

AIR QUALITY MANAGEMENT PLAN

PROJECT:

26-42 EDEN ST, ARNCLIFFE

CLIENT:

BILLBERGIA

Specialised Demolition
and Remediation

“Over 30 years of international experience
adopting the latest technologies and creating
the safest workplaces.”

Unrestricted Demolition License: AD212145
Hazardous Materials; Class A: AD212584



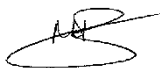
AS/NZS 4801 - OHS MANAGEMENT
ISO 9001 - QUALITY MANAGEMENT
ISO 14001 - ENVIRONMENTAL MANAGEMENT

TABLE OF CONTENTS

TABLE OF CONTENTS.....	2
1 DOCUMENT CONTROL	3
1.1 APPROVAL	3
1.2 DOCUMENT REVISION STATUS	3
1.3 DISTRIBUTION (CONTROLLED COPIES)	3
2 INTRODUCTION.....	4
2.1 BACKGROUND.....	4
3 OBJECTIVES	4
4 SITE DETAILS.....	4
4.1 SITE DESCRIPTION	4
5 SENSITIVE RECEPTORS	6
6 HOURS OF WORK	6
7 DEMOLITION METHODOLOGY SUMMARY.....	6
7.1 OVERVIEW	6
7.2 DEMOLITION METHODS	6
8 DUST CONTROL MEASURES	8
8.1 DEMOLITION METHODS	8
8.2 SITE PERSONNEL.....	8
8.3 GENERAL DEMOLITION CONTROL MEASURES INCLUDE:	9
8.4 DUST CONTROL METHODS.....	9
9 DUST.....	11
9.1 OVERVIEW	11
9.2 SITE EVALUATION.....	11
9.3 DUST SUPPRESSION.....	16
10 MANAGEMENT.....	16
10.1 ON SITE MANAGEMENT OF NOISE, DUST & VIBRATION	16
10.2 COMPLAINTS PROCEDURE	16

1 DOCUMENT CONTROL

1.1 APPROVAL

FUNCTION	POSITION	NAME	SIGNATURE	DATE
Prepared by	Drumderg Services Assistant PM	C Hood		16/03/2023
Reviewed by	Drumderg Services Project Manager	M Bishop		16/03/2023
Approved by	Drumderg Services Manager	K Daly		16/03/2023

1.2 DOCUMENT REVISION STATUS

Each page of this document bears a document number and revision date. When revisions to the document are issued, the following table will be updated to show the most recent revision level. The revised document will be forwarded to the holders of controlled copies. Recipients are responsible for destroying or marking “superseded” on the previous revision.

REVISION DATE	AMENDMENT DESCRIPTION
09/03/2023	INITIAL ISSUE
16/03/2023	FOR CONSTRUCTION

Any changes within this document that modify either the scope or intent of the original document are highlighted in the right margin by a vertical bar (|).

Where review and revision is deemed warranted, i.e. such as comments received from the Client, or where necessary to reflect changes in contractual or Project requirements, or as a result of an incident then these revisions shall be reviewed by the respective Project Manager and approved by the Construction Manager.

1.3 DISTRIBUTION (CONTROLLED COPIES)

COPY #	ISSUED TO	COMPANY / POSITION	DATE
1	GREG MATTHEWS	BILLBERGIA / CONTRACTS MANAGER	09/03/2023

2 INTRODUCTION

2.1 BACKGROUND

The purpose of the AQMP is to identify the level of risk of adverse dust effects which may be caused by the demolition phase of the scheme and ensure that potential effects are appropriately controlled so that the project is delivered with minimal disruption to the local community.

The AQMP has been prepared to assist Billbergia with their management of dust emissions from site and to ensure that the principles of best practicable means (BPM) and best practice are being adhered to.

3 OBJECTIVES

The objectives of the AQMP are to:

- Minimise unreasonable dust impacts on receptors.
- Comply with relevant construction dust management levels
- Undertake active community consultation and maintain positive working relationships.

