

- All reasonable and practicable measures must be taken to minimise the removal of, or disturbance to, those trees, shrubs and ground covers (organic or inorganic) that are intended to be retained.
- All land clearing must be undertaken in accordance with the Development Approval and applicable legislation.
- Land clearing is limited to the minimum practicable extent during those periods when soil erosion due to wind, rain or surface water is possible.

STOCKPILE MANAGEMENT

- Wherever possible, protect stockpiles from wind, rain, concentrated surface flow and excessive upslope stormwater surface flows.
- Long term stockpiles such as topsoil and overburden should be vegetated to achieve a minimum 70% coverage.
- Locate stockpiles up-slope of an appropriate sediment control system.
- Establish flow diversion systems (e.g., diversion bunds, channels) must be established immediately up-slope of stockpiles.

SITE MAINTENANCE

- General site litter is to be cleaned up on a weekly basis, prior to anticipated heavy rainfall and after significant rainfall events (>25mm/24hours) (IECA n.d.).
- All erosion and sediment control measures, including drainage control measures, must be maintained in proper working order at all times during their operational lives.
- Sediment removed from places of sediment deposition must be disposed of in a lawful manner that does not cause ongoing soil erosion or environmental harm.

4.2.5 Monitoring

The **Quarry Manager** or consultant will undertake monitoring of the water exiting the site following commissioning of the drainage, erosion and sediment control structures. Sampling and testing will include those parameters detailed in **Table 8 – Nominated Performance Targets – Settling Pond 2**. These parameters will be assessed using the nominated performance targets also detailed in **Table 8 – Nominated Performance Targets – Settling Pond 2**. Additional drainage, erosion and sediment controls will be installed if necessary.

The **Quarry Manager** or consultant will undertake periodic inspection or monitoring of the water exiting the site to ensure that the nominated performance targets are met.

Table 9 – Guide to Water Quality Management

Event / Description	Potential Impacts	Inherent Risk (unmitigated)	Treatment / Action / Contingency Measures	Water Storages			Residual Risk (following application of treatment action)
				Settling Pond 1	Settling Pond 2 (Release Pond)	Quarry Sump/Drop cut	
Likelihood scores: Rare (1), Unlikely (2), Possible (3), Likely (4), Almost Certain (5). Consequence scores: Negligible (1), Minor (2), Moderate (3), Major (4), Catastrophic (5). Risk rating scores <ul style="list-style-type: none"> High (rating 10–16) = Manage by implementing site management procedures, specific monitoring and may require some operation/plant design controls. Medium (rating 5–9) = Manage by implementing specific monitoring or response procedures. Low (rating 1 – 4) = Manage by routine procedures, unlikely to need specific application of resources. 							
Dry periods	Normal operating conditions.	1 x 1 = 1 (Low)	Ensure sediment collected in ponds is removed when at 30% capacity as per Condition WA10.	✓	✓	NA	1 x 1 = 1 (Low)
Preceding Forecasted Storm/Rain Event	Insufficient holding capacity for forecast event	3 x 3 = 12 (Medium)	Check water level to confirm standing water level allows at least 0.5 m freeboard as per Condition WA11.	✓	✓	NA	1 x 3 = 3 (Low)
Rain forecast to occur within upcoming 24 hour period	Standing water level is greater than required height of freeboard	3 x 3 = 9 (Medium)	If standing water level is greater than required height of freeboard, pump water to quarry sump via water truck if sufficient storage capacity exists or reuse through the processing plant and for dust suppression.	✓	✓	NA	1 x 3 = 3 (Low)
	Overtopping of sediment basin	3 x 3 = 9 (Medium)	If sediment basin is full, dewater sediment basin by pumping to water truck and store in Quarry Sump / Drop Cut	✓	✓	NA	1 x 3 = 3 (Low)

Event / Description	Potential Impacts	Inherent Risk (unmitigated)	Treatment / Action / Contingency Measures	Water Storages			Residual Risk (following application of treatment action)
				Settling Pond 1	Settling Pond 2 (Release Pond)	Quarry Sump/Drop cut	
Likelihood scores; Rare (1), Unlikely (2), Possible (3), Likely (4), Almost Certain (5). Consequence scores; Negligible (1), Minor (2), Moderate (3), Major (4), Catastrophic (5). Risk rating scores <ul style="list-style-type: none"> High (rating 10–16) = Manage by implementing site management procedures, specific monitoring and may require some operation/plant design controls. Medium (rating 5-9) = Manage by implementing specific monitoring or response procedures. Low (rating 1 – 4) = Manage by routine procedures, unlikely to need specific application of resources. 							
During Rain/Storm Event	Overtopping of stormwater management devices	3 x 3 = 9 (Medium)	Monitor stormwater controls to check effectiveness.	✓	✓	NA	1 x 3 = 3 (Low)
	Uncontrolled release of potentially contaminated stormwater	3 x 3 = 9 (Medium)	Monitor and record any uncontrolled discharges. If it is possible to safely sample the discharged water for quality, then do so.	✓	NA	NA	1 x 3 = 3 (Low)
	Uncontrolled release of potentially contaminated stormwater	3 x 3 = 9 (Medium)	Record date, time, frequency and duration of any uncontrolled discharge event.	✓	NA	NA	1 x 3 = 3 (Low)
	Uncontrolled release of potentially contaminated stormwater	3 x 3 = 9 (Medium)	Undertake sampling of release waters and compare to nominated performance targets. Collect sample from upstream sampling location to provide a comparison.	✓	NA	NA	1 x 3 = 3 (Low)

Event / Description	Potential Impacts	Inherent Risk (unmitigated)	Treatment / Action / Contingency Measures	Water Storages			Residual Risk (following application of treatment action)
				Settling Pond 1	Settling Pond 2 (Release Pond)	Quarry Sump/Drop cut	
Likelihood scores; Rare (1), Unlikely (2), Possible (3), Likely (4), Almost Certain (5). Consequence scores; Negligible (1), Minor (2), Moderate (3), Major (4), Catastrophic (5). Risk rating scores <ul style="list-style-type: none"> High (rating 10–16) = Manage by implementing site management procedures, specific monitoring and may require some operation/plant design controls. Medium (rating 5-9) = Manage by implementing specific monitoring or response procedures. Low (rating 1 – 4) = Manage by routine procedures, unlikely to need specific application of resources. 							
Immediately Post Rain/Storm Event	Overtopping of sediment basin	3 x 3 = 9 (Medium)	If there is a likelihood of another significant rain event within the next 5 days, then initiate 'Preceding Storm/Rain Event' checks in this checklist as soon as possible.	✓	✓	NA	1 x 3 = 3 (Low)
	Dam wall failure	3 x 4 = 12 (High)	Check the integrity of all dam walls, contour drains, drainage features and pump intake areas and make repairs as soon as practicable if required.	✓	✓	NA	2 x 4 = 8 (Medium)
Additional/Ongoing	Normal operating conditions.	1 x 1 = 1 (Low)	Reuse water for onsite activities.	✓	✓	✓	1 x 1 = 1 (Low)

4.3 Hydrocarbon and Chemicals Management Plan

4.3.1 Objective

The activity is operated in a way that protects the environmental values of land, air and water including soils, subsoils, landforms and associated flora and fauna.

4.3.2 Purpose

The Hydrocarbons and Chemicals Management Plan has been prepared to control the potential for spills or leaks from chemicals and hydrocarbons associated with the site activities.

