NSW GOVERNMENT

NSW Resources Regulator

FWP0001231

CHAIN VALLEY COLLIERY FORWARD PROGRAM

Friday 7 July 2023 to Monday 6 July 2026

Contents

Summary

DETAIL	
Mine	Chain Valley Colliery
Reference	FWP0001231
Forward program commencement date	Friday 7 July 2023
Forward program end date	Monday 6 July 2026
Forward program revision (if applicable)	FWP0001107
Contact	Lachlan Peter McWha
Mining leases	CCL 706 (1973), MPL 1389 (1906), ML 1784 (1992), MPL 1349 (1906), ML 1308 (1906), ML 1782 (1992), MPL 1400 (1906), ML 1051 (1906), ML 1052 (1906), CCL 707 (1973), ML 1785 (1992), MPL 337 (1973), ML 1783 (1992), ML 1781 (1992)
Project location	Great Southern Energy Pty Ltd
Date of submission	Tuesday 12 September 2023

Important

The department may make the information in your program and any supporting information available for inspection by members of the public, including by publication on its website or by displaying the information at any of its offices. If you consider any part of your program to be confidential, please communicate this to the department via the message function on this submission within the NSW Resources Regulator Portal.

Three-year forecast – surface disturbance activities

Project description

Both Chain Valley Colliery (CVC) and Mannering Colliery (MC) are neighbouring underground coal mines located on the southern side of Lake Macquarie approximately 60 km south of Newcastle and 80 km north of Sydney. The CVC and MC pit tops are located approximately 1.5 km south-east and 3 km south of the township of Mannering Park respectively.

As of 1 April 2019, Great Southern Energy Pty Ltd (trading as Delta Coal) own and operate the two underground coal mines. Mining is currently undertaken at CVC with coal being transported underground via a series of underground crushers and sizers to MC where the coal is screened and sent directly to the Vales Point Power Station (VPPS) via an overland conveyor.

The operations are currently approved to the 31st December 2027. Delta Coal is currently seeking to consolidate the existing approvals for CVC and MC into a single Development Consent and extend the existing approved operations to 31st December 2029

Description of surface disturbance activities

Exploration activities

There are no exploration activities planned within the CVC mining and exploration leases within the next 3 years.

Construction activities

There are no construction activities planned to be undertaken by Delta Coal at CVC or MC pit-top facilities.

Mining schedule

Mining development method and sequencing and general mine features.

Over the next three years (2023-2026), it is planned that mining operations will be bord and pillar style first workings with the potential for some secondary workings planned utilising pillar extraction by continuous miners. All workings are underground, with portal entrance to the

mine to remain from CVC pit-top. First workings are planned to continue in the Northern Mining Area (beneath Morisset Peninsula) with potential secondary extraction within an area defined as the Northern Pillar Area (beneath Lake Macquarie), these workings are within ML1785. Headings are currently being developed for extension into a western mining domain beneath Lake Macquarie to allow mining within ML1782.

Areas identified for emplacements, the sequencing of emplacements, construction, and management.

No emplacement areas within the forecast period.

Processing infrastructure activities and the location of tailings facilities and schedule for emplacement

Majority of sizing and crushing of ROM coal is undertaken via underground crushers and sizers, MC's coal handling and preparation plant (CHPP) is utilised for the purpose of further screening of ROM coal prior to transport to Vales Point Power Station via overland conveyor. No tailings or reject are being generated by the colliery's current operations.

Waste disposal and materials handling operations.

Delta Coal utilises a contractor to undertake total waste management and disposal for the site. Putrescible waste is placed in general waste bins of varying sizes and collected for disposal at landfill. Hydrocarbons utilised by the site include diesel fuels and machinery oils, all fuels and hydrocarbons are stored within bunded areas and fuels are transported underground utilising bunded fuel pods. Hydrocarbon waste is collected from sumps utilised to drain empty oil drums and processed off-site for the purpose of recycling. Contaminated soils are typically only encountered at the site in regard to minor hydrocarbon spills and soil is excavated and placed into dedicated bins for hydrocarbon contaminated soils and absorbents, if large volumes (>1m3) of soil is excavated material is placed in a dedicated bin and classified for off-site disposal in accordance with the NSW EPA Waste Classification Guidelines.

