

## Dalgety Bay Particles Advisory Group

### **FINAL SUMMARY OF DISCUSSION and RECORD OF RECOMMENDATIONS and ACTIONS**

#### **4<sup>th</sup> MEETING OF THE DALGETY BAY PARTICLES ADVISORY GROUP – 17 July 2012**

##### **Members Present:**

Prof Alex Elliott (Member) – **AE (Chairman)**

Prof Tim Atkinson (Member) – **TA**

Dr George Hunter (Member) - **GH**

Dr Andrew Tyler (Member) – **AT**

Mr Mark Toner (Technical Secretary) – **MT**

Miss Susan Carswell (Administration) – **SC**

Prof Marian Scott (Member) – **MS**

##### **Apologies:**

Dr Tom Bruce (Member)- **TB**

Mr John Burton, HPA – **Jbu**

Linda Turner, Fife Council – **LT**

##### **In Attendance:**

Mr Colin McPhail, Chairman Dalgety Bay & Hillend  
Community Council -**CM**

Miss Debbie Storm, SEPA Communications – **DS**

Mrs Joanne Brown, HPA - **JB**

Dr Paul Dale, SEPA – **PD**

Mr Ron Brown, Ministry of Defence (DSTL) – **RB**

Dr Will Munro, Food Standards Agency in  
Scotland(FSAS) - **WM**

George Brownless, CRCE - **GB**

Dr Jenny Wares, NHS Fife - **JW**

Dr Jackie Hyland, NHS Fife - **JH**

Dr Jim Gemmill, SEPA – **JG**

Phil Sinclair, AMEC – **PS**

Jennifer Stothert, AMEC – **JS**

Eamonn Guifoyle, MoD (DSTL) - **EG**

## AGENDA

<b>Item</b>	<b>Time</b>	<b>Title</b>	<b>Paper Reference</b>
<b>1</b>	10.30	Chairman's Introduction	-
<b>2</b>	10:35	Agreement to agenda	<b>DBPAG-M4-A1</b>
<b>3</b>	10.40	Minutes & Actions of last meeting	<b>DBPAG-M2-P1 (M3-A15)</b> <b>DBPAG-M2-P2 (M3-A15)</b> <b>DBPAG-M2-P3 (M3-A15)</b> <b>DBPAG-M2-P4 (M3-A15)</b> <b>DBPAG-M2-P5 (M3-A15)</b>
<b>4</b>	10:50	Monthly Monitoring update - MoD	<b>DBPAG-M4-P12</b> <b>DBPAG-M4-P13</b> <b>DBPAG-M4-P14</b>
<b>5</b>	11:00	Criteria evaluation of AMEC detection system	<b>DBPAG-M4-P10</b> <b>DBPAG-M4-P11</b> <b>DBPAG-M4-P17</b>
<b>6</b>	11:30	SEPA update on particles SEM study	<b>DBPAG-M4-P6</b>
<b>7</b>	12:00	SEPA update on GPR work	<b>DBPAG-M4-P7</b>
<b>8</b>	12:00	SEPA update general	<b>DBPAG-M4-P16 (AT)</b>
<b>9</b>	12:10	MoD Conceptual Site Model	<b>DBPAG-M4-P8</b>
<b>10</b>	12:20	AMEC Future Work programme – trial pits & data collection	<b>DBPAG-M4-P19</b>
		Lunch	
<b>11</b>	14:00	Walkabout site*	
<b>12</b>	15:00	Discussion on trial pit locations	
<b>13</b>	16:00	AOCB	
		Date of Next Meeting	
	16:15	Close	

\*Please bring appropriate clothing and footwear

Additional papers for background information:  
 DBPAG-M4-P9 – DSTL Migration of Radium Report 1999  
 DBPAG-M4-P15 – Information Review  
 DBPAG-M4-P18 – Shellfish Results Feb-Apr 2012  
 DBPAG-M4-P20 – DBPAG-OC-01 21062012  
 DBPAG-M4-P21 – DBPAG-OC-01 reply 11072012

