

EDINBURGH GROUP DOUNREAY PARTICLES MEETING

Date: Tuesday 29th September 2009

Time: 1030 to 1300 hours

Location: Conference room C&D, St Andrews House, Waterloo Place, Edinburgh

Present:	Elizabeth Gray	Scottish Government (Chair)
	Sandra Jack	Scottish Government
	Stuart Hudson	Scottish Government
	Byron Tilly	SEPA
	Paul Dale	SEPA/PRAG(D)
	Stuart Chalmers	NDA
	Alex Elliott	COMARE
	Will Munro	Food Standards Agency
	Keith Boddy	PRAG(D)
	David Mudie	Highland Council
	Michael Davidson	Health Protection Agency
	Phil Cartwright	DSRL
	June Love	DSRL

Apologies:	Arthur Johnston	Scottish Government
	Ian Hargrave	Highland Council
	Dave Welham	Health Protection Agency

MINUTES

1. WELCOME

Elizabeth Gray welcomed everyone to the meeting. She suggested that the agenda items be changed slightly, the DSRL report should be provided before the PRAG(D) report. This was accepted.

2. MINUTES OF LAST MEETING

There was one amendment to the previous minutes. Page 4, para 5.3 should read "... The two systems used similar detection technology ...". It was agreed that following this amendment the minutes were a true reflection of the meeting.

Action: Sept09/A01: June Love to amend previous minutes and publish on website. Action complete.

3. PROGRESS ON ACTIONS

Jan09/05: Scottish Government to contact DSRL on the requirements for updates for the Article 37 submission. Action complete – DSRL have been contacted and discussions on the requirements for Article 37 both for updates of the previous submissions(Article 35) and the new application for the low level waste facility has been carried out.

Jan09/A06: Stuart Chalmers to ensure that Sellafield was made fully aware of the lessons from the Dounreay Particles projects. Action complete – information had been passed to Sellafield and the sites would continue to share information as appropriate.

Alex Elliott indicated there was a COMARE meeting the following day and he should be able to see whether Sellafield were aware of the issues associated with particulate contamination.

The point was re-inforced about, the importance of, not using the DPAG definitions for Sellafield particles, as the definitions had resulted from detailed studies and Sellafield particles were completely different in composition.

Nov07/05: UKAEA to contact the Dunnet landowners to discuss arrangements for the new signage. Action complete - The Dunnet landowners had received a CD of the DPAG report and a copy of the Dunnet beaches review. In addition a further letter had been sent requesting a meeting following the SEPA habit survey. Further discussions and information would be sent to landowners as appropriate.

4. **DSRL UPDATE**

Phil Cartwright provided a presentation – see Appendix 1. Of note:

Beach monitoring equipment: Improvements in both vehicle and handheld detection equipment are now deployed. This system was tested by COMARE and DPAG on Dunnet beach last year and demonstrated that the system was capable of meeting the criteria set for beach monitoring. The systems had been improved over the years and demonstrated significant improvements in the capabilities for the detection of *relevant* particles at depth, which also improves the detection probability for *minor* particles nearer the surface. The original handheld version had been used for monitoring areas of very tight geometry, but did not have the same detection efficiency as the vehicle based system. The new handheld system has the same detection capability as the vehicle system.

Dounreay foreshore: Monitoring continued at the West Dounreay Foreshore apart from during the bird nesting season, monitoring of the East foreshore has continued fortnightly, when there is sediment present (12 surveys). Since the beginning of the year 7 particles have been detected, 2 on the west (1 just into the licensed part of the site) and 5 finds on the east foreshore. The east foreshore, for the last couple of years, had not regularly held sediment but with arrival of sand and pebbles this area had been monitored and particles had been detected. Monitoring continues on a fortnightly basis. The average of the activity detected and recovered was well into the *significant* level.

A meeting had been held between DSRL, SEPA, Highland Council, NII and Health Service to consider whether the Dounreay foreshore could be closed off to members of the public. The conclusion of that meeting was that it would be difficult to prohibit access but a number of actions could be taken to ensure that anyone walking along the foreshore was aware of the risks.

New signs will be erected at each end of the site fence following agreement of the wording from all agencies. Original site fences would be refitted at the edge of PFR and DFR water intakes.

Keith Boddy asked whether it would be sensible to define another walking route to divert away from the foreshore. Phil Cartwright stated this had been considered and noted that to define another walking route meant that DSRL would be redirecting walkers on to other people's land as well as other implications such as installing stiles for official walkways. The belief was that the number of walkers in this area was very small and an alternative signed route was un-necessary.

