areas, access routes and associated work areas will be assessed to ensure the effectiveness of erosion and sediment control protection measures
		• Baseline water quality will be established in accordance with Table 5 for standing receiving waters or flowing watercourses downstream of disturbance works.
		• Water quality will be monitored in accordance with Table 6 and where release water quality exceeds the values described, works subject to the release shall be stopped and ESC amended until release parameters are in accord with Table 6
		• remediation/clean up response
		• inspecting adequacy and management of any flow diversion measures
		• monitoring flow and sedimentation of drainage lines
		• visual assessment of standing surface water quality
		• monitoring of wash pits
		• inspection of water usage and maintenance of water savings measures, and
		• Inspection of availability, use and effectiveness of spill kits.
			-

8.2	Audits	Audits will be undertaken in accordance with details and frequency outlined in Section 10.2 of the CEMP.	-
8.3	CSWQMP Review	A review of this CSWQMP will be undertaken annually and whenever there are significant changes in the scope of work, subsequent changes to construction methodologies, following an occurrence of environmental harm, non-conformance and following changes to the layout of the works or where there are additional changes to the layout identified after the approval of this plan. Any updates to the CSWQMP will be required to be approved by DPIE in accordance with CoA F20. In the event the construction period is less than 12 months, scheduled reviews of the CWQMP will be undertaken on a 6-monthly basis. A copy of the updated plan and changes, as approved by DPIE will be distributed to all relevant stakeholders and regulatory authorities.	-
8.4	Continuous Improvement	This Plan will be subject to ongoing evaluation and continuous improvement as outlined in Section 10.7 of the CEMP. Any updates to the CSWQMP will be required to be approved by DPIE in accordance with CoA F20.	
9.	**REPORTING AND RECORD KEEPING**		
9.1	Record Keeping	The contractor shall maintain a documentation and record system in support of this CSWQMP and monthly Project reporting requirements to enable review and auditing of management systems and procedures. The following records are to be maintained: • Site Inspection Records • Disturbance Records	-

	• Water monitoring records • ESCPs • Incident Reports • Incident Register, and • Consultation Log.	
9.2 Reporting	Monthly Reporting includes information on relevant soil and water data, summary and includes the reporting of any incidents and non-conformance.	-

APPENDIX A – CONSULTATION RECORD

The following table provides a detailed record of the consultation activities associated with this Plan.

Date	Consultation	Comments
11th March 2020	Blayney Shire Council	Construction Soil and Water Management Plan issued for consultation.
4th May 2020	Blayney Shire Council	Blayney Shire Council confirmed receipt of the CSWMP for consultation and have confirmed no comments applicable to the Plan.
11th March 2020	Cabonne Shire Council	Construction Soil and Water Management Plan issued for consultation.
2nd April 2020	Cabonne Shire Council	Cabonne Shire Council confirmed receipt of the CSWMP for consultation and have confirmed no comments applicable to the Plan.
13th March 2020	Lands Ministerials (Crown Lands)	Construction Soil and Water Management Plan issued for consultation.
2nd April 2020	Lands Ministerials (Crown Lands)	Refer to correspondence overleaf received on the 2nd April 2020
13th March 2020	NSW Natural Resources Access Regulator	Construction Soil and Water Management Plan issued for consultation.
28th April 2020	NSW Natural Resources Access Regulator	Refer to correspondence overleaf received on the 28th April 2020.

Megan Richardson

From: Mark Dicker <MDicker@blayney.nsw.gov.au>
Sent: Monday, 4 May 2020 8:43 AM
To: Megan Richardson
Cc: Brian Treacy (Nacap); May.Patterson@planning.nsw.gov.au
Subject: [EXTERNAL] RE: Flyers Creek - Management Plans

Hi Megan,

I forwarded all plans to all relevant personal within BSC, and have had no responses (besides Nathan's which you have).

I have also skimmed all of the plans and they seem ok to me.

