ASBESTOS ASSESSMENT FOR CHAND ENVIRONMENTAL CONSULTANTS:

EVERITE SITE, BRACKENFELL, CAPE TOWN

OCCUPATIONAL HYGIENE MONITORING SERVICES

APPROVED INSPECTION AUTHORITY
OH0058-CI-06

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1. DISCLAIMER

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Occupational Hygiene Monitoring Services (Pty) Ltd is An Approved Inspection Authority with the Department of Labour of the South Africa (OH0058-CI-06).

All findings, content and results of this report are to be considered with confidentiality and persons that do not have a vested interest with this report and the contents thereof may not have access thereto. The results reflected in the report are representative of the current site condition at the time of the survey.

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QUICK REFERENCE GUIDE	
Date/s of Assessment:	1ST, 3RD AND 8TH September 2020
Project Number:	2020-324
Client:	Chand Environmental Consultants
Client Contact/s:	Marielle Penwarden
Revision:	00
OHMS Pty Ltd REFERENCE GUIDE	
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Department of Labour AIA Number:	OH 0058-CI 06
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ASBESTOS ASSESSMENT: CHAND ENVIRONMENTAL CONSULTANTS. EVERTIE SITE, BRACKENFELL, 1ST, 3RD, 8TH and 10th SEPTEMBER 2020

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Revision:	**Date of amendments**	**Area/section of Report**
Rev 1	19.10.2020	Bulk sample results added.

2. EXECUTIVE SUMMARY

An asbestos risk assessment was carried out on behalf of Chand Environmental Consultants, by OHMS, at the Everite site located in Brackenfell, Cape Town on the 1st, 3rd 8th and 10th September 2020. The assessment consisted of a visual examination of the site and taking of bulk samples of asbestos in soil over the entire area of the site, (See Sample point location diagram attached), and air samples at 10 points on the high point location of the site. The assessment was carried out following the " Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated sites, in Western Australia 2009".

The purpose of the assessment was to determine:

1. The location and condition of all asbestos containing material on the site
2. The likelihood and potential to release asbestos fibres into the atmosphere.
3. The formulation of preliminary control measures to be put into place immediately.
4. To discuss together with the client, the way forward with the site.
5. Make recommendations to ensure compliance with the asbestos regulations of 2001 and the environmental asbestos regulations 2007 and Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated sites, in Western Australia 2009".

Furthermore, this study was to understand and quantify the potential risks of asbestos exposure related to the current site condition and mole activity at the site since capping, and to recommend rehabilitation measures to mitigate potential risks that may be identified.

Observations of the current site condition.:

1. Sandy areas revealed large quantities of asbestos debris. (due to mole activity). (See attached photographs).
2. The areas where most asbestos debris were observed is the high lying area to the South of the site. There was also asbestos debris observed in the central area of the property. These areas are not compacted soil but generally loose soil. (See attached photographs).

3. Other areas of the property are compacted with a type of hardcore backfill and clay deposits are visible. (See attached photographs).
4. The property is generally covered with grass and port Jackson bushes that serves to encapsulate any asbestos that may become airborne at this moment in time. (See attached photographs).
5. The asbestos observed is in the form of a conglomerate of loosely bound asbestos debris. There are also numerous amounts of asbestos chip (Debris for asbestos items eg, Roof sheets, gutters and rainwater pipes etc.)

This property is large (covers an area of ~ 370 x 350 m). The property was divided into ~80 cells of 35 m x 35 m each. Within each cell, OHMS conducted a search to collect visible potential asbestos containing material for analysis. Within these cells, soil from the top 10 cm within 0.25 m x 0.25 m blocks within each of the cells was taken for analysis. This was analyzed in the OHMS laboratory using Polorizing light Microscopy. (HSG 248, method PM042/TM065).

Visually one could see friable asbestos on the site. A total of 80 bulk samples and 10 asbestos in air samples were taken. Numerous bulk samples tested positive for asbestos. (The sample results will be published once the laboratory analysis report has been compiled).

All the air samples were found to be negative for asbestos.

Based on the above, a Sampling and Analysis plan for the detailed site investigation needs to be determined, and if the Western Australian guideline for asbestos soil remediation of 2009, is going to continue to be used.

RECOMMENDATIONS.

PRELIMINARY ASBESTOS CONTROL MEASURES.

1. Asbestos signage to be placed on all entrances to the site, stating that this is an asbestos site and entrance is prohibited to un-authorized persons.
2. All boundary fencing wall openings must be closed preventing unauthorized access to any persons.

3. Weekly asbestos in air monitoring must be carried out, to determine if the asbestos is airborne or likely to become air borne. This will determine if further control measures may be required.
4. It was envisaged that where sandy areas are that is dry, it should always be kept wet to prevent asbestos becoming airborne. However due to the size of the areas that would require wetting, this is not a practical recommendation due to the volume of water needed. A water bowser would need to be on site permanently discharging large volumes of water. Furthermore, and irrigation system would need to be established across the entire site as there are sandy areas almost all over the site. In effect the soil would be disturbed due to site activity, possibility causing asbestos to become airborne. It is advised that disturbance to the soil be kept to a minimum. Based on this OHMS recommends not to dampen the soil at this time until further activity on the site is planned.
5. A decontamination unit will have to be established on site if any site activities take place. Only authorized persons may enter the site under asbestos control conditions. This requires full asbestos personal Protective equipment being worn, all persons entering must have asbestos medicals carried out and must be trained on the hazards of asbestos exposure. No eating, drinking or smoking on site is allowed. On exiting the property, all persons must follow the decontamination process.

LONG TERM CONTROL MEASURES TO BE PUT INTO PLACE.

1. The details of the long term control measures will be work - shopped with the project team and further described in the basic assessment.
2. If any asbestos contaminated material is to be removed, an asbestos plan must be drafted and must be approved by an Approved asbestos inspection authority (OHMS). This plan must be submitted to the regional department of Employment and Labor as notification of the intention remove asbestos containing material.
3. Any asbestos containing material must be removed by a registered asbestos contractor under the conditions of the asbestos regulations 2001 of the occupational health and safety act 85 of 1993 and in accordance with the procedures that will be drafted once the detailed description of works is determined.

4. The removal of the asbestos must be carried out in accordance with the asbestos regulations of the national environmental conservation act 73 of 1983. Regulations for the prohibition of use, manufacturing, import and export of asbestos containing material 2007, and if still required, the Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated sites, in Western Australia 2009".
5. The asbestos removal project must be carried out under the strict supervision of an Approved inspection Authority (OHMS).

3. INTRODUCTION

As discussed in the executive summary attached to this report, an asbestos risk assessment was carried out by OHMS, at the Everite Site, Brackenfell, Cape Town on the 1st, 3rd ,8th and 10th of September 2020.

The purpose of the assessment was to determine:

1. The location and condition of all asbestos containing material on the site
2. The likelihood and potential to release asbestos fibres into the atmosphere.
3. The formulation of preliminary control measures to be put into place immediately.
4. To discuss together with the client, the way forward with the site short- and long-term mitigation measures to control asbestos exposure during different site activities.
5. Make recommendations to ensure compliance with the asbestos regulations of 2001 and the environmental asbestos regulations 2007 and Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated sites, in Western Australia 2009".

Furthermore, this study was to understand and quantify the potential risks of asbestos exposure related to the current site condition and mole activity at the site since capping, and to recommend rehabilitation measures to mitigate potential risks that may be identified.

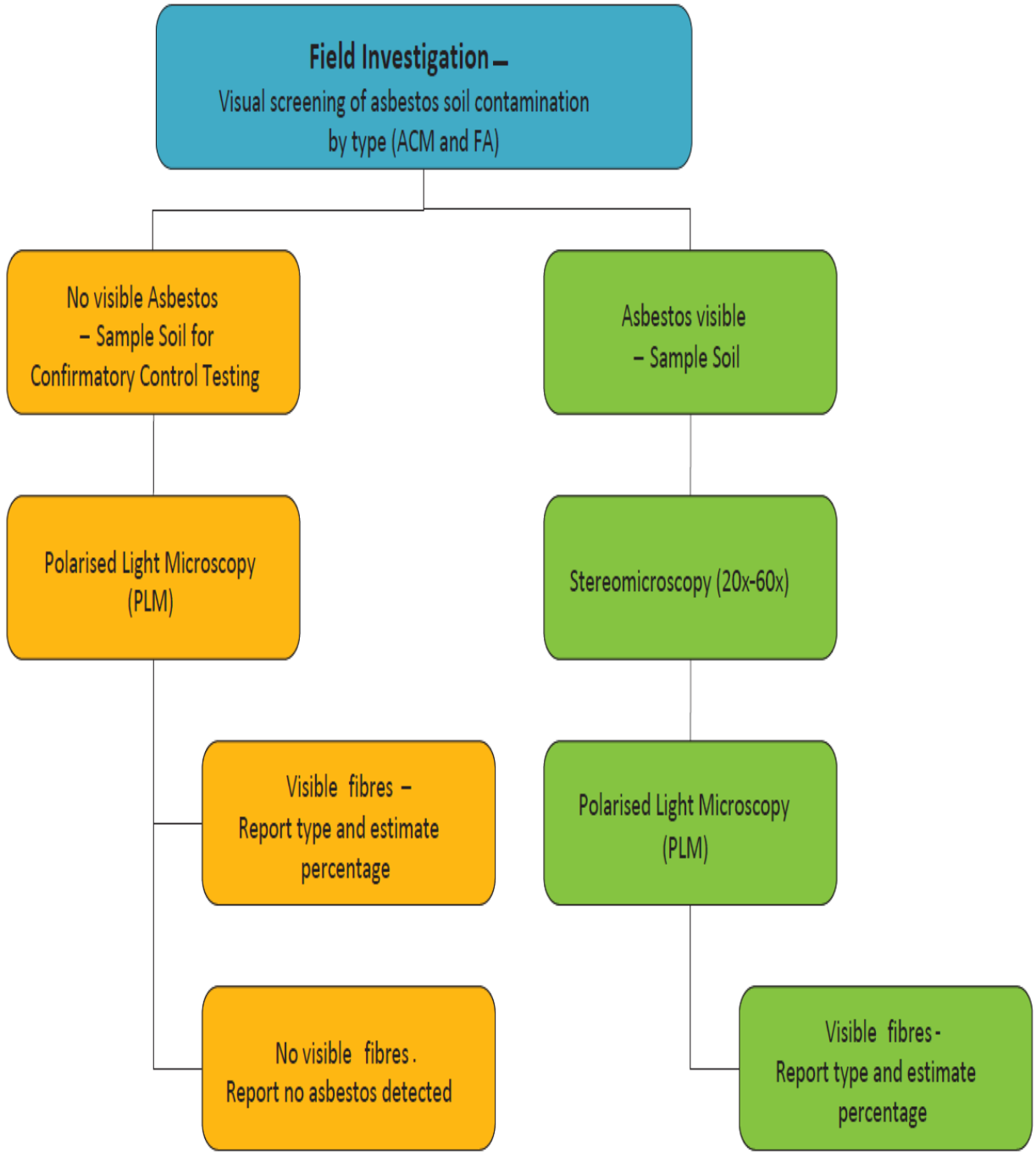
4. METHODOLOGY

This site is large (covers an area of ~ 370 x 350 m). The property was divided into ~80 cells of 35 m x 35 m each. Within each cell, OHMS the Asbestos Approved Inspection Authority conducted a search to collect all visible potential asbestos containing material. Within these types of cells, sampling from the top 10 cm within 0.25 m x 0.25 m blocks within each of the cells. This was analyzed by OHMS lab technician using Polarizing light Microscopy. (HSG 248, method PM042/TM065).

METHODS PROCEDURES AND STANDARDS:

1) *Asbestos Regulations 2001, of the Occupational Health and Safety Act 85, (Act 85 of 1993)*
2) *Environmental conservation Act 73 of 1989*
3) *Regulation for the prohibition of the use, manufacturing, import and export of asbestos and asbestos containing material 2007*
4) *Sample analysis are carried out in accordance with HSG 248*
5) *Surveys are carried out in accordance with HSG 264. Asbestos: survey guide*
6) *Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated sites, in Western Australia 2009.*

5. ASSESSMENT PROCESS FLOW DIAGRAM



6. DEFINITIONS

1) ***Exposed to asbestos –*** Means exposed to or likely to be exposed to asbestos dust while at the workplace, and exposure has a corresponding meaning.

2) ***Asbestos*** – Means any of the following minerals:
   a) Amosite
   b) Chrysotile
   c) Crocidolite
   d) Fibrous actinolite
   e) Fibrous anthophyllite
   f) Fibrous tremolite

   or any mixture containing any of these minerals.

3) ***Positive identification*** – Means the positive identification of asbestos can only be confirmed by analysis of a representative sample of the material, using a microscope.