<b>1. Chairman's Introduction</b>		
The Chairman welcomed all to the fourth meeting of the Dalgety Bay Particles Advisory Group. Apologies were noted. Round table introductions were made for the benefit of new attendees, which included AMEC as the MoD contractor for purposes of discussing the planned investigation and monthly monitoring protocols and Eamonn Guifoyle of MoD DSTL who was attending for observation and training purposes.		
<b>2. Agreement to Agenda</b>		
All in agreement of the revised agenda as presented.		
RB noted that paper M4-P9 on <i>the migration of radium in the environment</i> was superseded by a peer reviewed publication in the Journal of Radiological Protection, by <i>Baker et al, A review of the potential for radium from luminising activities to migrate in the environment</i> , JRP 25(2005) 127-140. This paper will be circulated to the group by the Technical Secretary.		
<b>3. Minutes of last meeting - Actions Arising</b>		
Outstanding actions are detailed in Action Point log.		
Subject to some minor amendments, the minutes of the meeting were approved.		
Group comments on papers DBPAG-M4-P1 to DBPAG-M4-P5:		
<u>DBPAG-M4-P1 comments:</u>		
GH queried the statement made in the last bullet point of the paper regarding particle recovery. PS explained that the system AMEC employ isn't just based on a fixed background as AMEC operate a 3-tier system. Initially measurements are taken during a walkover survey at fixed speed and offset. If the probe reading is 15% higher than the previous reading then the alarm will sound. Following this alarm, static measurements are taken to locate the area of maximum count rate. The instrument alarms if the count rate exceeds 200cps. This will, trigger intrusive investigations.		
RB said that the AMEC report uses criteria set by the expert group last year.		
There was a comment that the criteria was to be re-worded as agreed at the last meeting.		
PD pointed out that this letter addresses finds on the landward side, but not on the inter-tidal side. The specification defined by the expert group was for the beach not the land.		
TA requested that for a future meeting the MoD bring together the figures of the Dec & Jan survey and merge on map of historical coastline.		
<b>Action</b> M4-A1	PS will forward GIS file to PD for mapping. PS will require the file references for the files that the group wish to map.	<b>Action Due Date</b> Next meeting
<b>4. Monthly Monitoring Update</b>		
Group agreed that this information was what the group were seeking.		
RB highlighted that AMEC staff found it difficult to work on site due to the amenity issues. PS explained that AMEC staff are currently working out the back of cars which increases the probability of human error and made the work more difficult as there was no portacabin to work from. There are concerns over the recovery of particles as some can be blown away.		
CM suggested AMEC contact Fife Council regarding arrangements to place a portacabin on their land close to the beach.		
The Chairman noted these difficulties and for clarity recommended that access is provided to those that require it and that a suitable store is found to facilitate work.		
<b>Recommendation</b>	The Group recommended that contractors are provided with reasonable access and storage facilities to facilitate monitoring	
<b>Action</b>	-	-
<b>5. Criteria evaluation of AMEC detection system</b>		
RB explained that since the last meeting the MoD have been seeking advice on monitoring from several groups, as have AMEC, and that the picture of standards is confused at present. RB noted that there is no great support for the use of a rolling average background measurement from industry. MOD had not been able to obtain a clear understanding of what was meant by a rolling average background or of the criteria to be used in the		

associated data processing, however one method applied to sample data provided by AMEC showed that the AMEC survey method resulted in more alarms than a rolling average background of the type defined in that work. Copies of the report of this work (DBPAG-M4-P17) were circulated to the Group.

PS believes that the concern of the group relates to the perception that AMEC are using a very high background as baseline. PS stated that this is not the case and responded to the groups previous comments regarding AMEC's techniques by explaining that there is a series of checks taken before a particle is detected. If the count is 15% more than the previous reading the alarm will sound. The instrument reacts more readily to fixed readings. 15%cps is the first trigger to investigate any area of radioactive material. Second stage is to take static measurements around a source, if another alarm sounds then the operator will move to an intrusive phase to recover the source. As the instrument hadn't alarmed over the 2MBq source discovered in a subsequent SEPA survey the team now look at the GIS output and look for trends in count rate over the entire site. If areas of increased count rate are seen in locations where no alarm sounded then they go back for further investigations. The aim being to target deeper buried and higher activity sources.

AT noted that PS input was very useful, but raised concerns that the protocol was not explicit in the report. PS explained that different reports had been produced at different times and for different purposes and that he could provide further detail and procedural instructions to AT.

AT asked how many false alarms at 1 sigma had been identified. AT identified that using the numbers provided by AMEC, it was not possible to identify 20 kBq sources at 10 cm depth as the background was set too high. A 200 cps threshold is set too high and it is unclear how the requirements of the group can be met. It is not clear how a static measurement at 10 cm height from the beach can detect a source of 20 kBq at 10 cm depth. PS reiterated that the alarm does not depend on a fixed background and referred to the AMEC calibration report.