David Mudie said that Highland Council had considered the impacts of stopping access to the foreshore and there was a potential conflict with access legislation. Highland Council wanted to take the softer approach at this time with the erection of signs and fencing. If problems with walkers increased, the Highland Council would reconsider their position.

Byron Tilly noted that, if the contaminated land assessment which SEPA is currently undertaking determined the foreshore to be radioactive contaminated land then SEPA would need to consider if any actions would be necessary to protect the public.

Keith Boddy noted that DPAG had recommended that the foreshore be closed. The current plans represent the response to the DPAG recommendation, which Keith stated was acceptable. It was agreed that following SEPA's review under the contaminated land assessment this subject should be considered by PRAG(D).

In relation to the wording of the signs for the foreshore it was agreed that the proposed wording should be circulated to all members for comment. Following which it would also be circulated to those who attended the foreshore meeting.

Action: Sept09/A02: Phil Cartwright to circulate draft wording for foreshore signs. Complete

Action: Sept/09/A03: All members to provide comments to Phil Cartwright on wording for foreshore signs by 14th October.

Sandside beach: Since the last meeting, monitoring had taken place at Sandside in March when 7 particles were detected and recovered. A second survey commenced in June. As part of the agreement for access and in line with DPAG recommendations an enhanced monitoring of accessible sand at low tide was also planned to be undertaken. Statutory area coverage at the times of lowest tides together with 3 days of the enhanced monitoring continued until the 16th June when access permission was withdrawn. During this survey, a total of 14 particles was detected and recovered (11 from the statutory survey and 3 from the enhanced survey). This was the highest monthly total of particle finds in any month. The information was passed to PRAG(D) who noted that while the number of particle finds was the highest found to date, the number of finds lay within the numbers DPAG had predicted. A large number of the finds were in areas where the sand depth had increased, since the last survey. It was also note that 12 of the particles were *minor* and some detections were close to the detection capability of the monitoring system.

Alex Elliott asked if access would be re-instated. Phil Cartwright responded that discussion with the landowner's company and UKAEA LTD continued.

Alex Elliott said he would be reporting this back to COMARE. He felt that with the enhanced survey being stopped prematurely a great opportunity for information had been missed.

Keith Boddy noted that PRAG(D) will also report their disappointment at the interruption of the monitoring in June. The particle finds in June will be picked up by PRAG(D) at the November meeting. He also stated that he was in agreement with Phil Cartwright's update regarding the rate of particles on Sandside. There would need to be some kind of assessment of the probability of risk of people going on to the beach given the number of finds and the fact that access had again been withdrawn.

Phil Cartwright noted that the Dounreay Stakeholder Group had raised concerns regarding the lack of access and what this meant to the local community in terms of risk.

Dunnet beaches: A Dunnet beach strandline survey was completed in June. Targeted areas below the access points to the beach were also surveyed at this time. No particles were detected. The target areas will continue to be surveyed, along with the strandlines, until SEPA complete their habit survey of the beach.

Peedie Sands had also been covered with no particles detected.

A survey had been also undertaken at Murkle beach using both the vehicle and handheld systems. A single particle in the *minor* category was detected and retrieved.

DSRL have not planned further monitoring at Peedie or Murkle. Future monitoring will be dependent on the SEPA assessment and discussions with PRAG(D)

Melvich Beach: Previously access to Melvich had not been achievable due to a significant sandbar. The sandbar had since cleared, allowing access and monitoring was undertaken with no particles detected.

Coastal survey: In response to a recommendation from PRAG(D), a coastal survey, from the east end of Sandside bay, eastwards along the coast, to Dounreay and from Dounreay to Crosskirk was undertaken. All accessible areas with sand and shingle were monitored. The survey was completed using the Groundhog EV2 portable system. However, it should be noted that at some locations between Dounreay and Crosskirk it was not possible to record the GPS data. This was due to some of the areas being narrow geos or inlets, with very high rock faces on either side. Despite the absence of GPS data the radiological data was still able to be recorded and analysis showed that no particles were detected. Indeed, over the full coastal survey no particles were detected. Phil Cartwright commended the dedication of the monitoring team in accessing some areas.

Offsite finds: During monitoring of the area designated for the new low level waste facility, with the Groundhog Evolution equipment, a *minor* particle and an area of contamination were discovered. These have been removed and investigated by DSRL and the results have been reported to SEPA and FSA. FSA have carried out further work and confirmed that the finds pose no concern with respect to the food chain.