4.3.3 Performance Targets

- No land contamination from the site activity that would require registration on the Contaminated Land Register ('CLR').
- No serious spills of oils, greases, fuels, or other hazardous chemicals.
- No preventable release of hydrocarbons and chemicals to the environment.

4.3.4 Management Strategies

GENERAL

- Any chemical handling and storage must be designed and installed in accordance with the most recent edition of *AS 1940 - The storage and handling of flammable and combustible liquids* (Standards Australia 2017a), as a minimum.
- Maintain the chemical and fuel storage areas in a neat and tidy condition.
- Safety Data Sheets ('SDS') of chemicals used on site shall be kept in a register at the site office.
- Chemicals and fuels in containers of greater than 15 litres must be stored within a secondary containment system.
- Bunding must be constructed of material which is impervious to the material being stored.
- Bunds are to be kept in good condition (e.g., no cracks, gaps, or leaks)
- Roofed storage facilities are to be provided where possible.
- Stormwater captured within bunding is to be removed as soon as practicable and disposed of as contaminated water (if required).
- Empty hydrocarbon and chemical containers are to be stored with closures in place on hardstand or within a bunded area.
- A collection sump must be provided in the floor of the bunding to facilitate the removal of liquids.
- All pipe work in the bunded area must be directed over the bund wall and not through it.
- Where vehicle access to the bunded area is required, access must be by way of a rollover bund.
- Refuelling, equipment maintenance and cleaning of vehicles is to be undertaken within a designated area such as hardstand or sealed area, capable of capturing and containing contaminants.
- Spills are to be cleaned up immediately with appropriate spill kits. Spillages must not be cleaned up in a way that releases wastes, contaminants or other materials to any stormwater drainage systems, roadside gutters, or waters.
- All plant, equipment and vehicles are to be serviced and maintained in the designated workshop, hardstand and/or concrete areas.

4.3 Hydrocarbon and Chemicals Management Plan

- All new employees are to be inducted on the use of handling of chemicals used on-site.

SPILL KITS

- Maintain appropriate spill kits and personal protective equipment at locations known to all employees (e.g., refuelling locations, chemical storage facilities, mobile equipment).
- Ensure employees are familiar with, and trained in, the use of proper spill clean-up procedures and always maintain a copy of the procedures at the site.
- Undertake regular spill kit inventory checks to ensure sufficient materials and supplies are available in the event of a spill.

DISPOSAL

Refer to **Section 4.6 - Waste Management Plan** for details regarding correct methods of disposal of waste materials. In general:

- Hydrocarbon contaminated materials are to be appropriately disposed of at a licensed facility.
- If the material is a Regulated Waste (as defined under the legislation) it must be transported and disposed of by a licensed contractor.
- Oily waste materials, including liquid hydrocarbons, should be segregated from general wastes for disposal off-site by a licensed contractor.
- Records are to be kept on disposal of waste for all regulated waste materials.

4.3.5 Monitoring

Areas where handling of hydrocarbons and chemicals occur (e.g., refuelling, or minor on-site servicing) shall be regularly inspected by the Quarry Manager.

The Quarry Manager must ensure that adequate resources are available for management of hydrocarbons and chemicals and is to ensure that all personnel carrying out service and maintenance activities are appropriately qualified to do so.

4.3.6 Contingency Plan

In the event of any spill, implement the steps outlined in **Diagram 3 – Spill Response Procedure**. Remediation of land contamination may be required in the event of more serious incidents; however, Neilsens are to consult with a suitably qualified person to determine the nature and extent of any contamination remediation process.

Any incident caused by handling of hydrocarbons or chemicals which has the potential to cause environmental harm must be reported and investigated by the Quarry Manager or delegate in accordance with **Section 2.4 - Incident Response Procedure**, and corrective action is to be identified and undertaken.

SPILL RESPONSE PROCEDURE

1. INITIAL ASSESSMENT



For emergencies call 000

Advise the Site Supervisor immediately.

Assess the following:

- What is the type and volume of the spill
 - What is the source?
- What PPE is required according to the SDS?
- Are third parties needed to contain and manage the spill?

2. ISOLATE



Cease work in the area immediately.

Declare the area a no go zone and cordoned off where possible.

Avoid movement of plant/equipment into the area.

3. STOP THE SOURCE



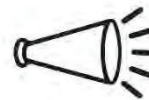
Locate and contain the source of the spill.

Stop the spill (e.g. close valves / taps, rotate damaged / punctured drums, plug leaks or gaps).

Protect water (e.g. block drains and outlets, apply drain covers, divert spills via spill berms, sandbag or similar).

Contain the spill use temporary bunds and spill kits, or absorbent materials (e.g., clay, rags).

4. NOTIFY



If a spill threatens or causes environmental harm, DES must be notified.

Spills within waterways pose a risk of environmental harm. DES must be notified, and professional assistance sought regarding clean-up operations.

5. CLEAN UP / REMOVAL



- Remove the spill by shovels and / or earthmoving equipment.
- Move plant and equipment to allow removal of the spill.
- Dispose contaminated soils / materials off-site via an approved regulated waste transporter to a licenced disposal facility.
- Do NOT dispose of any contaminated materials on-site.
- Do NOT use water or liquids to wash the spill area.

Spills within a waterway are to be cleaned up in accordance with advice provided by third parties, including DES.

6. INVESTIGATE



Investigate the cause of the spill and conduct a review of the on-site management measures to prevent a recurrence.

Carry any further notification or reporting requirements if directed to do so by DES.

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Diagram 3 – Spill Response Procedure

4.4 Noise Management Plan

4.4.1 Objective

The activity will be operated in a way that protects the environmental values of the acoustic environment.

4.4.2 Purpose

This Noise Management Plan has been prepared to control potential nuisance impacts that may occur as a result of noise associated with the site operations.

The EP Act and the associated *Environmental Protection (Noise) Policy 2019* provide the legislation and regulatory controls for management of noise in relation to protection of EVs.

4.4.3 Performance Targets

- No environmental nuisance complaints relating to the site operations.
- Site operations shall comply with the noise criteria specified in the EA.

4.4.4 Management Strategies

- Hours of operation are to be:
 - 6:00am to 6:00pm Monday to Friday
 - 7:00am to 5:00pm Saturdays
 - Blasting activities only to occur between 9:00am to 5:00pm Monday to Friday, except in an emergency.
 - No operations on Sundays or Public Holidays.
- Mobile plant (e.g., front-end loaders, dozers, haul trucks, excavators) are to be fitted with broadband reversing alarms where possible to mitigate potential nuisance from tonal characteristics.
- Stockpile areas should be designed to allow forward-in, forward-out movement of road haulage trucks to avoid a requirement for external trucks to reverse on-site.
- Ensure a site layout that enables product delivery and handling in such a way that reduces the need for reversing.
- Fixed engines, pumps and compressors are to be enclosed where practicable.
- Ensure all site equipment, machinery and vehicles are serviced in accordance with the original equipment manufacturers' specifications as a minimum.
- Ensure all modern mobile plant (e.g., front-end loaders, excavators, off-road trucks) is fitted with effective exhaust silencers.
- Equipment and machinery are to be shut down when not in use.
- Unnecessary revving of mobile or stationary motors and engines is to be avoided.
- Ensure that equipment at the site is used for the intended purpose.
- Ensure that any extraneous noises are rectified.
- Maintain haul roads and hardstand surfaces in good condition (e.g., free of potholes, rills and product spillages) and with suitable grades.
- Avoid the use of compression braking on product delivery trucks entering the site.