Thanks Mark

Mark Dicker
Director Planning and Environmental Services
Blayney Shire Council
PO Box 62 Blayney NSW 2799
p - 02 6368 2104 | m - 0409 742 432 | e - MDicker@blayney.nsw.gov.au | w - www.blayney.nsw.gov.au

---

From: Megan Richardson <Megan.Richardson@infigenenergy.com>
Sent: Thursday, 30 April 2020 4:14 PM
To: Mark Dicker <MDicker@blayney.nsw.gov.au>
Cc: Brian Treacy (Nacap) <b.treacy@quantaservices.com>; May.Patterson@planning.nsw.gov.au
Subject: RE: Flyers Creek - Management Plans

Mark,

Just a reminder to advise that tomorrow is the last day for any comments/feedback form Blayney Shire Council on the following Flyers Creek construction management plans:

- D26 Design & Landscape Plan
- F20 Construction Environment Management Plan
- F21 (d) Construction Soil & Water Mngmt Plan

Many thanks
Megan

From: Megan Richardson
Sent: Monday, 27 April 2020 12:00 PM
To: Mark Dicker <MDicker@blayney.nsw.gov.au>
Subject: RE: Flyers Creek - Management Plans

Great thanks for the update Mark.

Megan Richardson

From: Tony Weekes <Tony.Weekes@cabonne.nsw.gov.au>
Sent: Thursday, 2 April 2020 1:51 PM
To: Megan Richardson; Heather Nicholls; Robert Cohen
Cc: May.Patterson@planning.nsw.gov.au
Subject: [EXTERNAL] RE: Flyers Creek Wind Farm, Condition F21 (d): Construction Soil & Water Management Plan

Hi Megan,

I have looked over your documentation, and everything looks fine.

Regards

Tony Weekes
Operations Manager Roads & Bridges
Tony.Weekes@cabonne.nsw.gov.au
(02) 6390 7155
0407300279

Cabonne Council
PO Box 17
Molong NSW 2866
Switch:(02) 6390 7100
Fax: (02) 6392 3260
Council@cabonne.nsw.gov.au
www.cabonne.nsw.gov.au

From: Megan Richardson <Megan.Richardson@infigenenergy.com>
Sent: Wednesday, 11 March 2020 1:02 PM
To: Heather Nicholls <Heather.Nicholls@cabonne.nsw.gov.au>; Tony Weekes <Tony.Weekes@cabonne.nsw.gov.au>; Robert Cohen <Robert.Cohen@cabonne.nsw.gov.au>
Cc: May.Patterson@planning.nsw.gov.au
Subject: Flyers Creek Wind Farm, Condition F21 (d): Construction Soil & Water Management Plan

Heather/Bob/Tony,

Re: Flyers Creek Wind Farm, Condition F21 (d): Construction Soil & Water Management Plan.

Please find attached the Flyers Creek Wind Farm Construction Soil & Water Management Plan in draft form for Cabonne Shire Council's review and comment by Wednesday 1st April 2020.

Please note that the draft CSWMP has also been sent to Blayney Shire Council & DOI – Lands & Water for their input.

Please also find attached a spreadsheet to assist with tracking consultation with Cabonne Shire Council on the Development Approval pre-construction documentation.

Megan Richardson

From: deb.alterator@crownland.nsw.gov.au on behalf of Lands Ministerials <lands.ministerials@industry.nsw.gov.au>
Sent: Thursday, 2 April 2020 8:01 AM
To: Megan Richardson
Subject: [EXTERNAL] Re: FW: Flyers Creek Wind Farm, Condition F21 (d): Construction Soil & Water Management Plan

Good morning Megan

Have been advised that the attached request relates to comments on a draft Soil and Water Management Plan. This document is generic in nature in managing soil and water erosion for the development. The legislation that covers this plan (relative to DPI) is the Water Management Act and the Fisheries Act. As such there is no comments from a Crown Land perspective.