In addition, a *minor* particle was also found on Landfill 42 during work agreed with SEPA to determine the way forward for the landfill.

An investigation had been carried out which considered all the information including the incident reports dating back to the 50/60s to see if the source could be identified. It was not possible to definitively identify a physical transport mechanism although it had been concluded it was likely to be windblown

Elizabeth Gray asked whether DSRL intended to extend the survey. Phil Cartwright stated, that following the investigation it was felt that there was no reason to extend beyond what has already been done. An offer to local tenants to monitor land was rejected by two tenants while a third was still considering.

It was noted that the Dounreay Stakeholder Group had made positive comments regarding the use of the equipment and the fact the DSRL had gone out to look at this land.

Byron Tilly stated that the survey of the designated site had been requested by SEPA to provide baseline information for the LLW facility so that it can compare the state of the land for the future.

Diffuser system: An option study has been completed in order to identify the most appropriate method for sealing the old effluent discharge system and the associated fractured rock structure above the old diffuser. The report on the findings of the study is currently being produced, together with an environmental safety case and will be submitted to SEPA by December 2009.

Offshore work: Following PRAG(D) discussions, it was agreed to focus the off-shore clean-up work for 2009 on an area of 7.5 hectares at the west end of the main plume. The 'sentry box', an area at the edge of the fishing exclusion zone to the west, was monitored before and after monitoring/retrieval operations of the main plume.

Having completed the 2008 survey, DSRL felt they were not in a position to specify precise requirements for improvement to the system. It was decided to continue to use the existing ROV in 2009 to gain further information on the depth and number of higher activity particles and the effect these have with respect to the rate of retrieval.

Following completion of monitoring this year, 7.6 hectares were covered ahead of time. The information gained will allow DSRL to define requirements to specify improved equipment for next year.

One hundred and fifteen particles were detected which was less than predicted, being 27 *significant*; 39 *relevant*; and 49 *minor*. Sixteen particles were left in situ and the positions of these were logged. It is believed that most of these were *significant*, 6 of which are at a predicted depth of up to 45cm and 10 at a depth of up to 60cm.

Lessons were learnt during this current campaign – the precision of positioning the retrieval tool is paramount and a second location detector may assist this. The retrieval tool will also require some refinement to see whether retrieval at a greater depth can be achieved.

Stuart Chalmers noted that NDA's priorities were to reduce the high hazards from the site. He asked that given the budget for this project, with the relatively low risk what benefit does NDA get from continued funding.

Keith Boddy responded that it was impossible, at this stage, to provide a definitive answer. The answer could only be provided once PRAG(D) has all the necessary information. He noted that on the foreshore there would be a health risk and because of the less than adequate information from Sandside beach it was impossible to say for certain that a *significant* particle would not arrive on this beach.

Stuart Chalmers then asked whether this work had to be done so quickly or if it could be left and dealt with over a longer period of time. Paul Dale responded that there were two types of risk in this context. While he appreciated that the NDA's priorities were related to reduction in high hazards and risks on the site these were controlled and activity managed hazards and risks to which the public were largely not exposed to. For the particle contamination the hazard was not under any direct control and the public had an obvious potential exposure and is therefore a different sort of risk.

He stated that direct comparisons between a controlled on site hazard with an uncontrolled off site hazard would be inappropriate. Paul went on to state that at certain levels of hazard to the public, the public are not concerned by the probability of encounter and actions to mitigate the hazard may be required by the regulator.

Stuart Chalmers responded that based on what he had heard from those represented at this meeting the level of risk is very low and he needed to be able to compare the benefits with other projects. Keith Boddy said this would be a good question to take to PRAG(D). He stated that it was known that there were some very high activity particles in the off-shore environment and they could end up coming ashore. He felt that it was not a feasible option to go on, covering a small area each year, for the next 12 years. Following seabed work, PRAG(D) would require 2/3 years worth of continuous monitoring on the beaches to determine the remaining risks involved.

Elizabeth Gray stated that Paul Dale had made a good point in that considering risks both on and off the site was quite different. For off-site there were degrees of uncertainty that needed to be understood before a decision could be made on the programme.

Phil Cartwright concluded his report by outlining the complete picture of particle retrievals offshore where there is a prominent plume to the east but a small tail that heads off to the west. PRAG(D) will consider this information in detail at their next meeting. Similar to 2008, a significant proportion of the activity recovered in 2009 was contained in a single particle. The current plan was to continue, next year, to the east and also to return to the areas where particles were left and logged to see if they are still there and can be retrieved.