4.4 Noise Management Plan

4.4.5 Monitoring

The Quarry Manager must:

- Ensure regular surveillance of the site to qualitatively assess noise generation from the operations.
- Initiate noise monitoring if requested by the administering authority, or as otherwise deemed necessary, to investigate a noise complaint.

Any monitoring must be in accordance with the most recent version of the administering authority's *Noise Measurement Manual* (DES 2020a). When required by the administering authority, noise monitoring must be undertaken, and the results notified within 14 days to the administering authority.

Monitoring must include:

- $L_{A10, adj, 10 mins}$
- $L_{A1, adj, 10 mins}$
- The level and frequency of occurrence of impulsive or tonal noise
- Atmospheric conditions including wind speed and direction
- Effects due to extraneous factors such as traffic noise
- Location, date and time of recording.

4.4.6 Contingency Plan

Any complaint received in relation to noise impacts is to be managed by the Quarry Manager in accordance with **Section 0 -**

Compliant Recording and Response.

Should the outcomes of noise monitoring undertaken upon the request of the administering authority determine an exceedance of the specified limits, the administering authority notification is to be carried out in accordance with **Section 2.4 - Incident Response Procedure**, and corrective action is to be identified and undertaken.

Where necessary, advice should be sought from a suitably qualified person as to whether additional management measures are required to minimise noise. Additional noise monitoring must be undertaken where necessary to determine the effectiveness of the additional management strategies.

4.5 Blasting Management Plan

4.5.1 Objective

The activity will be operated in a way that protects the environmental values of the acoustic environment.

4.5.2 Purpose

Blasting will be required to fragment rock to a manageable size that can be transported and fed into the on-site crushing and screening plant.

Blasting practice has the potential to generate excessive noise and vibration impacts that may cause nuisance for sensitive receptors.

Section 440ZB of the EP Act provides the legislation for blasting.

4.5.3 Performance Targets

Blasting activities must not exceed the limits for peak particle velocity and air blast specified in the EA (extracted as **Table 10 – Blasting Limits** for reference) when measured at any sensitive place or commercial place.

Table 10 – Blasting Limits

Blasting criteria	Blasting limits
Airblast overpressure	115 dB (Linear) Peak for 4 out of 5 consecutive blasts.
Ground vibration peak particle velocity	<ul style="list-style-type: none"> For vibrations of more than 35 Hz-not more than twenty five (25) millimetres per second ground vibration, peak particle velocity; and For vibrations of not more than 35 Hz-not more than ten (10) millimetres per second ground vibration, peak particle velocity.

4.5.4 Management Strategies

All blast management at the site must be carried out in accordance with the *Bromelton North Quarry: Blast Management Plan* (Groundwork Plus 2022b).

4.5.5 Monitoring

Monitoring of blasting activities must be undertaken by a suitably qualified person in accordance with the administering authority's guideline *Noise and Vibration from Blasting* (DES 2022) and the relevant *AS 2187.2-2006 Explosives - Storage and use - Use of explosives* (or most recent version) (Standards Australia 2006). Refer to the *Bromelton North Quarry: Blast Management Plan* (Groundwork Plus 2022) for information relation to methods and frequency of blast monitoring to be implemented at the site.

4.5 Blasting Management Plan

4.5.6 Contingency Plan

Any compliant received regarding nuisance associated with blasting at a sensitive receptor must be managed by the Quarry Manager in accordance with **Section 0 -**

Compliant Recording and Response.

In the event that blast monitoring determines an exceedance of the approved limits, the Quarry Manager is to notify the administering authority in accordance with **Section 2.4 - Incident Response Procedure**. Advice should be sought from a suitably qualified person as to whether additional management measures are required to minimise impacts from blast. Subsequent blasts are to be monitored to ensure effectiveness of any additional measures implemented.

Additional air quality monitoring should be undertaken as necessary to determine the effectiveness of any additional management strategies employed in response to exceedance of approved limits.

4.6 Waste Management Plan

4.6.1 Objective

Any waste generated, transported, or received as part of carrying out the activity is managed in a way that protects all environmental values.

4.6.2 Purpose

This Waste Management Plan has been prepared with reference to the conditions of approval to ensure wastes produced on-site are appropriately managed.

The type of wastes that may be generated at the site may include, but are not necessarily limited to the following:

- Regulated wastes (e.g., batteries, oil filters, waste oil/hydrocarbons and containers, oil/water emulsions and tyres).
- Scrap metal and used or faulty parts and equipment.
- General waste such as food waste, packaging and consumables.
- Green waste.

The *Waste Reduction and Recycling Act 2011* ('WRR Act') nominates a waste and resource management hierarchy in a preferred order of adoption. The hierarchy is as follows:

- (a) *AVOID unnecessary resource consumption*
- (b) *REDUCE waste generation and disposal*
- (c) *RE-USE waste resources without further manufacturing*
- (d) *RECYCLE waste resources to make the same or different products*
- (e) *RECOVER waste resources, including the recovery of energy*
- (f) *TREAT waste before disposal, including reducing the hazardous nature of waste*
- (g) *DISPOSE of waste only if there is no viable alternative.*

4.6.3 Performance Targets

- Implement the WRR Act waste management hierarchy.
- Maintain a record of wastes requiring off-site disposal.
- Meet all legislated waste tracking requirements in accordance with the EP Reg.
- No unlawful disposal of wastes on or off-site.

4.6.4 Management Strategies

WASTE AVOIDANCE

Waste avoidance relates to preventing the generation of waste or reducing the amount of waste generated. Reasonable and practicable measures for achieving waste avoidance may include, but are not necessarily limited to:

- Input substitution (using recyclable materials instead of disposable materials, for example using oil delivered in recyclable steel drums instead of non-recyclable plastic containers).
- Increased efficiency in the use of raw materials, energy, water, or land (purchasing consumables in bulk (large containers) rather than in small quantities).

4.6 Waste Management Plan

- Improved maintenance and operation of equipment (keep equipment in good working order to reduce wear and overhaul).
- Undertaking an assessment of waste minimisation opportunities from time to time.

WASTE REUSE

Waste re-use refers to re-using waste, without first substantially changing its form. Reasonable and practicable measures for reusing waste may include, but are not necessarily limited to:

- Recovering and separating solvents, metals, oil, or components or contaminants and reusing separated solvents for degreasing plant and equipment.
- Applying waste processing fines to land in a way that gives agricultural and ecological benefits (using fine sediments in rehabilitation activities).
- Using overburden for constructing bunds and landforming.
- Reusing silt/sediment on-site to the maximum practicable extent.

WASTE RECYCLING

Waste recycling refers to treating waste that is no longer useable in its present form and using it to produce new products. Reasonable and practicable measures may include, but are not necessarily limited to:

- Recovering oils, greases, and lubricants for collection by a licensed oil recycling contractor, recovering, separating, and recycling packaging (including paper, cardboard, steel and recyclable plastics).
- Recycling used plant and equipment to the maximum practicable extent.
- Finding alternatives to disposal of non-recyclable materials (using conveyor belts for noise attenuation, mudflaps, ute tray liners).
- Providing suitable receptacles and storage areas for collection of materials for recycling.

