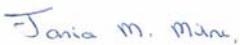


# Dalgety Bay

## Appropriate Person Report

### Appendix 13

Author	Miss Nina Patton		26 June 2013
Reviewed	Dr James Gemmill		27 June 2013
Approved for Release	Ms Janice Milne		27 June 2013

## Summary of Radium-226 sources and artefacts found in trial pits

### 13. Summary

This appendix summarises the active sources and artefacts found in the trial pits. Artefacts have been reviewed using information gathered from the internet and research sources and are referenced appropriately throughout.

Across the investigation area there is a wide range of debris ranging from broken crockery, asbestos tiles and bricks visible from the surface. These items were found at depths across a number of trial pits.

Artefacts found from Trial pits:

- Bricks
- Pottery
- Sommerfeld Tracking
- Mayenord Container
- Ohmite Electrical Component

#### 13.1. Bricks

Information on the provenance of brickworks was gathered from two brick work websites and from an Industrial Archaeological Survey published by the University of Strathclyde.

- <http://www.fifeminingheritage.org.uk/Index.asp?MainID=2135>
- <http://www.penmorfa.com/bricks/>
- Graham Douglas's *A Survey of Scottish Brickmarks*, published in 1986 by the University of Strathclyde's Industrial Archaeology Survey, [http://bloodhound.tripod.com/scots\\_bricks.htm](http://bloodhound.tripod.com/scots_bricks.htm)

##### 13.1.1. Fire Bricks

A brick with 'BURN-AXE' marking was recovered at depth from a trial pit. These bricks are larger and more solid than ordinary bricks. This brick is possibly a fire-brick. Suggestions from brick history websites that this would be related to Fire-Axe brick, which was a refractory brick used in high temperature processes.



Figure 13-1: Burn-Axe brick

Lochside	Lochside Works, Townhill, Dunfermline	1902 to 1974
Wellwood	Elgin & Wellwood Colliery, Dunfermline	The colliery closed in 1950 but the brickworks survived until 1981
Dewar	Possibly part of the Dalmellington Iron Company	1850s and closed in 1976
Blairadam	Blairadam Brickworks, Kelty.	1828 to 1947
Auchinlea	Auchinlea Quarries and Brickworks, Cleland, North Lanarkshire	1920 – 1947
Wemyss	Methill, Fife	1906 – to 1981
Nimmo	probably North Lanarkshire/Stirlingshire	1899 to 1939
Firebricks (Burn-Axe)	Refractory bricks were produced in Glenboig, North Lanarkshire however this specific brick type cannot be confirmed	

**Table 13-1: Brick types & associated brickwork operational dates**

AUCHINLEA	Auchinlea Brickworks	Wishaw	1920-1947
BLAIRADAM	Blairadam Brickworks	Kelty	1828-1947
NIMMO	Holytown Brickworks	New Stevenston	1899-1939
LOCHSIDE	Lochside Works	Dunfermline	1902-1974
WEMYSS	Wemyss Brick Co	Methill	1906-1981

**Table 13-2 Brickworks and operational dates (A Survey of Scottish Brickmarks, 1986)**

### 13.2. Pottery

Similar to the bricks found on the surface and in the trial pits, pottery objects in various states (broken and unbroken) can be found on the surface and in the trial pits. Several of the objects recovered show markings of NAAFI (Navy, Army and Air Force Institutes) and the Admiralty, whilst others indicate a date stamp.



Figure 13-2: G w R pottery dated from 1944, pit TP 1/1/007



Figure 13-3: Admiralty logo pottery from TP 2/1/009



Figure 13-4: NAAFI logo pottery from TP 2/1/009



Figure 13-5: G w R logo pottery dated 1942 from TP 3/2/031B

### 13.3. Sommerfeld Tracking

The presence of metal rods with distinctive looped ends, laid at set distances apart was noted in a number of concurrent pits in Ross Plantation. It was commented at the time of the intrusive investigation that the rods appeared to be 'sommerfeld tracking'.

Sommerfeld tracking was used as a temporary surface, either for airfields or roadways. It was made with pre-fabricated wire mesh netting and steel bearing bars. It was noted to be useful for temporary airfields and beach roadways. Some information on sommerfeld tracking was found on several internet sites.