Keith Boddy stated that PRAG(D) needed the information from DSRL as quickly as possible. He believed that the information gained by DSRL would allow them to specify improvements to the retrieval system. He also asked for a copy of the map to be sent to him. He also asked DSRL to look at producing the population density information by particle category.

Action: Sept09/A03: Phil Cartwright to supply Keith Boddy with a larger copy of the off-shore map with plotted particle finds and to produce the information as population densities by particle category. All Complete

5. PRAG(D) UPDATE

Elizabeth Gray noted that there was an item under any other business to discuss the future requirement for this meeting. This meeting had been established to ensure that people who did not necessarily have a voice on DPAG could be heard. If all organisations were represented at PRAG(D) then the need for this meeting may now be superseded.

Byron Tilly noted that with the issue of the Fourth Report the Dounreay Particles Advisory Group (DPAG) completed their contracted work scope. Since its creation in 2000 DPAG has provided valuable independent expert advice on the particles issue to SEPA and UKAEA (now DSRL) and has produced a series of reports on the particles issue (DPAG reports 1,2, 3 and 4).

Through the period of implementation of the Particles BPEO, additional information will be generated from the particles retrieval to allow the extent of the contamination to be further refined, to provide information on the effectiveness of the particle removal and, ultimately, permit the definition of end-points for both the retrieval work

and the beach monitoring work. Expert scrutiny of the information generated would allow the progress of the BPEO implementation to be independently reviewed, and enhance public confidence.

In addition, the impact of the offshore work on onshore monitoring could be analysed and incorporated into any review of the monitoring regime for particles by SEPA or DSRL.

To this end a new independent body had been set up with the following main duties:

- To review information received from DSRL on offshore particles recovered and seabed survey areas, with the aim of determining whether the offshore population diagrams in DPAG 4 and the estimates and distributions of *significant*, *relevant* and *minor* particles remain valid. The results of the review will be communicated to SEPA and DSRL.
- To review the effectiveness of offshore particle retrieval, to make recommendations for improvement and review the plan for the next year's recovery operations.
- To consider criteria for determination of the offshore recovery end point.
- To provide commentary on the potential re-population of offshore areas.
- To review beach monitoring information and make recommendations for improvement in techniques and changes in the frequency and extent of monitoring area (in relation to public health and other objectives). The first meeting of this group took place in Edinburgh on the 5th May 2009.

The new group is called Particles Retrieval Advisory Group (Dounreay) (PRAG(D)). PRAG(D) is chaired by Professor Keith Boddy and is administered by SEPA. Initially set up for a two year period the group will produce an annual report by end of March 2010. A number of members had been identified with the addition of Observers including FSA, Scottish Government, HPA, COMARE, DSRL, SEPA and DSG. Keith Boddy clarified that PRAG(D) had been set up with 5 years timescale with review at 2 years.

Keith Boddy noted that it was expected that observers would play a contributory role, the only difference being that if required, only members could vote.

Elizabeth Gray stated that it was important to ensure that Terms of Reference for PRAG(D) were distributed. She noted that PRAG(D) had a two year remit which did not fit in with COMARE's desire for 2-3 years worth of information. The issue here was how this is going to be progressed and how PRAG(D) would move forward. There needed to be transparent information of the work programme for PRAG(D).

Keith Boddy stated that a meeting on the 5th May agreement on the work programme had been reached. He noted that Phil Cartwright's update, provided earlier in this meeting, outlined the agreed work programme for 2009.

Keith had also suggested that COMARE become a member of PRAG(D) rather than attending with Observer status. The next meeting is due to be held in November and it would be important that the information from DSRL goes to PRAG(D) as quickly as possible so that members of PRAG(D) can look at their areas of expertise. Tim Atkinson would be considering the issue of population density while Marion Scott and

Andrew Tyler would be looking at the number of particles and the monitoring regime. The timescale for review of the information is extremely tight and PRAG(D) wishes to be in a position to produce its first report by the end of the financial year.

Keith noted that Phil Cartwright was completely aware about what is required and, if need be, Keith would write to the Director of Dounreay to re-inforce this message.

Elizabeth Gray reiterated the importance of having a formal work programme which was publicly available. Keith Boddy responded that there was a number of issues identified that PRAG(D) need to process before a work programme was properly developed. PRAG(D) will, however, provide a summary report after each meeting to ensure that information is available and there were no objections about making this information public. Byron Tilly noted that all information would be made available on SEPA's website.

