Query No.	EPA query and Teagasc response
1.	1. According to the notification, two sites will be sown in each of 2013, 2014 and 2015 yet the trial is not scheduled to end until 31/12/2016. What activities will take place on the sites between harvest 2015 and 31/12/2016? Response: At present, there are no plans to complete an additional year's planting in 2016, as three years of planting will be achieved in 2013, 2014 and 2015, which will meet the level of repetition typically required for statistical validity of field data. However, in the circumstance that a year is lost due to destruction of the trial or unfavourable climatic conditions, an additional year could be required in 2016.
2.	2. Page 10/11 refers to 2005/2010 pollen mediated gene flow studies during which the presence of berries indicated the occurrence of successful pollen mediated gene flow. Data is also given regarding the % berries containing seed and the % seed capable of germination under controlled greenhouse conditions. What is the significance of this data, in particular, what might occur in the field situation as opposed to a controlled greenhouse? Response: The data described in pages 10 and 11 is not from glasshouse studies but was gathered from field trials conducted by Teagasc at Oak Park using the var. Desiree, which is the parental variety of A15-031. As such, the gene flow patterns of A15-031 can be expected to be equivalent to the parental variety Desiree. The data provides an insight into the low levels of pollen dispersal by var. Desiree across independent studies in separate years and supports the recommendation of a separation distance of 40m.
3.	3. In addition, in relation to the aforementioned 2005 study it is stated in the application that 2.8% berries contained seed. In the 2010 study, rather than providing a percentage it is stated that 1,765 seeds were collected from berries (of which 69% were capable of germination). What percentage of berries contained seed? Response: In 2005, 23 viable seed were produced from 4 berries. In 2010, 1,219 viable seed were collected from 34 berries. To determine the potential and consequence of pollen-mediated gene flow from a potato crop, the single

	most important factor is the number of viable true potato seed produced as a result of pollination and not necessarily the number of berries that form or the number of berries that contain seed.
4.	4. Please provide an explanation of figure 2 on Page 13. In particular what do the values on the Y axis represent? Response: The y-axis represents the length of the pollen-donating Desiree plot, which in the field was positioned between two pollen receptor plots of var. British Queen
5.	5. Page 24/Section G. proposes methods for the destruction of the GM potato namely "*..validated steam sterilisation or burial in a designated pit (~6 feet in depth) for larger volumes*". • Where will the proposed steam sterilisation be performed? • Provide details of time, temperature and pressure applied and how the heat inactivated tubers will be disposed of. • Is burial to a depth of 6 feet a recognised standard methodology for the disposal of such tubers? Response: Steam sterilisations will be performed at Oak Park, using a Rodwell Sapphire 330L Autoclave. Sterilisations will be performed for 40min at 121^{o}C with 2-3 psi. Each load will also be strip validated to ensure appropriate criteria are met within each load. Loads that qualify through the validation process will be disposed of as standard waste. Tubers harvested from each year are to be saved for the following year's sowing. In the event that more tubers are harvested than are required tubers will be destroyed by autoclaving or burial to a minimum depth of 6 feet. Deep burial has been listed as a method of disposal in other notifications made within the EU.

6.	6. Page 25/Section G.3 states "*No tuber material will be supplied to animals for feed purposes during the course of the study*"; then on Page 26/Section G.4 it is stated that "*….a separate Teagasc project will conduct feeding studies on the GM potatoes…..*" and then further on "*the results of the feeding studies will be forwarded to the EPA….*" Please clarify whether feeding trials will take place. In the event that such trials are being proposed, what will be the main aims/objectives and what quantity of tubers would be needed for such a study? Response: Tuber material will not be made available to commercial livestock as a feed substitute. Separately, as Teagasc has the expertise to complete a research-based feeding trial, if the EPA deems it necessary Teagasc would complete a research study which would run in parallel to the field studies. The objective of such research would be to determine if there is any significant difference in the level of specific biomarkers between animals fed GM or non-GM potatoes. The feasibility of such a study would be dependent on the quantity of tubers harvested from 2013 onwards.
7.	7. Page 26/Section G.4 states that the volunteer monitoring and management programme "*will be repeated each year for 4 years after the initial GM plantings*". If initial plantings take place in 2012, monitoring will only take place up to and including 2016. Page 27/Section H1 states that the "*eradication of groundkeepers and volunteers post-harvest is carefully monitored for up to 4 years after the experimentation is completed*". Please clarify when the volunteer monitoring and management programme is proposed to commence and conclude. In addition, please provide further detail on the proposed monitoring, Response: If planting is achieved in 2012, the monitoring programme will commence spring 2013 and will continue through to the autumn of 2020, four years after the termination of the project. Monitoring will see project staff walk the trial site to survey the emergence of groundkeepers. Quantitative data will be recorded by measuring the number of groundkeepers and/or volunteers sitting in a $1m^2$ quadrat, with up to 100 quadrats recorded per site visit.