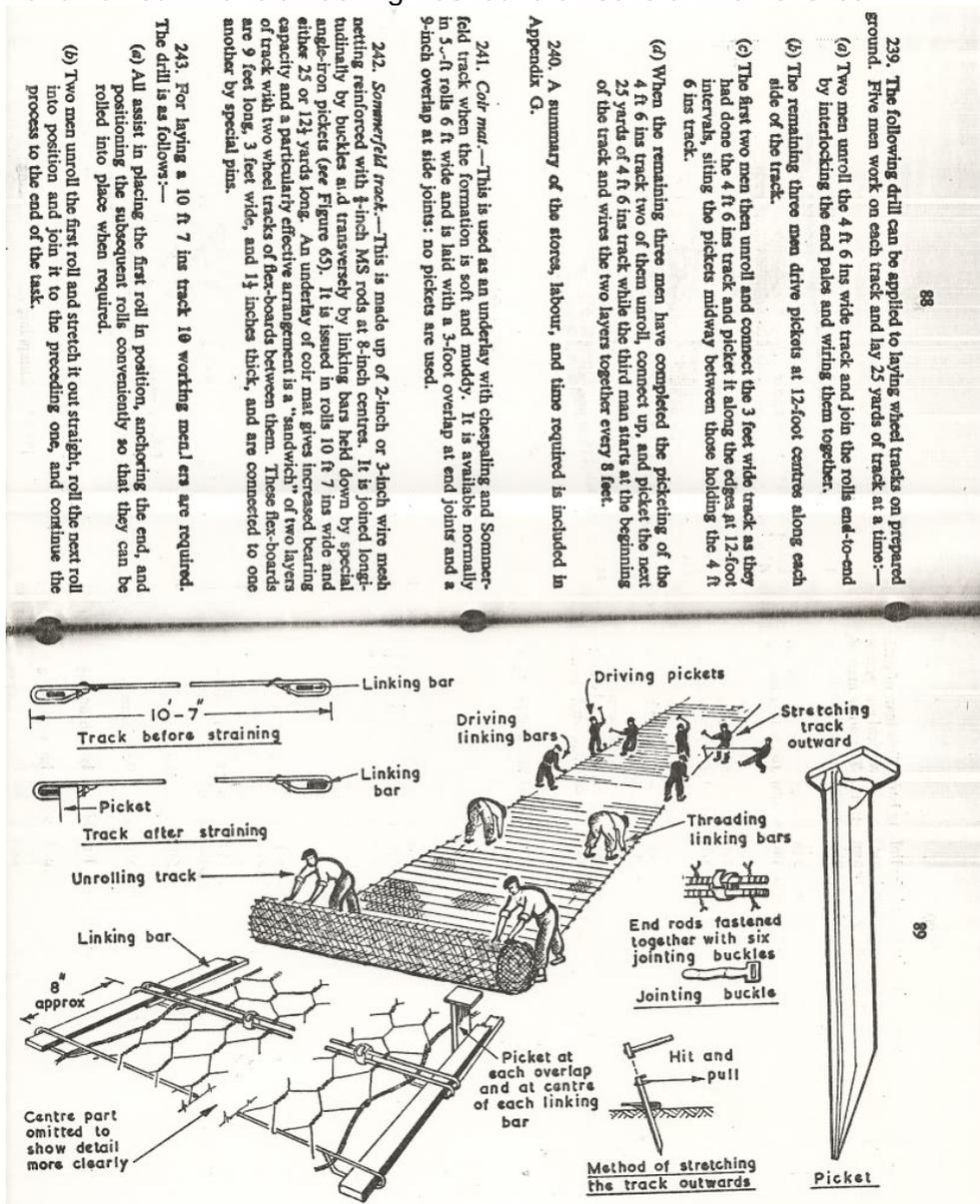


Figure 13-6: Sommerfeld track

[http://media.photobucket.com/user/elgorah\\_r/media/SommerfeldTrack.jpg.html?filters%5Bterm%5D=sommerfeld%20tracking&filters%5Bprimary%5D=images#/user/elgorah\\_r/media/SommerfeldTrack.jpg.html?filters%5Bterm%5D=sommerfeld%20tracking&filters%5Bprimary%5D=images&\\_suid=136389005984809595747147374787](http://media.photobucket.com/user/elgorah_r/media/SommerfeldTrack.jpg.html?filters%5Bterm%5D=sommerfeld%20tracking&filters%5Bprimary%5D=images#/user/elgorah_r/media/SommerfeldTrack.jpg.html?filters%5Bterm%5D=sommerfeld%20tracking&filters%5Bprimary%5D=images&_suid=136389005984809595747147374787)

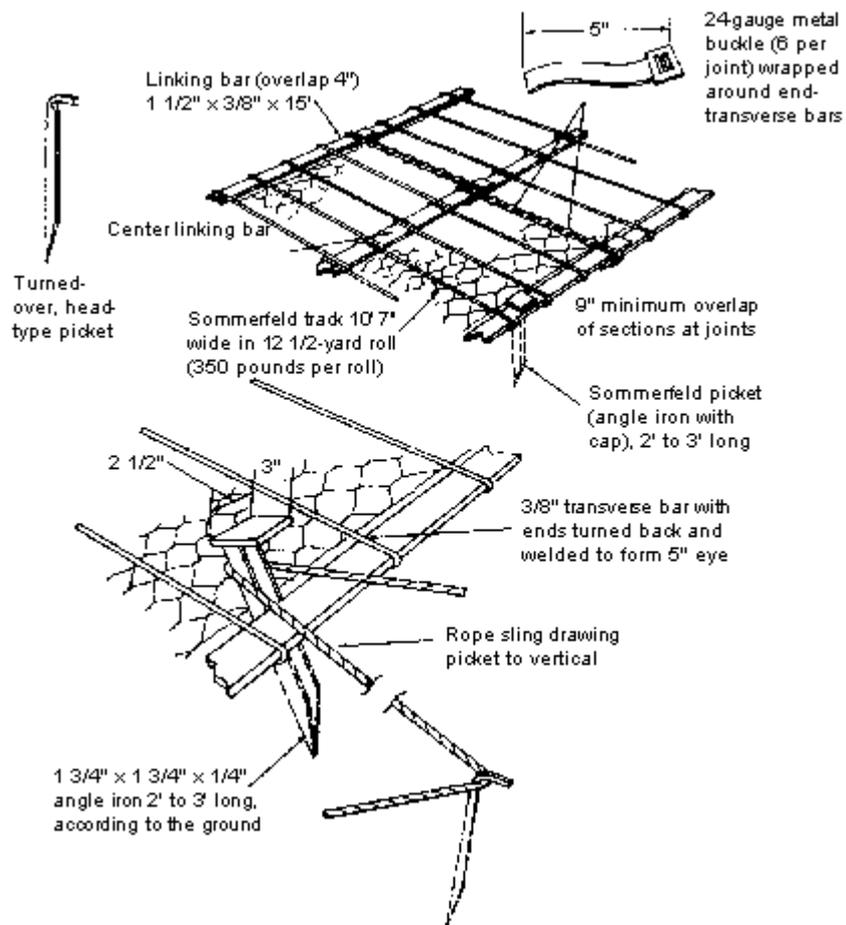


Figure 13-7: Installing Sommerfeld track

<http://www.globalsecurity.org/military/library/policy/army/fm/5436/chap14.htm#fig14-4>