4) ***Strong presumption*** – Means that the material looks like asbestos containing material. This conclusion can be reached through visual inspection alone by an experienced, well trained surveyor, familiar with the range of asbestos products. Examples of strong presumption would be:

   a) Where laboratory analysis has confirmed the presence of asbestos in a similar construction material

   b) Materials in which asbestos is known to have been commonly used in the manufactured product at the time of installation (e.g. corrugated cement roof sheeting, cement gutters and drain pipes.)

   c) Materials which have the appearance of asbestos but no sample have been taken.

5) ***Management survey*** – Means a standard survey. Its purpose is to locate, as far as reasonably practicable, the presence and extent of any suspect asbestos containing material in the building which could be damaged or disturbed during normal occupancy, including foreseeable maintenance and installation, and to assess their condition. Management surveys will often involve minor intrusive sampling and some disturbance.

6) ***Refurbishment or demolition survey*** – Means a refurbishment or demolition survey carried out before any refurbishment or demolition work. This type of survey is used to locate and describe, as far as reasonably practicable, all asbestos containing materials in the area where the refurbishment will take place or in the whole building if demolition is planned. The survey will be fully intrusive and involve destructive inspection, as necessary, to gain access to all areas, including the areas that may be difficult to reach. A refurbishment and demolition survey may also be required in other circumstances e.g. when more intrusive maintenance and repair work will be carried out or for plant removal or dismantling.

7. ASBESTOS IN AIR SAMPLING RESULTS

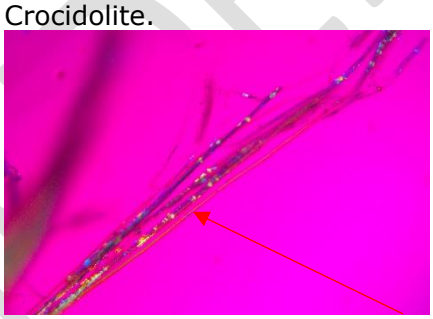
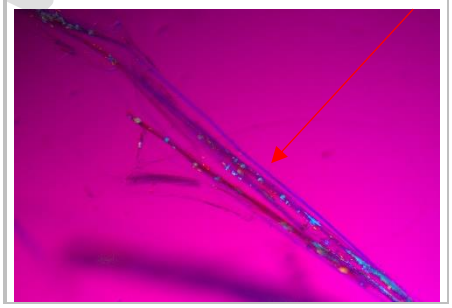
Sample No:	Sample Date	Date of sample analysis	Volume	Duration @ l/min	Fibres counted	Number of fields counted	Results
2020-324-AS1	10.09.20	15.09.20	503.52L	240l@2.098l/min	0	200	**No Regulated fibers detected**
2020-324-AS2	10.09.20	15.09.20	490.56L	240l @2.098 l/ min	0	200	**No Regulated fibers detected**
2020-324-AS3	10.09.20	15.09.20	535.2 L	240l @2.023 l/ min	0	200	**No Regulated fibers detected**
2020-324-AS4	10.09.20	15.09.20	496.56L	240l @2.069 l/ min	0	200	**No Regulated fibers detected**
2020-324-AS5	10.09.20	15.09.20	487.68L	240l @2.032 l/min	0	200	**No Regulated fibers detected**
2020-234-AS6	10.09.20	15.09.20	489.60L	240l @2.040 l/ min	0	200	**No Regulated fibers detected**
2020-324-AS7	10.09.20	15.09.20	500.64L	240l @2.086 l/ min	0	200	**No Regulated fibers detected**
2020-324-AS8	10.09.20	15.09.20	496.56L	240l @2.069 l/ min	0	200	**No Regulated fibers detected**
2020-324-AS9	10.09.20	15.09.20	495.36L	240l @2.064 l/ min	0	200	**No Regulated fibers detected**
2020-324-AS10	10.09.20	15.09.20	488.40L	240l @2.035 l/min	0	200	**No Regulated fibers detected**
2020-324- FB	10.09.20	15.09.20	-	-	0	200	**No Regulated fibers detected**

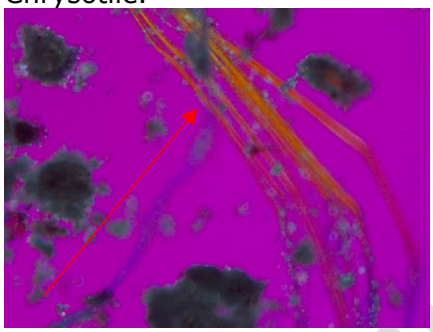
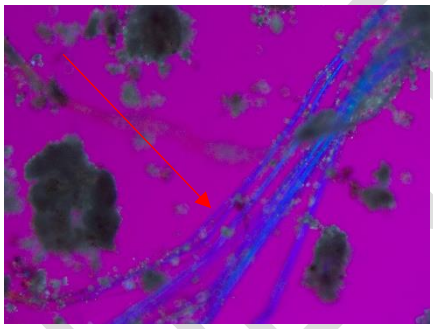
8. ASBESTOS BULK SAMPLE RESULTS

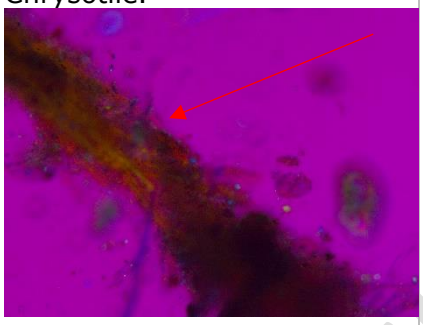
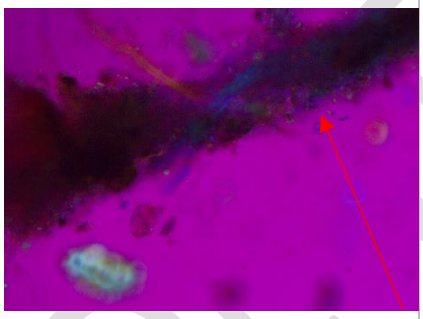
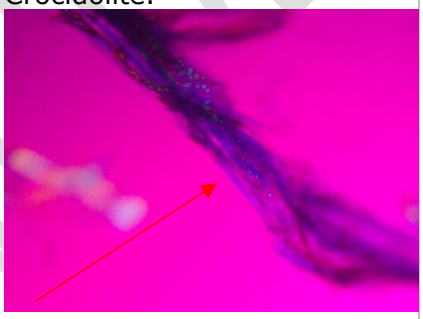
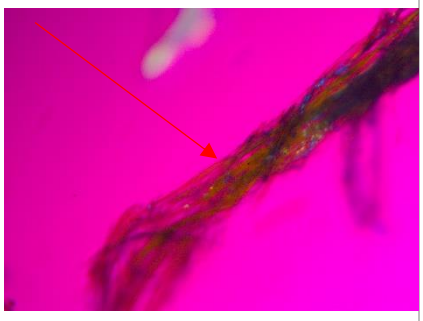
It has been observed from the analysis of the samples analyzed that asbestos conglomerate debris and fibre as well as asbestos chip is located as per the attached highlighted diagram. Here the asbestos is visible and exposed.

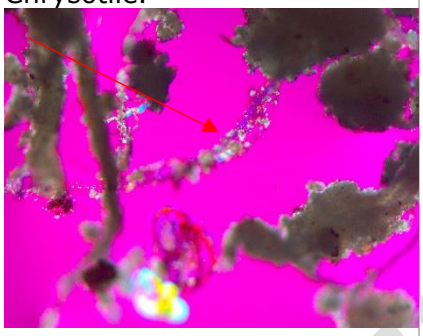
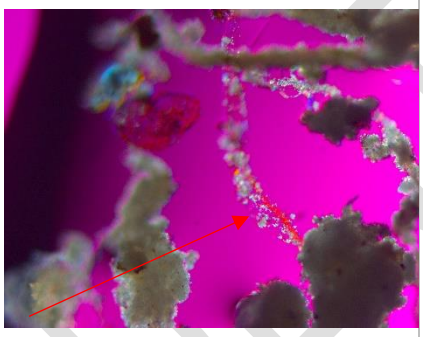
The asbestos is currently in a stable state but will release regulated asbestos fibres if disturbed or if extensive weathering takes place. Currently most of the property is covered with grass, weeds and shrub growth which assists with natural encapsulation of asbestos fibres for this moment in time.

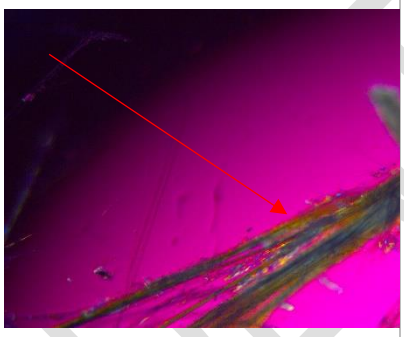
The risk of asbestos risk ranking due to the algorithm calculation is high but not necessarily high personal and environmental exposures. **The risk ranking is 18. (See risk ranking criteria below).**

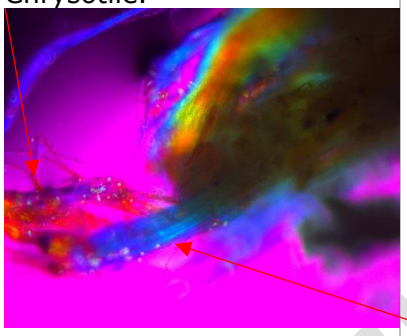
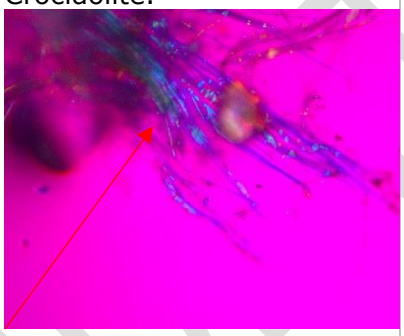
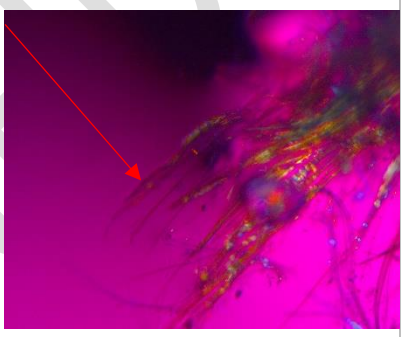
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS1	07.08.2020	07.09.2020	Bulk Sample Chrysotile.   Crocidolite.  	Positive for asbestos content. The type of asbestos identified is Chrysotile and Crocidolite.	HSG 248.

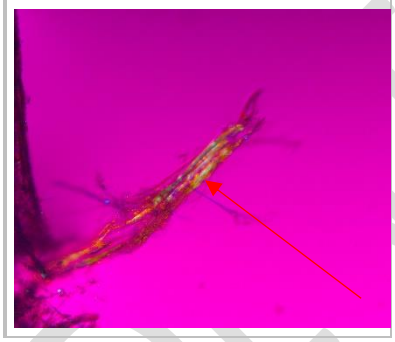
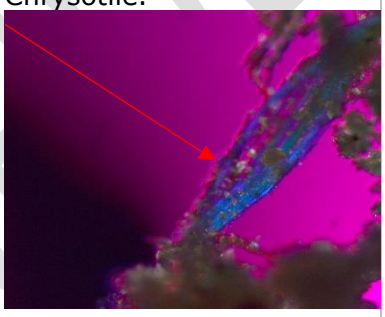
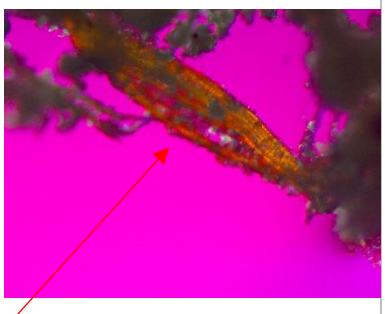
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS2	07.08.2020	07.09.2020	Bulk Sample Chrysotile.  	Positive for asbestos content. The type of asbestos identified is Chrysotile.	HSG 248.

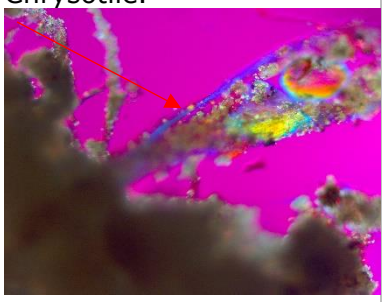
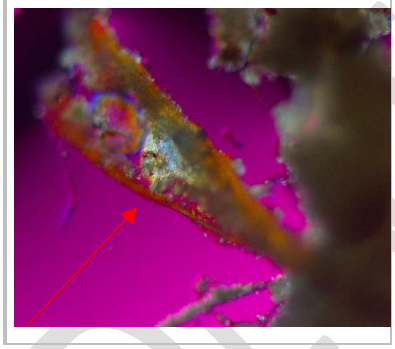
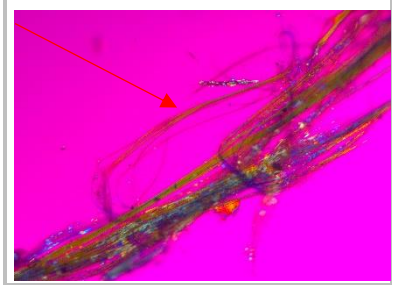
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS3	07.08.2020	07.09.2020	Bulk Sample Chrysotile.   Crocidolite.  	Positive for asbestos content. The type of asbestos identified is Chrysotile and Crocidolite.	HSG 248.

