



**BEST PRACTICABLE ENVIRONMENTAL OPTION (BPEO) ASSESSMENT:
DREDGING APPLICATION FOR IONA SLIPWAY**

	Name	Signature	Date
Prepared by	Viviana Crespo	<Redacted>	06/02/2023
Checked by	John McGeeney	<Redacted>	25/05/2023
	Lyall Morris	<Redacted>	25/05/2023
Approved by	Elsa Simoes	<Redacted>	26/05/2023

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1. INTRODUCTION

1.1 Background to application

This Best Practicable Environmental Option (BPEO) assessment supports an application for dredging under the Marine (Scotland) Act 2010, Part 4, Marine licensing.

The Isle of Iona is located immediately west of Fionnphort, across the Sound of Iona and covers 8.77 km². There are around 120 residents that currently live on the island, and rely heavily on the ferry service to the Isle of Mull which operates from Iona Slipway.

Caledonian MacBrayne, the ferry operator between Fionnphort and the Isle of Iona, plans to introduce a larger vessel on this route to improve journey reliability during unfavourable weather. As a direct result of this, this larger vessel will have a deeper draught – which requires the area around Iona Slip to be dredged.

The proposed dredge level at Iona Slipway to suit the new larger vessel is -3.0m CD.

Sampling and Testing has been carried out at Iona, in line with Marine Scotland's requirements and is appended with this application.

1.2 Materials to be deposited

There will be approximately 1,225m³ of material to be dredged and deposited from the area surrounding Iona Slipway.

1.3 Description (nature and volume) of materials

Sediment characteristics as a whole consist of a mixture of white fine to medium sand.

1.3.1 Trace Metals and Organotins

No results were above AL1 or AL2 from the samples taken at Fionnphort and Iona.

Copper and Nickel each had one result from a sample being over 10 mg/kg but were both below 13.4 mg/kg.

There were levels of Zinc in the sediment found to be as high as 27.7 mg/kg, with the average level of zinc in the sediment being around 12 mg/kg.

1.3.2 Poly Aromatic Hydrocarbons

No results were above AL1 from the samples taken at Fionnphort and Iona.

All PAH results from Fionnphort were found to be in low levels, with the highest µg/kg single result being PYRENE at a level of 2.68 µg/kg.

All other results were found to be lower than this, with the majority being <1 µg/kg.

1.3.3 Organohalogens - Polychlorinated Biphenyls

All samples of the PCBs were below AL1.

The highest result was ICES7 with a result of 0.56 µg/kg.

All other results were below <0.1 µg/kg.

1.4 Discussion about sampling and testing results

The sampling of the seabed was undertaken in November 2020 by Structural Soils Ltd and the samples tested at SOCOTEC laboratories.

Iona lies on the western side of the Sound Of Iona, which acts as a natural narrowing and constriction of tidal waters which causes fast tidal waters to flow through the Sound.

There are no historical chemical analysis records for the proposed area to be dredged and no sign of contamination either.

This, along with the limited use of the site explains the low levels of contamination found on the seabed around Fionnphort and Iona Slipways.

The site has been historically used as a means of passage to the Isle of Iona, now incorporating the Car and Passenger ferry service run by Caledonian MacBrayne. The site has also historically been used by fishermen, which is still the case to this day.

2. OPTIONS

In this section the different available options will be looked into and if necessary will be described in more detail if the option is found to be feasible.

2.1 Do nothing approach

The seabed level is currently such that a purely 'do nothing' option would not allow the future safe use of the new, larger, vessel which is planned to be in use for the Fionnphort – Iona passage in the future.

In order to maintain safe passage for the vital lifeline ferry service from Fionnphort to the Isle of Iona, the 'do nothing' approach is deemed to be not acceptable.