**Figure 13-8: Metal bars with looped end as possible Sommerfeld Track, TP 6/2/053**



**Figure 13-9: Metal bars with looped end as possible Sommerfeld Track, TP 6/2/053**

### 13.4. OHMITE Electrical Component

In one of the trial pits an object with the marking 'OHMITE MFG CO CHIGAGO, MADE IN USA' was recovered. Enquiries to the OHMITE website ([www.ohmite.com](http://www.ohmite.com)) has indicated that this object may be an electrical component, perhaps a resistor or rheostat switch. OHMITE manufactured components for radio transmitters.



Figure 13-10: OHMITE artefact recovered from trial pit



Figure 13-11: Ohmite Rheostat Switch From 1959 PA24-250 Piper Comanche

[http://www.ebay.com/itm/AIRCRAFT-OHMITE-RHEOSTAT-SWITCH-PIPER-CESSNA-BEECH-EXPERIMENTAL-/281119644895?pt=Motors\\_Aviation\\_Parts\\_Gear&vxp=mtr&hash=item4174095cdf&nma=true&si=DTwamJKc5xSkOfWc0fm9tS1QOjw%253D&orig\\_cvip=true&rt=nc&trksid=p2047675.l2557#ht\\_395wt\\_883](http://www.ebay.com/itm/AIRCRAFT-OHMITE-RHEOSTAT-SWITCH-PIPER-CESSNA-BEECH-EXPERIMENTAL-/281119644895?pt=Motors_Aviation_Parts_Gear&vxp=mtr&hash=item4174095cdf&nma=true&si=DTwamJKc5xSkOfWc0fm9tS1QOjw%253D&orig_cvip=true&rt=nc&trksid=p2047675.l2557#ht_395wt_883)



Figure 13-12: Ohmite Rheostat Switch

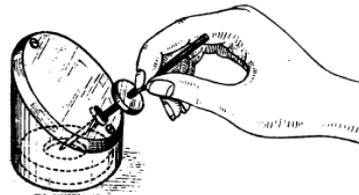
<http://www.aircraftpartsandsalvage.com/ohmite-rheostat-switch-p-20018.html>

### 13.5. Mayneord Container

Within one active pit a perspex item was recovered that appeared to look like an aircraft dial. This circular disc was approximately 8 cm across and made of a twin layered Perspex with pivot screw and drilled finger holes allowing rotation. This would cover the face of an aircraft dial and is potentially a modified Mayneord Container for reducing radiation exposure to dial painters



Figure 13-13: Perspex twin-layered rotating disc from TP 7/2/097  
CONTAINER IN USE



#### DETAILS OF CONTAINER

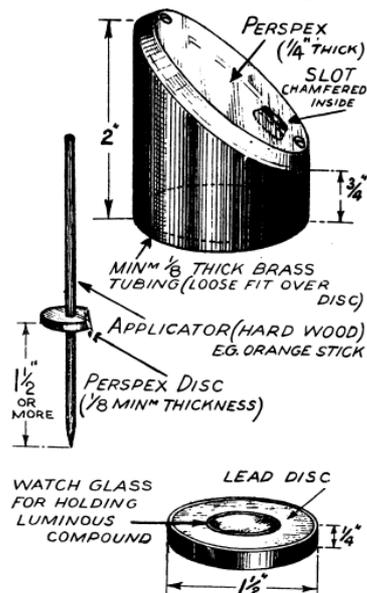


Figure 13-14: Instructions for Mayneord Container  
MEDICAL ASPECTS OF RADIATIONS USED IN INDUSTRY, ETHEL BROWNING, From the  
Factory Department, Ministry of Labour and National Service 1947

### 13.6. Air Ministry Electric Switch

One of the artefacts recovered displayed an Air Ministry crown insignia and a reference number 5C/859. This item was found to be a landing gear socket switch for a Lancaster aircraft, although this may have been used on other types of aircraft.



Figure 13-15: Air Ministry Item Ref No. 5C/859



Figure 13-16: Air Ministry Item Ref No. 5C/859 found on aircraft salvage website [http://forum.keypublishing.com/showthread.php?120747-wreckageoflanca-ster-ed908-\(60-z\)&p=1954878#post1954878](http://forum.keypublishing.com/showthread.php?120747-wreckageoflanca-ster-ed908-(60-z)&p=1954878#post1954878)

### 13.7. Artefacts & Radium-226 sources from Trial Pits

This section details the radioactive radium-226 sources and artefacts recovered from the trial pits.