ENERGY RECOVERY FROM WASTE

This refers to recovering and using energy generated from waste. Due to the scale of the operation, energy recovery is not considered viable.

WASTE DISPOSAL

This refers to disposing of waste which cannot otherwise be reused, recycled or used for energy recovery. Reasonable and practicable measures may include, but are not necessarily limited to:

- Regulated wastes must be transported and disposed of in accordance with the *Environmental Protection Regulation 2019*.
- Disposal to a licensed waste disposal facility (i.e., landfill or transfer station).

WASTE STORAGE

- Waste storage containers or areas are to be provided and located at safe and convenient locations at the site.
-

4.6 Waste Management Plan

- Any storage containers are to be identified with the type of wastes which may be disposed of in each container.
- Carry out a daily housekeeping and litter collection to ensure loose litter is contained and disposed of appropriately.
- Whenever possible use fencing, enclosures, cover and other physical barriers to prevent inadvertent transport of litters off-site.

REGULATED WASTE

Regulated wastes are defined in the EP Reg. Waste management areas must include a dedicated section for regulated wastes, which must be stored within sealed containers within a bunded area in accordance with Australian Standards and the following minimum requirements:

- All regulated wastes will be transported off-site by a suitably licensed commercial transporter with an ERA 57 Regulated Waste Transport (or equivalent) approval.
- To assist in the collection and transfer of regulated wastes, designated regulated waste bins, drums and skips must be used. Where possible these regulated waste storage containers should be located at the work location where the waste is being generated and then returned to the designated regulated waste storage areas for storage prior to offsite disposal or recycling.
- Dedicated regulated waste storage areas must be provided to prevent the mixing of regulated wastes with other stored material or with incompatible hazard classes. Wastes must only be deposited into designated areas within the applicable storage area.
- Storage areas for regulated wastes must be constructed in accordance with AS 1940-2004 or an equivalent Australian Standard.
- Any regulated waste stored at the site should be recorded in a Waste Management Register or similar.
- Where possible, regulated waste stores must be lockable to prevent access by unauthorised persons.
- As soon as practicable, remove and dispose of all regulated waste to a licensed waste disposal facility or recycling facility using a licenced contractor.

TRACKABLE WASTE

Certain regulated wastes as defined under Schedule 9 of the EP Reg are to be tracked in accordance with the requirements of Section 11 of the EP Reg. **Diagram 4 – Waste Tracking Requirements (Paper Based System)** provides an overview of the waste tracking requirements for each stakeholder in the transport and handling of trackable waste chain.

4.6.5 Monitoring

All site personnel shall be responsible for ensuring wastes are stored and removed from the site on a regular basis.

The Quarry Manager must:

- undertake ongoing visual inspections to ensure the waste management hierarchy is being effectively implemented.

4.6 Waste Management Plan

- undertake daily visual inspections of baled materials to identify and remedy any damage to covering materials.
- ensure that waste treatment measures are implemented at the site.
- ensure that waste receptacles are provided, and that temporary waste storage areas are signed; recycling bins are emptied when full and materials which may cause land contamination are not disposed of on the site.
- keep a record of regulated waste generated at the site, treatment and disposal methods, approved contractors for transporting and disposing of waste and the location of the facility for accepting the waste.

4.6.6 Contingency Plan

Where a non-compliance is identified, a review of the Waste Management Plan is to be undertaken to determine areas for improvement and additional staff training on waste management procedures and waste handling is to be undertaken.

Where Neilsens becomes aware that putrescible, trackable or regulated wastes have been inappropriately disposed of, or an incident occurs involving potential or actual environmental harm, the incident must be notified to the administering authority in accordance with **Section 2.4 - Incident Response Procedure**, and corrective action is to be identified and undertaken.

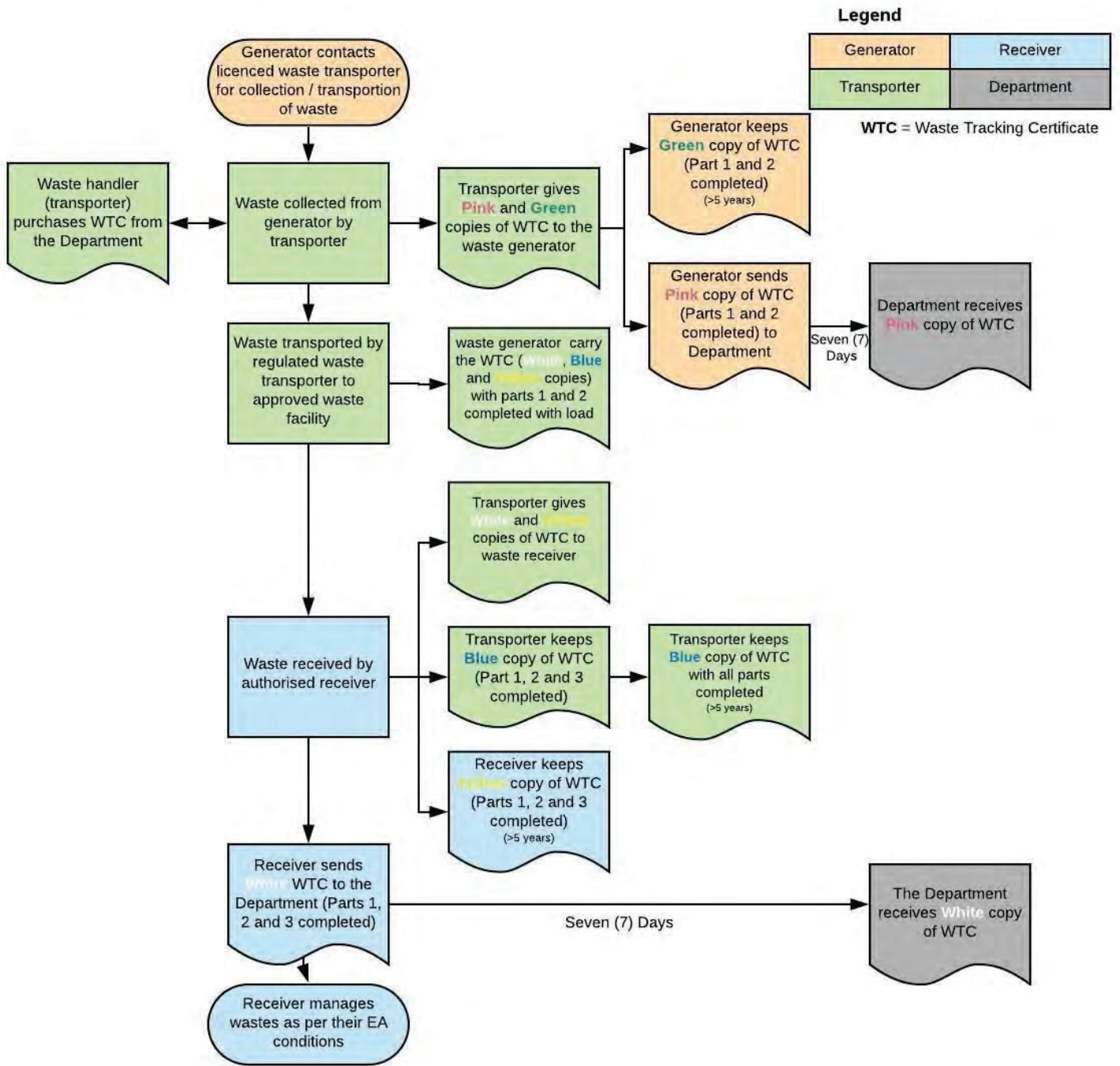


Diagram 4 – Waste Tracking Requirements (Paper Based System)

4.7 Rehabilitation Management Plan

4.7.1 Objective

The activity is operated in a way that protects the environmental values of land including soils, subsoils, landforms and associated flora and fauna.