8.	8. Please comment on the potential risk of the GM potato pollen contaminating locally produced honey to be sold commercially. It is our understanding that bumblebees act as the primary pollinators of potato and that honeybees will have little or no interest in potato flowers, especially as other sources of pollen and nectar will be available at that time of year. This is what we have observed in the pollen dispersal studies conducted at Oak Park in previous years, where the var. Desiree was used. In our opinion the risk of GM potato pollen being incorporated into locally produced honey is minimal.
9.	9. What is the distance between the proposed location of the GM potato field trial and the location of : o Teagasc's non-GM potato breeding programme within Oak Park; o the nearest potato producer in the surrounding district; o Teagasc's bee hives within Oak Park; o the nearest honey producer in the surrounding district? Response: The proposed location of the study will be a minimum of- • 750m from non-GM potato plots used in Teagasc's potato breeding programme • 700m from the Teagasc's bee hives at Oak Park It is not possible to state where the nearest commercial potato field will be located as Teagasc has no remit to demand the planting plans from local farmers. To our knowledge, the Teagasc beehives are the only hives in the surrounding district.
10.	10. Page 28/Section H.4 states "*As conventional fungicide programmes impact significantly on a range of non-target organisms, …*" Please provide information/data to substantiate this statement. Response: The active ingredient mandipropamid is a carboxylic acid amide (CAA) effective against a range of oomycete organisms, of which *Phytophthora infestans* is just one. Dithane™ (active ingredient mancozeb) is also

	used against *P. infestans* but has been reported to have deleterious effects against mycorrhizal spore number and percentage mycorrhizal root colonization in alternative crop systems. Mancozeb acts by disrupting lipid metabolism and is a multi-site inhibitor of several fungal species. Fluazinam impacts on ascomycetes, basidiomycetes and zygomycetes, as well as oomycetes of which *P. infestans* is one. See attached review for additional information.
11.	11. Please provide molecular data (gel data) supporting the data given in Table 1 and Figure 4 on pages 16 and 17 of the application, respectively. Response: The data provided in Table 1 has supported previous applications made to the Dutch and Belgium competent authorities for the A15 lines. As in both cases no additional molecular data was required it is not possible to source the requested gel data. However as part of our own internal diagnostic procedures, Teagasc will be completing several of the analyses described in Table 1 once the material is received in Oak Park. To facilitate the EPA in this matter, Teagasc will expand this analysis to complete all of the tests described under Table 1 and will forward this information upon completion to the EPA. Please note that Figure 4 is a schematic to explain the position of PCR primers used in the generation of data for Table 1 and is for illustrative purposes only.
12.	12. Please comment on the potential risk arising from intrusion of animals and birds into the proposed GM potato trial site. Provide details of animal-proof fencing to be employed. Response: The site will be cordoned off to a height of ~ 4 feet with an electrified element at the top of the fence. The fence will be buried to a depth of 0.5 feet and will be of adequate design to prevent animal entry into the site. To counter bird predation, control measures will include the covering of GM plots with netting and/or using other methods to prevent tuber dispersal off the site.

13.	13. Please provide details of the cropping history of the proposed GM potato trial site. In addition, provide more detail on the proposed experimental design. Response: The site has been in continuous perennial ryegrass for in excess of 10 years. The experimental design has yet to be finalised as it is wholly dependent on the amount of plantlets/tubers available in any given year. However, to ensure statistical validity, there will be two potato genotypes tested; A15-031 and the comparator non-GM var. Desiree. At a minimum there will be 3 treatments; no spray, full spray and reduced spray. For each interaction, there will be a minimum of 3 replicated blocks. The exact experimental planting plan will be forwarded to the EPA, prior to planting and after agreement has been reached among the relevant AMIGA partners on a uniform experimental design.
14.	14. Please submit an amended notification taking account of Articles 14 (2)(c) and (d) of the GMO (Deliberate Release) Regulations, S.I. No 500 of 2003, as follows: Section H of the notification is entitled 'Risk Assessment'. This section would be more appropriately entitled 'Conclusions' since the headings correspond with those set out under Section D2 of the Second Schedule of the GMO (Deliberate Release) Regulations S.I. No 500 of 2003. Similarly the table on pages 31 – 33 inclusive would be more appropriately entitled 'Risk Assessment' (RA) since it corresponds with the RA methodology described in Commission Decision 2002/623/EC establishing guidance notes supplementing Annex II to Directive 2001/18/EC on the deliberate release into the environment of GMOs. Section D.13 of the notification (Page 20) should also be amended to clarify the Netherlands notification under which GM potato line A15-013 is being trialled. Response: Please see amended notification.