TP 1-1-007, 26/10/12:

- Activity: Long piece of metal at 1.4 m, 900 cps, Ra-226 identified.
- Artefacts: Particularly thick glass (2 cm), 3 layers adhered together at 1.5 m, Glass bottle, Kirkcaldy, R Douglas Ltd, at 1.8 m, Pottery, G v R, Copeland, 1944

TP 1/1/008 25/10/12

- Activity: No sources
- Artefacts: Metal and plastic 0.65 m, Ashy layer, bricks, rubble, Modern Plastic, photo ref 302, 1.35 m, Concrete, sandstone, plastic edging, hacksaw blade @ 1.8 m

TP/2/1/009 25/10/12

- Activity: Active sources
- Artefacts: Ash layer, blue corroded battery with nail, NAAFI pottery

TP 2/1/012 23/10/12

- Activity: No sources identified
- Artefacts: Small ash layer, Rubble, bricks (Blairadam), scraps of wallpaper, Broken bottle tops

TP 2/1/012B 23/10/12

- Activity: No sources identified
- Artefacts: 5cm – metal artefact, ashy layer, asbestos tiles, rubble, bricks, 1.1m smooth brick, 1.2 m soil.

TP 2/1/013 24/10/12

- Activity: No sources listed
- Artefacts: Ash layers, glass, pottery, 'Loch..' – (Lochside) brick, Pottery, wiring, debris at 1.9 m

TP 2/1/014 23/10/12

- Activity: No sources
- Artefacts: Some bricks, markings 'Blank' and 'A F' identified. Cement still adhered to face, but believe other bricks did not have marking.

TP 2/2/015 26/10/12

- Activity: Ra-226 confirmed from 0.8m (equivalent of 0.5m below surrounding ground level as pit on slope) throughout to 2.7m, down pit monitoring not beyond 2.7m.
- Artefacts: Wrapper dated 1976 found at 0.1m, Ash at 0.4 m, clinker, broken bricks, glass, rubble, Pottery at 1.0 m, Wedgewood & Co. Ltd. 1944, Burnt tin roof piece at 1.4 m, Asbestos, Patent 209653 bakelite object at 1.4 m (Photo 0382 Artefact: is bakelite light switch - [http://www.ebay.co.uk/itm/Vintage-Expresso-Regd-Patent-Ceramic-and-Bakelite-Toggle-Light-Switch-/111082993345?pt=UK\\_Antiques\\_Architecural\\_RL&hash=item19dd0ff6c1#ht\\_368wt\\_1014](http://www.ebay.co.uk/itm/Vintage-Expresso-Regd-Patent-Ceramic-and-Bakelite-Toggle-Light-Switch-/111082993345?pt=UK_Antiques_Architecural_RL&hash=item19dd0ff6c1#ht_368wt_1014)), Pottery G w R, Booths Ltd, 1944 at 1.8 m, Blue corroded battery at 3.7 m with fragments of bricks

TP2/2/016

- Activity: Radium-226 confirmed 0.25m – elevated counts to 1800 cps in ash layer, no discrete sources. Elevated counts at 2.3m (230cps) but no sources isolated.
- Artefacts: Ash with brick., 0.45m – wire, pottery, bricks, ash, corroded battery, object with threaded surface (similar to a screw thread – photo 571/2)

TP2/2/017

- Activity: No sources recovered, up to 250 cps at 2.0m where K-40 identified
- Artefacts: Ash layer from 1.7m, plastic/rubble/paving stones to 0.5m, metal peg, bitumen lumps at 1.0m, max 191cps/avg 150 cps, evidence of old structure at 1.7m, 2<sup>nd</sup> ash layer at 2.2m (estimated to be 1.4 above ground level based on 11 ½ steps at 184 rise, 2.4m glass bottle, 2.7m base to 150 cps soil. Note: this trial pit was moved from the original location due to the potential for foul drainage and unknown services.

TP 2/3/018 30/10/12

- Activity: No sources recovered, however possible multiple sources in ash layer (friable) at 73 cm. 2000 cps Ra226 glass fragment recovered at shallow depth 4m NW of pit (200 cps at surface). This became BH 2/3/003.
- Artefacts: Bricks & Stones, large concrete slabs with metal fragments (0.65 m), Flat concrete slabs (80 mm thick), Sandstone, Metal Structure at 1.8 m (note – possible rebar or Sommerfeld track given metal loops, photo 728) Unable to remove structure, pit stopped at 1.8-2.0 m. Coke can recovered from 2.0 m. Note large voids in pit.

TP 2/3/019 26/10/12

- Activity: No sources recovered.
- Artefacts: Disposable Lighter (note photo 478 – possibly first invented in 1972). Dressed sandstone, ironmongery for doors, metal artefacts

TP 2/3/020 30/10/12

- Activity: Source at 1.0 m
- Artefacts: large piece of worked stone (possible old church), bits of burnt paper at 0.8 m, pipe found in-situ at 1.5 m

TP 2/4/021 24/10/12

- Activity: No sources recovered
- Artefacts: 0.3 m clinker and blue corroded battery, 0.4 m metal triangle, 0.7 m fibre & gasket, 0.8 m image 221 cloth, Planar blocks – outer thicker than inner, Rounded pebbles at 3.5 m

TP 3/1/022 19/11/12

- Activity: Non-active pit
- Artefacts: Rubber cable protection ring noted – e.g. modern structure.

TP 3/1/023 16/11/12

- Activity: No sources recovered
- Artefacts: Burnt material at 1.5 – 2.5 m

TP3/1/024

- Activity: No Radium-226 identified
- Artefacts: 0.4m ashy layer with lochside brick, corroded battery, pottery, asbestos, ash layer ends at 0.8m, 1.0m clinker and tarmac up to 260cps, 1.2m tarmac, 1.4/1.5m very thin ash layer, 1.7m sandstone.