[1] This includes coarse rejects, tailings and any other wastes resulting from beneficiation.

Key production milestones

MATERIAL	UNIT	YEAR 1	YEAR 2	YEAR 3
Stripped topsoil (if applicable)	(m^3)	0	0	0
Rock/overburden	(m^3)	0	0	0
Ore	(Mt)	0	0	0
Reject material[1]	(Mt)	0	0	0
Product	(Mt)	1.5	1.5	1.5

Three-year rehabilitation forecast

Rehabilitation planning schedule

Rehabilitation planning schedule

Former Mining Cottages Area Rehabilitation:

- Ecosystem and Land Use Establishment phase, Q2 2021 – Q4 2023
- Ecosystem and Land Use Sustainability phase, Q1 2024 – Q1 2026

Catherine Hill Bay – Possum Gulley Area Rehabilitation:

- Landform Establishment phase, current – Q2 2023
- Growth media development, Q2 2023 – Q3 2023
- Ecosystem and land use sustainability phase – Q3 2023 – Q1 2024
- Relinquishment – date to be confirmed with NPWS and RR

The proposed final rehabilitation program will be based on extensive experience of rehabilitation in coastal areas undertaken previously by DC, in addition to that undertaken by Councils and mineral sand mining companies and research on mine rehabilitation in the Hunter Valley. Given this, and the limited amount of area disturbed, major rehabilitation trials or research programs are not expected to be necessary. Prior to development of a detailed mine closure plan (2-5 years from planned mine closure) Delta Coal will commence a program to investigate and maintain records relating to available soil material for use as growth media on-site, including:

- Soil characterisation of existing soil stockpiles on-site; and
- Subsoil characterisation over domain areas to determine suitability as growth medium.

Stakeholder consultation

Consultation with national parks and wildlife services and resources regulator regarding the relinquishment of Catherine hill bay – possum gulley rehabilitated area relinquishment. Consultation with landowners (Vales Point Power Station) and Community Consultative Committee regarding future rehabilitation planning for CVC and MC pit-tops.

Rehabilitation studies, risk assessments and/or design work

Nil.

Rehabilitation research and trials

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS
FWP0001231					

Rehabilitation maintenance and corrective actions

Ongoing monitoring of the Chain Valley Colliery former mine cottages are in regard to ecosystem establishment and sustainability with ongoing management of weeds and invasive species as required.

Rehabilitation schedule

Former Mining Cottages Area Rehabilitation:

- Monitoring of land use and ecosystem development and sustainability (open grasslands), ongoing weed and invasive species management.

Catherine Hill Bay Possum Gulley:

- Importation of certified-fill material for the establishment of final landforms
- Amelioration and growth medium development
- Vegetation development (native woodland / heathland)
- Monitoring of land use establishment and sustainability.

Areas of surface disturbance are limited to relatively small areas due to the inherent nature of underground mining and limited coal processing on-site. As no coal beneficiation occurs on-site and, as a result, no major sources of reject or tailings are generated, the areas of direct surface disturbance within the Chain Valley and Mannering are able to be maintained at a minimum. As a consequence, the opportunities for the rehabilitation of areas of disturbance have been limited, with the surface features remaining largely unchanged since the 1960s. Regardless of this, where achievable Delta Coal is committed to the progressive rehabilitation of its sites examples of this include the demolition and ongoing rehabilitation of the former mine cottages in 2020, with surface coal handling structures also demolished during 2020.

Subsidence remediation for underground operations

Mine workings planned under land is limited to a negligible amount (considered less than 20mm) of subsidence. The mine regularly conducts subsidence monitoring to confirm the extent of actual subsidence.

All approved secondary extraction has occurred or is planned to occur beneath Lake Macquarie outside of the seagrass protection barrier and high-water subsidence protection barrier.