2.2 Beach Replenishment at Isle of Tiree

Re-purposing dredged material at a relevant coastal site would initially appear to be allowable from the results of the Analysis of Sediment Samples carried out by Structural Soils LTD (documents "541771 Iona and Fionnphort Letter Report final.pdf" and "MS Results Template MAR00820.xlsx" presented in Appendix C). Whilst the dredged material is suitable for beach replenishment as a result of the very low levels of contamination. This option will be taken forward for consideration under Section 3.

The Isle of Tiree is at significant risk of coastal erosion, it has been selected as a potential site for beach replenishment. There is a significant risk of much of the island being eroded due to coastal erosion. The relatively small volume of material which will be dredged at Iona would be suitable, as it is a similar homogeneous and clean sand to that currently present at Tiree.

2.3 Sea Disposal – Plough Dredging Only

Plough dredging would initially appear to be allowable from the results of the Analysis of Sediment Samples carried out by Structural Soils LTD (documents "541771 Iona and Fionnphort Letter Report final.pdf" and "MS Results Template MAR00820.xlsx" presented in Appendix C). Whilst the dredged material is suitable for plough dredging as a result of the very low levels of contamination.

Due the nature of plough dredging, and the distance involved in transporting the dredged material to the proposed deposit site, this is not deemed to be an appropriate environmental option as to not disturb a significant area of seabed in the Sound of Iona.

Much of the seabed depth in the Sound of Iona is relatively shallow, ranging from low spots of -3m CD to around -6m CD. Therefore, a distance of between 3.5km to 7.5km would need to be travelled with the plough dredger to reach an acceptable area to deposit the material.

This option will be taken forward for consideration under Section 3.

2.4 Sea Disposal below -100m Chart Datum

Deposit at sea would appear to be allowable from the results of the Analysis of Sediment Samples carried out by Structural Soils LTD (documents “541771 Iona and Fionnphort Letter Report final.pdf” and “MS Results Template MAR00820.xlsx” presented in Appendix C). Whilst the dredged material is suitable for deposit at sea as a result of the very low levels of contamination.

In order to achieve a deposit depth of -100m below chart datum, this would involve approximately 45 round trips of at least 40Km from the site, based on a hopper barge taking 250m³ per journey. This would increase the impact on the environment, due to increased fuel required to take the excavated material to the required location. During adverse or, unfavourable wind and tide conditions which can be expected when working in an exposed area such as the Sound of Iona, even more fuel will be required to be burned by the vessel(s) transporting the material.

The area around the sound of Iona, as per Admiralty Chart No. 2617 (presented in Appendix A), is a Submarine Exercise area. As a result of this, Argyll and Bute Council propose to deposit the material as close as reasonable acceptable to site, to reduce the risk of any interference with the Ministry of Defence and any potential risk to life. Drawing 00040-33-102 Iona Proposed Dredge Deposit Locations, showing proposed locations, is presented in Appendix A.

Taking this into consideration, based on the environmental impacts, the risk involved in depositing below -100m CD in a Submarine Exercise area is high.

This option will be taken forward for consideration under Section 3.

2.5 Sea Disposal at Licenced Site – via back-hoe dredging or suction dredging

Deposit at sea would appear to be allowable from the results of the Analysis of Sediment Samples carried out by Structural Soils LTD (documents “541771 Iona and Fionnphort Letter Report final.pdf” and “MS Results Template MAR00820.xlsx” presented in Appendix C). Whilst the dredged material is suitable for deposit at sea as a result of the very low levels of contamination.

The closest Open Dredge Deposit site is MA035 Portnahaven, just off the coast of the Isle of Islay, an approximate 80Km distance away from Iona, and 160Km round trip.

The closest Closed or Disused Dredge Deposit site is MA080, in Gott Bay, Tiree. This is slightly closer to the sites at Iona and Fionnphort being an approximate 37Km journey and 74Km round trip.

Both MA035 and MA080 are a significant distance away from both Iona and Fionnphort, and require around 45 exposed sea journeys which as discussed before in section 2.4, has the potential to significantly increase the environmental pollution produced during transit.