Going back to the question of representation at PRAG(D) she queried whether NDA and Highland Council were included in the list of Observers. David Mudie responded that it would be best if Highland Council were invited 'as and when required' rather than as a formal Observer. It was agreed that NDA should be invited on as an Observer.

Action: Sept 09/A04: Paul Dale to invite NDA to become an observer at PRAG(D).

It was also agreed to circulate members with list of dates for forthcoming meetings.

Action: Sept09/A05: Paul Dale to circulate all members with list of forthcoming PRAG(D) meetings.

Elizabeth Gray questioned whether this meeting needed to continue if all those attending here were represented at PRAG(D). Byron Tilly said that he did not think there was a need for a regular bi-annual meeting. However, it may be that certain issues arise which could result in an ad-hoc meeting being arranged.

Keith Boddy agreed with Byron Tilly . Alex Elliott added that the initial reason for this meeting was to bring all the organisations under one roof to ensure a joined up approach to this work programme and to encourage openness between all the organisations. He felt that this had been achieved.

Stuart Hudson said he liked the idea of retaining this group for ad-hoc meetings if specific issues needed to be discussed. Elizabeth Gray re-inforced the message that there had to be some visibility around the work programme to ensure there was a pro-active public engagement process, noting that DSRL was very good at this, but it would become more important in the current financial climate.

She concluded that on the basis of the discussions this meeting would go into abeyance and the group would look to continue their working relationships through PRAG(D). If any issues arose which could not be covered specifically at PRAG(D) then this group would meet as and when appropriate.

Keith Boddy stated that PRAG(D) will maintain its independence and he expected Observers to play a full part in this. He asked that credit be given to DSRL and especially the then director, Norman Harrison, for the openness they have initiated in going forward.

6. **SEPA UPDATE**

Byron Tilly provided the update for SEPA:

SEPA has written to members of the local community to provide information on PRAG(D) and its remit.

The habit survey undertaken at Dunnet beach was completed in July and it is expected that this report will be available in the spring.

Access to the foreshore and the finds at the designated low level waste facility had been adequately covered in discussions earlier.

Relating to the potential designation of land, the radioactive contaminated land assessment is continuing to collect relevant data. Hugh Fearn and Paul Dale visited HPA to discuss issues relating to considering dose criteria and it was considered that the information would be available early next year.

Once assessment is complete SEPA will share this information with others and if the outcome is to designate land there is a formal process to go through. Letters have gone to landowners to inform them of this ongoing work.

Stuart Hudson noted that a SEPA statement had been read out at the Dounreay Stakeholder Group which appeared to say that the likely source for the particle find on the LLW facility footprint was the re-profiling of landfill 42. This appeared to be at odds from what he had heard at this meeting.

Phil Cartwright confirmed that the investigation had stated that Landfill 42 could be the source, the SEPA statement had talked about when the landfill had been pulled back from the coast. The investigation team had considered this but, on the basis of the information they had, could not make such a specific link.

Phil continued that in terms of what we do with landfill 42 the fact that particles have been found will be taken into account. DSRL had recently found another particle in Landfill 42 in an area of land where soil had been deposited in the 1990s. This information had been passed to SEPA.

7. **SCOTTISH GOVERNMENT UPDATE**

Higher activity wastes: Work was ongoing to develop a detailed statement of the Scottish Government's higher activity waste policy. Consultation would commence as soon as possible and it is still expected that the policy will be finalised in June 2010.

8. **NUCLEAR DECOMMISSIONING AUTHORITY (NDA) UPDATE**

NDA's new Chief Executive, Tony Fountain, would take up his post on 22nd September.

The PIN had now been issued relating to the competition for the PBO (parent body organisation) for Dounreay.

It had recently been announced that Babcock International was the preferred bidder to buy UKAEA.

9. **COMARE UPDATE**

COMARE meeting was due to take place on 30th September and concerns will be raised in regards to access for Sandside beach. COMARE will also see how many lessons the Sellafield team had taken on board.

Alex Elliott wished to place on record compliments to DSRL for their proficiency and professionalism relating to the offshore work. He had not expected retrieval performance to be as good as had been achieved.

COMARE look forward to receiving the options report for remediation of the old diffuser.

10. **HIGHLAND COUNCIL UPDATE**

No issues raised except that it would be useful to ensure a mechanism of informing Highland Council of the progress of PRAG(D).