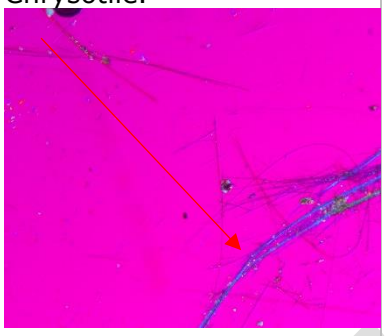
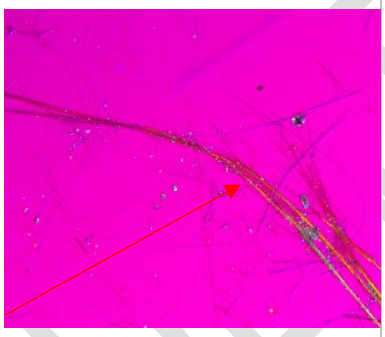
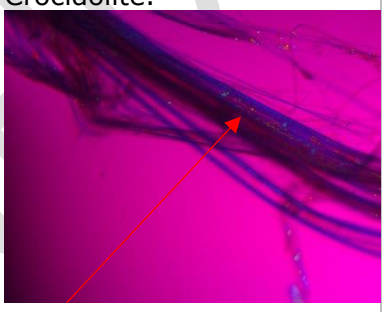
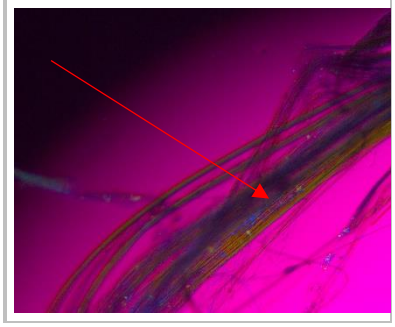
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS4	07.08.2020	07.09.2020	Bulk Sample Chrysotile.  	Positive for asbestos content. The type of asbestos identified is Chrysotile.	HSG 248.

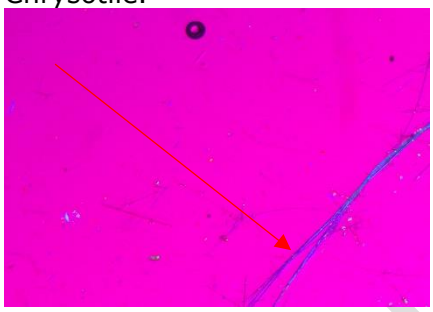
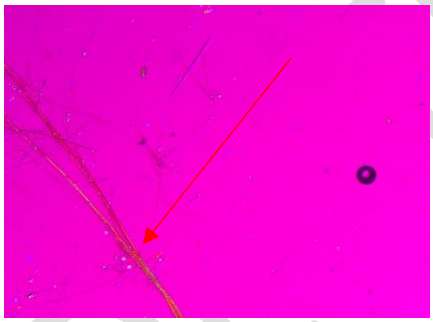
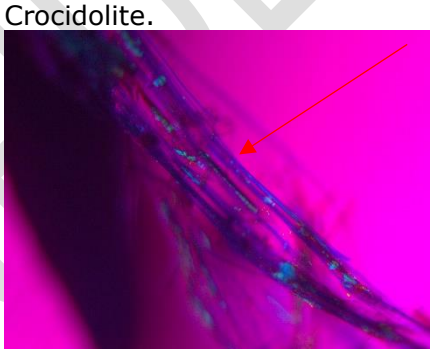
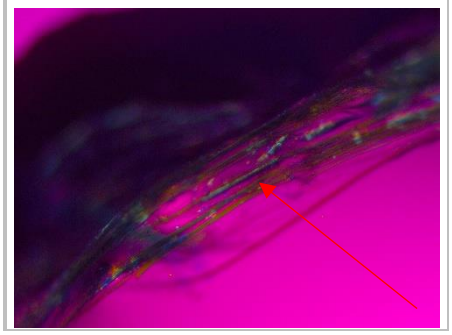
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS5	07.08.2020	07.09.2020	Bulk Sample Crocidolite.  	Positive for asbestos content. The type of asbestos identified is Crocidolite.	HSG 248.

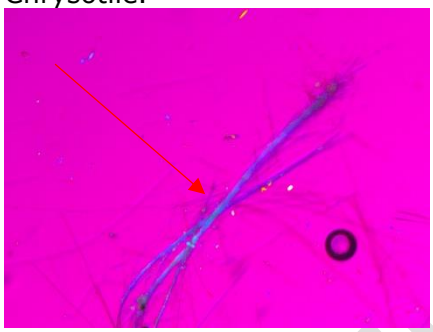
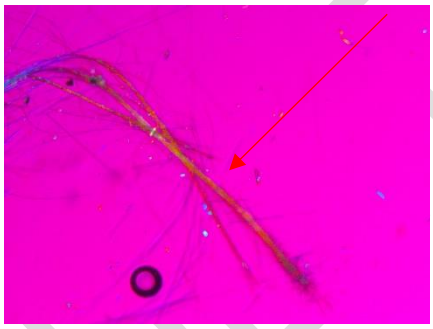
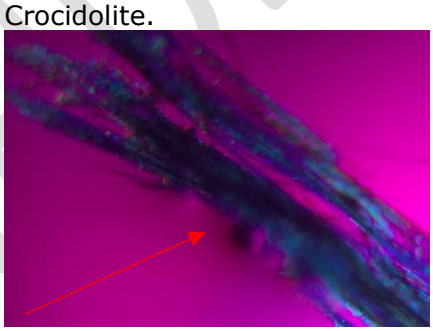
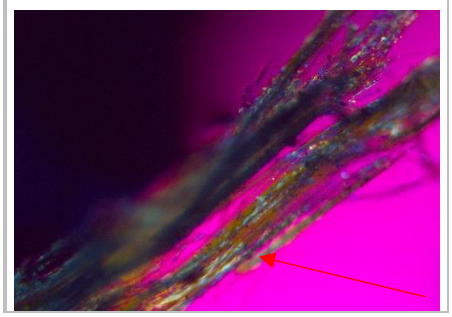
Sample No:	Sample Date	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS6	07.08.2020	07.09.2020	Bulk Sample Chrysotile.  Crocidolite.  	Positive for asbestos content. The type of asbestos identified is Chrysotile and Crocidolite.	HSG 248.

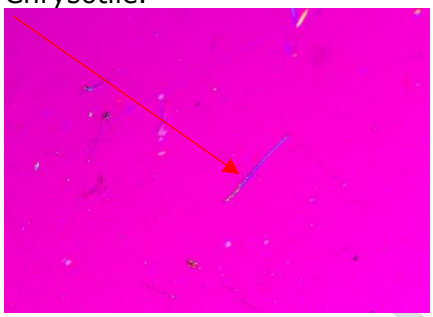
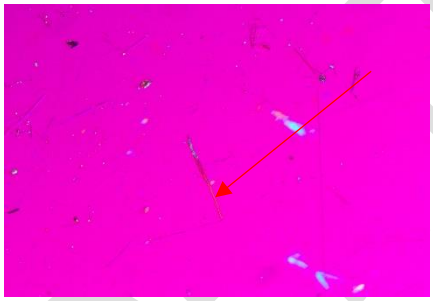
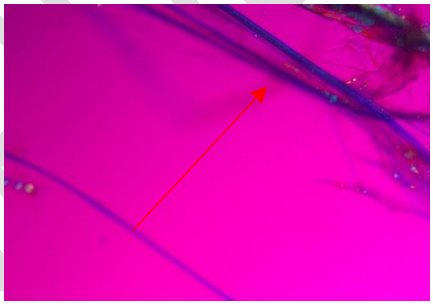
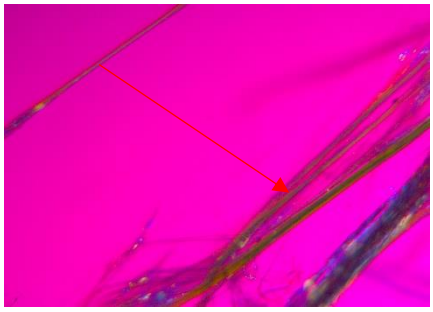
Sample No:	Sample Date	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS7	07.08.2020	07.09.2020	Bulk Sample Crocidolite.  	Positive for asbestos content. The type of asbestos identified is Crocidolite.	HSG 248.
2020-324-BS8	07.08.2020	07.09.2020	Chrysotile.  	Positive for asbestos content. The type of asbestos identified is Chrysotile.	HSG 248.

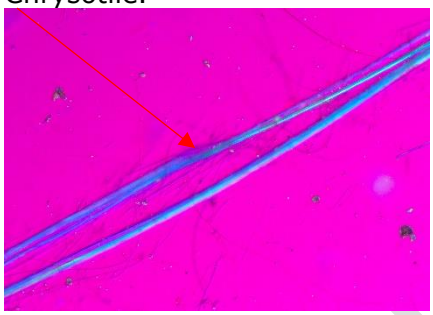
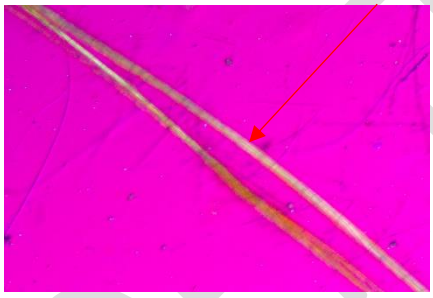
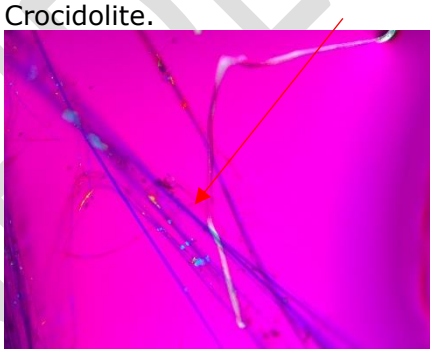
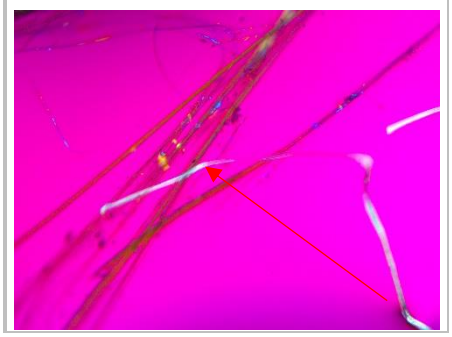
Sample No:	Sample Date	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS9	07.08.2020	07.09.2020	Bulk Sample Chrysotile.  	Positive for asbestos content. The type of asbestos identified is Chrysotile.	HSG 248.
2020-324-BS10	07.08.2020	07.09.2020	Bulk Sample Crocidolite.  	Positive for asbestos content. The type of asbestos identified is Crocidolite.	

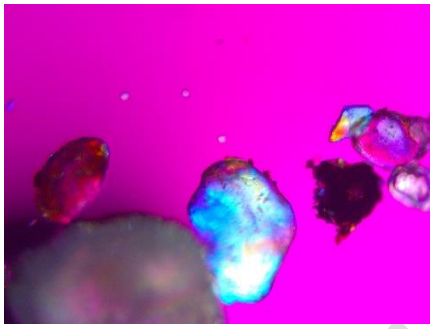
Sample No:	Sample Date	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS11	07.08.2020	07.09.2020	Bulk Sample Chrysotile.   Crocidolite.  	Positive for asbestos content. The type of asbestos identified is Chrysotile and Crocidolite.	HSG 248.

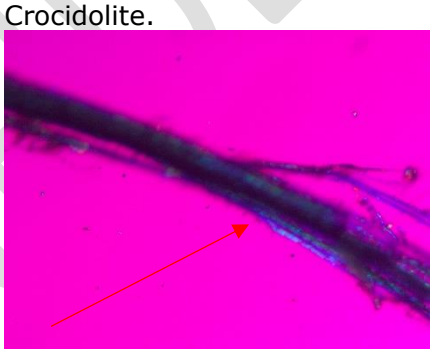
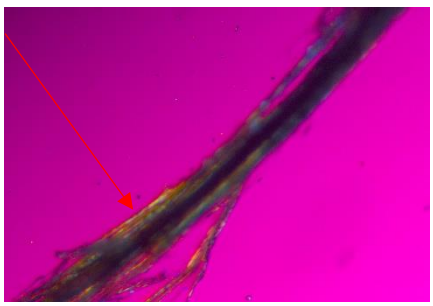
Sample No:	Sample Date	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS12	07.08.2020	07.09.2020	Bulk Sample Chrysotile.   Crocidolite.  	Positive for asbestos content. The type of asbestos identified is Chrysotile and Crocidolite.	HSG 248.