AT, RB and PS will discuss this further outwith the group.

PD asked if there was an updated report containing the new thresholds and alarming that could be made available to the group.

PS agreed to pass on this information which was contained in work instructions rather than a technical report.

DBPAG-M4-P11 comments:

PD provided an update for SEPA. In line with the recommendations from COMARE, SEPA has been surveying the east and western sides of the Bay. Sandy areas in the east, on the other side of the Bay at St. Bridgets Kirk have been monitored and nothing has been found. East of the pipeline has been monitored and a particle was found on other side of the pipe. Monitoring of the new harbour area and sandy areas to the West resulted in the recovery of several physically small sources which were also above the 20kBq threshold. As a result of the monitoring, SEPA recommend that DIO revise the monitoring area to take account of the finds in the New Harbour area by including it in the monthly monitoring programme. RB queried if this recommendation had been made to DIO. PD confirmed that SEPA advised DIO of the particles found in New Harbour, and also the recommendation to include the area in the monthly programme via a telephone conference and also in writing. If no additional resources are available, then SEPA recommend re-deploying resources to the sandy areas from the sections currently monitored that reside further out into the Bay. RB indicated that he had had no information from DIO about any communication from SEPA and that it may not have reached the most appropriate point of contact. PD rejected this, however confirmed that he would follow up again.

CM asked if particles had been found to the west of New Harbour. PD confirmed no sources had been found in the limited monitoring SEPA had undertaken.

CM enquired if the map on the new signs reflected the new monitoring area. PD stated he would follow this up with MoD. PS advised that the probability of encounter was taken into account for sources out with the survey area.

DBPAG-M4-P17 comments:

It was clarified that the x-axis on the chart was the individual counts per second points for one survey area for period of time not exceeding one day. RB noted that this set contained 10,000 sequential data points. Spatial locations were available and could be provided if necessary.

PD asked if the rolling average was included, which AT indicated was crucial as variability was not included. AT

advised that 10 data points would equal 10 measurements over a 5 metre distance of beach. PD commented that the data suggested that, using PS description of the alarming criteria of 15% above previous reading, there would be about 1000 alarms in this section of data alone. This would require AMEC to investigate each alarm to determine whether a particle was present or not – this would inevitably slow the process down. PS agreed with this and advised that the site is essentially monitored by a static measurement – and that the data set could be examined by the time taken between data points. PD agreed that there was no perfect system. PS said AMEC had looked at various systems, from the more sensitive 4 litre system, which was felt would not discriminate between the background, to a 2 litre system which might be slightly better than the current set up. PD asked if the 2 l system was a gated window, but PS said that the manufacturer of the equipment believed that an open window was better, however this may be slightly clipped. RB said his discussions with industry suggested the advantages of a rolling average for the conditions at Dalgety Bay were unclear. PD advised that the Dounreay Particles Advisory Group had recommended rolling averages for use in an environmental setting in their 3<sup>rd</sup> and 4<sup>th</sup> reports. In SEPA’s view, if the criteria are being met, then optimisation of the process is between the MoD and its contractor. PS noted that AMEC had been criticised for their previous work where no standard existed, however there is now the need to understand how the criteria for 20kBq/10 cm applies at deeper depths for higher activity particles.

After a discussion on instrumentation and clarification of standards, PD reiterated that the monitoring is in place to afford the public a level of protection. Higher activity sources at depth will require remediation. Need to be clear of purpose of monitoring objectives, which may result in different monitoring standards for remediation than for the protection of the public.

JG if different monitoring systems are required for characterising the land and protecting the public, it is not necessary to do both with the same instruments at the same time.

AE explained that the group’s expectation is that if a signal is detected that particle would be recovered. If a signal is detecting 20 kBq and 10 cm has been excavated, then the signal suggests that the item is buried deeper.

PS verified that AMEC has recovered 70 point sources on 19 April. It was noted that the log of sources recovered by AMEC did not have a date column.