Regards

Deb

Lands Stakeholder Relations

Team telephone numbers: Rebecca Johnson, Principal Project Officer, 4920 5040; Kirstyn Goulding, Administration Officer - Customer Liaison, 4920 5058; Kim Fitzpatrick, Senior Project Officer, 4920 5015, Deb Alterator, Project Support Officer 4920 5172

Crown Lands | Department of Planning, Industry and Environment
E lands.ministerials@industry.nsw.gov.au
Level 4, 437 Hunter Street Newcastle NSW 2295
www.dpie.nsw.gov.au

NSW GOVERNMENT | Planning, Industry & Environment

The Department of Planning, Industry and Environment acknowledges that it stands on Aboriginal land. We acknowledge the traditional custodians of the land and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

On Fri, Mar 13, 2020 at 11:03 AM Megan Richardson <Megan.Richardson@infigenenergy.com> wrote:

> Dear Sirs,
>
> *Re: Flyers Creek Wind Farm, Condition F21 (d): Construction Soil & Water Management Plan.*

Natural Resources Access Regulator

Contact: Bryson Lashbrook
Phone: 02 6937 2708
Email: bryson.lashbrook@nrar.nsw.gov.au

Megan Richardson
Development Manager
Infigen
Level 17, 56 Pitt Street
Sydney NSW 2000

Our ref: V15/3875-3#78
File No:
Your Ref:

28 April 2020

Dear Megan

Re: Flyers Creek Wind Farm - Construction Environmental Management Plan and Construction Soil and Water Quality Management Plan - Natural Resource Access Regulator Comments

The Natural Resources Access Regulator (NRAR) has reviewed the Construction Environment Management Plan (CEMP) and the Construction Soil and Water Quality Management Plan (CSWQMP) in relation to the Flyers Creek Wind Farm that was received on 13 March 2020. It is understood this consultation is in accordance with the requirements of Condition F20 and Condition F21 (d) of the Project Approval. The documents have been reviewed and the following comments are provided.

Construction Environmental Management Plan

- It is noted Appendix F includes a table which references licensing under the Water Management Act 2000. Additional information needs to be considered in relation to this aspect as follows:
- Water Supply Work Approvals are excluded from an approved SSD project on the basis the impacts of these works have been assessed and approved as part of the SSD project. It is understood no relevant works were approved in the SSD project hence any new works or works not currently authorised appropriately will require an approval under the Water Management Act 2000 prior to the take of water. Applications for new approvals include an advertising and assessment process.
- Water Access Licences (WALs) are not excluded from approved SSD projects. Hence where required, a WAL needs to be obtained prior to the take of water.

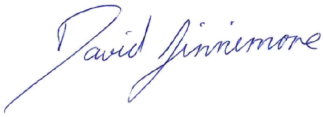
Construction Soil and Water Quality Management Plan

- It is noted Section 4.10 references the use of groundwater and local dams for construction purposes “where available” and references to the need to identify water sources. The availability of water and any approval or WAL requirements therefore remains uncertain and a potential risk to this project. Please note licence requirements and authorisations can apply to differing water sources eg. farm dams, bores, river water, town water supplies.
- If groundwater is likely to be intercepted consultation with NRAR is required to determine licensing requirements under the Water Management Act 2000.

- MM04 and MM22 refers to the Development and implementation of Erosion and Sediment Control Plans (ESCP's) which are expected to provide the detail of erosion and sediment control for the project are yet to be prepared. No comment can therefore be required on the adequacy of erosion and sediment control measures.
- MM13 refers to the potential for impacts on drainage lines. References in this document to the use of the "Guidelines for Controlled Activities on Waterfront Land (NSW Office of Water, 2012)" in relation to waterway crossings is supported. The reference should be updated to the latest version *NSW NRAR 2018*.