4.7.2 Purpose

This Rehabilitation Management Plan has been prepared to assist with site rehabilitation.

4.7.3 Performance Targets

- Limit land disturbance to that which is necessary at any one time.
- Identify any land contamination and implement appropriate remediation or management where necessary.
- Land that has been disturbed for activities must be rehabilitated in a manner such that:
 - suitable native species of vegetation for the location are established and sustained for earthen surfaces.
 - potential for erosion is minimised.
 - the quality of water released from the site, including seepage, does not cause environmental harm.
 - potential for environmental nuisance caused by dust is minimised.
 - the water quality of any residual water body does not have potential to cause environmental harm.
 - the final landform is stable and protects public safety.
- Rehabilitation of disturbed areas must take place progressively as works are staged and new extraction areas are commenced.

4.7.4 Management Strategies

FINAL LANDFORM AND FINAL LAND USE DESCRIPTION

The final landform of the site is to demonstrate consideration for the zoning of the land and surrounding undisturbed areas. It is expected that the landform will comprise of vegetation terminal workings, with slower gradient areas returned to pasture for agricultural uses. Any stormwater management devices may be converted to clean water storages for livestock watering / farm water supply. The proposed Concept Rehabilitation Plan is included as **Attachment 3 – Conceptual Rehabilitation Plans**.

Terminal benches are to be battered to varying slopes depending upon the geotechnical properties of the substrate. Residual void batters are expected to have a face slope varying between 15° to 80°, and the final overall batter slopes will be 45° to 58°, depending on the geotechnical properties of the substrate (to be guided by a suitably qualified person).

4.7 Rehabilitation Management Plan

PROGRESSIVE AND FINAL REHABILITATION METHODOLOGIES

Rehabilitation is to be undertaken progressively throughout the life of the operations and is to commence in each area as soon as practicable after it is no longer required for operational purposes. Progressive rehabilitation must take place as new areas of extraction are commenced.

Rehabilitation methodologies for the hard rock extraction areas are to generally include:

- The extraction area will be re-profiled and revegetated with native species on terminal benches, and pasture species on low gradient areas to support a rural end use.
- Battering terminal benches to stable slopes depending upon the geotechnical properties of the rock (to be informed by a suitably qualified person).
- Installing safety bunds and erosion and sediment controls.
- Covering the bench surfaces with available overburden and topsoil.
- Planting of endemic tree and shrub species on top of benches.
- Seeding of low gradient areas (slopes 0-6%) e.g., pit floor (NB. these areas are likely to be required for ongoing use until cessation of the pit development).

All areas subject to rehabilitation are to be subject to ongoing monitoring and maintenance until the vegetation is self-sustaining.

TOPSOIL AND SUBSOIL MANAGEMENT

The following measures should be implemented for topsoil and subsoil stripping:

- Materials should not be stripped when too wet or too dry.
- When stripped, materials should be used directly for rehabilitation to the maximum practicable extent or stockpiled and preserved for future use.
- Stockpiling of materials should not exceed a height of 2 to 3 m and should be shaped and revegetated to protect the soil from erosion and weed infestation.
- Stockpiles should be maintained in a free draining condition and long-term soil saturation should be avoided.
- Runoff waters external to the areas to be stripped should be diverted away from the working area.
- Stripping of topsoil should be limited to the minimum area necessary.

The following measures should be implemented for topsoil and subsoil spreading:

- Whenever possible, stripped materials should be directly placed on an area undergoing rehabilitation.
- Areas to be re-spread should be shaped prior to placing materials over the re-profiled surface.
- Equipment used to spread materials should be scheduled to avoid compaction.
- Before respreading the materials, loosen the underlying substrate to break up any compacted or surface sealing and to enable keying of the two (2) materials.
- On slopes less than 3(H):1(V), loosen lightly compacted substrate, ensuring all ripping operations occur along the contour.

4.7 Rehabilitation Management Plan

- Materials are to be removed from stockpiles in a manner that avoids vehicles travelling over the stockpiles.
- Materials are to be respread in the reverse sequence to its removal so that the original upper soil layer is returned to the surface to re-establish the entrapped seed content of the soil.
- Ensure all exposed substrates are covered with a minimum 300mm of suitable topsoil / subsoil to enable success of revegetation.
- After spreading materials, ensure the surface is left in a roughened state to assist moisture infiltration and inhibit soil erosion.
- Prior to any revegetation, cultivate any compacted or crusted topsoil surfaces (to a depth no greater than the depth of the materials to be spread).
- Spreading is to be immediately followed by revegetating wherever possible.
- If erosion occurs on treated surfaces, the area is to be re-spread with additional materials and revegetated.

SPECIES SELECTION

Table 11 – Species Suitable for Revegetation provides species that may be used for revegetation of terminal workings. This species list is indicative only, based on pre-clearing regional ecosystems mapped over the site. The species used may be any combination of these species, or more relevant alternative species as recommended by an ecologist, and should be selected at the time of revegetation based on availability at local suppliers.

Table 11 – Species Suitable for Revegetation

Final Landform Feature	Vegetation*
Terminal benches	<ul style="list-style-type: none"> • <i>Acacia sp.</i> (Wattle) • <i>Alphitona excelsa</i> (Red Ash) • <i>Angophora subvelutina</i> (Rough-barked Apple) • <i>Aphananthe philippinesis</i> (Native Elm) • <i>Aristida sp.</i> (Wire Grass) • <i>Callistemon viminalis</i> (River Bottle Ash) • <i>Casuarina torulosa</i> (Forest She Oak) • <i>Erythrina vespoertillio</i> (Batwing Coral Tree) • <i>Eucalyptus crebra</i> (Narrow-Leaf Ironbark) • <i>Eucalyptus intermedia</i> (Pink Bloodwood) • <i>Eucalyptus maculate</i> (Spotted Gum) • <i>Eucalyptus melliodora</i> (Silver-Leaved Ironbark) • <i>Eucalyptus moluccana</i> (Grey Box) • <i>Eucalyptus tereticornis</i> (Forest Red Gum) • <i>Eucalyptus tessellaris</i> (Moreton Bay Ash) • <i>Ficus stephenocarpa</i> (Sandpaper Fig) • <i>Ficus virens</i> (White Fig) • <i>Ficus watkinsiana</i> (Green-Leaved Moreton Bay Fig) • <i>Jagera seudorhus</i> (Foam Bark) • <i>Lophostemon suaveolens</i> (Swamp Myrtle) • <i>Milia azedarach</i> (White Cedar) • <i>Notelaea longifolia</i> (Native Olive) • <i>Pittosporum revolutum</i> (Yellow Pittosporum) • <i>Trema aspera</i> (Native Peach).