<b>Recommendation</b>		
<b>Action</b> M4-A2	RB was not aware of this recommended amendment to the monthly monitoring plan so PD will forward a copy of SEPA’s correspondence with DIO directly to RB.	<b>Action Due Date</b> Next meeting
<b>Action</b> M4-A3	SEPA to liaise with Ian Robertson & RB regarding the final design for the signs around the site in relation to finds in the New Harbour.	<b>Action Due Date</b> Next meeting
<b>Action</b> M4-A4	AMEC to provide monitoring data/logs (counts, GPS, date, time, and sources recovered) to SEPA. SEPA can then interrogate the data on GIS system.	<b>Action Due Date</b> Next meeting

**6. SEPA update on particles SEM study**

PD provided an update on the SEM particle study conducted on several particles. This analysis confirmed the presence of zinc sulphide paint. Some of the particles analysed showed evidence of incineration, where as others did not. It is believed that particle DBP12-06 was an artefact, possibly a compass mount.

AE asked that careful consideration is given to particle descriptions as “pvc” may not be likely given the dates involved.

The 9 particles in this analysis were chosen at random to show that technique was successful and future analysis will feature specific particle selection. The group discussed the statistics, and if the number of samples was big enough to demonstrate the population characteristics. MS advised that this would depend on the existence or otherwise of any sub-populations. PD, MS and AT will discuss.

<b>Recommendation</b>		
<b>Action</b>	-	<b>Action Due Date</b>

**7. SEPA update of GPR work**

PD provided an update on further Ground Penetrating Radar work undertaken on the headland, car park, high-activity area, boat storage area and also in sections of Ross Plantation. Paper details area of made ground

where boats are and area of high activity.

Figures 10 & 8 depict what is happening at depth. Figure 8 is valley area.

This work was undertaken by SEPA and was not available at the time AMEC drafted the intrusive plan, however JS confirmed that the areas correlate with planned inspection areas. AMEC will review the report.

JS asked if Figure 10 had been correlated with the Enviro reports (2007). PD confirmed that this work was independent and had not yet been cross-referenced. CMcP asked if Figure 8 was undertaken in Ross Plantation as this was the area where anecdotal statements suggest engines were dumped. PD explained that the survey in Ross Plantation was limited at the old pipeline due to the presence of pools of water. PD stated that SEPA believes areas of infill should be targeted, and that the GIS maps should identify pit locations.

AE noted thanks to Dr Raffle of Queens University Belfast for his assistance with this work.

<b>Recommendation</b>		
<b>Action</b> M4-A5	AMEC hold the Enviro report and will correlate this with the SEPA report	<b>Action Due Date</b> Next meeting

**8. SEPA general update**

AT presented the findings of the SEPA commissioned work to characterise radium at depth. Detection at depth is dependent on background levels. 1.6MBq particle discovered at 600mm depth.

Background identifies elevated radium. Radium detected consistently at depth in made areas, such as car park, boat storage area & new harbour area. The detector was 5cm off the ground and detection was estimated at 20cm but AT noted that the target depth was highly dependent on the density of material used, so the location may be 40cm if a different density value was used in the model.

Several point sources were found in the new harbour area and, additionally there seems to be a vein of heterogeneous material buried at depth to the West. The data from this work can help inform where the trial pits should be placed.

JG extended thanks to Stirling University for this work as it serves as a guide for the invasive work and is invaluable.

<b>Recommendation</b>	-	
<b>Action</b>	-	<b>Action Due Date</b>

**9. Conceptual Site Model**

RB highlighted that this is a revised version and that there is a problem with aligning all activities and tying it altogether is proving difficult.

Comments:

Table 5.4 – WM asked that shellfish collecting & ingestion of contaminated shellfish should be included.

GH – requested that dermal contact via injection or puncture be considered. JB advised that there is little data on this so it is difficult.

PD noted that preferential selection of objects is missed. This would cover the deliberate collection of artefacts.

PD observed that the presence of an incinerator on site is listed, where as the braziers were not. These have been identified by witness statements and also in the Enviro 2007 report (study area).

P6 – second paragraph – AT asked that the activities of individuals be put into context, as the wording is slightly misleading and more people are on site than suggested. The inference of low levels of activity on site are contrary to the actual truth. JS assured the group that this would be addressed in a future draft of the paper. CMcP notes that many activities happen at the club, and that 2 weeks ago it was used for school prom nights for primary school children. PD noted that there have been times that AMEC surveyors could not use the car park as it was full – which is not mentioned in the report, this suggests higher occupancy.

P7/p8 – PD said the references to ‘information review’ are misleading as it was an aerial photo review that was undertaken.