Please direct any questions regarding this correspondence to Bryson Lashbrook, bryson.lashbrook@nrar.nsw.gov.au, (02) 6937 2708.

Yours sincerely

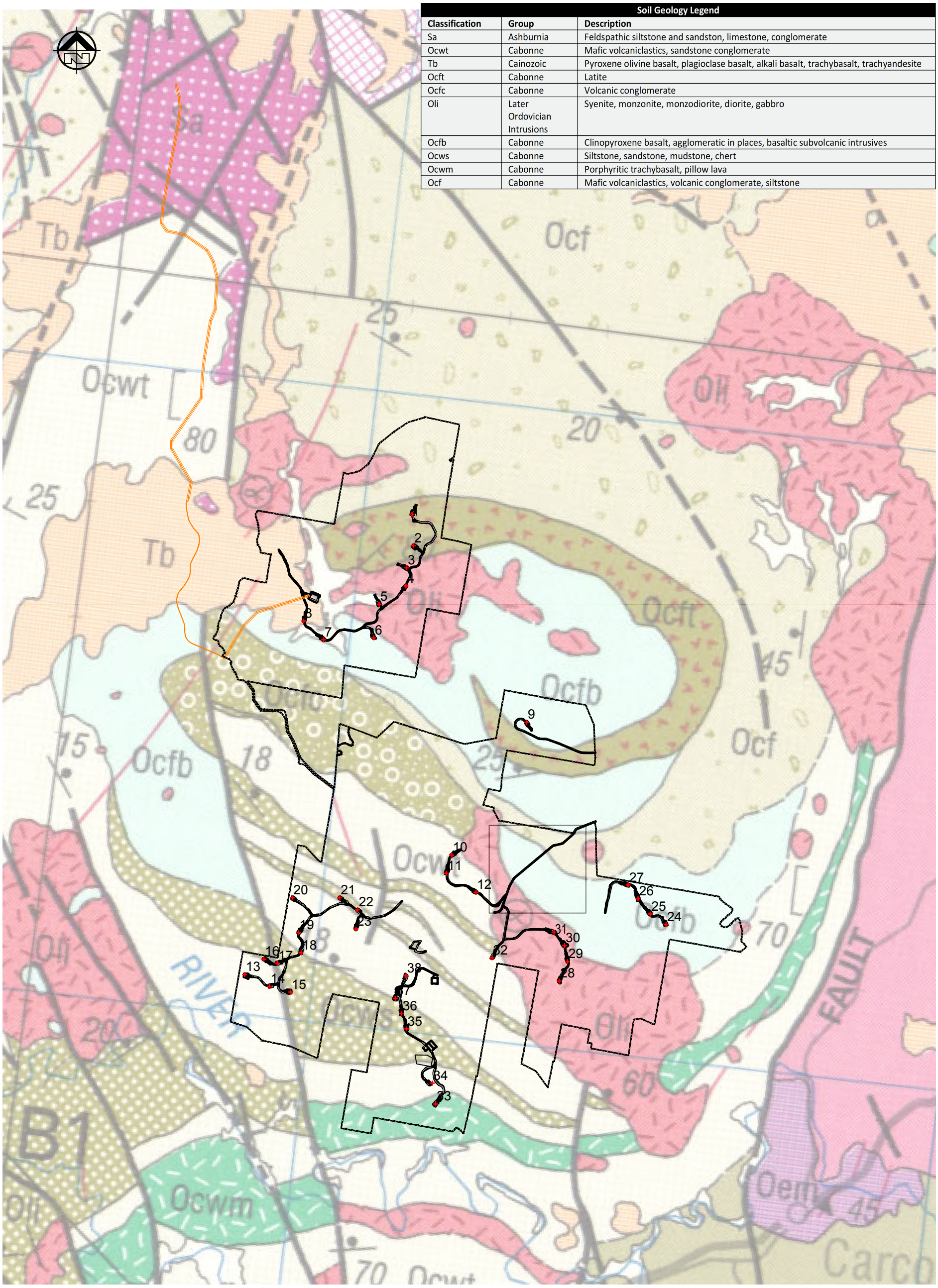


David Finnimore
A/Manager - Licencing and Approvals
Water Regulatory Operations – West
Department of Industry – Natural Resource Access Regulator

APPENDIX B – SOIL MAPPING

Note – Preliminary layout subject to minor amendments during detailed design and consultations.