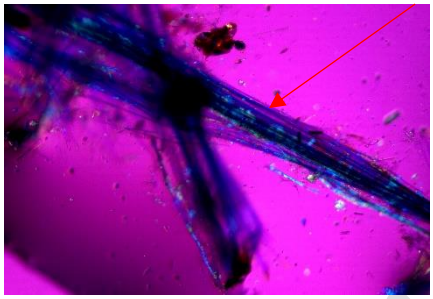
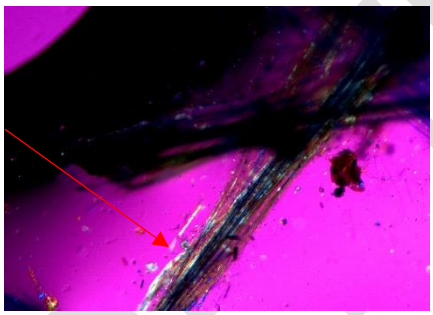
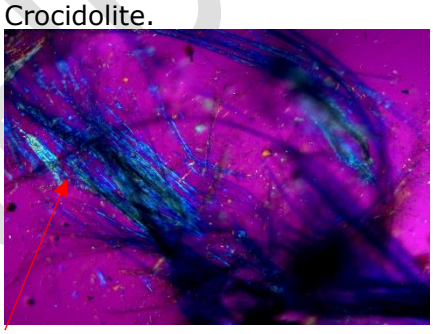
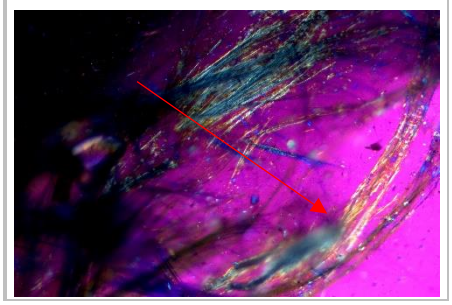
Sample No:	Sample Date	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS13	07.08.2020	07.09.2020	Bulk Sample Chrysotile.   Crocidolite.  	Positive for asbestos content. The type of asbestos identified is Chrysotile and Crocidolite.	HSG 248.

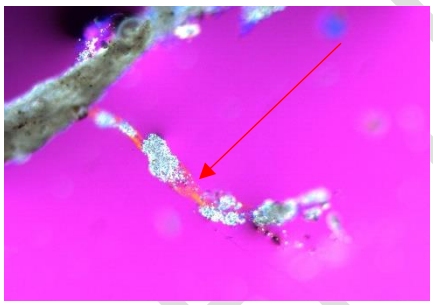
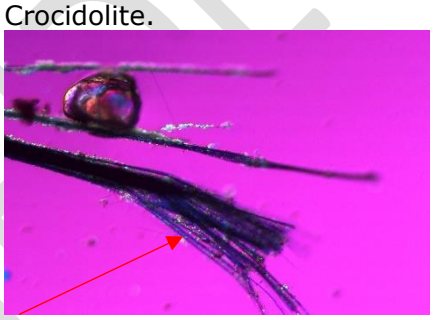
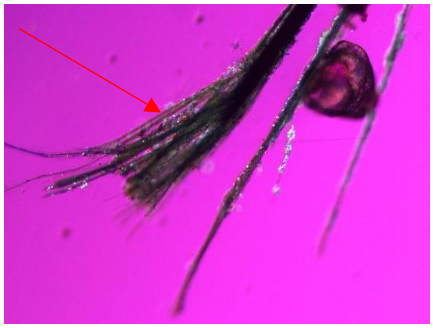
Sample No:	Sample Date	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS14	07.08.2020	07.09.2020	Bulk Sample Chrysotile.   Crocidolite.  	Positive for asbestos content. The type of asbestos identified is Chrysotile and Crocidolite.	HSG 248.

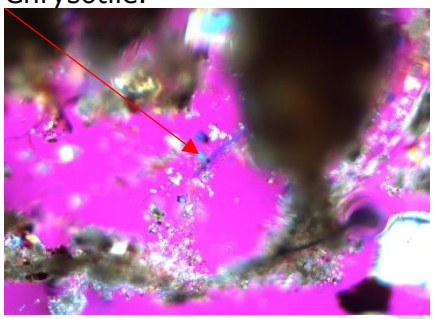
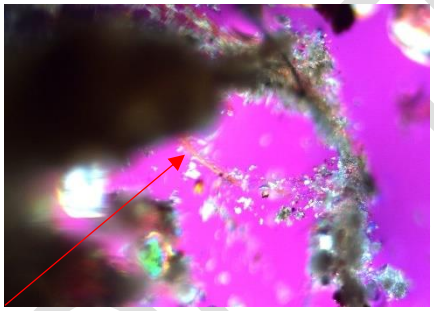
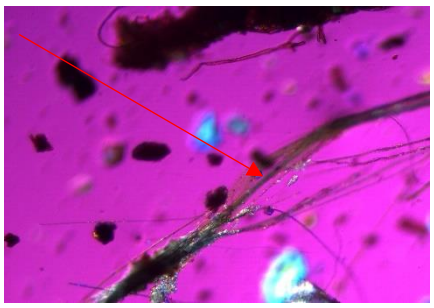
Sample No:	Sample Date	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS15	07.08.2020	07.09.2020	Bulk Sample Chrysotile.   Crocidolite.  	Positive for asbestos content. The type of asbestos identified is Chrysotile and Crocidolite.	HSG 248.

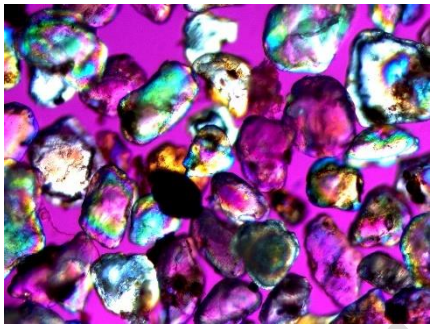
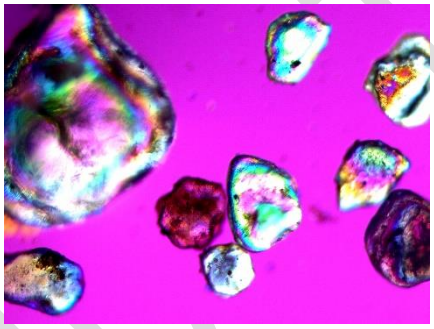
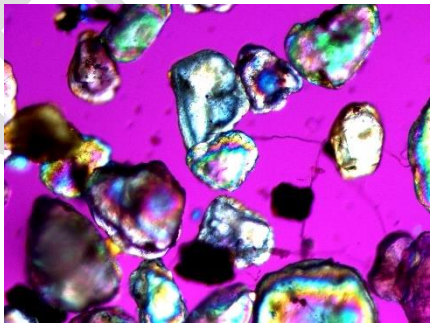
Sample No:	Sample Date	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS16	07.08.2020	07.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.

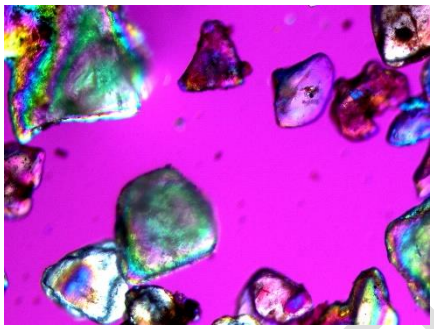
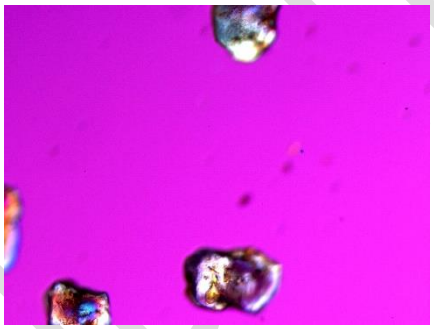
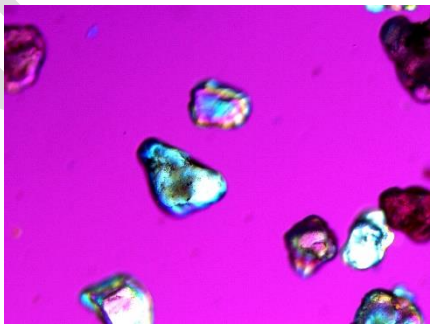
Sample No:	Sample Date	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS17	07.08.2020	07.09.2020	Bulk Sample Chrysotile.   Crocidolite.  	Positive for asbestos content. The type of asbestos identified is Chrysotile and Crocidolite.	HSG 248.

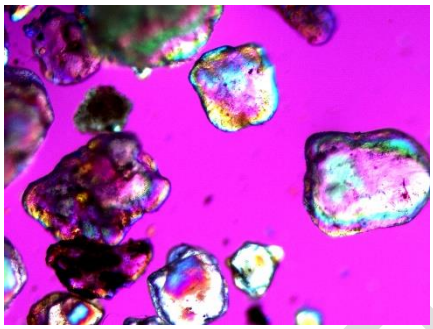
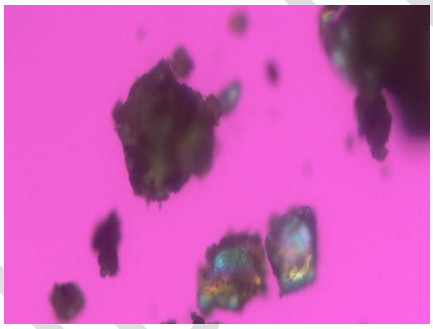
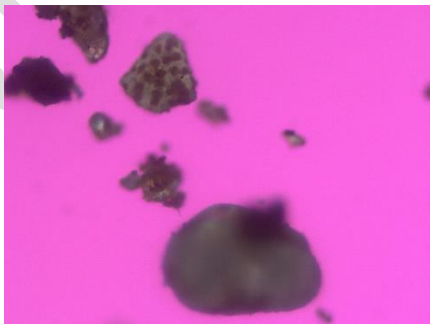
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS18	07.08.2020	07.09.2020	Bulk Sample Crocidolite.  	Positive for asbestos content. The type of asbestos identified is Crocidolite.	HSG 248.
2020-324-BS19	07.08.2020	07.09.2020	Bulk Sample Crocidolite.  	Positive for asbestos content. The type of asbestos identified is Crocidolite.	HSG 248.

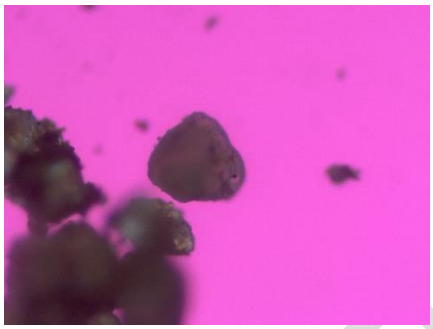
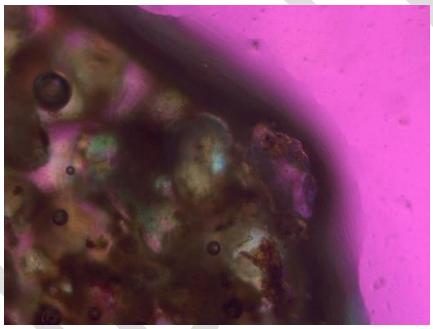
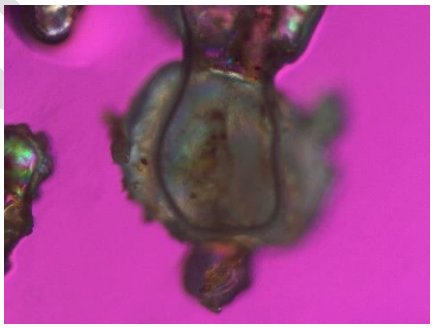
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS20	07.08.2020	22.09.2020	Bulk Sample Chrysotile.   Crocidolite.  	Positive for asbestos content. The type of asbestos identified is Chrysotile and Crocidolite.	HSG 248.

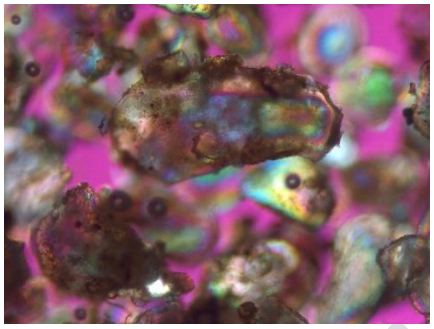
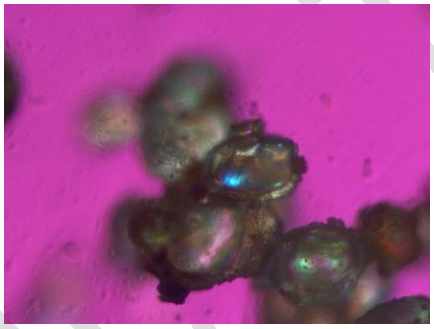
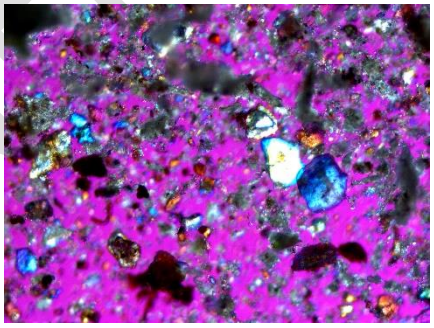
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS21	07.08.2020	22.09.2020	Bulk Sample Chrysotile.   Crocidolite.  	Positive for asbestos content. The type of asbestos identified is Chrysotile and Crocidolite.	HSG 248.