TP 3/1/025 15/11/12

- Activity: Radium-226 sources recovered
- Artefacts: Pit also contained ash, clinker, pottery, brick fragments, Silver sand at 1.95 m, hydrocarbon smell, burnt/fused sand

TP 3/1/026 15/11/12

- Activity: Radium-226 sources recovered
- Artefacts: Tarmac at 0.5 m, Lochside bricks, Yellow brick, similar to 'Burn-Axe' refractory bricks, , object recovered – brick with battery corrosion, Malteser packet at 0.65 m, Ash at 1.1. with timber, component with holes for wires, 1.25 m – Sand, Perspex in spoil with ash. 1.25 – 1.35 m – objects: Perspex angular material, leather glove, gasket ring, flexible hose covering, components, photo ref 2092. 1.5 – 1.7 m Wire, gromit from ash. Identified parts of leather boot, Golden sand with burnt/fused sand, ash layer on top. Photo 2093.

TP 3/1/027 16/11/12

- Activity: No sources recovered
- Artefacts: Unnamed bricks (possibly modern), Burnt sand at 0.5 m, 1.5 – 1.85 dark grey, orange sand, weathered sandstone.

TP3/1/029

- Activity: K-40 confirmed at base of pit, no radium.
- Artefacts: None. Pit comprised type 1 hardcore over red blaze, soil, sandstone.

TP3/1/030

- Activity: Radium-226 confirmed 0.4-0.6m, multiple small sources.
- Artefacts: Reinforced glass & brick fragments on surface, wire, pottery, possible (concrete?) H-beam etc amongst ash/clinker layer 0.3m, gasket, wires, larger brick chunks, pottery fragments, burnt clinker, plant pot, rubber to 0.8m.

TP 3/2/031 14/11/12

Pit abandoned due to tidal inundation and wet weather. Elevated readings were noted, significant pit due to proximity to High-Activity Area.

TP 3/2/031B 19/11/12

- Activity: Multiple friable sources present in pit. Highest at 50,000 cps. Typically at 1.4 m.
- Artefacts: Clinker, rounded glass, 1942 pottery (photo 2285 ->), Melior Pottery (probably coffee pot) (photo 2275), Glass Bottle with inscription U442, UGB and a dragon image. Probably Gin bottle from UGB. UGB changed to United Glass in 1959. Photo id 2273, similar photo online at [http://i747.photobucket.com/albums/xx114/tenerds/1860DA60-E004-4435-8BD7-7129F40A20A3-1702-00000152A285D8BC\\_zps64a3571f.jpg](http://i747.photobucket.com/albums/xx114/tenerds/1860DA60-E004-4435-8BD7-7129F40A20A3-1702-00000152A285D8BC_zps64a3571f.jpg) . - UGB was formed in 1913 by the merger of 5 companies, including - Cannington Shaw & Nuttall (both St. Helens), Alfred Alexander (Leeds) and Robert Candlish (Seaham Harbour). Breffit was absorbed later, in 1913 (factory

closed in 1926) and John Lumb in 1937. It became United Glass in 1959 (<http://homepage.ntlworld.com/john.roberts187/bottlemanufacturers.html>).

More information:

[http://www.gracesguide.co.uk/United Glass Bottle Manufacturers](http://www.gracesguide.co.uk/United_Glass_Bottle_Manufacturers).

- Hydrocarbon smell and oil sheen in water

TP 3/2/032 14/11/12

- Activity: No radioactive contamination identified
- Artefacts: Metal Chain Fence at surface, Lochside bricks mortared together (0.8-1.3 m), Cable, Shovel head, metal spring, tarmac cobbles
- Also noted that a bread packet (0.4m) and 'fertiliser bag' was recovered but no photograph is available

TP3/2/033

- Activity: Radium-226 sources on and near pit surface, 0.3-1.05m. Sources also recovered from JCB wheel tracks which disturbed ground.
- Artefacts: 0.3m – ash with soil, crockery, brick fragments, 0.5-1.0m – coarser material, lots of clinker, Perspex, rounded glass, corroded pipe. Interface of ash/rock cut through pit.

TP3/2/034

- Activity: Ra226 at 0.2m and 0.95m.
- Artefacts: Pottery, ash, asbestos, brick & brick fragments, metal, corroded batteries, concrete, tarmac, hydrocarbon odour, fibrous woody material associated with tarmac & hydrocarbon odour. Ash layer dipping eastwards towards sea.

TP3/3/035

- Activity: No radioactive contamination identified
- Artefacts: Concrete/Tarmac at 0.25m, Ash at 1.2 -1.3m, Orange sand/Clinker/Plastic/Metal/Armoured Cable at 1.2-1.4m, Pit end at 2.0 m with water ingress.

TP3/2/036

- Activity: Ra-226 sources recovered from 1.95m
- Artefacts: Plastic liner at 0.65m, pottery at 1.65m, black material with sand and pottery/clinker at 1.95m, 2.0m bedrock.

TP3/2/038

- Activity: Ra-226 in active ash layer 1.7 – 2.0 m
- Artefacts: Ash at surface, battery, 0.25m – ash layer gone, metal object with corroded battery, tarmac, brick at 0.5m, wood/tarmac/hydrocarbon odour at 0.6m, Ash layer with glass, crockery, at 1.7 -2.0m, 2.0 – 2.3 sand to base. Photo 1366.