Soil Geology Legend		
Classification	**Group**	**Description**
Sa	Ashburnia	Feldspathic siltstone and sandston, limestone, conglomerate
Ocwt	Cabonne	Mafic volcaniclastics, sandstone conglomerate
Tb	Cainozoic	Pyroxene olivine basalt, plagioclase basalt, alkali basalt, trachybasalt, trachyandesite
Ocft	Cabonne	Latite
Ocfc	Cabonne	Volcanic conglomerate
Oli	Later Ordovician Intrusions	Syenite, monzonite, monzodiorite, diorite, gabbro
Ocfb	Cabonne	Clinopyroxene basalt, agglomeratic in places, basaltic subvolcanic intrusives
Ocws	Cabonne	Siltstone, sandstone, mudstone, chert
Ocwm	Cabonne	Porphyritic trachybasalt, pillow lava
Ocf	Cabonne	Mafic volcaniclastics, volcanic conglomerate, siltstone



SITE LAYOUT

SCALE 1:70,000

LEGEND

1	TURBINE NUMBER
	132 kV TRANSMISSION LINE UG
	132 kV TRANSMISSION LINE OH

PRELIMINARY LAYOUT SUBJECT TO FINAL DESIGN

DIAL BEFORE YOU DIG www.1100.com.au

REV	DETAIL	DRN	CHK	APP	DATE
A	FOR APPROVAL	R.K.	F.M.	N.C.	06.03.2020

REVISIONS AND APPROVALS

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L2 39 Sherwood Rd Toowong, Qld 4066 www.icubed.com.au ABN 89 106 675 156
PO Box 878 Toowong, Qld 4066 mail@icubed.com.au ACN 106 675 156
p 07 3870 8888

nacap
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PROJECT: FLYERS CREEK WIND FARM

TITLE: PROJECT OVERALL SITE GEOLOGY PLAN

DRAWING STATUS: PRELIMINARY

PROJECT No. 18-070

CAD DO NOT SCALE DRAWING

SCALE: AS SHOWN

SIZE: A3

DRAWING No. FCWF-DWG-0751-1

REV. A

APPENDIX C – WATERWAY MAPPING

Note – Preliminary layout subject to minor amendments during detailed design and consultations.

LEGEND

- STREAM ORDER - 1
- STREAM ORDER - 2
- STREAM ORDER - 3
- STREAM ORDER - 4 OR HIGHER
- PROJECT BOUNDARY
- 132 kV TRANSMISSION LINE UG
- 132 kV TRANSMISSION LINE OH
- 33 kV CABLING LINE UG
- 33 kV CABLING LINE OH
- 11 kV LINE - EXISTING
- WTG 1 — TURBINE NUMBER
- ACCESS TRACK

NOTE

STREAM ORDER IDENTIFICATION FROM NSW GOVERNMENT PLANNING, INDUSTRY & ENVIRONMENT HYDRO LINE SPATIAL DATA.

NO PERENNIAL WATER COURSES IDENTIFIED WITHIN THE PROJECT BOUNDARY FROM GEOSCIENCE AUSTRALIA, GEODATA TOPO 250K SERIES 3 - BATHURST.