4 SITE DETAILS

4.1 SITE DESCRIPTION

The location of the site is fourteen residential buildings which takes up addresses 26 to 42 Eden St, Arncliffe. The site is bordered by Eden St to the North west, the Princes Hwy to the south east and neighbouring residential properties to the north east and south west. Surrounding the site is mostly residential one to two storey buildings, with light industrial properties along the Princess Hwy.

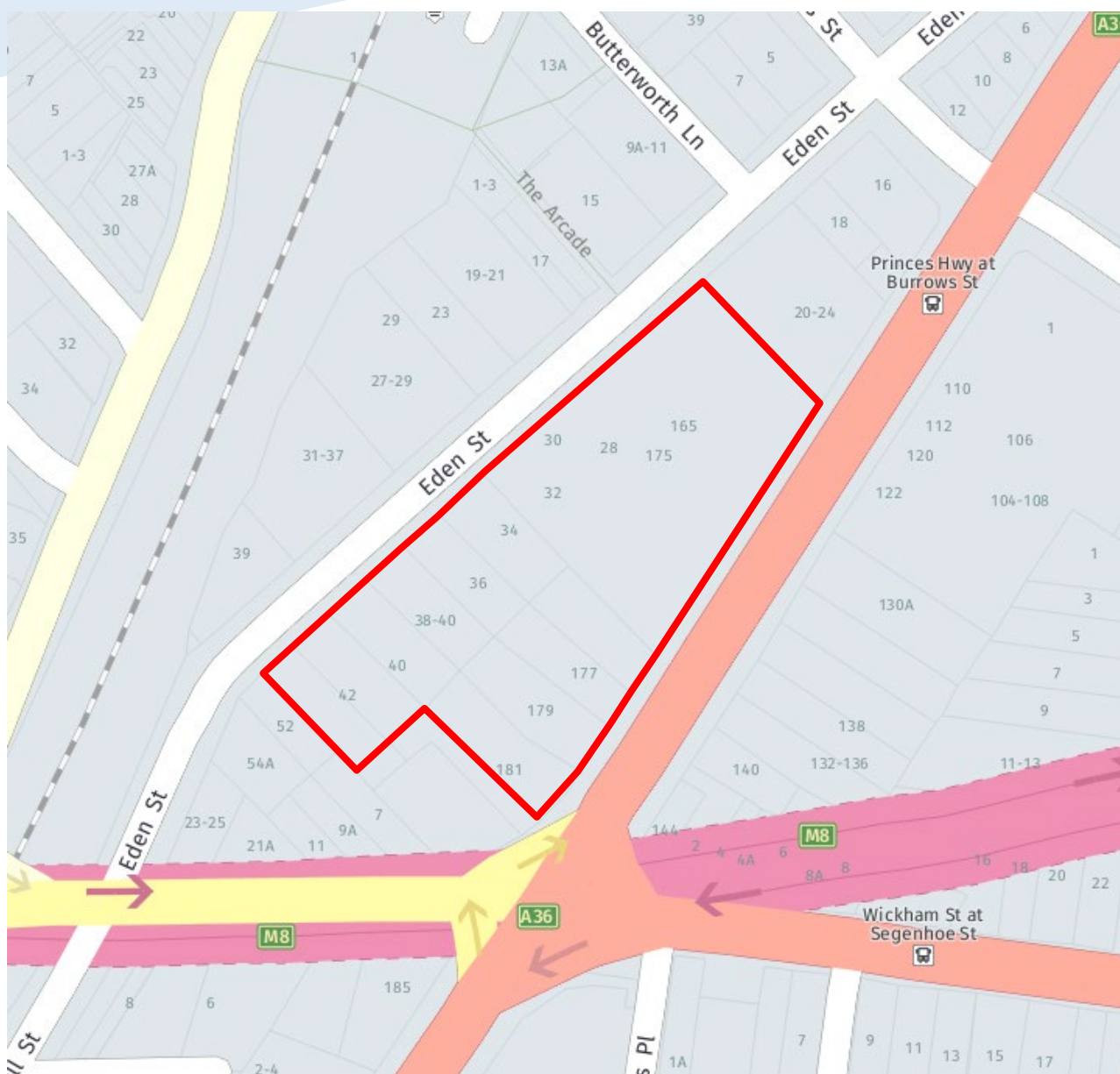


Figure 1.0

The proposed demolition works are the complete demolition of the fourteen 3 storey residential buildings within the site as illustrated above including all hardstand areas and concrete footpaths.