TP3/3/039

- Activity: Clinker source at 1.4m, elevated counts to 1.6m
- Artefacts: brick & brick fragments, reinforced concreted (0.4m), tarmac, metal cable
- Natural sand at 2.2m

TP3/3/040

- Activity: Physically small source recovered at backfill. Thought to be from ash layer at 0.25m (likely to be sources not identified in ash layer),

- Artefacts: Pottery within ash layer (Ash coarser than TP 3/3/039), 'Nimmo' brick at 0.6m, veneer of ash at 0.25m, ash layer at 1.0m , 1.1 m – clay pipe, 1.3m sandy matrix with rubble (no ash),

#### TP3/3/041

- Activity: No radium identified. K/Th confirmed in base of pit
- Artefacts: No artefacts recovered. Rope taken from near surface (<5cm), however this is likely to have come from a boat

#### TP3/3/042

- Activity: Ra-226 at 0.8m, 1.1m,
- Artefacts: Large lumps of white sandstone, brick at 0.25m, Metal/Rubble/Lochside bricks at 0.35m, ash at 0.6m, asbestos, bakelite switch, crockery, clinker, burnt bottles, Auchinlea bricks, Pottery dated 1944 with "GwR" marking at 0.7m, clinker at 1.1m, Sandy material with made ground at 1.45, bedrock at 1.55m

#### TP3/3/043

- Activity: No radium-226 identified
- Artefacts: No artefacts, pit closed at 0.6m due to bedrock.

#### TP3/3/044

- Activity: Ra-226 source recovered from spoil between 1.55 – 2.0 m, this source was a piece of small clinker within a lump of 'clay' material. Counts of 160cps at surface gave rise to a source of over 1500cps, elevated counts suggest multiple sources likely to be present.
- Artefacts: Ash at 1.55m, Water ingress at 1.9m – pit closed at 2.2 m due to water ingress and poor light.

#### TP3/3/045

- Activity: Radium identified at 1.5 m among coarse ash, K-40 at 2.5m,
- Artefacts: Hardcore under soil at 0.1m, Brick pieces, Tarmac/Gravel to 1.0m, 'coconut husk' fibrous material at 1.0m, Clinker and ash at 1.2 m, Very black consistent ash at 1.3m, Coarse ash at 1.5 (contains bricks, shells), Ash, clinker, fabric, glass, metal at 1.7 m, boulders and light brown sand at 2.5 m.

#### TP3/3/046

- Activity: Radium-226 at 1.0, 1.2 and 1.5m
- Artefacts: Dark ash and tarmac at 0.5m (photo 1006), soil/tarmac 0.85m, change to ashy/sandy material at 1.05m, pottery at 1.05m, water at 1.35m, glass jar at 1.5m, base at 2.0m.

#### TP3/3/047

- Activity: Ra-226 at 1.1m and 1.5m, multiple point sources in layers of pit.
- Artefacts: 0.4m large chunks of concrete, 0.8m dark layer with metal fragment (possibly burnt), 1.1m burnt material, pottery fragments, pottery dated 1944 with GwR marking (photo id 0788), pit closed at 1.7m

#### TP 6/2/053

- Pit extended 3 times, covers Ross Plantation, across path, into beach
- Activity: Lots of small sources 0.1 -0.4 m
- Artefacts: Metal bars, looks like Sommerfeld tracking (Regular Spacing)

#### TP3/3/054

- Activity: No sources recovered from pit
- Artefacts: Thin Ash & Sand layering , bedrock at 0.8m

#### TP6/2/055

- Activity: Radium-226 at 0.25, 0.3 and 0.35m. Note source of 1300 cps was small and heavily shielded by small volume of beach sediment.
- Artefacts: General beach debris (brick fragments, pottery etc) at 0.1m, ash at 0.25m to 0.4m, pit re-located due to rock obstruction, showing same characteristics. Pit closed due to bedrock scrape at 0.8m. Ash from 0.25 – 0.8m,

#### TP6/2/056

- Activity: Radium-226 Source recovered in ash layer at 0.35m
- Artefacts: No artefacts. Note ash from 0.2 – 0.35m in third extension, ash at 0.5m contained shells and pottery fragments (photo id 1826, 1835), sand layer followed. Close at 0.7m. Layers shown in photo 1831. Abutment to soil interface shown in photo 1834.

#### TP6/2/057

- Activity: Radium-226 Sources from 0.35m in active ash layer.
- Artefacts: No artefacts noted, however ash layer was coarse.

#### TP6/2/058

- Activity: No sources identified
- Artefacts: Large reinforced concrete block on surface (overgrown with ivy) shifted by JCB prior to digging, pottery at 0.3m, pit to 1.0m, poor light made identification of layers difficult, however no elevated counts within pit.

#### TP6/2/059

- Activity: 0.15 – 0.4m Radium-226 sources recovered from active ash layer. Thorium-232 & K-40 confirmed at 1.05m
- Artefacts: from 0.15 change from sand/topsoil to ash, brick fragments, clinkers, bone, pottery, rubber pipe/hose, wood, At 0.4 – 1.05 m change to sandy/clay matrix with lumps of sandstone, bedrock at 1.8 m.

#### TP6/2/060

- Activity: Ra-226 sources recovered from surface to 1.0 m. Multiple small sources in pit and near surface around pit.
- Artefacts: Light sand with clinker near surface, multi-ash layer 0.4 -1.5m, clinker/crockery/ash 0.7m, red brick/crockery (1.5m – '194\_', i.d 1476)

#### TP6/2/061

- Activity: Surface scan identified radium-226 sources at 0.05m within top soil about 4m South West of pit centre. This was co-located with 'aynsley' marked pottery (photo 1904). Sources from pit at 0.2m and 0.3m. Multiple sources likely.
- Artefacts: From near surface (0.01-0.25m): ash, pottery, brick fragments, melted plastic. From 0.3 – 0.55 ash layer containing Bakelite switch and other Bakelite artefact (photo id 1909-1910) housing, pottery with NAAFI stamp 1947 (photo 1913), metal clip approx 12cm diameter (photo 1914), glass bottle.