There are negligible environmental impacts expected due to mine subsidence. There will be no risk to public safety due to the planned subsidence.

Progressive mining and rehabilitation statistics

Three-yearly forecast cumulative disturbance and rehabilitation progression

	FORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
A	**Total surface disturbance footprint**	(ha)	27.62	27.62	27.62
B	**Total active disturbance**	(ha)	18.63	18.63	18.63
P	**Total new area of land proposed for active rehabilitation**	(ha)	4.1	4.1	4.1

Rehabilitation key performance indicators (KPIs)

	FORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
O	**Total new active disturbance area**	(ha)			
P	**Total new area of land proposed for active rehabilitation during the reporting period**	(ha)	4.1		
Q	**Annual rehabilitation to disturbance ratio**				

Attachment 1 – Reporting Definitions

REPORTING CATEGORY		DEFINITION
A	Total disturbance footprint – surface disturbance	All areas within a mining lease that either have at some point in time or continue to pose a rehabilitation liability due to surface disturbance activities. The total disturbance footprint is the sum of the total active disturbance, decommissioning, landform establishment, growth medium development, ecosystem and land use establishment, ecosystem and land use development and rehabilitation completion (see definitions below). Underground mining operations should not include the footprint of underground mining areas/subsidence management areas in the total disturbance footprint.
B	Total active disturbance	Includes on-lease exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, waste rock emplacements (active/unshaped/in or out-of-pit), tailings dams (active/unshaped/uncapped) and temporary stabilised areas (e.g. areas sown with temporary cover crops for dust mitigation and temporary rehabilitation).
C	Rehabilitation – land preparation	Includes the sum of all disturbed land within a mining lease that have commenced any, or all, of the following phases of rehabilitation– decommissioning, landform establishment and growth medium development. Refer to the glossary of terms in this document for the definition of these phases of rehabilitation.
D	Ecosystem and land use establishment	Includes the area which has been seeded/planted with the target vegetation species for the intended final land use. However, vegetation has not matured to a stage where it can be demonstrated that it will be sustainable for the long term and or require only a maintenance regime consistent with target reference/analogue sites. Typically, rehabilitation areas would be in this phase for at least two years (and usually more) before rehabilitation can be classified as being in the ecosystem and land use development phase. This phase does not apply to infrastructure areas that are being retained as part of final land use for the site.

REPORTING CATEGORY		DEFINITION
O		The area of any new active disturbance that will be created during the next three years, as defined under definition A1 (definition A1 Table 5).
P		The sum of any new rehabilitation to be commenced in the next three years. These areas may be in the phases "Rehabilitation - Land Preparation" or the "Ecosystem & Land Use Establishment" (definitions C & D in Table 5).
Q		The rehabilitation to disturbance ratio (S / R) indicates how many hectares of new rehabilitation are undertaken for each hectare of land disturbed during the three years. A ratio of 1/1 indicates that the area of new rehabilitation and disturbance in that period are the same.

Attachment 2 – Definitions

WORD	DEFINITION
Active	In the context of rehabilitation, land associated with mining domains is considered 'active' for the period following disturbance until the commencement of rehabilitation.
Active mining phase of rehabilitation	In the context of rehabilitation, the active mining phase of rehabilitation constitutes the rehabilitation activities undertaken during mining operations such as salvaging and managing soil resources, salvaging habitat resources, and native seed collection. This phase also includes management actions taken during operations to manage risks to rehabilitation and enhance rehabilitation outcomes such as selective handling of waste rock and management of tailings emplacements.
Analogue site	In the context of rehabilitation, an analogue site is a 'reference site' that represents an example of the defining characteristics (such as vegetation composition and structure or agricultural productivity) of the final land use. Characteristics of analogue sites can be assessed to develop the rehabilitation objectives and completion criteria for final land use domains.
Annual rehabilitation report and forward program	As described in the Mining Regulation 2016.
Annual reporting period	As defined in the Mining Regulation 2016.
Closure	A whole-of-mine-life process, which typically culminates in the relinquishment of the mining lease. It includes decommissioning and rehabilitation to achieve the approved final land use(s).
Decommissioning	The process of removing mining infrastructure and removing contaminants and hazardous materials.
Decommissioning Phase of Rehabilitation	Activities associated with the removal of mining infrastructure and removal and/or remediation of contaminants and hazardous materials. In the context of the rehabilitation management plan this phase of rehabilitation may also include studies and assessments associated with decommissioning and demolition of infrastructure or works carried out to make safe or 'fit for purpose' built infrastructure to be retained for future use(s) following lease relinquishment.

