

Bruce Cummings
CIANBRO Corporation
101 Cianbro Sq.
Pittsfield, ME 04967

April 18, 2019

RE: Blast Plan Assessment for Nordic Aquafarms

Dear Craig,

Please find attached our blast plan for the proposed Nordic Aquafarms located in Belfast, Maine. Based on the information that we have received we have prepared the attached blast plan. In the blast plan you will find methods that will help to control the adverse effects of blasting. The blast plan contains information on fly rock prevention, misfire prevention, as well as ways to control air blasts and limit ground vibrations. The plan also contains information on pre-blast surveys, seismic monitoring and general site safety that should be in place for all blasting activities.

In reviewing the site plan and geotechnical information, it shows that blasting will be required throughout the project site and as well as for the pipe run of the water intake pipe. We have based our blasting design and patterns on the estimated cut depths and locations that we have received. We have calculated that a range of PPV from 0.54 in/sec to 1.08 in/sec would result at the nearest off site structure. This PPV level is well below the limit of 2.00 in/sec set by the USBM Appendix B requirement and below the DEP requirements of 1.25 in/sec. Generally blasting will take place at a greater distance from structures than the distance used for the above calculations, vibration effects, noise and air blast effects on any existing structures, and natural resources at these distances and vibration levels would be minimal.

As a precaution to verify that no adverse effects are caused by the blasting, seismograph monitoring should be used for all blasts at the nearest off site structure, to insure that levels of blasting remain below the allowable limits set by the DEP. Pre-blast

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surveys should also be offered to all property owners within the 2,000' blasting radius to document the existing conditions of these structures.

There are several water wells located within 2,000' of the blasting area. Based on the above calculated PPV's for the project, and distances to the wells, water well quality and quantity should not be affected by blasting. Water quality tests should be offered to all wells within the blasting radius to create a base line of water quality prior to blasting activities.

In conclusion, the potential for any adverse effects from blasting on natural resources, structures, surface water, and wells of offsite buildings is negligible at best, based upon the proposed site design. Please let me know if you have any additional questions on this project or need any additional information.

Sincerely,



Brett Doyon
Project Engineer
207-203-1689