5 SENSITIVE RECEPTORS

Receptors identified as sensitive to potential dust emissions during the demolition of the site are listed in Table 1.1, including approximate distances to the worksite. These receptors have been identified using Stantec's Eden Street, Arncliffe Noise and Vibration Impact Assessment report dated 23/06/2021. A plan showing the location of receptors in relation to the site is presented in Figure 2.

RECEPTOR ID	PROPERTY	APPROX CLOSEST DISTANCE FROM SITE (M)	RECEPTOR TYPE
R1	Eden St	25	Residential
R2	Princess Hwy	15	Residential
R3	Princess Hwy	46	Residential
R4	Forest Rd	8	Residential
R5	Forest Rd	60	Residential
C1	Eden St	18	Commercial
C2	Princess Hwy	58	Commercial
C3	Princess Hwy	60	Commercial

6 HOURS OF WORK

Normal working hours for the Arncliffe Central Demolition worksite are as follows:

Monday to Friday – 07:00 to 18:00

No works on Saturdays, Sundays and Public Holidays

7 DEMOLITION METHODOLOGY SUMMARY

7.1 OVERVIEW

The demolition methodology presented in this document has been derived from the Drumderg Demolition Management Plan.

7.2 DEMOLITION METHODS

SITE ESTABLISHMENT

Installation of site fencing, access gates and site signage

Mobilisation of site offices, meeting room, lunchroom amenities, first aid, safety equipment.

Establishment of induction room and systems, sign in & visitor register system

Establishment of site documentation controls and processes

HAZMAT REMOVAL WORKS

Identification of hazmat removal areas

Installation of airborne asbestos monitoring units throughout removal area and site.

Creation and communication of restricted site areas, barricading and/or creation of sealed enclosure (where friable material)

Removal of hazmat

Containment on site controls, creation of EPA consignment & tracking, transport and disposal at local licenced facility.

Visual clearance inspection per affected area.

Record keeping of all removal work areas and associated clearances, monitoring reports, test reports, disposal dockets.

Carry out final clearance inspection and report.

DEMOLITION WORKS

Ensure all services have been decommissioned prior to works

Ensure a final hazmat clearance has been provided prior to works

Erection of scaffolding system to protect public areas, as per AS 2601 requirements prior to works

Commence removal of loose items throughout the buildings

Removal of non structural materials throughout the buildings

Hard demolition of structures by specialised demolition plant, to maintain noise and vibration levels to a safe minimum

Maintain and submit records of all material exports on a regular basis, including resource recovery reports

Ensure site has been cleared on completion of demolition works



Figure 2.0

8 DUST CONTROL MEASURES

8.1 DEMOLITION METHODS

The control measures detailed in this section have been developed in accordance with the proposed methods of deconstruction for this project which are summarised in Section 7 of this document. Deviation from approved method statements will be permitted only with prior approval from relevant parties.

8.2 SITE PERSONNEL

All operatives on site will be trained to ensure that dust emission is minimised and that Best Practicable Means are implemented at all times. Works will be checked regularly by Site Supervisors to ensure that BPM is being undertaken and where necessary corrective actions implemented.

Employees must show consideration to the sensitive receptors and must not generate unnecessary dust when working on the site, or when leaving and arriving at work. This will be communicated through the Site Induction, Pre-Start Briefings and Toolbox Talks with supervision on site at all times.

Suitable areas within the site compound will be provided for employees i.e. designated smoking areas, to reduce disruption around the site boundary.