11. **FOOD STANDARDS AGENCY UPDATE**

The particle find at the designed low level waste facility had been promptly reported and liaison with DSRL had been very good.

The fishing zone ban would remain in place while the offshore work progresses.

12. **HEALTH PROTECTION AGENCY UPDATE**

No issues raised – HPA were working through PRAG(D) and were content with the progress being made.

13. **ANY OTHER BUSINESS**

Review of future meetings: Elizabeth Gray noted that this discussion had taken place earlier in the meeting (see PRAG(D) update). To summarise this meeting was now in abeyance but ad hoc meetings could be organised if issues arose that could not be covered in PRAG(D).

Keith Boddy thanked Elizabeth Gray for setting up these meetings adding that they had been very useful in bringing all the organisations together.

Elizabeth Gray also asked that thanks be recorded to all existing members and their predecessors in their open and honest approach in discussing and taking forward all matters raised.

It was agreed that since there would be no further meetings the agreement of the minutes of this meeting would be achieved via correspondence and then publication on the website. All remaining actions would be progressed until closed out.

There being no further business the meeting closed.

ACTIONS ONGOING

Sept09/A03: All members to provide comments to Phil Cartwright on wording for foreshore signs by 14th October. *Action ongoing – will now be transferred to action under PRAG(D).*

ACTIONS COMPLETE

Nov07/05: UKAEA to contact the Dunnet landowners to discuss arrangements for the new signage. *Action complete - The Dunnet landowners had received a CD of the DPAG report and a copy of the Dunnet beaches review. In addition a further letter had been sent requesting a meeting following the SEPA habit survey. Further discussions and information would be sent to landowners as appropriate.*

Sept09/A01: June Love to amend previous minutes and publish on website. *Action complete.*

Sept09/A02: Phil Cartwright to circulate draft wording for foreshore signs. *Action complete.*

Sept09/A04: Paul Dale to invite NDA to become an observer of PRAG(D). *Action complete.*

Sept09/A05: Paul Dale to circulate all members with list of forthcoming PRAG(D) meetings. *Action complete – dates for PRAG(D) meetings are as follows: 17 February, 23 June and 27 October.*

Jan09/01: June Love to publish minutes of meeting held in August 2008 on DSRL website. *Action complete – minutes published on 26th January 2009.*

Jan09/02: SEPA (with DSRL) to organise a meeting with HC and NHS (Highland) to discuss the issue of closure of the foreshore as recommended by DPAG. Crown Estates should also be informed. *Action complete – meeting held on 14th April and notes of meeting circulated.*

Jan09/03: Will Munro to circulate options paper on review of fishing exclusion zone. *Action complete – paper circulated with these minutes.*

Jan09/A04: Paul Dale to provide members with a copy of the DPAG presentation made at the launch of the Fourth Report. *Action complete.*

Jan09/05: Scottish Government to contact DSRL on the requirements for updates for the Article 37 submission. *Action complete – DSRL have been contacted and discussions on the requirements for Article 37 both for revision of the previous application and the new application for the low level waste facility has been carried out.*

Jan09/A06: Stuart Chalmers to ensure that Sellafield was made fully aware of the lessons from the Dounreay Particles projects. *Action complete – information had been passed to Sellafield and the sites would continue to share information as appropriate.*

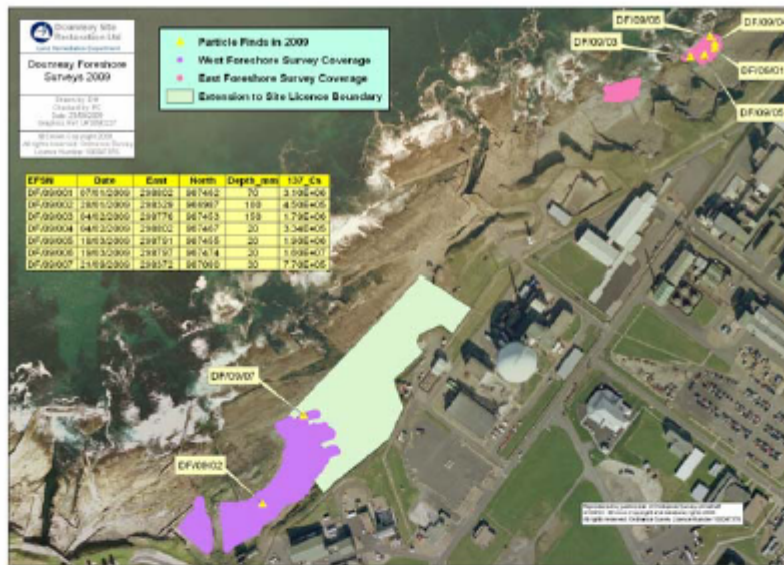
Jan09/07: June Love to identify date for next meeting (end Sept/beg October). *Action complete – meeting to be held on 29th September 2009.*