SWITCH YARD AND SATELLITE OFFICE
ERROWANBANG ROAD
CADIA ROAD
PANJARA ROAD
SATELLITE OFFICE
SUBSTATION
TRACK 1c
TRACK 1
TRACK 2
TRACK 3
TRACK 3a
TRACK 4
TRACK 5
TRACK 6
TRACK 7
TRACK 8
TRACK 9
TRACK 10
TRACK 10a
TRACK 11
TRACK 12
TRACK 13
TRACK 14
TRACK 15
TRACK 16
PROJECT COMPOUND
BATCH PLANT
CRUSHING PLANT
EXISTING QUARRY
DUNSTAFFNAGE ROAD
HALLS ROAD
GRONANG ROAD
CAR ROAD
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38

SITE LAYOUT

1:30,000 600 0 600 1200 A1
1:60,000 A3

PRELIMINARY LAYOUT SUBJECT TO FINAL DESIGN

DIAL BEFORE YOU DIG www.1100.com.au

REV	DETAIL	DRN	CHK	APP	DATE
B	FOR APPROVAL	J.C.	F.M.	N.C.	10.03.2020
A	FOR APPROVAL	J.C.	F.M.	N.C.	06.03.2020

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PO Box 878 Toowong, Qld 4066 mail@icubed.com.au ACN 106 675 156
p 07 3870 8888

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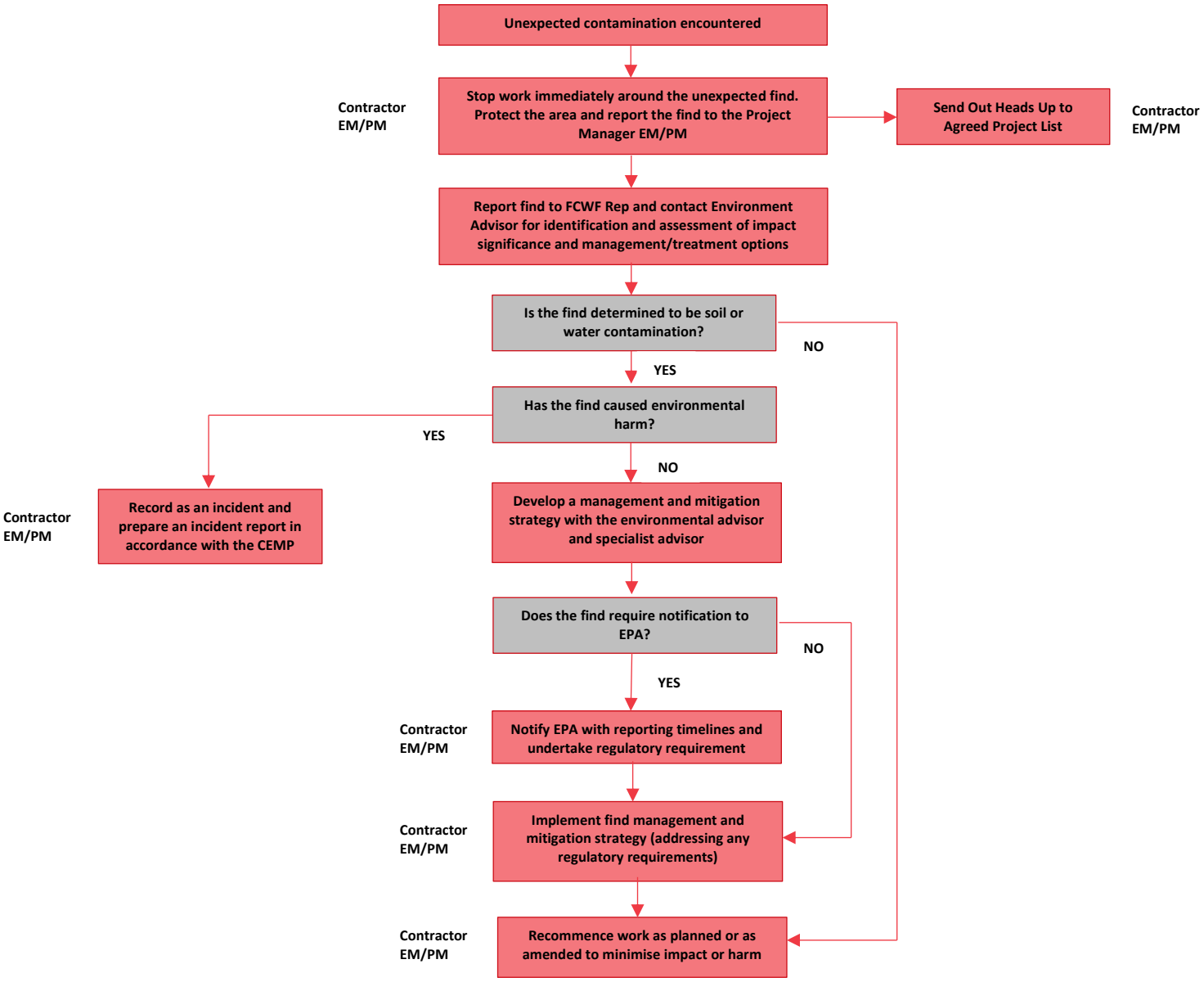
PROJECT: FLYERS CREEK WIND FARM
TITLE: PROJECT OVERALL WATERCOURSE CROSSING PLAN