Access to the work site will be facilitated at all reasonable times for inspection by the local authority environmental health personnel, following appropriate site-specific induction and / or health and safety training.

8.3 GENERAL DEMOLITION CONTROL MEASURES INCLUDE:

- G1. development and implementation of a stakeholder communication plan that includes community engagement before work commences on site and includes stakeholder meetings.
- G2. choice of methodology/technique for noisy and dusty operations (including site layout) has been considered in order to eliminate or reduce emissions at sensitive locations;
- G3. installation of solid hoarding around the site perimeter;
- G4. equipment will be well-maintained and will be used in the mode of operation that minimises noise;
- G5. equipment will be shut down when not in use or throttled down to a minimum during waiting period;
- G6. plant employed for any activity associated with the construction works will be operated in a manner such that noise emissions are controlled and limited as far as reasonably practicable;
- G7. avoid use of diesel or petrol powered generators by using mains electricity;
- G8. use of electrically powered plant where practicable;
- G9. make a complaints log available;
- G10. vehicles shall not wait or queue on the public highway with engines running (unless the engine is required to power the operation of the vehicle e.g. concrete wagon); and
- G11. all materials will be handled in a manner that minimises noise, vibrations and dust emission.

8.4 DUST CONTROL METHODS

- D1. display of the name and contact details of person(s) accountable for air quality pollutant emissions and dust issues on the site boundary.
- D2. display the head Drumderg office contact information.
- D3. record and respond to all dust and air quality pollutant emissions complaints.
- D4. regular site inspections to monitor compliance with air quality and dust control procedures, record inspection results.
- D5. regular dust soiling checks of buildings within 100m of site boundary.
- D6. increased frequency of site inspections by those accountable for dust and air quality pollutant emissions issues when activities with a high potential to produce dust and emissions are being carried out, and during prolonged dry or windy conditions.
- D7. regular liaison meetings with other high-risk construction sites within 500m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised.
- D8. soft strip inside buildings before demolition, hoarding will be installed around the perimeter of the worksite.
- D9. recording of any exceptional incidents that cause dust and air quality pollutant emissions, either on or off the site, and the action taken to resolve the situation is recorded in the log book;
- D10. site fencing, barriers and scaffolding to be kept clean using wet methods.
- D11. no blasting, use of mechanical demolition instead.
- D12. avoidance of run-off.
- D13. plant layout to maximise distance between plant and dust sensitive receptors.
- D14. cutting equipment to be used with water suppressant or suitable extract system.
- D15. Shade Cloth scaffold netting will be employed to help contain dust.

- D16. damping down of surfaces, particularly during dry weather.
- D17. pulveriser attachments on the 360 Excavators to be used instead of breakers where practicable.
- D18. bagging and removal of any biological debris or damp down of material prior to demolition.
- D19. drop heights to be minimised wherever possible.
- D20. no burning of waste wood or other materials on site.
- D21. a suitable method for immediate clean-up of spillages of dusty materials in place.
- D22. non-road mobile machinery (NRMM) used on site will operate ultra-low sulphur diesel
- D23. effective cleaning methods and retention of hard surfacing for site haulage routes.
- D24. all loads entering and leaving site to be covered where appropriate.
- D25. requirements for a change of shoes and clothes before going off-site to reduce transport of dust.
- D26. Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
- D27. avoid dry sweeping of large areas.
- D28. vehicle washing at site exit.
- D29. application of dust suppressants at the exit of the demolition site
- D30. internal and external roads cleaned effectively, as required, to prevent dust from tyre contact.
- D31. reuse and recycle waste to reduce dust from waste materials
- D32. fine powders to be sealed after use and enclosed in containers or silos.

9 DUST

9.1 OVERVIEW

The purpose of this assessment is to identify the category of risk from dust emission associated with the demolition phase, and to propose a suitable mitigation strategy to ensure negative impacts and adverse effects are controlled and reduced.