APPENDIX 1 – DSRL PRESENTATION



Beach Monitoring Update

- Equipment
 - Groundhog EV2
 - Handheld Equipment EV2
- Foreshore
- Sandside
- Other beaches
- Other finds



Foreshore Signage

- New signs.
- Replacement fences.

Advice to Members of the Public

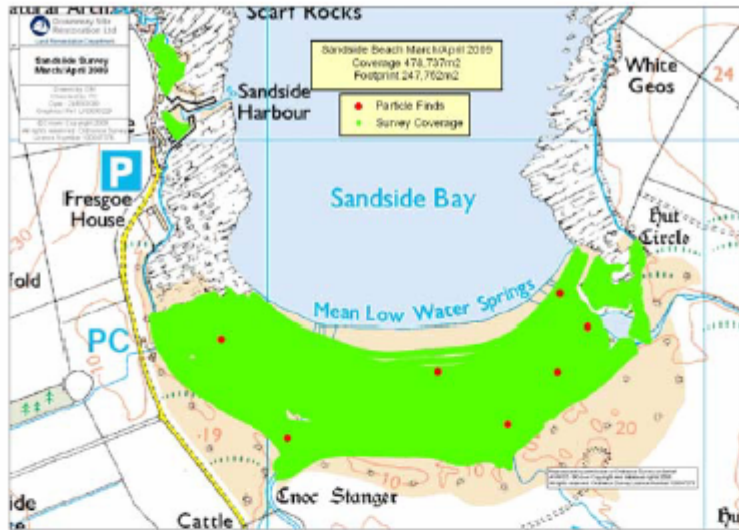


Access past this point is not advised. Radioactive particles of significant activity have been found on the foreshore. The Nuclear Licensed Site, which is prohibited to the public, extends to the tidal zone. The presence of coastal features and the live/used site fences makes safe progress past this point difficult.

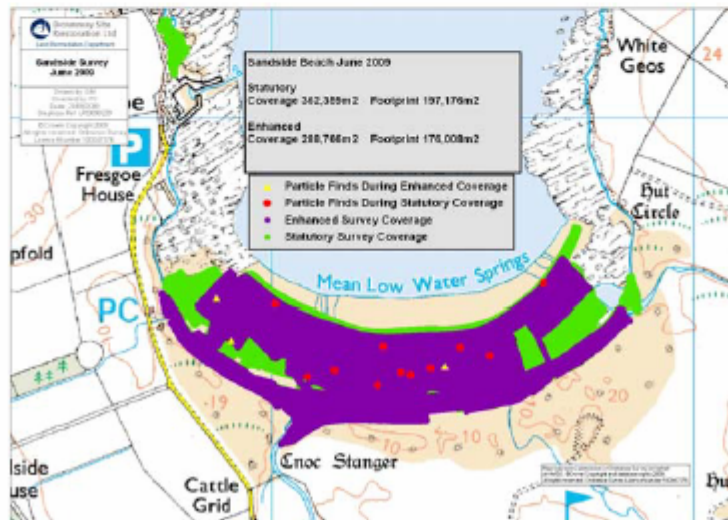
Members of the public who wish to continue further round the coast are advised to find an alternative route.



Sandside Survey March



Sandside Survey June



Sandside Particles

- 3 Relevant Particles
- 18 Minor Particles

EFSN	DATE of survey	depth (cm)	Cs_137
SSBCH/09/001	25/03/2009	5	2.7E+04
SSBCH/09/002	27/03/2009	12	9.2E+03
SSBCH/09/003	28/03/2009	21	3.6E+04
SSBCH/09/004	28/03/2009	20	9.8E+03
SSBCH/09/005	29/03/2009	12	1.1E+05
SSBCH/09/006	29/03/2009	20	2.50E+04
SSBCH/09/007	08/04/2009	7.5	2.30E+04
SSBCH/09/008	01/06/2009	30	1.30E+05
SSBCH/09/009	01/06/2009	10	1.50E+04
SSBCH/09/010	01/06/2009	13	2.90E+04
SSBCH/09/011	02/06/2009	17	1.70E+04
SSBCH/09/012	03/06/2009	14	2.70E+04
SSBCH/09/013	04/06/2009	16	3.00E+04
SSBCH/09/014	04/06/2009	6	1.80E+04
SSBCH/09/015	05/06/2009	19	9.30E+04
SSBCH/09/016	05/06/2009	10	1.00E+04
SSBCH/09/017	06/06/2009	12	3.90E+04
SSBCH/09/018	07/06/2009	5	4.70E+03
SSBCH/09/019	10/06/2009	26	1.30E+05
SSBCH/09/020	15/06/2009	10	2.00E+04
SSBCH/09/021	15/06/2009	14	5.80E+03