DRAWING STATUS: PRELIMINARY
PROJECT No. 18-070
CAD DO NOT SCALE FROM PLAN
SCALE: AS SHOWN
SIZE: A3
DRAWING No. FCWF-DWG-0271-5
REV. B

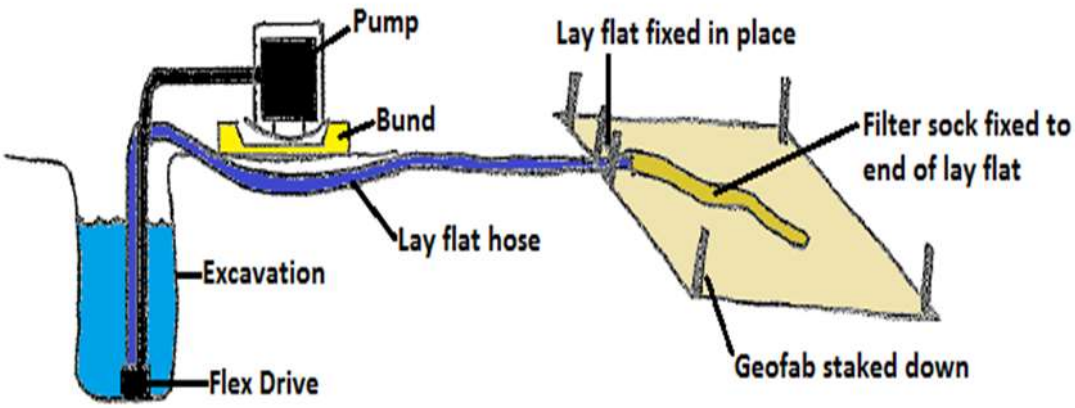
APPENDIX D – UNEXPECTED FINDS PROTOCOL – CONTAMINATION

UNEXPECTED FINDS PROTOCOL	
Purpose	The purpose of the unexpected finds protocol is to provide guidance to construction personnel in the event that contaminated soils are expectantly found within the Project area. An 'unexpected contamination find' can be defined as any unanticipated discovery of contamination including asbestos, that has not been previously assessed, mapped or is not covered by an existing management measure, and may present a risk of harm due to construction activities or cumulative impacts over the life of the development. As a result, appropriate management measures need to be implemented to minimise impacts to the Project area and to ensure compliance with relevant notification and other obligations, and to minimise the risk of penalties to individuals, the contractor, Infigen and Flyers Creek Windfarm Pty Ltd.
Scope	In some instances, following prior assessment undertaken during the environmental planning approval process, some localised sites of contamination may not be identified as being within the Project area or may have emerged or become uncovered/exposed due to environmental conditions or approved disturbance. This protocol provides guidance for procedures, mitigation and notification that should be followed in circumstances of unexpected finds. This protocol does not replace any requirements identified as part of the environmental impact assessment process. It should be noted that there has been no prior assessment of contamination.
Protocol and Mitigation	If project activities uncover or cause suspected soil or groundwater contamination, works will cease at that location and (after any necessary emergency response measures have been implemented) the contractors LECH Manager or delegate will be contacted for advice. The contractors Environmental Advisor will assess such sites and advise if works may continue in the area, or if the following contingency measures will be put in place: • The site will be flagged-off with a buffer of at least 10 metres all round • Ensure a suitably qualified consultant is engaged to undertake further site assessments or soil sampling / analysis/characterisation as required • Develop remediation measures, and • Ensure appropriate waste tracking is completed and all waste is disposed of appropriately All instances of soil contamination will be recorded in the Incident Register – with accompanying location information, site plan (including the mapped extent of the contaminated area), photographs (if relevant), record of notification to EPA, and action(s) taken. This will apply to both: • pre-existing soil contamination encountered during project activities, and • instances of soil contamination resulting from project activities. Upon formal assessment, a remediation management plan will be developed, and