GH highlighted that in section 3.1.4 Site Ownership, the wording of “it is understood...” infers that there is a lack of confidence that the sale took place when it is a matter of public record that it did.

AE recommended that this section is rewritten to say “MoD sold land on 28 November 1959...” JS noted that the inferences would be removed.

P11/p12 – PD said there was an obvious omission from table 3.4, which is the SEPA recovered particles, should be included.

P13/p14 – Building 26...what happened at the repair yard?

JS explained there's very little information on this. PD said that it should state in the paper that there is little/no information at present.

Salvage section is an important piece of information to capture. JS clarified to CM that the comment in the paper about the review of the aerial photos was not an assumption but merely that incineration wasn't evident in the photos.

JG highlighted that NRPB did surveys in the gardens and found circular footprint of a brazier that was confirmed as radium contamination.

P15/p16 – table 3.6 – CM suggested that AMEC might get further information from a local history book called History & Local Heritage.

P19/p20 – PD said the risk assessment in section 4.1 refers to the risk assessment for housing developments which isn't appropriate for this site. PD also advised that the Statutory Guidance is clear on definition of Significant Harm. PD recommended that IAEA criteria is used instead.

P21/p22 – Table 4.2 – group queried the percentage definitions given. MS remarked that the banding for 'unlikely' is exceedingly wide as 44% seems too high to be 'unlikely', when 5-10% is more reasonable.

P27/p28 – paragraph 6 'Boat Park' – TA queried the grounds on which AMEC used to decide the deposition was “probably natural”. JS explained this was inferred from the tidal lines on aerial photos. The group consensus was that these lines were more likely to be vehicle tracks. JS agreed to remove the “probably natural” comment from the paper.

P33/p34 – table 5.1

GH asked why No18 in the table was rated 'n/a' for all 4 areas. JS explained that there was no direct link of when the material went so no direct conclusion. AE asked that a footnote in included to explain this.

Witness statements have confirmed burning on site. RB said that any information from witnesses needed to be tested and that his understanding was that neither MOD nor AMEC had yet had the opportunity to do this. So the absence of anecdotal evidence was not surprising.

JG: The fear of liability shouldn't influence the scope of the investigation. If its hearsay it's not admissible. Shouldn't be dismissing the obvious source of material to the foreshore. Witness statements corroborate findings and so do carry weight.

PD said the aim of this is to carry out a suitable investigation and witness statements, etc should all be captured. When relevant information is available it should be captured in this report. PD stated that the MOD has never denied that it is their waste, only where the waste is located. This action should still show as a 'clearance' activity.

TA said the use of 'n/a' wasn't appropriate in this context and an asterix should be used instead to provide a full definition.

WM noted that Table 5.1 was inconsistent – the reason for excluding 18. Donibristle and 20. Unknowns are inconsistent.

P35/p36

WM asked that another ingestion pathway, through food ingestion of shellfish, be added to Table 5.4.

GH asked that the injection pathway, via cuts, also be added to the list.

PD suggested that the pathways considered by the HPA for Dounreay should also be considered for Dalgety Bay. There is a potential for the preferential selection of artefacts from the beach and this needs to be considered.

Annex – figure 6

TA said it's a good summary but is concerned about the state of understanding now, as figure shows landfills as being on top of the beach but he thinks that landfills will be down to the bedrock. Area between A and ▼ - put the old beach to the left of the landfill.

PD stated that chapter 6 will need to be revised given everything that has been discussed.

<b>Recommendation</b>		
<b>Action</b> M4-A6	MS to send the IPCC classifications to JS for her to consider.	<b>Action Due Date</b> Next meeting

**10. AMEC Future Work programme**

JS explained that detail of trial pit locations formed the basis of this using conceptual model which identified characteristics and targeted the investigation. Intrusive work including trial pits and boreholes will be used to establish horizon of bedrock. Still to reach agreement on the scope of the work and there has been no agreement as yet with the sailing club but AMEC will be meeting with them on 6 August. Trial pits will be 0.6m wide by 2m across and to a depth that is necessary. The scope of these will be revised while work is being implemented, so can be extended if necessary but if it goes into natural ground then the pit will be small. Table 3 on p26 identifies the activities, trial pits and investigations. Pit locations are based on knowledge gathered from previous reports and site investigations.

JG requested that the coast area (as mapped in Figure 1b) has additional pits or a trench across the area, as the higher activity particles were recovered from this area.