Dunnet Beach Surveys



Dunnet main beach
Strandline and Access Area
Peedie – EV2 Handheld
Murkle - Groundhog EV2
EV2 Handheld
1 particle find 9E03 Bq Cs-137 MTR



Melvich Beach Survey



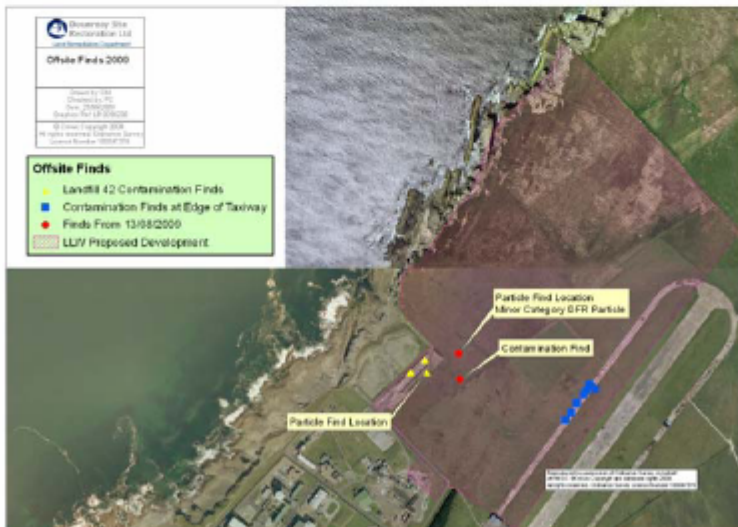
Sandside Beach - Site



Site - Crosskirk

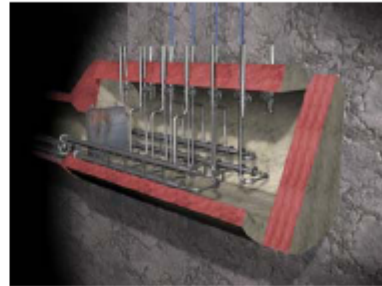


Offsite finds



Diffuser Work

- Options study underway.
- Draft Environmental Safety Case written.
- Report to SEPA on selected option by December 2009.



Deployment of Retrieval Equipment in 2009

- Fathoms contracted – existing ROV.
- Sentry box pre and post monitoring.
- 7.5 Ha area at west of plume.
- Information on population - depth, activity, numbers.
- Particle targeting.
- Daily coverage.
- Incentivised contract model.



Retrieval Success

- 7.6 Ha total coverage.
- 115 Particles retrieved.
 - 27 Significant
 - 39 Relevant
 - 49 Minor
- 23 mobile particles.
- 16 particles left in situ. Position tagged
 - Significant
 - 6 at predicted depth less than 45 cm
 - 10 at depth up to 60 cm
- 14 Contacts determined not to be particles.

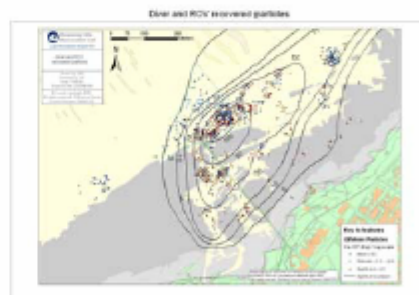


Offshore Particles Retrieval in 2009

Total activity retrieved 4.68E8 Bq $^{137}\text{Cs}^*$.

Maximum activity 2.3E8 Bq $^{137}\text{Cs}^*$.

*Assessed activity following retrieval.



Future Work

- Review of 2009 work with PRAG(D).
- Improvement of ROV for use in 2010.
- Plan 12.5 Hectare coverage.
- Revisit areas where particles not recovered.
- Review of beach monitoring.
- Feedback on Diffuser options.