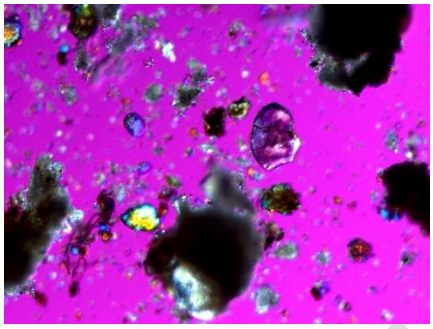
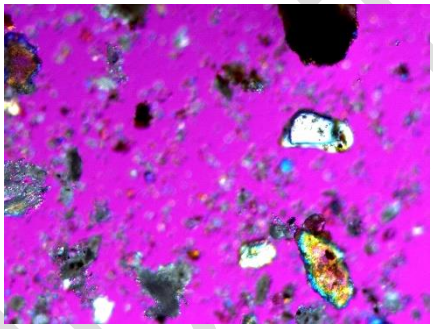
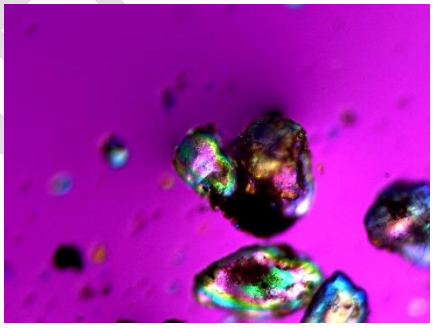
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS22	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS23	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS24	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.

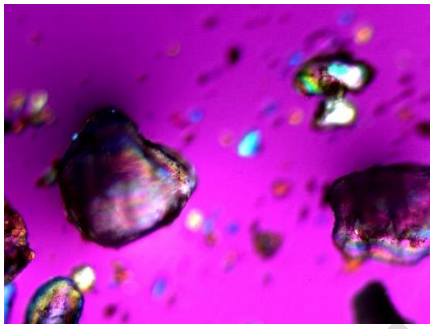
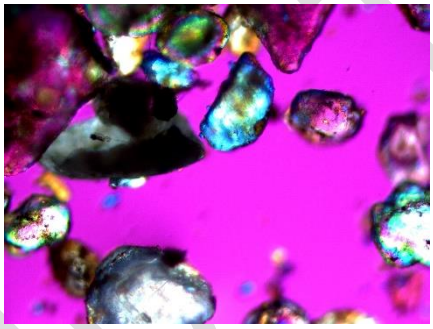
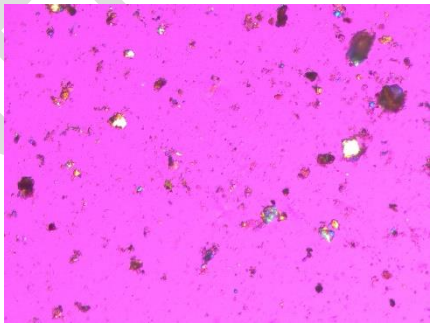
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS25	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS26	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS27	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.

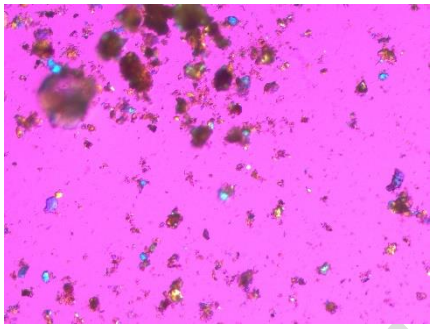
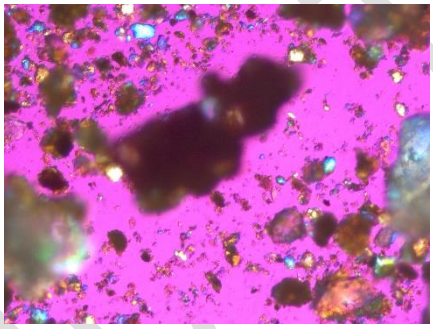
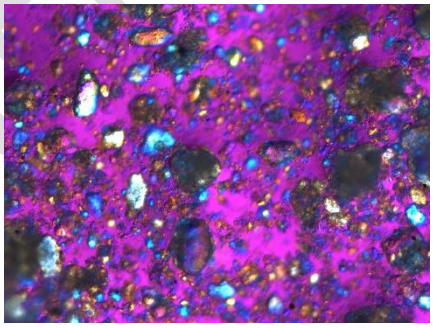
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS28	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS29	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS30	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.

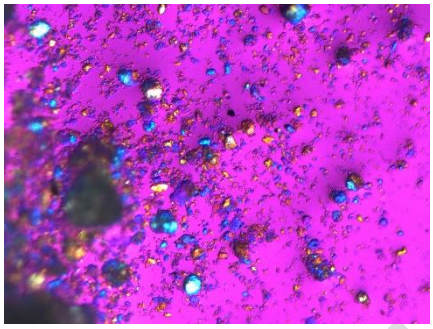
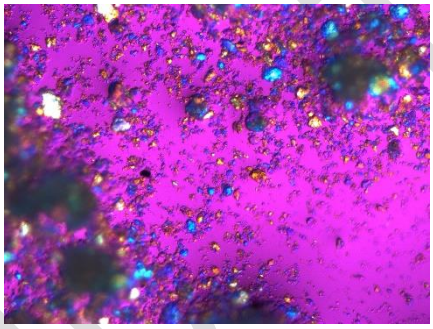
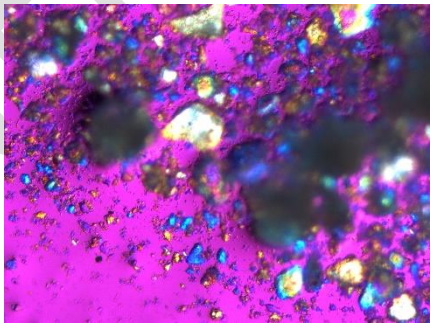
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS31	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS32	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS33	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.

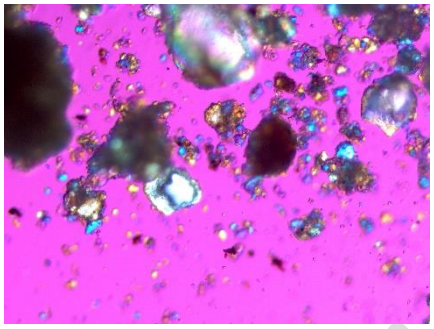
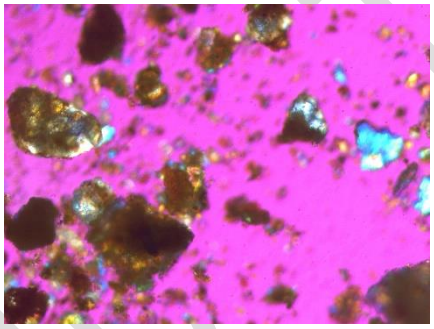
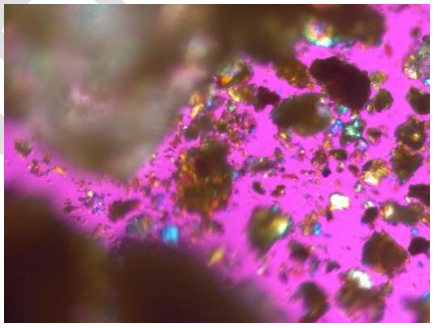
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS34	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS35	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS36	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.

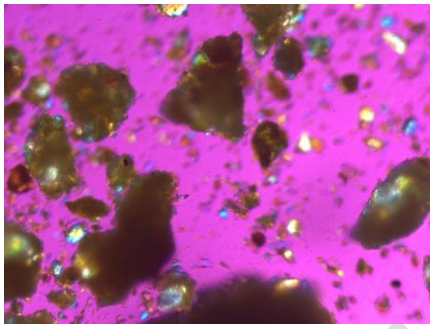
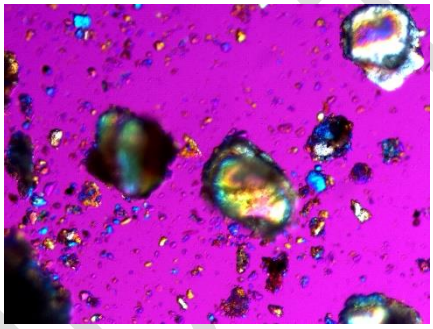
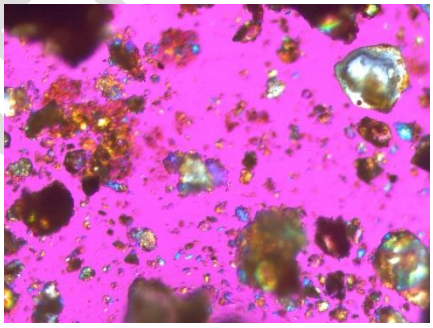
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS37	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS38	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS39	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.

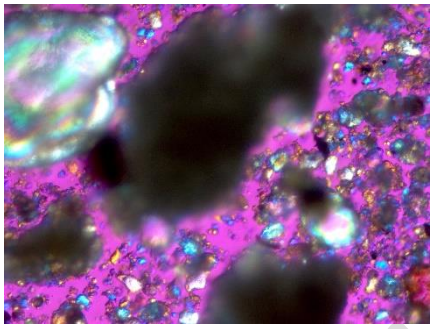
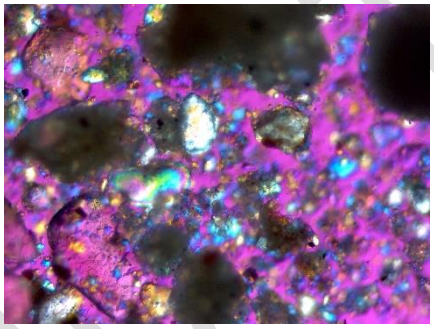
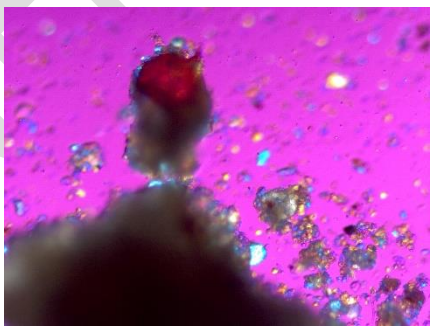
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS40	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS41	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS42	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.

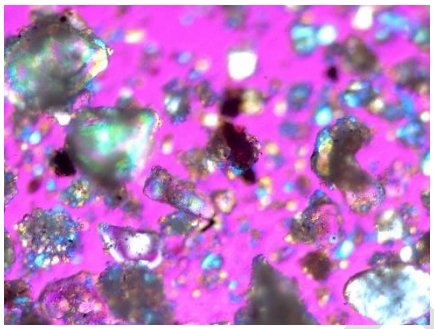
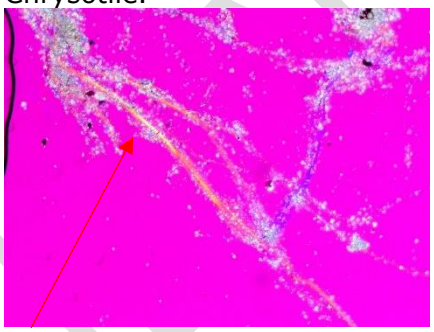
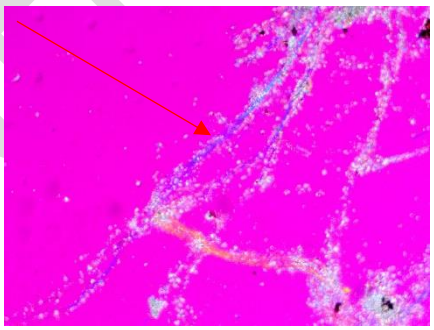
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS43	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS44	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS45	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.