This option will be taken forward for consideration under Section 3.

2.6 Landfill Disposal – at Licenced Site

Landfill disposal would appear to be allowable from the results of the Analysis of Sediment Samples carried out by Structural Soils LTD (documents “541771 Iona and Fionnphort Letter Report final.pdf” and “MS Results Template MAR00820.xlsx” presented in Appendix C). Whilst the dredged material is suitable for landfill disposal as a result of the very low levels of contamination.

Glengorm Waste Disposal Site is located approximately 56 miles from Fionnphort, taking the A819 which for the majority of the journey will be narrow single track road. Not only will this result in hundreds of journeys on the islands narrow single track roads, but it will also result in increased carbon pollution and noise pollution to the local residents.

This option will be taken forward for consideration under Section 3.

2.7 Other beneficial uses

Any other beneficial uses are not considered a viable option for this area of Iona at this stage, which would not increase carbon footprint and environmental impact.

3. OPTIONS UNDER CONSIDERATION

3.1 Beach Replenishment at Isle of Tiree

3.1.1 STRATEGIC CONSIDERATION

3.1.1.1 Operational aspects, including handling, transport, etc.

Disposal to beach replenishment would require around 1,225m³/ 2,205 wet tonnes of dredged material to be transported from the dredged site to an appropriate area for beach replenishment. The Isle of Tiree has been identified for beach replenishment and could make use of the total volume of the dredged material.

This would involve a number of round trips of around 80km from the Sound of Iona to Tiree and return. The number of trips would depend on the size of the vessel – which would be confirmed at the tender stage.

Due to the exposed nature of the sea between the Isles of Iona and Tiree, consideration must be taken to safely transport of the dredged material. This likely will have an increased financial impact on this proposed option due to the increased risk involved.

The Isle of Tiree has lost from 2006 to 2018 an approximate amount of 247,300m³ of material; therefore, 1,225m³ of dredge material from Iona would be insignificant against the required amount for beach replenishment at Isle of Tiree. The logistics to transport the material a number of round trips of around 80km from the Sound of Iona to Tiree and return would be complex due to the exposed route required for the passage.

3.1.1.2 Availability of suitable sites/facilities

The Isle of Tiree is at significant risk of coastal erosion, it has been selected as a potential site for beach replenishment. There is a significant risk of much of the island being eroded due to coastal erosion. The relatively small volume of material which will be dredged at Iona would be suitable, as it is a similar homogeneous and clean sand to that currently present at Tiree.

3.1.1.3 Legislative implications, both national and international

Marine Licence sought.

3.1.1.4 Summary of the outcome of discussions with third parties (If possible, copies of consultees replies should be appended to the assessment)

The proposed dredging is primarily to avoid any disruption to third parties such as Caledonian MacBrayne going forwards; therefore no discussions at this stage as dredging is expected to avoid any impact on third parties.

3.1.2 ENVIRONMENTAL CONSIDERATIONS

3.1.2.1 Safety implications

Tender submissions will be accompanied by relevant Health & Safety documentation.

3.1.2.2 Public health implications

The dredged has no levels of contamination above Action Level 1 (documents “541771 Iona and Fionnphort Letter Report final.pdf” and “MS Results Template MAR00820.xlsx” presented in Appendix C). Therefore, there are no public health implications expected.

3.1.2.3 Pollution/contamination implications, including discussion on: accumulation, toxicity, hazards, persistence, short and long-term impacts, dilution and dispersion, etc.

Re-purposing dredged material at a relevant coastal site would initially appear to be allowable from the results of the Analysis of Sediment Samples carried out by Structural Soils LTD (documents “541771 Iona and Fionnphort Letter Report final.pdf” and “MS Results Template MAR00820.xlsx” presented in Appendix C). Whilst the dredged material is suitable for beach replenishment as a result of the chemical analysis showing no levels of contamination above Action Level 1.