Dust from demolition processes contains a range of particle types and material sizes which can cause adverse effects. The pollutant of concern in this assessment is particulate matter (PM10), defined as a mass fraction of airborne particulates with an aerodynamic diameter of 10 microns or less. Particulate matter less than 2.5 microns (PM2.5) and nitrogen dioxide (NO2) are also considered.

PM10 and PM2.5 are respirable and can be drawn deep into the lungs and cause health problems. The fraction of dust that is larger than 10 µm is filtered by the nose and throat. PM10 and PM2.5 can cause respiratory and cardiovascular illness and even death. NO2 inflames the lining of the lung and can lead to shortness of breath and coughing and can reduce immunity to lung infections like bronchitis.

This assessment has been undertaken in accordance with The Institute of Air Quality Managements guidance on the assessment of dust from demolition and construction. The main steps are as follows:

screen the requirement for a more detailed assessment

- identify magnitude of dust emission for each of the phases the worksite;
- Identify the sensitivity of the receptors;
- Identify the sensitivity of the area;
- determine potential risk category of each works phase;
- determine site specific mitigation to be applied;
- examine the residual effects and determine whether or not these are significant; and
- document these steps

9.2 SITE EVALUATION

The level of risk attached to a demolition site is dependent not only on the size and scale of a development, but also the demolition activities, the timing of works (seasonality) and the sensitivity of the surrounding area.

Details of the worksite and the proposed scheme are presented in the Demolition Management Plan, SWMS and Programme.

The demolition methodology and construction vehicle access arrangements are summarised in the Demolition Management Plan and Traffic Management Plan

An initial assessment was conducted to establish if a detailed assessment was required. As there are human receptors within 50 m of the site the assessment will proceed to detailed assessment. As there are no ecological receptors within 50 m of the boundary of the site or 50m from the routes used by construction vehicles on the public highway (up to 500 m from the site entrances).

The distance from source to sensitive receptor is a key factor for determining the potential dust effects from a demolition site. As a general guide, the main effects are at distances of less than 100 m. The distances from source that dust effects are felt is dependent on the extent and nature

of mitigation measures, prevailing wind conditions and the presence of natural screening by, for example, vegetation or existing physical screening such as boundary walls and buildings.

This risk assessment considers the potential effects of the demolition phase at sensitive receptors for:

The risk of health effects from an increase in exposure to PM10 and PM2.5; and

Annoyance from deposition of dust and soiling.

A map showing the worksite and distance buffers to nearby sensitive receptors is illustrated.

The dust emission magnitude has been considered for the demolition prior to mitigation, and the residual effects have also been considered.

Demolition activities include soft strip and demolition of the fourteen residential structures.

Materials removed will be transferred internally within the building and disposed of into on the site skips.

The dust emission magnitude for the demolition phase has been assessed as Large as the work involves working with a potentially dusty material (concrete). It is the responsibility of the Site Management team to monitor dust and air polluting activities on site. Daily visual site inspections will be carried out to ensure the site works are not impacting air quality for workers and the surrounding environment.

Large

Potentially dusty construction material



• (e.g. concrete), or



• on-site crushing and screening, or



Activity	Dust Emission Magnitude
Demolition	Large

The sensitivity of the receptors needs to be considered for both dust and soiling effects on people and property and health impacts. There are >100 high sensitivity receptors to dust and soiling effects on people and property, and so the Sensitivity of the Area is defined as High.

The Table, below categorises the sensitivity of the area to the activity phases.

The dust soiling impacts for Demolition would be considered high due to the close proximity of the residential buildings.

The human health impacts for Demolition would be considered high due to the close proximity of the residential buildings.