TP6/2/062

- Activity: radium-226 from bottom end of pit recovered prior to digging. Note that unable to search for point sources properly as waste from pit too voluminous, elevated counts in some areas.
- Artefacts: Linoleum material recovered from 0.3m, brick fragments at 0.45m,

TP6/2/063

- Activity: radium-226 source from 0.1m
- Artefacts: 0.1m - pottery fragments, asbestos tiles and bits of brick. 0.2m – ashy/burnt material to eastern wall, sandstone to west. 0.6m – some black/burnt material amongst sediment, several ashy/clinker layers observed. 0.9m – further ashy layer. 1.15m – sandstone (fine grain), hard plastic (wire cover?) from sand layer. Bakelite light fitting at base. Pit closed at 1.45m

TP6/2/064

- Activity: Radium-226 confirmed with 3 sources at 0.5m, source at 1.2m from excavated material.
- Artefacts: Blue pottery fragments with brick at 0.5m (Buchan pottery – Portobello, Scotland - photo 1655. Enquiries with the Portobello Heritage Trust has identified the item, number 76, as a sample coffee mug. The pottery started in 1867 and moved to decorative and tableware post WW2, thus the item was dated early 1950s.), white pottery from 0.9m, tile fragment at 1.5m. Photo 1652 shows an object with text 'OHMITE MPG CO. CHIGAGO. MADE IN USA'. Enquires have shown that this company manufactured electrical components (resistors and rheostats) for radio transmitters. Pit terminated at 1.5m.

TP6/2/065

- Activity: Radium-226 sources from extended pit at 0.25m, 0.3m (note physically small – grain of sand sized)
- Artefacts: Pottery pieces at 0.3m marked as NAAFI 1950 (photo id 1572), coarse burnt material with shells at 0.8m. Pit closed at 0.9m.

TP7/2/066

- Activity: Radium-226 item from 0.2m. K-40 in spoil at 1.0m.
- Artefacts: Brick, brick fragments and pottery at 0.2m.

TP7/2/067

- Activity: radium-226 source recovered nearby prior to digging,
- Artefacts: no artefacts.

TP7/2/069

- Activity: No sources
- Artefacts: No artefacts. This was a hand-dug pit to 1.2m

TP7/2/070

- Activity: Sources from top layer to 0.35m
- Artefacts: small clinker fragments at 0.35m

TP7/2/071

- Activity: No sources
- Artefacts: No artefacts. This was a hand-dug pit to 0.8m stopped due to rocks.

TP7/2/072

- Activity: Source recovered at 0.55m with rounded glass, K-40 confirmed at pit bottom (0.9m)
- Artefacts: small brick fragments

TP7/2/074

- Activity: Ra-226 recovered throughout (0.3 – 1.1m elevated counts),
- Artefacts: Metal 'rope' on beach surface near pit with strong hydrocarbon odour, Brick/Pottery at near surface, possible burnt bakelite switch at 0.25m, weathered glass, corroded battery material, asbestos board, 0.6m – Coarser material, bone/pottery/brick/metal hinge/weathered glass/asbestos, lino/plastic, bakelite/ceramic with fuse, reinforced tubing, wire, gasket, string, bottle

TP7/2/076

- Activity: Ra-226, 0.7 m multiple sources, 14 kcps. Possible paint flecks, clinker with paint flecks. Other sources likely. Monitoring at depth not possible due to water logged pit (1.7m)
- Artefacts: Rubble, clinker, stones, no note of any ash, wire, metal, pottery, rubble. No note of dates. Clay with shells at 0.9 m. Glass bottle.

TP7/2/077

- Activity: No sources noted
- Artefacts: bricks, rubble (fine)

TP7/2/078

- Activity: No sources.
- Artefacts: Beach sediment & general debris at surface, artefact at 0.15m (photo 1136 – unidentifiable electrical component with marine growths , estuarine sediments below 0.3m, bedrock at 1.15m

TP7/2/079

- Activity: Active sample from 0.6m co-located with pottery, Plastic/Bakelite (light) active artefact with No. 15 inscribed and set interval markings (similar to tachometer dial) (photo 1199), very small active sample from 0.4m. Radium-226 confirmed.
- Artefacts: Pit was dug at an angle into the slope. Potential slight thinning of ash towards the east. Surface of sand, gravel, bricks, pottery. Ash layer from 0.3 – 0.55m. Wire material at 0.55m, clay/estuarine silt at 0.6m. 1.75-1.85 possible bedrock. Heel of shoe found in base of pit, but potentially fell in from the side

TP7/2/080

- Activity: Source recovered at 5 cm pre-dig. 1 kcps Ra-226.
- Artefacts: brick, broken crockery at surface, nothing noted below surface. General debris around area, Lochside/Blairadam bricks, glass, tarmac, clinker.