Based on the above, due to the dredged material being free from any contamination – there is no expected pollution/contamination risk associated with the proposed beach replenishment.

3.1.2.4 Interference with other legitimate activities, e.g. fishing operations, other aquaculture interests

Beach replenishment would be managed in such a way as to not interfere with the Caledonian MacBrayne ferry service between Iona and Fionnphort and will minimise disruption to leisure and fishing craft.

3.1.2.5 Amenity/aesthetic implications

No amenity / aesthetic implications identified at this stage.

3.1.2.6 Best practice guidance and mitigation measures

Chemical Analysis has been carried out in accordance with Marine Scotland guidelines. For dredging activities, companies will be vetted for suitability and competence as part of Argyll & Bute Council’s tender process.

3.2 Sea Disposal – Plough Dredging

3.2.1 STRATEGIC CONSIDERATION

3.2.1.1 Operational aspects, including handling, transport, etc.

Dredging and deposit of material can be carried out with no effect on the public. Suitable vessel(s) & equipment will be obtained through a tender process.

Plough dredging will not be permitted for the works at Iona.

3.2.1.2 Availability of suitable sites/facilities

The nearest Open Deposit site is MA035, approximately 80km away and 160km round trip.

The closest Closed or Disused Dredge Deposit site is MA080, in Gott Bay, Tiree. This is approximately 37Km journey and 74Km round trip.

3.2.1.3 Legislative implications, both national and international

Marine Licence sought.

3.2.1.4 Summary of the outcome of discussions with third parties (If possible, copies of consultees replies should be appended to the assessment)

Dredging is proposed primarily to avoid any disruption to third parties although no discussions as yet as dredging will negate any issues.

3.2.2 ENVIRONMENTAL CONSIDERATIONS

3.2.2.1 Safety implications

Tender submissions will be accompanied by relevant Health & Safety documentation.

3.2.2.2 Public health implications

No Public Health implications identified.

3.2.2.3 Pollution/contamination implications, including discussion on: accumulation, toxicity, hazards, persistence, short and long-term impacts, dilution and dispersion, etc.

The Sampling was of the seabed were taken in November 2020 by Structural Soils Ltd and the samples tested at SOCOTEC laboratories.

None of the samples taken at Iona and Fionnphort, when tested, produced results greater than Action Level 1. Due to this nature, and the limited use the site has been exposed to in the past, Argyll and Bute Council is of the opinion that the dredged material requiring deposition elsewhere is of a clean nature.

If the dredged material were to be deposited close by, then Argyll and Bute Council foresee no short term or long-term impacts due to the homogenous nature of the sand found around the Sound of Iona.

3.2.2.4 Interference with other legitimate activities, e.g. fishing operations, other aquaculture interests

Sea disposal by Plough Dredging would be managed in such a way as to not interfere with the Caledonian MacBrayne ferry service between Iona and Fionnphort and will minimise disruption to leisure and fishing craft.

3.2.2.5 Amenity/aesthetic implications

No amenity / aesthetic implications identified at this stage.

3.2.2.6 Best practice guidance and mitigation measures

Argyll and Bute Council will take all necessary steps to minimise any disruption to the marine environment throughout the process of the dredging operation. This will be accomplished by following Marine Scotland's guidelines with close cooperation with the dredging contractor.

3.3 Sea Deposit at Licenced Site – (MA035 Portnahaven) – via back hoe or suction dredge

3.3.1 STRATEGIC CONSIDERATION

3.3.1.1 Operational aspects, including handling, transport, etc.

Dredging and disposal can be carried out with no effect on the public. Suitable vessel(s) & equipment will be obtained through a tender process.

3.3.1.2 Availability of suitable sites/facilities

Closest open deposit site is approximately 80Km south west at MA035 Portnahaven.

3.3.1.3 Legislative implications, both national and international

Marine Licence sought.