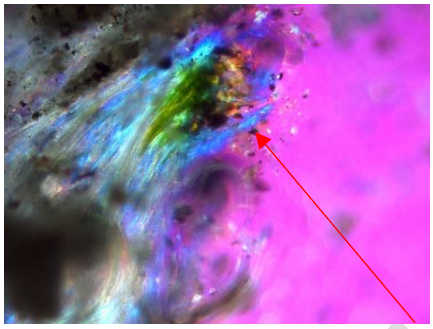
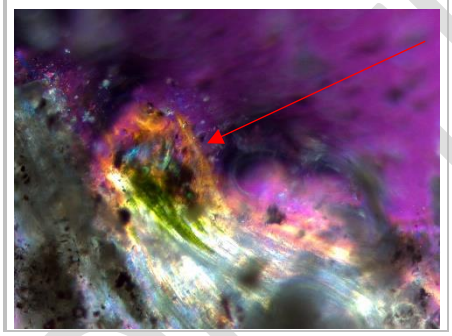
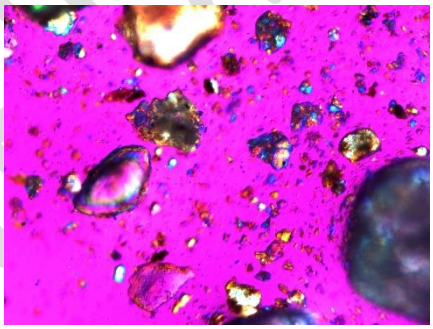
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS46	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS47	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS48	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.

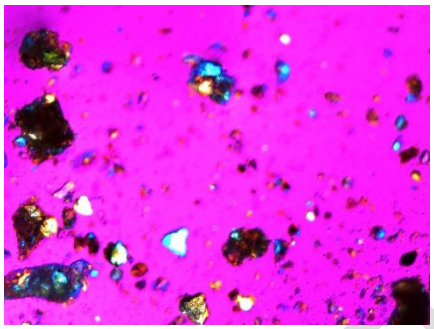
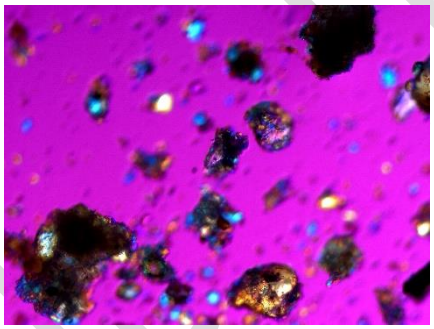
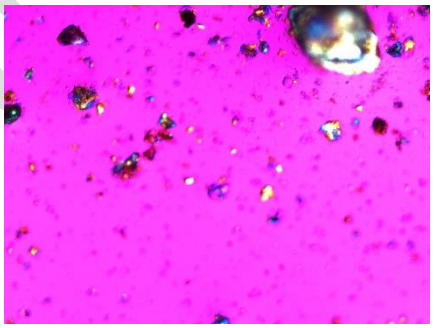
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS49	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS50	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS51	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.

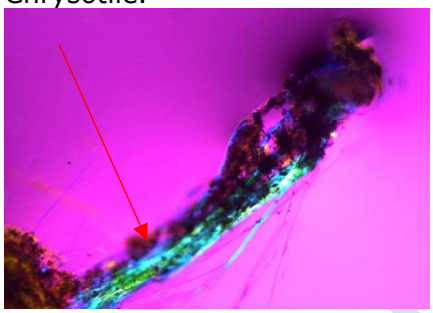
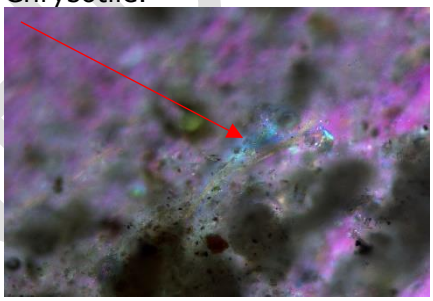
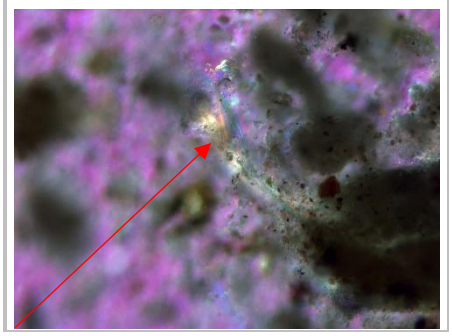
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS52	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS53	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS54	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.

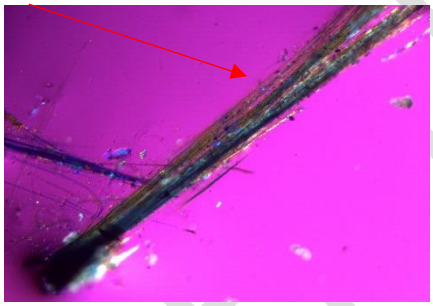
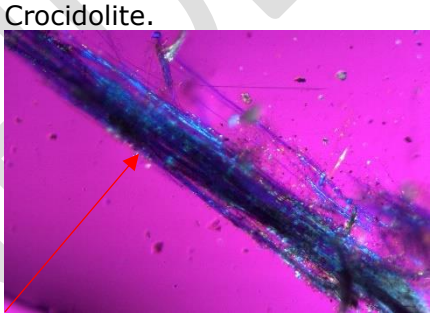
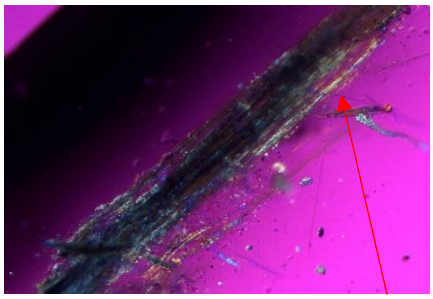
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS55	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS56	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS57	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.

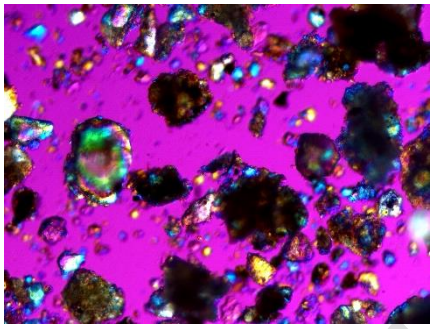
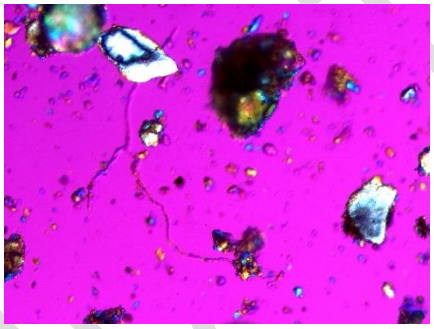
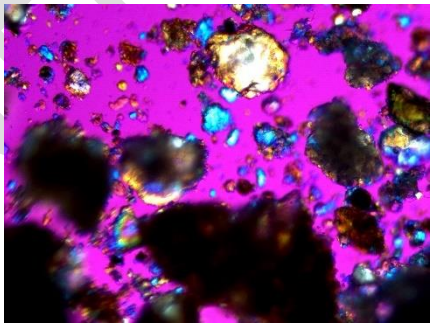
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS58	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS59	07.08.2020	22.09.2020	Bulk Sample Chrysotile.  	Positive for asbestos content. The type of asbestos identified is Chrysotile.	HSG 248.

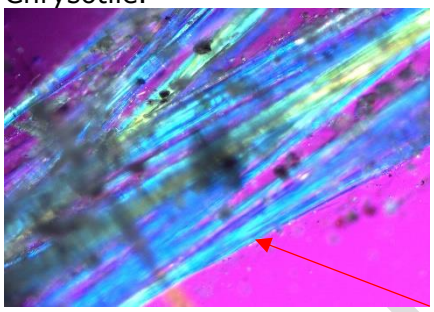
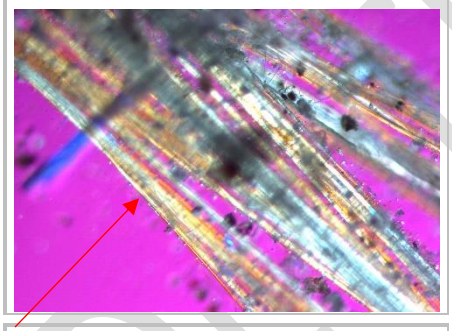
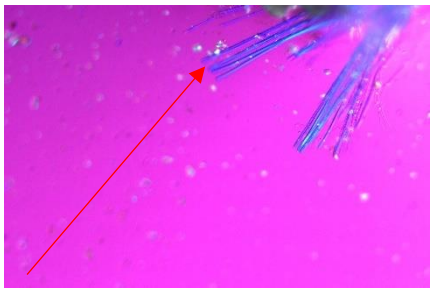
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS60	07.08.2020	22.09.2020	Bulk Sample  	Positive for asbestos content. The type of asbestos identified is Chrysotile.	HSG 248.
2020-324-BS61	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.

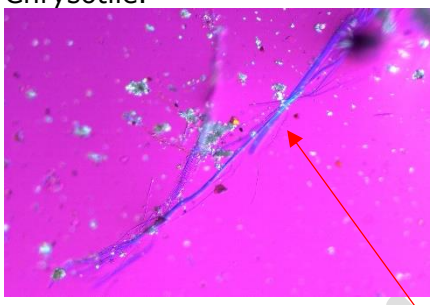
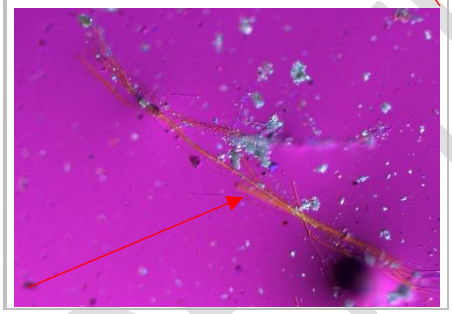
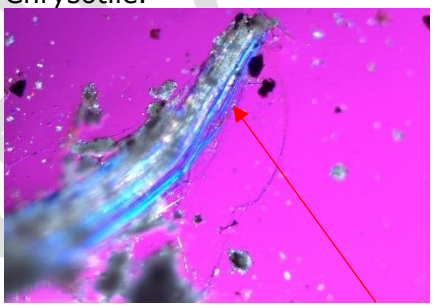
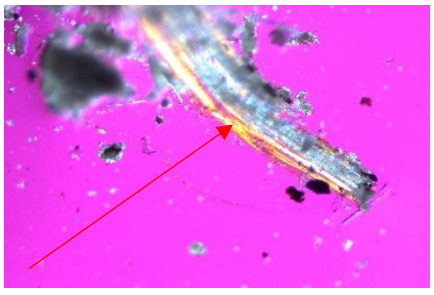
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS62	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS63	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS64	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.

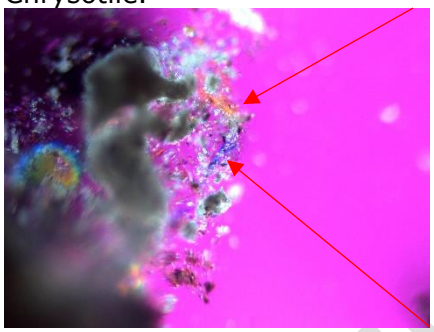
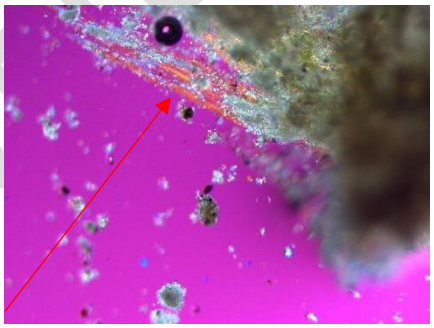
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS65	07.08.2020	22.09.2020	Bulk Sample Chrysotile.  	Positive for asbestos content. The type of asbestos identified is Chrysotile.	HSG 248.
2020-324-BS66	07.08.2020	22.09.2020	Bulk Sample Chrysotile.  	Positive for asbestos content. The type of asbestos identified is Chrysotile.	HSG 248.

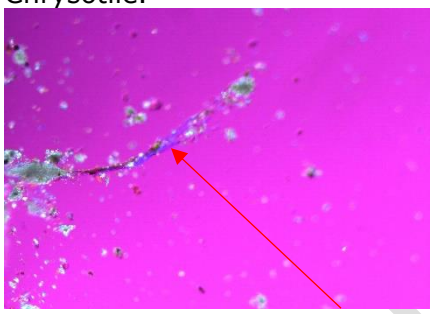
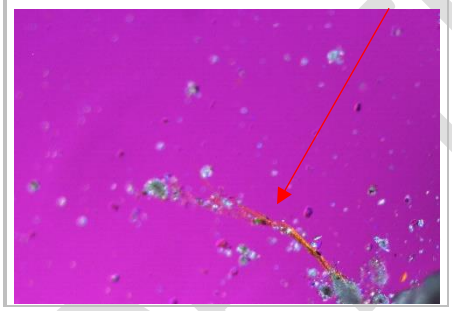
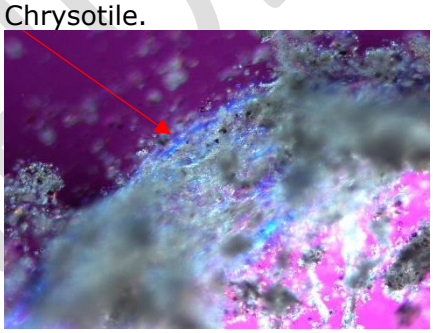
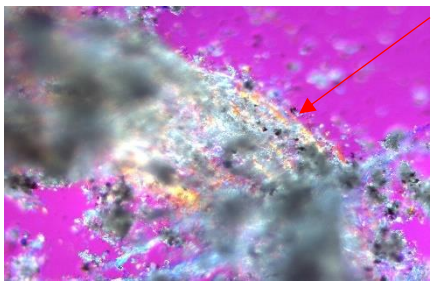
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS67	07.08.2020	22.09.2020	Bulk Sample Crocidolite.  	Positive for asbestos content. The type of asbestos identified is Crocidolite.	HSG 248.
2020-324-BS68	07.08.2020	22.09.2020	Bulk Sample Crocidolite.  	Positive for asbestos content. The type of asbestos identified is Crocidolite.	HSG 248.