Sensitivity of the Area	Demolition	Trackout
Dust Soiling Impacts	High. >100 receptors within 20 m of site.	Medium. >100 receptors within 20 m of route.
Human Health Impacts	High. >100 receptors within 20 m of the site	Low. >100 receptors within 20 m of the route

TABLE 3: SENSITIVITY OF THE AREA

By considering the dust emission magnitude and the sensitivity of the area the risk of dust impacts can be defined as High risk for the demolition phase. A summary of the dust risk category is presented below in the Table

Summary	Demolition	Trackout
Dust Soiling	High Risk	Medium Risk
Human Health	High Risk	Low Risk

TABLE 4: SUMMARY DUST RISK CATEGORY

The mitigation measures for a high risk demolition site and Medium Risk Trackout will be applied. The IAQM guidance states “For almost all construction activity, the aim should be to prevent significant effects on receptors through the use of effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be ‘not significant’”.

Air Quality Controls – Mitigation Measures for Demolition & Trackout will be implemented where possible. Please note as all concrete, brick and asphalt is being crushed on site, this greatly reduces the trackout stage and the need for further intervention regarding dust mitigation measures.

MEASURES SPECIFIC TO DEMOLITION

MITIGATION MEASURE	LOW RISK	MEDIUM RISK	HIGH RISK
Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).	X	X	XX
Ensure water suppression is used during demolition operations.	XX	XX	XX
Avoid explosive blasting, using appropriate manual or mechanical alternatives.	XX	XX	XX
Bag and remove any biological debris or damp down such material before demolition.	XX	XX	XX

MEASURES SPECIFIC TO TRACKOUT

MITIGATION MEASURE	LOW RISK	MEDIUM RISK	HIGH RISK
Regularly use a water-assisted dust sweeper on the access and local roads, as necessary, to remove any material tracked out of the site.	X	XX	XX
Avoid dry sweeping of large areas.	X	XX	XX
Ensure vehicles entering and leaving sites are securely covered to prevent escape of materials during transport.	X	XX	XX
Record all inspections of haul routes and any subsequent action in a site log book.		XX	XX
Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems and regularly cleaned.		XX	XX
Inspect haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable;		XX	XX
Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	X	XX	XX
Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.		XX	XX
Access gates to be located at least 10m from receptors where possible.		XX	XX
Apply dust suppressants to locations where a large volume of vehicles enter and exit the construction site		X	XX

XX Highly Recommended

X Desirable

9.3 DUST SUPPRESSION

Dust monitoring for the site will be undertaken by the Site Manager in the form of a visual inspection. As part of the Daily Inspection the surrounding roads and internal areas are inspected for evidence of dust. During demolition activities a visual assessment will take place to ensure the dust control plan and mitigation measures are working. If the dust suppression measures are failing works will be stopped and dust suppression measures to be reevaluated. New control measures will be introduced and evaluated for their effectiveness.

10 MANAGEMENT

10.1 ON SITE MANAGEMENT OF NOISE, DUST & VIBRATION

Site Manager (or designated persons on site) will be responsible for the management of noise, dust and vibration emissions, and will be tasked with implementing the measures set out in this document.

The noise, dust and vibration control measures stated in Section 8 of this report will be adopted for the demolition of this project.

Prior to the approval of any methodologies (i.e. method statements), discussions and workshops will be held to ensure BPM is employed when carrying out all operations. Discussion will include measures to be adopted to minimise and/or change working practices that could foreseeably have the potential to cause excessive noise, dust or vibration.

Information relating to the control of noise, dust and vibration will be communicated to all site operatives through the site induction, pre start briefings and tool box talks. As such, all site operatives will be trained to ensure that best practicable means are implemented at all times, and to show due consideration to sensitive receptors.

In recognition of the potential noise, dust and vibration impacts to receptors in the vicinity of the works, a process of public liaison and consultation will be maintained throughout the deconstruction period to ensure that neighbours are briefed on key site activities and given the opportunity to influence the works as appropriate.

10.2 COMPLAINTS PROCEDURE

All noise, dust or vibration complaints will be referred to the Construction Manager for immediate investigation. Complaints received outside of core working hours will be investigated at the start of the next working day.

Following receipt of a complaint, the construction manager will undertake an initial appraisal to check whether BPM is being used to control noise, dust and vibration, and to assess suitable corrective action.

To prevent further complaints of the same nature, corrective actions will be enforced for the remainder of those works.