3.3.1.4 Summary of the outcome of discussions with third parties (If possible, copies of consultees replies should be appended to the assessment)

The proposed dredging is primarily to avoid any disruption to third parties going forwards; therefore no discussions at this stage as dredging is expected to avoid any impact on third parties.

3.3.2 ENVIRONMENTAL CONSIDERATIONS

3.3.2.1 Safety implications

Tender submissions will be accompanied by relevant Health & Safety documentation.

3.3.2.2 Public health implications

It is expected that there will be minimal public health implications as a result of the dredging works proposed at Iona.

3.3.2.3 Pollution/contamination implications, including discussion on: accumulation, toxicity, hazards, persistence, short and long-term impacts, dilution and dispersion, etc.

None of the samples taken at Iona or Fionnphort were above Action Level 1.

Samples were taken at the seabeds in November 2020 at Iona and Fionnphort by Structural Soils Ltd and the samples tested at SOCOTEC laboratories.

These results can be seen on documents “541771 Iona and Fionnphort Letter Report final.pdf” and pre-disposal sampling results form “MS Results Template MAR00820” presented in Appendix C.

It is assumed that there should be minimal impact at the agreed dredge deposit site, as the material does not appear to be contaminated.

3.3.2.4 Interference with other legitimate activities, e.g. fishing operations, other aquaculture interests

Interference will be minimised at every opportunity. Close communication between the Harbour Master for Iona and Fionnphort and with Caledonian Macbrayne will

minimise the impact to the ferry service between Iona and Fionnphort. Close communication with the Harbour Master for the site for other activities, such as fishing, will be maintained throughout the dredge disposal process to lower the potential for interference.

3.3.2.5 Amenity/aesthetic implications

No amenity / aesthetic implications identified at this stage.

3.3.2.6 Best practice guidance and mitigation measures

Chemical analysis has detailed that some of the samples taken from both Iona and Fionnphort show that no samples returned values above Action Level 1.

Argyll and Bute Council will take all necessary steps to minimise any disruption to the marine environment throughout the process of the dredging operation. This will be accomplished by following Marine Scotland's guidelines with close cooperation with the dredging contractor.

3.4 Sea Disposal below -100m Chart Datum

3.4.1 STRATEGIC CONSIDERATION

3.4.1.1 Operational Aspects, including handling, transport, etc.

Dredging and disposal can be carried out with no effect on the public. Suitable vessel(s) & equipment will be obtained through a tender process.

3.4.1.2 Availability of suitable sites/facilities

Suitable pocket areas are available within 3.5km to 7.5km of each site.

3.4.1.3 Legislative implications, both national and international

Marine Licence sought.

3.4.1.4 Summary of the outcome of discussions with third parties (If possible, copies of consultees replies should be appended to the assessment)

The proposed dredging is primarily to avoid any disruption to third parties going forwards; therefore no discussions at this stage as dredging is expected to avoid any impact on third parties.

3.4.2 ENVIRONMENTAL CONSIDERATIONS

3.4.2.1 Safety implications

Tender submissions will be accompanied by relevant Health & Safety documentation.

3.4.2.2 Public health implications

If sea disposal below -100m chart datum was used then it would be up to a 40km round trip to deposit site. This would require multiple journeys that could potentially be a danger to other users within the loch and sea.

Air pollution, fuel use and environmental impact all increased.

3.4.2.3 Pollution/contamination implications, including discussion on: accumulation, toxicity, hazards, persistence, short and long-term impacts, dilution and dispersion, etc.

None of the samples taken at Iona or Fionnphort were above Action Level 1.

Samples were taken at the sea bed in November 2020 at Iona and Fionnphort by Structural Soils Ltd and the samples tested at SOCOTEC laboratories.

These results can be seen on documents "541771 Iona and Fionnphort Letter Report final.pdf" and pre-disposal sampling results form "MS Results Template MAR00820" presented in Appendix C.