TA requested that from borehole BH3/3/006 out to TPNH/095 additional trial pits are included to give a more continuous profile of this area and to determine how far the landfill goes out.

TA said that the remediation suggestion of a barrier along the coastline wouldn't fully address the issue as a lot of contamination may be left on the other side of the barrier.

SEPA suspect that the sea is getting through the current rock armour and dislodging sources.

The hypothesis is that there is a broader deposit of landfill material beneath the beach veneer and west of it may be a landfill along the coastal path. Flexible approach on the westward side for trail pitting but if there's a change of composition you can put in a bigger pit for profiling. Clinker material may have been moved westward over decade and was thrown up onto the coastal path during the 2010 storm.

PD said it was also worth putting a trial pit in the New Harbour area to investigate the 'ashy layer' anomaly. JS explained that this area is currently outwith the boundary of the area that they have been asked to deal with. RB said that a request has to be made in writing to MoD to request an extension to the boundary.

Expert group went on site walkabout 15:15-16:00

<b>Recommendation</b>		
-		
<b>Action</b> M4-A7	AE will write to MoD to request an extension of the investigation boundary to cover the New Harbour area	<b>Action Due Date</b> Next meeting

**11. Discussion on trial pit locations**

Section 4 – walkover survey

JS confirmed to JB that any particles found during the walkover survey would be recovered. JB asked that this is made clear in the report. RB stated that there could be no absolute guarantees about particle recovery as it is not known what is present. There could be occasions when material cannot be removed and it will be returned to the location where it was found. PD expressed concern over this and that AMEC needs to instantly notify the regulator if it's impractical to recover, and fully delineate the area of contamination.

PD suggested that AMEC look to NDAWG for guidance on doing habit surveys (referred to as Land Use Survey in AMEC plan). AE noted that the Scottish Schools return on 14 August.

Following the discussions during the walkabout PD explained the additional and removal of various trial pits to the investigation.

PS explained that in each trial pit AMEC will take probe measurements and take a sediment log along the full

depth of the pit. If they sample in each pit they could accumulate an unmanageable size of samples. They will sample representatively to profile depths and horizons and relate these to probe measurements.

PD raised concern over activity estimates, and suggested that a tray is used to spread out the sample and to enable them to fully isolate the source and put it in a sample pot. This will provide more accurate activity and size estimates. PS stated that the material will be segregated to determine the maximum activity.

JS said the extracted pit material will be backfilled and the radiological condition of the pit will be no worse than it was prior to digging. The depth and location of pits will be determined by discussions with the sailing club and some pits could be dug by hand. PS assured the group that the site advisor is experienced in this type of work and the visual impact will be minimal. JS explained that trial pit procedure will be a maximum of 1 hour and nothing will be left open over night. Expect to do 6/7 pits per day. Estimate it will be 3 weeks work plus the boreholes which will take 1 day each. Work can commence one week after an agreement has been reached with the sailing club. RB expressed concern that the programme timescale had slipped and that he was unsure what if any impact this might have on timescales for final reporting.

<b>Recommendation</b>	-	
<b>Action</b>	-	<b>Action Due Date</b>

## 12. AOCB

### Clarification on Activity Content of Recovered Sources

PS noted that the activity measurements of AMEC recovered sources has been amended. PD explained that this was a result of a comparison of activity of SEPA, DSTL and AMEC activity estimates. This has resulted in an increase of the activity previously reported. Samples are now suitable for disposal.

### Comments on papers submitted for information only:

#### Shellfish Monitoring

WM – the shellfish monitoring paper will be published on a website but there will be discussions with SEPA/FSA to determine where best to host the paper. RB noted that no detectable radium activity had been found.

#### Non-Radioactive Pollution at Dalgety Bay

CM brought to the group's attention a letter that had been sent to Gordon Brown regarding the sewage pollution from the outflow pipe on the beach. AE advised that the letter should be sent to Environmental Health at Fife Council. PD noted that the SEPA Fife team are responding to this.

#### Radon Surveys

PD thanked HPA for their service in the radon survey work at Dalgety Bay which has been completed. SEPA noted that there were no actions arising.