4.7 Rehabilitation Management Plan

<p>Low gradient areas (slopes 0-6%)</p>	<p>Pasture species that may include, but are not limited to:</p> <ul style="list-style-type: none"> • Angleton grass (<i>Dicanthium aristatum</i>) • Buffel grass (<i>Cenchrus ciliaris</i>) • Creeping bluegrass (<i>Bothriochla insculpta</i>) • Forest bluegrass (B. <i>bladhii</i> subsp. <i>glabra</i>) • Indian bluegrass (B. <i>Pertusa</i>) • Pangola grass (<i>Digitaria spp.</i>) • Panics (P. <i>maximum</i>) • Perennial forage sorghum, 'Silk' sorghum (<i>Sorghum</i>) • Prairie grass (<i>Bromux wildenowii</i>) • Queensland bluegrass (<i>Dicanthium sericeum</i>) • Rhodes grass (<i>Chloris gayana</i>).

WEED AND PEST CONTROL

- Any materials (e.g., soil, mulch, straw) brought onto site for rehabilitation are to be inspected to ensure they are free from weeds and pests.
- Prior to the establishment of vegetation, a spraying campaign may be required to control weeds to prevent migration of weed species into areas under rehabilitation.
- Alternative methods for controlling both grass and weeds include manual weeding, burning, slashing, weed matting and mulching.
- Predation (e.g., grazing animals, birds and insects) are risks for revegetation. Depending on the situation, specific measures may be required to protect the works from predation such as fencing.

WATER BODIES

Water bodies are likely to remain within the final landform, created through the final extraction void and sediment basins utilised for stormwater management during the operational phase of the quarry.

Water bodies are to be converted to clean water storages where they are to be retained in the final landform. This can be achieved by:

- Cleaning sediment from the base of water storages.
- Battering slopes to achieve grades of no more than 3(H):1(V) where practicable.
- Ensuring that the water quality within these water storages is suitable for future use.

Neilsens are to engage a suitably qualified person to assess water quality of any residual water bodies at the site to ensure that the release parameters specified by the EA conditions, or other water quality objectives agreed with the administering authority.

4.7 Rehabilitation Management Plan

LAND CONTAMINATION

Prior to site closure, a contaminated land assessment by a suitably qualified person may be required. Assessment of site contamination, if required, is to be undertaken and managed in accordance with the following:

- *National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended 2013)*
- *AS 4482.1-2005 - Guide to the sampling and investigation of potentially contaminated soil. Part 1 – Non-volatile and Semi-volatile compounds.*
- *AS 4482.2-2005 - Guide to the sampling and investigation of potentially contaminated soil. Part 2 – Volatile Compounds.*

Should it be identified that areas of the site have been contaminated through the operational activities, these areas are to be remediated, and validated as contaminant free, prior to site closure.

INFRASTRUCTURE

Infrastructure that is to remain on-site after the surrender of the approvals may only be retained where a landowner agreement has been provided to the administering authority which clearly itemises the infrastructure that will remain, and detail the condition it is to remain in. It is anticipated that the following infrastructure would be suitable for retention:

- Utilises and services (e.g., water, electricity, telecommunications, gas).
- Access tracks and roads.
- Water storages (rehabilitated).

Plant, equipment and buildings (including demountable and mobile infrastructure) should be removed from the final landform

A landowner's agreement should be prepared at cessation of the rehabilitation to confirm satisfaction with the rehabilitation site and for retention of any infrastructure within the landform.

KEY PERFORMANCE INDICATORS

The Key Performance Indicators ('KPIs') summarised in

Table 12 – Key Performance Indicators for Rehabilitation have been established to provide quantifiable measures for achieving the performance targets for rehabilitation. Progressive and final rehabilitation will be deemed complete when the KPIs are achieved.

Each of the KPIs are assigned to Neilsens for completion; however, should the Neilsens require assistance to measure the achievement of these KPIs, they are to engage a suitably qualified person.

Table 12 – Key Performance Indicators for Rehabilitation

KPI Description	Measure(s)	Critical Timeframe
The final landform demonstrates consideration for the surrounding undisturbed areas and land zoning.	True / False.	Prior to lodgement of application for surrender.
Suitable species are to be utilised for revegetation in accordance with Table 11 – Species Suitable for Revegetation.	Species as per Table 9 – Species Suitable for Revegetation.	Prior to commencement of rehabilitation activities.
IECA (Australasia) (2010, p.5) state that ‘at least 70% ground cover (combined plant and mulch) is considered necessary to provide a satisfactory level of erosion control’.	70% groundcover will be required at all sites to mitigate sediment mobilisation through erosion.	Assessment prior to any stormwater management device reduction or removal; and, Final assessment prior to surrender application.
Erosion rates of soil / sediment from disturbed areas associated with the extractive industry activities does not exceed natural rates experience for the locality.	Local erosion rate calculated and compared against actual site erosion rates.	Within three months of completion of each stage of the quarry (including at final stage).
Evidence that water quality of any residual water bodies complies with the water quality objectives of the EA or other agreed release parameters. Alternatively, water bodies are to be filled and stabilised with vegetation to create a clean, free-draining catchment.	Water quality objectives of EA conditions or other agreed Water Quality Objectives (e.g., Livestock Watering Guidelines).	Prior to lodgement of a surrender application for the EA.
Air quality of the final landform achieves levels consistent with adjacent undisturbed areas through establishment of the final landform.	Visual surveillance and complaints register review.	Prior to lodgement of a surrender application for the EA.
Review of geotechnical stability confirms that the site is stable and not subject to slumping.	Geotechnical assessment.	Prior to lodgement of a surrender application for the EA.
Assessment confirms the slope stability of final landforms.	Slope ratio, degree, or percentage.	Prior to lodgement of application for surrender.
Landowner statement(s) obtained for: <ul style="list-style-type: none"> • any retained items of extractive industry-related infrastructure; and • satisfaction with the rehabilitated final landform. 	True / False.	Prior to lodgement of application for surrender.

4.7.5 Monitoring

Neilsens must undertake a monitoring and maintenance period following the rehabilitation phase and action any remedial measures to ensure the rehabilitated landform transition to a self-sustaining state.

The Quarry Manager or delegate must conduct regular inspections of any rehabilitated areas to ensure maintenance and repairs are carried out as necessary. Maintenance works may include fertilising, watering, repairs to barriers, guards and plant failure replacements, refer to **Table 13 – Maintenance Schedule for Revegetation**.

The monitoring and management program will review the ongoing success of the rehabilitation treatment. The Quarry Manager or delegate may engage a consultant to assist with any detailed monitoring or management of rehabilitation. The key parameters to be measured as part of the rehabilitation monitoring and management program will include:

- Landform stability.
- Erosion and sedimentation.
- Groundcover success (<70% desirable).
- Vegetation species composition and density.
- Water quality.
- Weed presence.

Final rehabilitated areas are to be visually monitored by the Quarry Manager or delegate and, where relevant, assessed by suitably qualified persons to determine the effectiveness of measures implemented.

Table 13 – Maintenance Schedule for Revegetation

Activity	Frequency
Weed Control	
Site Preparation (where necessary)	One (1) treatment at least two (2) weeks prior to seeding / planting.
Ongoing weed management	Biannually or as required.
Revegetation	
Monitor performance and conduct any necessary maintenance.	<ul style="list-style-type: none"> • One (1) month after seeding / seedling planting. • Three (3) months after seeding / seeding planting. • Six (6) months after seeding / seedling planting. • 12 months after seeding / seedling planting. <p>OR</p> <ul style="list-style-type: none"> • Following significant rainfall events (e.g., >25 mm).
Replace diseased or dead plants.	As necessary following maintenance inspections.
Fertilise (if applicable)	Two (2) months after topsoil spreading or seeding.
Apply mulch (if available)	One-off around tube stock plantings
Pasture management	
Slashing and fertilising	As required.