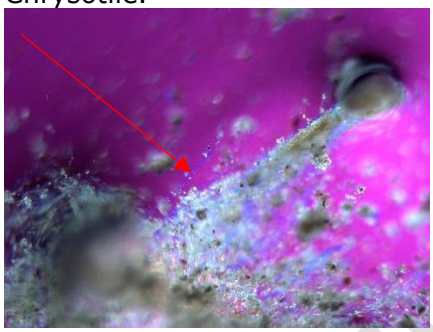
Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS69	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS70	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.
2020-324-BS71	07.08.2020	22.09.2020	Bulk Sample 	Negative for asbestos content.	HSG 248.

Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS72	07.08.2020	22.09.2020	Bulk Sample Chrysotile.  	Positive for asbestos content. The type of asbestos identified is Chrysotile.	HSG 248.
2020-324-BS73	07.08.2020	22.09.2020	Bulk Sample Chrysotile.  	Positive for asbestos content. The type of asbestos identified is Chrysotile.	HSG 248.

Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS74	07.08.2020	22.09.2020	Bulk Sample Chrysotile.  	Positive for asbestos content. The type of asbestos identified is Chrysotile.	HSG 248.
2020-324-BS75	07.08.2020	22.09.2020	Bulk Sample Chrysotile.  	Positive for asbestos content. The type of asbestos identified is Chrysotile.	HSG 248.

Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS76	07.08.2020	22.09.2020	Bulk Sample Chrysotile. 	Positive for asbestos content. The type of asbestos identified is Chrysotile.	HSG 248.
2020-324-BS77	07.08.2020	22.09.2020	Bulk Sample Chrysotile.  	Positive for asbestos content. The type of asbestos identified is Chrysotile.	HSG 248.

Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS78	07.08.2020	22.09.2020	Bulk Sample Chrysotile.  	Positive for asbestos content. The type of asbestos identified is Chrysotile.	HSG 248.
2020-324-BS79	07.08.2020	22.09.2020	Bulk Sample Chrysotile.  	Positive for asbestos content. The type of asbestos identified is Chrysotile.	HSG 248.

Sample No:	Samples Received	Date of sample analysis	Sample Description	Comments	Standard
2020-324-BS80	07.08.2020	22.09.2020	Bulk Sample Chrysotile.  	Positive for asbestos content. The type of asbestos identified is Chrysotile.	HSG 248.

3. DISCUSSION OF RESULTS:

The bulk samples 2020-324-BS1, 2020-324-BS2, 2020-324-BS3, 2020-324-BS4, 2020-324-BS5, 2020-324-BS6, 2020-324-BS7, 2020-324-BS8, 2020-324-BS9, 2020-324-BS10, 2020-324-BS11, 2020-324-BS12, 2020-324-BS13, 2020-324-BS14, 2020-324-BS15, and 2020-324-BS17, ,2020-324-BS18, 2020-324-BS19, 2020-324-BS20, 2020-324-BS21, 2020-324-BS59, 2020-324-BS60, 2020-324-BS65, 2020-324-BS66, 2020-324-BS67,2020-324-BS68, 2020-324-BS72, 2020-324-BS73, 2020-324-BS74, 2020-324-BS75, 2020-324-BS76, 2020-324-BS77, 2020-324-BS78, 2020-324-BS79 and, 2020-324-BS80 analyzed on the 7th of September and 22nd of September 2020 is **positive for asbestos content.** The type of asbestos identified is Chrysotile and Crocidolite.

The bulk samples 2020-324-BS16, 2020-324-BS22, 2020-324-BS23, 2020-324-BS24, 2020-324-BS25, 2020-324-BS26, 2020-324-BS27, 2020-324-BS28, 2020-324-BS29, 2020-324-BS30, 2020-324-BS31, 2020-324-BS32,

2020-324-BS33, 2020-324-BS34, 2020-324-BS35, 2020-324-BS36, 2020-324-BS37, 2020-324-BS38, 2020-324-BS39, 2020-324-BS40, 2020-324-BS41, 2020-324-BS42, 2020-324-BS43, 2020-324-BS44, 2020-324-BS45, 2020-324-BS46, 2020-324-BS47, 2020-324-BS48, 2020-324-BS49, 2020-324-BS50, 2020-324-BS51, 2020-324-BS52, 2020-324-BS53, 2020-324-BS54, 2020-324-BS55, 2020-324-BS56, 2020-324-BS57, 2020-324-BS58, ,2020-324-BS61 ,2020-324-BS62 ,2020-324-BS63, 2020-324-BS64, 2020-324-BS69, and 2020-324-BS70, 2020-324-BS71 analyzed on the 7th and 22nd of September 2020 is negative for asbestos content.

9. RISK RANKING (RR) CRITERIA

During the course of the survey, various suspect materials were sampled and following analysis, found to contain asbestos. In order to assess the potential risk posed by a material proven to contain asbestos, a method of categorisation has been devised. This categorisation is used to determine the most suitable course of action based upon the factors below. The algorithm outlined is used to produce a Risk Ranking (RR) for each positively identified ACM.

PRODUCT TYPE

1	Cement, Plastics, Bitumen Textured Coating and Paint
2	Insulation board, Mill board, Paper, Rope and Gaskets
3	Insulation, Sprayed coatings and any form of debris

ASBESTOS TYPE

1	Chrysotile
2	Amosite, Actinolite, Anthophyllite, Tremolite
3	Crocidolite

SURFACE TREATMENT

0	Composite materials containing asbestos, reinforced plastics, resins
1	Enclosed sprays and lagging asbestos insulating boards with exposed areas

2	Unsealed asbestos insulating board or encapsulated laggings and sprays
3	Unsealed lagging and sprays.

EXPOSURE RATING

0	Below the OEL at all times
1	Mostly below the OEL but could be above the OEL if disturbed
2	Above OEL when disturbed.

QUANTITY

1	< 1 metre / metre squared
2	Between 1 metre / metre squared to 10 metres / metres squared.
3	>10 metres or metres squared

ACCESSIBILITY

0	Usually inaccessible or unlikely to be disturbed
1	Major activities small possibility of disturbance
2	Likely routine disturbance of material Location

CONDITION

0	Good - No signs of damage and well-sealed product
1	Fair - The material is in average condition with minor areas of fraying
2	Damaged - Significant signs of materials deterioration
3	Poor - The material has sustained major damage

LOCATION

0	External
1	Area with controlled access
2	General access room.

Once the presence of an ACM has been identified, the above table should be followed thus creating a score that categorises the material in relation to the potential risk posed.

The following points give details that relate to the RR, and the likely procedures that will be required in order to reduce it, or to completely remove the material.

Risk Assessment Score 3 to 8

This is the lowest band possible and will therefore relate to a low risk material that is in a good condition, and unlikely to be disturbed. Attention should be made to the recommendations in this report, which relates to the specific requirement of each particular ACM.

Risk Assessment score 9 to 13

Materials that fall within this RR score will generally be a low risk material that requires some minor repair, or a high-risk material that is in a fair to good condition. Attention should be made to the recommendations in this report, which relates to the specific requirement of each particular ACM.

Risk Assessment score 14 to 16

Materials that fall into this RR score will inevitable require some form of repair or removal work to reduce the RR.

Attention should be made to the recommendations in this report, which relates to the specific requirement of each particular ACM.

Risk Assessment Score 17 and above

This is the highest band possible and relates to a material that is deemed to be a severe risk to health. It is generally recommended that any materials that record these scores would require access being restricted to the area and the removal of the material and / or remedial works undertaken to repair the material and subsequently reduce the RR. Once the presence of an ACM has been confirmed and a subsequent RR has been applied, recommendations in this report of action required to help assess and reduce the potential risk posed by the ACM of this report.

10. DISCUSSION OF RESULTS

As can be seen from the above survey, asbestos containing material in the form of friable asbestos has been identified across the site.

It must be noted that the site is dynamic. With the rain and other weathering, the mole hills spread out taking the asbestos with it. New moles hills come up daily bringing new asbestos with it. With the weathering process the mole hills "flatten" out spreading the asbestos further away from the original mole hill. Guinea fowls too are present on the site and they go to the mole hill to have "sand baths" also spreading the asbestos further.

11. RECOMMENDATIONS

PRELIMINARY ASBESTOS CONTROL MEASURES.

1. Asbestos signage to be placed on all entrances to the site, stating that this is an asbestos site and entrance is prohibited to un-authorized persons.
2. All boundary fencing wall openings must be closed preventing unauthorized access to any persons.
3. Weekly asbestos in air monitoring must be carried out, to determine if the asbestos is airborne or likely to become air borne. This will determine if further control measures may be required.
4. It is recommended to keep disturbance on the site to a minimum.
5. It was envisaged that where sandy areas are that is dry, it should always be kept wet to prevent asbestos becoming airborne. However due to the size of the areas that would require wetting, this is not a practical recommendation due to the volume of water needed. A water bowser would need to be on site permanently discharging large volumes of water. Furthermore, and irrigation system would need to be established across the entire site as there are sandy areas almost all over the site. In effect the soil would be disturbed due to site activity, possibility causing asbestos to become airborne. Based on this OHMS recommends not to dampen the soil at this time until further activity on the site is planned.

6. A decontamination unit will have to be established on site if any site activities take place. Only authorized persons may enter the site under asbestos control conditions. This requires full asbestos personal Protective equipment being worn, all persons entering must have asbestos medicals carried out and must be trained on the hazards of asbestos exposure. No eating, drinking or smoking on site is allowed. On exiting the property, all persons must follow the decontamination process.

LONG TERM CONTROL MEASURES.

1. The details of the long term control measures will be work - shopped with the project team and further described in the basic assessment.
2. If any asbestos contaminated material is to be removed, an asbestos plan must be drafted and must be approved by an Approved asbestos inspection authority (OHMS). This plan must be submitted to the regional department of Labor as notification of the intention remove asbestos containing material.
3. Any asbestos containing material must be removed by a registered asbestos contractor under the conditions of the asbestos regulations 2001 of the occupational health and safety act 85 of 1993 and in accordance with the procedures that will be drafted once the detailed description of works is determined.
4. The removal of the asbestos must be carried out in accordance with the asbestos regulations of the national environmental conservation act 73 of 1983. Regulations for the prohibition of use, manufacturing, import and export of asbestos containing material 2007, and if still required, the Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated sites, in Western Australia 2009".
5. The asbestos removal project must be carried out under the strict supervision of an Approved inspection Authority (OHMS).

12. CONCLUSION

As can be seen from the results of this report, asbestos has been identified on the site in locations indicated on the attached diagrams of the property. Bulk samples were taken from 80 locations over the property and were analyzed using polarized light microscopy.

The asbestos ranges from conglomerates of friable asbestos observed in disturbed soil in non-compacted areas due to mole and bird activity and asbestos chip in other areas. The property is covered with grass and bush growth which serves as an encapsulator, which prevents asbestos fibre release into the environment if not disturbed.

Asbestos in air samples have been taken on the property which tested negative under normal prevailing weather conditions, and it if of our opinion that no wetting process is required at this moment time. It is however a recommendation that continuous weekly air monitoring for asbestos on the site be carried out to scientifically prove that there is no release of asbestos into the environment, and if asbestos in air is detected, mitigating controls will be recommended. Given the findings of this report is our opinion that the risk of asbestos exposure on the site is high ranked RR18 in accordance with the risk ranking algorithm in this report.

To comply with the regulations referenced in this report the recommendations made in this report must be actioned and adhered to.

13. AIA CERTIFICATION

labour

Department:
Labour
REPUBLIC OF SOUTH AFRICA

National Department of Labour
Republic of South Africa

APPROVED INSPECTION AUTHORITY

Registered in accordance with the provisions of the Occupational Health and Safety Act, Act 85 of 1993, as amended.