WORD	DEFINITION
Department	The Department of Regional NSW.
Disturbance	See Surface Disturbance.
Disturbance area	An area that has been disturbed and that requires rehabilitation. This may include areas such as on-licence exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, waste emplacements (active/unshaped/in or out-of-pit), tailings dams (active/unshaped/uncapped), and areas requiring rehabilitation that are temporarily stabilised (i.e. managed to minimise dust generation and/or erosion).
Domain	An area (or areas) of the land that has been disturbed by mining and has a specific operational use (mining domain) or specific final land use (final land use domain). Land within a domain typically has similar geochemical and/or geophysical characteristics and therefore requires specific rehabilitation activities to achieve the associated final land use.
Ecosystem and Land Use Development	This phase of rehabilitation consists of the activities to manage maturing rehabilitation areas on a trajectory to achieving the approved rehabilitation objectives and completion criteria. For vegetated land uses this phase may include processes to develop characteristics of functional self-sustaining ecosystems, such as nutrient recycling, vegetation flowering and reproduction, and increasing habitat complexity, and development of a productive, self-sustaining soil profile. This phase of rehabilitation may include specific vegetation management strategies and maintenance such as tree thinning, supplementary plantings and weed management.
Ecosystem and Land Use Establishment	This phase of rehabilitation consists of the processes to establish the approved final land use following construction of the final landform. For vegetated land uses this rehabilitation phase includes establishing the desired vegetation community and implementing land management activities such as weed control. This phase of rehabilitation may also include habitat augmentation such as installation of nest boxes.
Exploration	Has the same meaning as that term under the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.

WORD	DEFINITION
Final landform and rehabilitation plan	As defined in the Mining Regulation 2016.
Final land use	As defined in the Mining Regulation 2016.
Form and way	Means the form and way approved by the Secretary. Approved form and way documents are available on the Department's website.
Growth Medium Development	This phase of rehabilitation consists of activities required to establish the physical, chemical and biological components of the substrate required to establish the desired vegetation community (including short lived pioneer species. This phase may include spreading the prepared landform with topsoil and/or subsoil and/or soil substitutes, applying soil ameliorants to enhance the physical, chemical and biological characteristics of the growth media, and actions to minimise loss of growth media due to erosion.
Habitat	Has the same meaning as that term under the *Biodiversity Conservation Act 2016* and the *Fisheries Management Act 1994* (as relevant).
Indicator	An attribute of the biophysical environment (e.g. pH, topsoil depth, biomass) that can be used to approximate the progression of a biophysical process. It can be measured and audited to demonstrate (and track) the progress of an aspect of rehabilitation towards a desired completion criterion (i.e. defined end point). It may be aligned to an established protocol and used to evaluate changes in a system.
Land	As defined in the *Mining Act 1992.*
Landform Establishment	This phase of rehabilitation consists of the processes and activities required to construct the final landform. In addition to profiling the surface of rehabilitation areas to the approved final landform profile this phase may include works to construct surface water drainage features, encapsulate problematic materials such as tailings, and prepare a substrate with the desired physical and chemical characteristics (e.g. rock raking or ameliorating sodic materials).
Large mine	As defined in the Mining Regulation 2016.
Lease holder	The holder of a mining lease.