this will be used to manage the ongoing protection and management of the Project Site. Pre-start toolbox for relevant personnel should be conducted to ensure all onsite personnel involved in disturbance activities are aware of the potential for contamination, that may occur in the site, and what to do if they are encountered. Further, all onsite personnel involved in disturbance activities should be made aware of the 'Unexpected Contamination Finds Protocol'.
Legislative Requirements	Refer to Section 4.1 of this Plan.
Relevant Authority	EPA
Managing unexpected contamination finds	In the event an unexpected soil or water contamination is encountered during the performance of the works, the flowchart in Figure 1 should be followed.

Figure 1 Unexpected Finds Protocol – Contamination - Management Flowchart



APPENDIX E – DEWATERING PROTOCOL

DEWATERING PROTOCOL	
Purpose	The purpose of the dewatering protocol is to provide guidance to construction personnel regarding the proposed method for dewatering of excavations containing surface water run-off and ingress.
Scope	This protocol is to be used for dewatering of all excavations.
Protocol and Mitigation	• The LECH Manager or delegate shall undertake an assessment of the water to determine the suitability for re-use or disposal. This will involve a visual inspection for contaminants and a field test of the water against the parameters described in Table 5 in Section 6 of this Plan. Water meeting the release parameters can be dewatered otherwise the LECH Manager or delegate will determine appropriate storage/ treatment and disposal options. • For small quantities of water approved to be released that do not impact on safety or the conduct of works, first consideration shall be to allow the water to evaporate should weather conditions suit. • Next option will be re-use as dust suppression water via the use of a water cart(s) taking the water direct from the excavation to other areas of the construction site that require dust suppression. • If direct release to ground is undertaken, ensure that the dewatering arrangement is set up as presented in Figure 1 below. In this instance, the following shall be adhered to: ○ Pumps to be used are to be bunded ○ During the pumping operation, an operator MUST remain on site at all times and monitor the operation of the pumping and release of water ○ The receiving environment should be grassed or vegetated, ensure the outlet site has scour control and ESC as appropriate to the receiving environment. ○ The outlet hose is to be fitted with a sediment sock ○ Monitor the release to ensure ESC is adequate to the outflow of water. ○ THERE IS TO BE NO DISCHARGE DIRECT TO WATERWAYS – review the path of flow downstream to observe impacts and amend the ESC as required ○ IF IN DOUBT STOP WORK AND SEEK ADVICE FROM LECH MANAGER OR SUPERVISOR **Figure 1 – Dewatering to ground set up** 
Legislative Requirements	Refer to Section 4.1 of this Plan.
Relevant Authority	EPA

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infigen