4.7.6 Contingency Plan

In the event that monitoring identifies failures in the rehabilitation implementation, the following contingency measures may be used, however; these will be adapted to the particular failure identified:

- Replacement of failed plantings to increase establishment / success rates.
 - Use of fertilisers and soil ameliorants where necessary.
 - Reprofiling or eroded or failed landforms.
 - Application of additional topsoil where necessary to support vegetation growth.
 - Impletion of additional erosion and sediment controls.
 - Water quality improvements where necessary.
-

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ATTACHMENTS

Attachment 1

Annual Environmental Performance Review

Annual Environmental Performance Review

Site:

Date:

Reviewer:

Approvals

1. Have there been any changes to the site approvals?

Note: consider the Environmental Authority, Development Permit, etc.

Yes

No

If yes, provide details of the change (e.g. change to Environmental Authority condition, or Development Permit condition). Include the date / reference number of the current approvals relevant to the site activities.

Environmental Monitoring

2. Has all monitoring required under the Environmental Authority been carried out?

Yes

No

If no, provide details

3. Has all monitoring required under the Environmental Management Plan (EMP) been carried out?

Note: Refer to Section 4. Environmental Management Plans for monitoring requirements.

Yes

No

If no, provide details

4. Were any exceedances of the approval limits recorded?

Yes No

If yes, provide details.

5. Was the exceedance reported to the administering authority?

Yes No

Provide details of any notifications to the administering authority and actions taken to address the exceedance (if any).

Complaints / Incidents

6. Have any complaints been received, or environmental incidents reported, over the previous 12 months?

Note: An environmental incident generally relates to an event which has caused, or threatens, serious or material environmental harm, consistent with the duty to notify of environmental harm under Division 2 of the *Environmental Protection Act 1994*.

Yes No

If yes, briefly summarise the nature of the complaint and/or incident and any action taken to resolve the matter.

Site Operations

7. Have there been any changes to the site operations over the previous 12 months?

Yes No

If yes, provide details and determine if any change to the EMP or associated management documents are required.

Proposed Measures for Improved Environmental Performance

8. Are any measures proposed to be implemented over the coming 12 months to improve the environmental performance of the site?

Note: Examples of measures may include; revised stormwater management measures, changes to fuel / chemical storage, etc.

Yes No

If yes, provide details and determine if any change to the EMP or associated management documents are required.

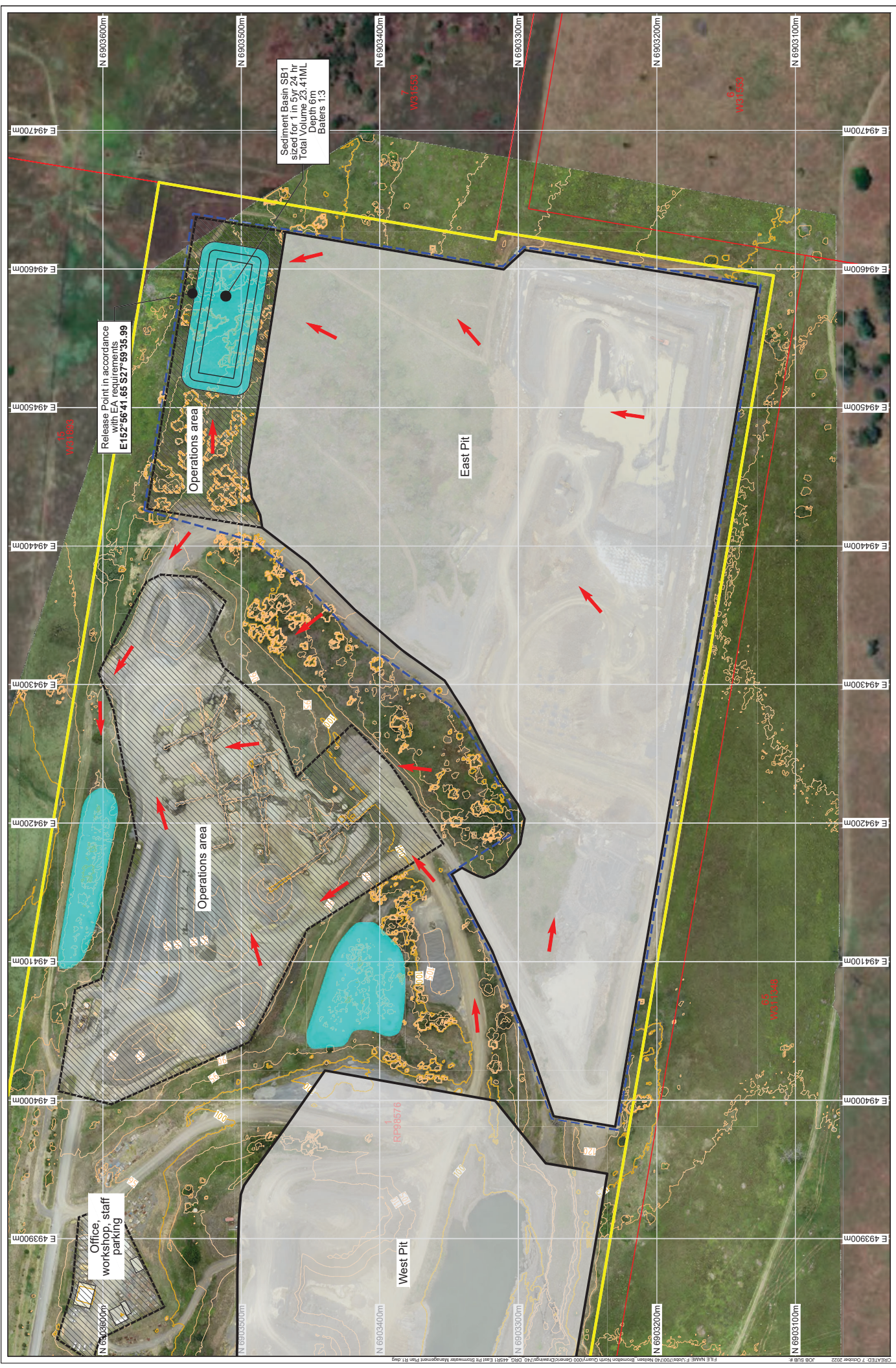
Attachment 2

Stormwater Management Plan Drawing



<p>PROJECT</p> <p>Bromelton North Quarry</p> <p>CLIENT</p> <p>Neilsens Quality Gravels Pty Ltd</p>	<p>TITLE</p> <p>Stormwater Management Plan (Site)</p>
<p>DATE</p> <p>15 December 2022</p> <p>BY</p> <p>MB</p>	<p>SCALE</p> <p>1:2,500</p> <p>0 50m</p>
<p>DESCRIPTION</p> <p>1 - Stormwater design</p>	<p>REVISION NUMBER</p> <p>740.DRG.445A</p> <p>REVISION</p> <p>2</p>
<p>Drawn by: Groundwork Pty Ltd</p> <p>Checked by: Groundwork Pty Ltd</p> <p>Project: Stormwater Management Plan (Site)</p> <p>Client: Neilsens Quality Gravels Pty Ltd</p> <p>Site: Bromelton North Quarry</p> <p>Drawn: 15 December 2022</p> <p>Checked: 15 December 2022</p> <p>Scale: 1:2,500</p> <p>North Arrow: North</p> <p>Projection: WGS 84 UTM Zone 56 S</p> <p>Units: Meters</p>	<p>NSW NATURAL HORIZONTAL VERTICAL ZONE</p> <p>NSW / AHD / 1984</p>