WORD	DEFINITION
Life of mine	The timeframe of how long a mine is approved to mine, from commencement to closure.
Mine rehabilitation portal	Means the NSW Resources Regulator's online portal that lease holders must use (via a registered account) to: ■ upload rehabilitation geographical information system (GIS) spatial data ■ develop rehabilitation GIS spatial data (using online tracing functions) ■ generate rehabilitation plans and rehabilitation statistics using the map viewer and Rehabilitation Key Performance Indicator functionalities. Data submitted to the mine rehabilitation portal is collated in a centralised geodatabase for use by the NSW Resources Regulator to regulate rehabilitation performance of lease holders.
Mining area	As defined in the *Mining Act 1992*.
Mining domain	A land management unit with a discrete operational function (e.g. overburden emplacement), and therefore similar geophysical characteristics, that will require specific rehabilitation treatments to achieve the final land use(s).
Mining land	As defined in the *Mining Act 1992.*
Native vegetation	Has the same meaning as that term under section 60B of the *Local Land Services Act 2013.*
Overburden	Material overlying coal or a mineral deposit.
Performance indicator	An attribute of the biophysical environment (for example pH, slope, topsoil depth, biomass) that can be used to demonstrate achievement of a rehabilitation objective. It can be measured and audited to demonstrate (and track) the progress of an aspect of rehabilitation towards a desired completion criterion, that is, a defined end point. It may be aligned to an established protocol and used to evaluate changes in a system.

WORD	DEFINITION
Phases of rehabilitation	The stages and sequences of actions required to rehabilitate disturbed land to achieve the final land use. The phases of rehabilitation are: ■ active mining ■ decommissioning ■ landform Establishment ■ growth medium development ■ ecosystem and land use establishment ■ ecosystem and land use development.
Progressive rehabilitation	The progress of rehabilitation towards achieving the approved rehabilitation completion criteria. This may be described in terms of domains, phases, performance indicators and rehabilitation completion criteria.
Rehabilitation Completion	The final phase of rehabilitation when a rehabilitation area has achieved the approved rehabilitation objectives and rehabilitation completion criteria for the final land use. Rehabilitation areas may be classified as complete when the NSW Resources Regulator has determined in writing that the relevant rehabilitation obligations have been fulfilled following submission of *Form ESF2 Rehabilitation completion and/or review of rehabilitation cost estimate* application by the lease holder.
Rehabilitation Completion criteria	As defined in the Mining Regulation 2016.
Rehabilitation cost estimate	As defined in the Mining Regulation 2016.
Rehabilitation management plan	As defined in the Mining Regulation 2016.
Rehabilitation objectives	As defined in the Mining Regulation 2016.
Rehabilitation risk assessment	As defined in the Mining Regulation 2016.
Rehabilitation schedule	The defined timeframes for progressive rehabilitation set out in the forward program.

WORD	DEFINITION
Relevant stakeholders	Means any persons or bodies who may be affected by the mining operations, including rehabilitation, carried out on the lease land, and includes: ■ the relevant development consent authority ■ the local council ■ the relevant landholder(s) ■ community consultative committee (if required under the development consent) or equivalent consultative group ■ affected land holder(s) ■ government agencies relevant to the final land use ■ affected infrastructure authorities (electricity, telecommunications, water, pipeline, road, rail authorities) ■ local Aboriginal communities, and ■ any other person or body determined by the Minister to be a relevant stakeholder in relation to a mining lease.
Risk	The effect of uncertainty on objectives. It is measured in terms of consequences and likelihood (AS/NZS ISO 31000:2009).
Secretary	The Secretary of the Department.
Security deposit	An amount that a mining lease holder is required to provide and maintain under a mining lease condition, to secure funding for the fulfilment of obligations under the lease (including obligations that may arise in the future).
Surface disturbance	Includes activities that disturb the surface of the mining area, including mining operations, ancillary mining activities and exploration.
Tailings	A combination of the fine-grained solid material remaining after the recoverable metals and minerals have been extracted from the mined ore, and any process water[2].
Waste	Has the same meaning as that term under the *Protection of the Environment Operations Act 1997*.

[2] Commonwealth of Australia (DITR), 2007. *Tailings Management.*

Attachment 3 – Plans

Plan 2A.pdf

Plan 2A.pdf

Plan 2A.pdf