This is to certify that:

OCCUPATIONAL HYGIENE MONITORING SERVICES (PTY) LTD

has been approved by the Department of Labour as a Type A, Approved Inspection Authority: Occupational Health and Hygiene under the following regulations:

- Asbestos Regulations 8, 18 & 21.
- Hazardous Chemical Substances Regulations 6 & 12.
- Lead Regulations 7 & 14.
- Noise Induced Hearing Loss Regulation 7

CHIEF INSPECTOR

Valid from: 26 August 2018
Expires: 25 August 2022
Certificate Number: OH0058- CI 06

14. SAIOH CERTIFICATION

SAIOH

The Southern African Institute for Occupational Hygiene

This is to certify that

Celia Keet

ID Number: 6709140155086

Has satisfied the requirements of
the Constitution of the Institute
and on recommendation of the Professional Certification Committee
is registered as an

Occupational Hygienist (OH)

Member Number: 0090

Valid until: 31 January 2021

Mr Sean Chester
Chairman: Professional Certification Committee

Member ID: 33914499
Certificate ID: 33914499-18623
Issued by the Southern African Institute for Occupational Hygiene
SAQA Professional Body ID: 844

IOHA Recognised Certification Scheme
IOHA

SAIOH

The Southern African Institute for Occupational Hygiene

This is to certify that

Gerard Keet

ID Number: 5810035115085

Has satisfied the requirements of
the Constitution of the Institute
and on recommendation of the Professionals CertificationCommittee
is registered as an

Occupational Hygiene Assistant (OHA)

Member Number: 0382

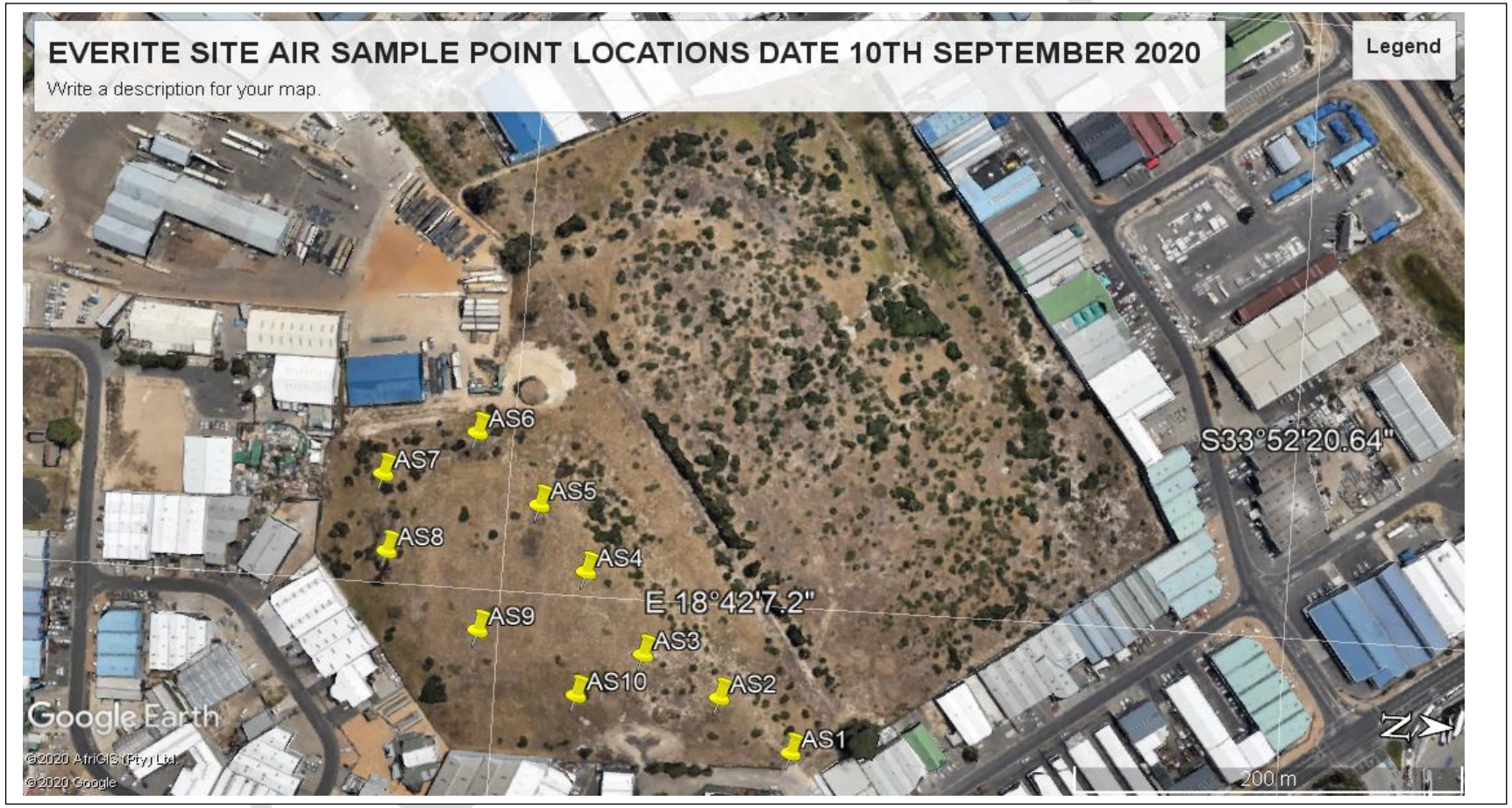
Valid until: 31 January 2021

Mr Sean Chester
Chairman: Professional Certification Committee

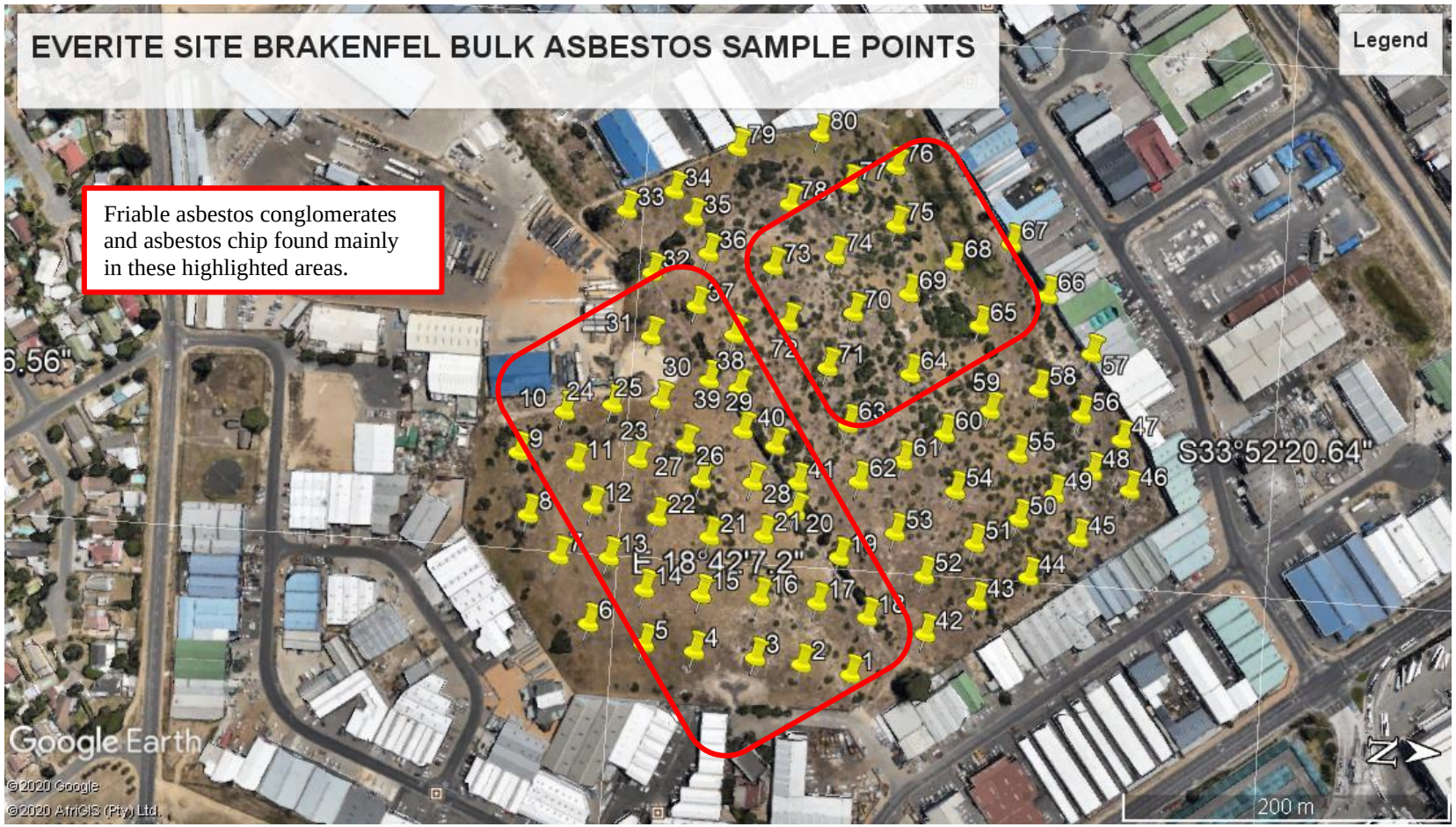
Member ID: 33914616
Certificate ID: 33914616-18620
Issued by the Southern African Institute for Occupational Hygiene
SAQA Professional Body ID: 844

IOHA Recognised Certification Scheme
IOHA

15. ASBESTOS AIR SAMPLE POINTS.



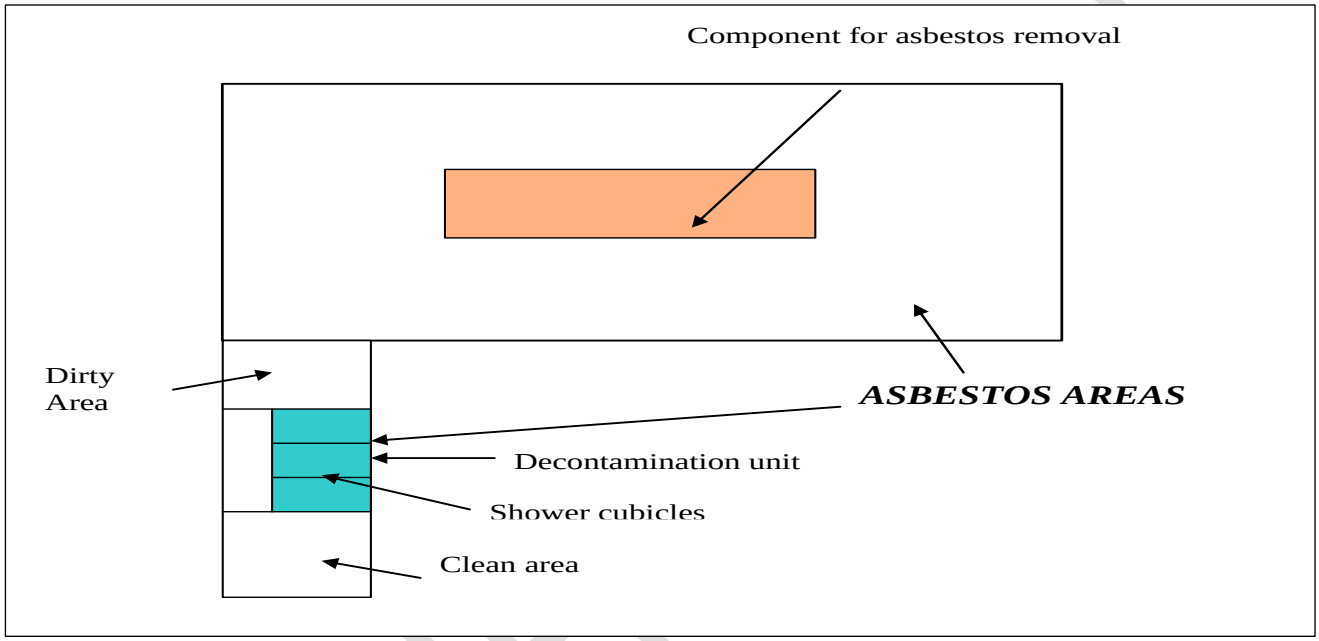
16. ASBESTOS BULK SAMPLE POINTS.



17. PHOTOGRAPHS OF SITE CONDITION.

18. PHOTOGRAPHS OF SOIL CONDITIONS WITH ASBESTOS DEBRIS VISIBLE.

TYPICAL ASBESTOS DECONTAMINATION UNIT THAT WILL HAVE TO BE PLACED ONTO THE SITE. ALL PERSONS ENTERING AND LEAVING THE SITE,WILL HAVE TO GO THROUGH THE DECONTAMINATION UNIT.



DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I E.C. Keet ....., as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or

  - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);

- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;

- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and

- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.

10.09.21

Signature of the Specialist: Date:

Occupational Hygiene Monitoring Services (PTY) LTD

Name of company (if applicable):