3.4.2.4 Interference with other legitimate activities, e.g. fishing operations, other aquaculture interests

Interference will be minimised at every opportunity. Close communication between the Harbour Master for Iona and Fionnphort and with Caledonian Macbrayne will minimise the impact to the ferry service between Iona and Fionnphort. Close communication with the Harbour Master for the site for other activities, such as fishing, will be maintained throughout the dredge disposal process to lower the potential for interference.

3.4.2.5 Amenity/aesthetic implications

No amenity / aesthetic implications identified at this stage.

3.4.2.6 Best practice guidance and mitigation measures

Chemical analysis has detailed that some of the samples taken from both Iona and Fionnphort show that no samples returned values above Action Level 1.

Argyll and Bute Council will take all necessary steps to minimise any disruption to the marine environment throughout the process of the dredging operation. This will be accomplished by following Marine Scotland's guidelines with close cooperation with the dredging contractor.

3.5 Landfill Disposal at Licensed Site – Glengorm Waste Disposal Site

3.5.1 STRATEGIC CONSIDERATION

3.5.1.1 Operational aspects, including handling, transport, etc.

Disposal to landfill would require around 1,225m³/2,205 wet tonnes of dredged material to be transported from the dredged site to an appropriate commercial waste facility, which is 56 miles away. It should be noted that this disposal site, Glengorm Waste Disposal Site, is not expected to have the capacity to take this amount of material. Therefore it would have to be transported via ferry off the island to the mainland, increasing the environmental impacts drastically. Further to this, the added wear to the island's roads would be undesirable.

In order to make the sediment suitable for landfill deposit, several processes would need to be undertaken. Dredged material would require offloading to shore and undergo a dewatering process, ideally prior to transportation to minimise the weight to be transported. It is unlikely that the harbour area at Fionnphort would have sufficient space available to undertake the dewatering processes on site and hence another area would need to be found for this process to take place.

Due to the rural nature of the site, the dewatering process is likely to be technically challenging and could result in significant disruption to the area. Full methods have not yet been provided by a contractor, the following assessments are made using potential working methods. It is considered that undertaking dewatering will in reality be impractical, disruptive to local residents and traffic and ultimately cost prohibitive. Dredged material from Rothesay would need transporting by HGV's to the mainland. The transportation alone would increase the cost substantially and add to significant disruption to locals on roads and ferries.

Suitable vehicles(s) & equipment would be obtained through a tender process.

3.5.1.2 Availability of suitable sites/facilities

Due to the weight of material to be disposed of being 2,205 tonnes, and the nearest suitable site being on the mainland this option has been discounted at this stage. Assuming 25 tonnes of material can be loaded onto a 40 tonne truck, this would require 89 lorry loads to be transported via ferry to the mainland accumulating approximately 9,968 excess miles driven on the Island roads. This would drastically increase cost and environmental pollution, as well as impacting the Island roads and communities.

Due to the remote location of the site, and following assessment of the available disposal sites on the Isle of Mull – this has been ruled out.

3.5.1.3 Legislative implications, both national and international

Marine License sought.

3.5.1.4 Summary of the outcome of discussions with third parties (If possible, copies of consultees replies should be appended to the assessment)

The proposed dredging is primarily to avoid any disruption to third parties going forwards; therefore no discussions at this stage as dredging is expected to avoid any impact on third parties.

3.5.2 ENVIRONMENTAL CONSIDERATIONS

3.5.2.1 Safety implications

Tender submissions will be accompanied by relevant Health & Safety documentation.

3.5.2.2 Public health implications

If landfill deposition of the dredged material was the option taken forward, there is no site on the island with capacity for such material. The material would have to be transported on up to 89 vehicle movements across the island, on ferry to the mainland to Oban and then onto another location in Scotland.

3.5.2.3 Pollution/contamination implications, including discussion on: accumulation, toxicity, hazards, persistence, short and long-term impacts, dilution and dispersion, etc.