<b>Recommendation</b>	-	
<b>Action</b>	-	<b>Action Due Date</b>

## 13. Date of next meeting

Ideally it will be timed to allow the expert group to view the trial pits. PD advised that because of access issues the work will be a phased approach with pits outwith the sailing club land being undertaken first. Sailing Club has indicated that work on their land may begin in October. PS advised that it will take about one month to collate the data from the trial pits. AMEC also have to resolve the welfare issues on site.

Consensus is that the next meeting will take place in October – date to be agreed by correspondence.

**DALGETY BAY PARTICLES ADVISORY GROUP**

**ACTION POINTS FOLLOWING MEETING on 17 July 2012**

<b>Number</b>	<b>Owner</b>	<b>Action</b>	<b>Progress – Open</b>
<b>Meeting of 21/02/12</b>			
M2-A9	SEPA	<p><u>10. Particle Hazard</u> SEPA to source appropriate procedure or laboratory for improving dose rate measurement of high activity particle, i.e. aniline dye for skin dose studies. <u>May Update:</u> Work in progress and to report at next meeting.</p> <p><u>July Update:</u> Some work has been done by HPA and Stirling Uni using different TLDs. Now looking to do this on a larger sample basis. SEPA is looking internationally to do work the work Monty Charles did at Dounreay to get a robust analysis of skin doses. HPA plans to recreate this work within the next 12 months but SEPA require something sooner.</p>	<b>Open</b>
<b>Meeting of 9/05/12</b>			
M3 A1	SEPA	<p><u>6 SEPA update on Solubility Work</u> SEPA to contact Paediatric Medicine Specialist to determine range of ingestible size of objects <u>July Update</u> – still to progress</p>	<b>Open</b>
M3 A2	HPA	<p><u>6 SEPA update on Solubility Work</u> HPA to provide results of particle sizes and ingestion doses</p>	<b>Open</b>
M3-A4	Ron Brown	<p><u>8 Monthly Monitoring Protocol</u> AMEC to consider modifying Annex D pt3.1, second paragraph to “floating background” <u>July Update</u> – work on hold</p>	<b>Open</b>
M3-A5		<p><u>8 Monthly Monitoring Protocol</u> AMEC report and AT’s review report to be circulated to the group asap via email. <u>July Update</u> – work on hold</p>	<b>Open</b>
M3-A6	Ron Brown	<p><u>8 Monthly Monitoring Protocol</u> AMEC to consider amending Annex D pt 1.2 Aims &amp; Objectives – “... up to 20kBq” and Annex D pt 1.2 to refer to particles greater than or equal to 20kBq and to consider inserting a definition of “anomaly”. <u>July Update</u> – work on hold</p>	<b>Open</b>
M3-A7	Paul Dale	<p><u>9 DIO Investigation Plan</u> PD will check if the French/Canadian DVD can be copied and distributed. July update – DVD has been obtained but need to check copyright and will then circulate</p>	<b>Open</b>
M3-A12	Ron Brown	<p><u>9 DIO Investigation Plan</u> Annex A – pA4 – says that SEPA has confirmed there are no offshore caches.</p>	<b>Open</b>

		When in fact SEPA said it is unlikely that cache comes from offshore, it wasn't confirmed that there are no offshore caches. MOD (RB) to arrange correction. <u>July Update</u> – on hold pending monthly monitoring	
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<b>Meeting of 17/07/12</b>			
M4-A1	Phil Sinclair	<u>Minutes of last meeting</u> PS will forward GIS file to PD for mapping	<b>Open</b>
M4-A2	Paul Dale	<u>Criteria Evaluation</u> PD will forward a copy of SEPA's correspondence with DIO directly to RB	<b>Open</b>
M4-A3	SEPA	<u>Criteria Evaluation</u> SEPA to liaise with Ian Robertson & RB regarding the final design for the signs around the site	<b>Open</b>
M4-A4	AMEC/SEPA	AMEC to provide monitoring data/logs (counts, GPS, date, time, and sources recovered) to SEPA. SEPA can then interrogate the data on GIS system.	<b>Open</b>
M4-A5	AMEC	<u>SEPA update of GPR work</u> AMEC hold the Enviros 2007 report and will correlate this with the SEPA GPR report	<b>Open</b>
M4-A6	Marion Scott	<u>Conceptual Site Model</u> MS to send the IPCC classifications to JS for her to consider.	<b>Open</b>
M4-A7	Alex Elliot	<u>AMEC future work programme</u> AE will write to MoD to request an extension of the investigation boundary to cover the New Harbour area.	<b>Open</b>