TP7/2/081

- Activity: Multiple point sources throughout pit (to 1.2m) and spoil, difficult to monitor due to physical size, activity and shielding effects of sediment. Radium-226 confirmed.
- Artefacts: NAAFI pottery (undated but insignia intact – photo 1027), crockery dated 1944, bakelite switch (front part of bakelite switch in pit, photo 1033, TP 2/2/015 -see link), other bakelite items. Pottery (with rounding) with 'YMCA'

logo, bakelite items, 1942 pottery found by MoD observer on surface of beach distant to the pit area but identified during the pit investigation (photo 1041-5 not part of pit artefacts). Research shows YMCA logo was current between 1897 – 1967 (<http://www.ymca.net/sites/default/files/pdf/y-logo-history.pdf>).

#### TP7/2/082

- Activity: Multiple sources, radium confirmed from surface-1.3m
- Artefacts: Clinker, pottery, glass, wire at surface, note 'same material continues' to 1.1 m, Pottery dated 1945 at 0.9m (note sources recovered from this depth), Sand Layer at 1.1m,

#### TP7/2/083

- Activity: Multiple sources Ra-226 throughout pit (0 – 0.5m)
- Artefacts: Partial NAAFI pottery from surface, Wellwood/Lochside/Blairadam bricks on surface, pottery/clinker/metal/glass/concrete slabs on surface, similar material down pit, unstable pit collapsed at 0.5m making interpretation of layers difficult

#### TP7/2/084

- Activity: Radium-226 items recovered from 0.14m and 0.05m prior to digging, then at 0.2m
- Artefacts: Beach debris (glass, bricks: Wellwood, Lochside, clinker, pottery) present throughout pit, with plastic and litter on surface. Pit closed at 0.75m due to incoming tide.

#### TP 7/2/085

- Activity: Confirmed Ra-226
- Artefacts: Bricks: Dewar, Lochside, Oil Sheen at 0.9 m, Building Rubble, Malteser packet – image 2064.

#### TP 7/2/086

- Activity: Clinker sources identified
- Artefacts: Bricks – Blairadam & Lochside, Brick item (photo 644/Folder 103) "Electric Cables Reg. No. 839159" (possibly 0 instead of 9)

#### TP 8/1/087

- Activity: New Harbour: Active – Rock with surface sediment, confirmed Ra-226
- Artefacts: None

#### TPNH 095

- Activity: No activity
- Artefacts: 0.3 m 1 ½ brick found

#### TPNH 096

- Activity: Radium-226 at 0.35 cm, round metal disc fragment – possibly part of a dial
- Non-active artefacts: Pottery and brick to 35 cm

#### TP 7/2/097

- Activity: Active pit with ash and clinker at near surface
- Artefacts: Perspex circular disc, approx 8 cm across. Twin layered Perspex with pivot screw and drilled finger holes allowing rotation. Will cover the face of an aircraft dial and is suspected of being a modified Mayneord Container for reducing beta exposures to dial painters.

TP 7/2/098

- Activity: No sources identified
- Artefacts: Asbestos at surface

TP 7/2/099

- Activity: No sources recovered,
- Artefact: Photo ID 2128-2131: Crown Symbol "A.M. Ref. No. 5C/859", believed to be Air Ministry, aircraft part (see similarly branded items on eBay) – 3 Pin Socket Connector
- [http://forum.keypublishing.com/showthread.php?120747-wreckageoflancaster-ed908-\(60-z\)&p=1954878#post1954878](http://forum.keypublishing.com/showthread.php?120747-wreckageoflancaster-ed908-(60-z)&p=1954878#post1954878), John Bissett, Dunfermline Glass Bottle, a live 'blank' bullet was recovered from this location.

TP 7/2/100

- Activity :Surface to 1.2 m sources recovered
- Artefacts: Wemyss Brick at 0.5 m, Glass, Asbestos, At 1.2m - NAAFI Pottery, Copper pipework

TP7/2/101

- Activity: Source found at surface pre-dig, near surface, base (0.6m) and upon pit backfill
- Artefacts: Ash layer, bricks, pottery, clinker throughout.

TP 7/2/102

- Activity: 0.2 & 0.3 m sources recovered
- Artefacts: Sharp edged pottery fragment, orange layer below ash, brick fragments

TP3/3/103, 20/11/2012

- Activity: Radium identified and recovered, multiple sources (up to 11,000cps) (0.65 – 2.0m), sources also recovered on beach surface in line with pit,
- Artefacts: ash, coarse clinker, brick fragments (starting at 0.6m). 2.0 m estuarine mud with intact shells. Sharp glass noted at base. AMEC photo log show 'grout nozzle' artefact taken from shallow depth.

TP3/3/104, 21/11/2012

- Activity: Radium identified and recovered,
- Artefacts: Ash (0.05-0.15) – no pottery, shells etc, Brick fragments, tarmac fragments, possible burnt brick 1.4 m, ceramic tile, tarmac, pottery, , 2.0m – small sources, ash, clinker, fibrous board, NAAFI pottery, brick fragments, glass, burnt items with glass, bottle neck, wood, unoxidised copper, intact shells.

TP 8/1/105

- Activity: New Harbour: Active – Large Boulder containing Ra-226 on surface
- Artefacts: None

TP3/3/106, 21/11/12

- Activity: 6kcps and other Ra-226 source at 1.4-1.8m (co-located with 'GwR 194\_' pottery), Ra-226 confirmed with high confidence at 2.1m (K/Th low/very low confidence), multiple sources present.

- Artefacts: Ash, tarmac road edgings, angular cobbles, brick & pottery fragments (pottery dated 194\_ - photo id 2449), small bottles, glass bottles, glass (only slight rounding), Stoneware Jar.

**Hand Dug Pits:**

No artefacts or activity found

TPNH 094,

TPNH 093,

TPNH 091,

TPNH 090,

TPNH 092

TP 010