None of the samples taken at Iona or Fionnphort were above Action Level 1.

Samples were taken at the sea bed in November 2020 at Iona and Fionnphort by Structural Soils Ltd and the samples tested at SOCOTEC laboratories.

These results can be seen on documents “541771 Iona and Fionnphort Letter Report final.pdf” and pre-disposal sampling results form “MS Results Template MAR00820” presented in Appendix C.

3.5.2.4 Interference with other legitimate activities, e.g. fishing operations, other aquaculture interests

There would likely be interference with fishing vessels and pleasure craft using the Iona slipway.

The expected requirement of 89 movements to transport the material along Mull’s road network would interfere with local traffic and would involve an increased burden on the island’s roads.

3.5.2.5 Amenity/aesthetic implications

No amenity / aesthetic implications identified at this stage.

3.5.2.6 Best practice guidance and mitigation measures

Argyll and Bute Council will take all necessary steps to minimise any disruption to the marine environment throughout the process of the dredging operation. This will be accomplished by following Marine Scotland's guidelines with close cooperation with the dredging contractor.

4. APPROXIMATE COSTS

4.1 Capital / Revenue costs

- Cost for Plough Dredging and disposal of material below -3.0m Chart Datum is estimated at <Redacted>
- Cost for Dredging and disposal of material below -100m Chart Datum is estimated at <Redacted>
- Cost for beach replenishment at Tiree is estimated at <Redacted>
- Cost for Dredging and disposal of material at **Licensed Site (MA035)** via back hoe or suction dredge is estimated at <Redacted>
- Tender for disposal of material on land is estimated at <Redacted>

Costs are based on comparing the options to previous schemes and consultation for those methods not before costed.

5. CONCLUSIONS

5.1 Summary of available options

Only one option is considered to be suitable to dredge Iona and Fionnphort. This is after close consideration of the costs and the environmental impact that these options may incur.

5.2 Summary of Options

The following table summarizes aspects of each scenario:

OPTION	VIABILITY	JUSTIFICATION
Do Nothing Approach	Not viable	To do nothing would make the harbours unusable which is not a viable option to support the lifeline ferry service to Iona.
Beach Replenishment	Not Viable	Beach replenishment would require the movement of the sediment a significant distance. This would provide a small amount of protection in a limited area on the Isle of Tiree. Due to the volume of material which is required at Tiree this small amount is insignificant.
Plough Dredging	Not Viable (not permitted)	Plough dredging is thought to be unacceptable. There will be an increased potential for disruption to the CalMac ferry service and impact to the environment.
Sea Disposal at a Licenced Site –via back hoe or suction dredge	Feasible	Low environmental impact compared to plough dredging. There will be Minimal impact between the dredging location at Iona and Fionnphort and the disposal location as the dredged material is homogeneous to the disposal location and contains no levels of contaminants above Action Level 1.
Sea Disposal below -100m Chart Datum	Not Viable	High environmental impact due to multiple sea journeys to -100m CD site.
Landfill Disposal	Not Viable	The process is majorly impractical due to the transport of many vehicles and plant on an already congested ferry service and a local roads network which would have unnecessary additional wear and tear.

5.3 Identification of BPEO

The “**Sea disposal at licenced site**” option has been chosen as the Best Practicable Environmental Option due to a number of factors:

- Minimising use of the Island’s road network and the trunk road network on the mainland.
- Minimising fuel use.
- Minimising Environmental impact.
- Avoiding unnecessary journeys to allow disposal of material in licenced site on land.

Overall, based on this report Sea Disposal at the Licenced site MA035 via back hoe dredging or suction dredging provides the best practicable and environmental option for disposal. This report was based on environmental and strategic considerations.

6. APPENDIX

Appendix C – Analytical Chemistry Data

- 541771 Iona and Fionnphort Letter Report final.pdf
- MAR00820.xlsx
- MS Results Template MAR00820.xlsx