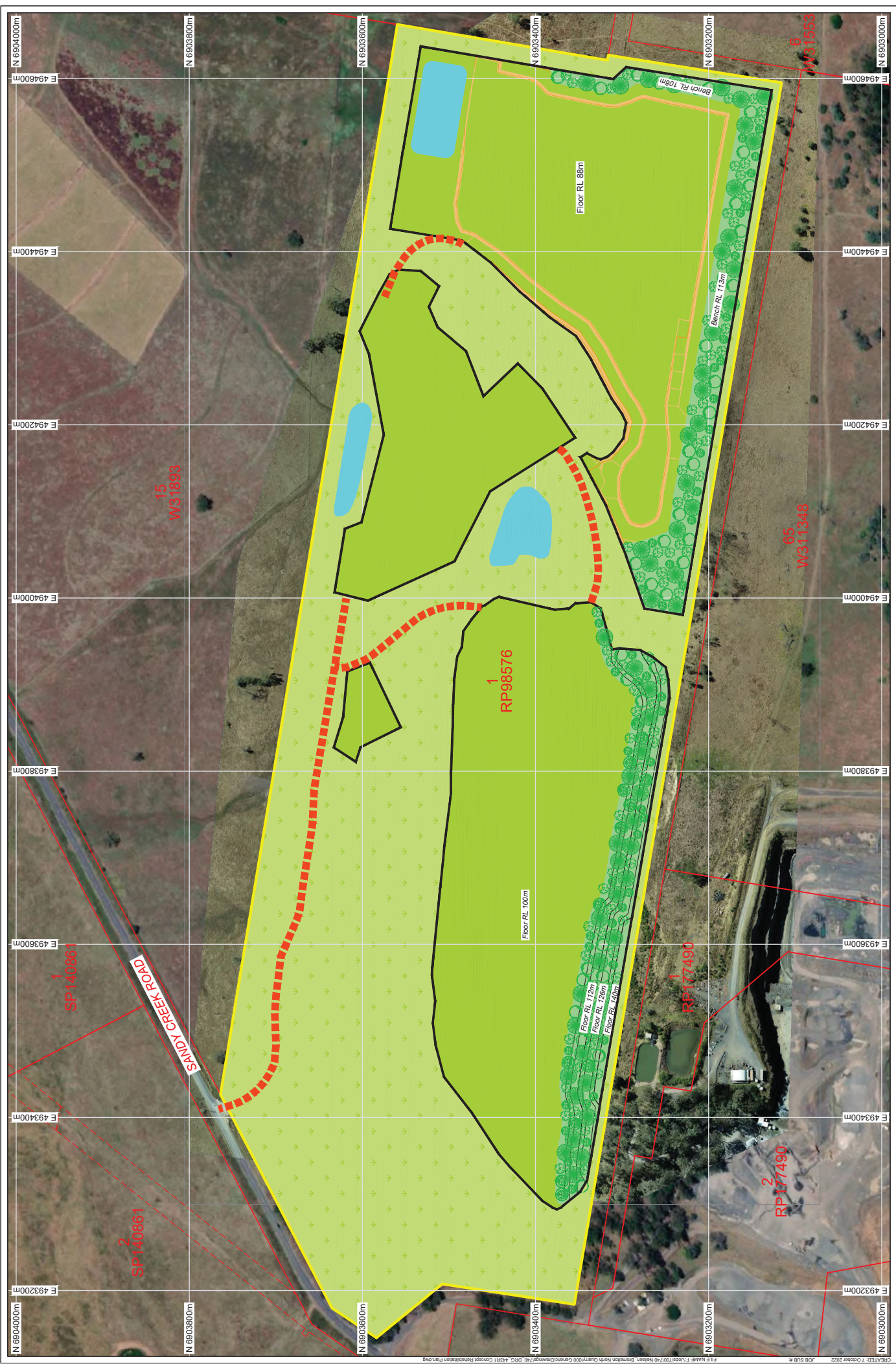
- Legend:**
- Site Boundary
 - Cadastral Boundary
 - Easement Boundary
 - Proposed Extraction Boundary
 - Catchment
 - Sediment Basin / Water Storage



<table border="1"> <tr> <th>REV</th> <th>DESCRIPTION</th> <th>DATE</th> <th>BY</th> </tr> <tr> <td>1</td> <td>Issue for design</td> <td>02/10/22</td> <td>MB</td> </tr> </table> <p> <small> Drawn by: [Name] Checked by: [Name] Project No: [Number] Client: [Name] Date: [Date] Scale: [Scale] Author: [Name] Title: [Title] </small> </p>	REV	DESCRIPTION	DATE	BY	1	Issue for design	02/10/22	MB	<p>Stormwater Management Plan (East Pit)</p> <p>GROUNDWORK</p> <p>Scale: 1:2,500</p> <p>North Arrow</p> <p>Scale bar: 0 to 50m</p> <p> <small> DRAWN: [Name] CHECKED: [Name] DATE: [Date] PROJECT: [Project Name] CLIENT: [Client Name] </small> </p>
REV	DESCRIPTION	DATE	BY						
1	Issue for design	02/10/22	MB						
<p>PROJECT</p> <p>Bromelton North Quarry</p> <p>CLIENT</p> <p>Neilsens Quality Gravels Pty Ltd</p>	<p>Legend:</p> <ul style="list-style-type: none"> Site Boundary Cadastral Boundary Easement Boundary Proposed Extraction Boundary Catchment Sediment Basin / Water Storage 								

Attachment 3

Conceptual Rehabilitation Plans



Legend:

- Site Boundary
- Cadastral Boundary
- Easement Boundary
- Access Road
- Water Storage
- Pasture Area
- Native Ecosystem
- Pasture/Native Ecosystem

Client: Bromelton North
Client: Neilsens Quality Gravels Pty Ltd

PROJECT TITLE: Concept Rehabilitation Plan

GROUNDWORK SCALE: 1:4,000
DATE: 7 October 2022
DRAWN: P. J. S. I.
CHECKED: P. J. S. I.
DATE: 7 October 2022
PROJECT NUMBER: 740 DRG.443
REVISION: 1

PROJECT: BROMELTON NORTH
CLIENT: NEILSENS QUALITY GRAVELS PTY LTD
PROJECT NUMBER: 740 DRG.443
REVISION: 1

DATE: 7 October 2022
DRAWN: P. J. S. I.
CHECKED: P. J. S. I.

PROJECT: BROMELTON NORTH
CLIENT: NEILSENS QUALITY GRAVELS PTY LTD
PROJECT NUMBER: 740 DRG.443
REVISION: 1

DATE: 7 October 2022
DRAWN: P. J. S. I.
CHECKED: P. J. S. I.

