Appendix I

Kuterra Aquaculture

Environmental Report

March 6, 2017

Chief, Debra Hanuse
Namgis First Nation
49 Atli Road
Alert Bay, BC
V0N 1A0

Re: Phase 1 ESA - Kuterra Limited Partnership Land Based Fish Farm
Namgis First Nation, Ches-La-Kee Indian Reserve 3, Rupert District

Dear Chief Hanuse,

Please find below an Environmental Site Assessment (ESA) Letter detailing site conditions at the Kuterra Limited Partnership's Land Based Fish Farm Facility and associated property. This ESA was undertaken on Ches-La-Kee IR 3 on December 14, 2016 by Christopher Pretty, RPF as a component part of the larger Phase 1 ESA that is being conducted on all Namgis First Nations Reserves by BC Ecosphere Ltd.

This letter provides a summary of the onsite environmental screening of the land-based fish farm and deals mainly with the concern of any potential contaminants and environmental liabilities that could result from the day-to-day operations.

The objective of the overall Phase 1 ESA is to look for contaminants and risks to human health and the ecology from sources of pollution. It is not intended to include the content of an environmental audit of the facility but rather an assessment of the lands to determine if there are any potential environmental liabilities on the lands subject to FNLMA transfer.

However, subject to our regular due diligence when conducting our Phase 1 assessments I have conducted an environmental screening on the Kuterra facility and Ches-La-Kee IR 3 as a whole. To support your upcoming land designation being conducted by Indigenous Affairs and Northern Development I have provided a summary of the Kuterra facility's portion of the Namgis Phase 1 ESA below.

I hope this of benefit to the Nation and federal authorities.

Natural Site Characteristics:

The Kuterra facility occupies Lot ___ being 0.0 hectares in size on Ches-La-Kee IR 3. The plant is situated on a cleared, flat, well-drained, lowland area to the east of the Nimkish River. Subsurface soils consist of gravel and cobbles.

There is no vegetation directly adjacent to the Kuterra facility, as the land has been stripped to facilitate access and egress requirements, the plant site, open pit filtering ponds and various structures to support the operation. Nearby vegetation consists of forested areas, tress and shrubs consistent within the Coastal Western Hemlock Biogeoclimatic Zone.

There are no signs of stressed vegetation on any areas of the site or the adjacent forest/brush areas. There are also no obvious signs of any contamination on the ground or in the soils surrounding the facility. No staining or discoloration, oily films or odours were present outside the facility.

Structures and development on the property:

The Kuterra facility consists of 3 main buildings. These are the office, Main Fish Plant Building and Harvesting Building. Structures are primarily built out of steal framing and corrugated steal siding. The office is a semi-portable Atco type trailer. Construction of the facility occurred in 2011-2013 and appears to be built to all applicable codes. The primary use is a Industrial Aquaculture Closed containment facility. The main building is approximately 80 feet x 200 feet which the fish harvest building being approximately 25 feet x 40 feet. The main structure is 2 stories built on a impervious concrete slab foundation.

The author visited the site and toured the inside and outside of the facility on December 14, 2016. Plant Manager, John Burton, provided the author access to all areas of the facility.

There was no obvious staining on any of the floors, walls, ceilings, sumps or drains in any of the buildings. Heating and cooling is provided primarily by electric means to run a closed two loop geothermal heating system. There is a back up diesel generator on site adjacent too and on the west side of the main building. This commercial/industrial-sized generator is situated on a concrete pad and is fueled by a double walled above ground tank (AST) and there is a properly sized and compatible spill kit located adjacent to the generator as well. No obvious signs of spills or staining adjacent to either the generator or AST were noted. The site was well kept.

There are to my knowledge, no materials containing asbestos at the site, as this facility is a relatively very new build. There is no Urea Formaldehyde Foam Insulation, lead paint or materials containing PCB's at the site.

Site Services:

Electrical service is provided to the site by BC Hydro. The electrical service powers a geothermal heating system at the facility. There are a number of wells providing water to the facility; 3 production wells and 2 geothermal wells. The wells are

located on the plant site property within 100 metres of the existing structure(s) and are currently all active. The 2 geothermal wells are located within 10 metres either side of the plant and the 3 ground water production wells are located adjacent to the driveway leading up to the plant site. Wells were installed between the years of 2011-2013 and thus would have associated well ID plates and reports filed with the BC Comptroller of water rights.

There are 3 septic systems servicing the site and although none were closely inspected, all seemed to be functioning within there normal operability limits.

On site septic systems are used for the following purposes:

1) Harvest fish blood and fish waste and water is contained in a stand along septic system.
2) Water effluent from the plant is diverted to open ground pits for ground filtration. Bio-solids from effluent are contained in 3 ground based cone filters and pumped by a professional septic company and taken to a Sea Soil fertilizer production facility.
3) One septic system is utilized for domestic waste purposes.

There are no no problems with any of the septic systems employed on the property.

Materials used and stored on site:

One double walled AST is located on site to provide diesel fuel to the plants back up generating system. The tank appears to be in new condition. The tank sits on a concrete pad but is built without a berm containment system.

Housekeeping and storage items and areas:

Large commercial containers to support the plant operations such as caustic soda to regulate water pH levels are contained in sealed 1400Kg units, which are reinforced and properly contained. Bulk chemicals/solutions to support operations are in sealed units and reinforced and are separated from bulk fish food storage in their own (locked) room with appropriate Hazmat and First Aid stations nearby. Notifications and signage of these materials are clearly posted and properly labeled. Materials are storage in sealed bins and located on an impervious concrete floor.

Empty bulk containers are stored outside the main plant building on the north side adjacent to the exterior of the building for ease of pick up by scheduled delivery companies.

There is no evidence of spillage or staining in any measurable quantity in storage areas.

Other on property storage areas contain the following:

1) Green cans contain bulk salt.
2) Large liquid oxygen tank
3) In maintenance portion of the main facility there is a small amount of retail paints all well maintained and stored.
4) Compressed gasses consisting of propane for office (trailer) heat.
5) Small amounts of household/commercial cleaners, etc in the workshop at retail level quantities.

The plant manager keeps records of handling practices and purchase records of all materials that come onto the site.

Facility Waste(s):

Wastes are generated at the Kuterra facility. These wastes consist primarily of fish metabolic waste, which is filtered and separated between water effluent and bio-solids. Water effluent is ground filtered by way of 2 large open pit settling ponds which drain in a northerly direction underneath the highway and the Nimpkish River.

Air emissions at the site are negligible and consist of plant fresh air exhaust as the plant is run by electrical and geothermal means. The plant manager is not aware of any air monitoring or sampling being completed and due to the nature of the facility would not be required for operational safety reasons.

Liquid discharges:

Liquid waste is generated at this site however the waste as explained above is properly treated and/or separated and taken away to a licensed commercial fertilizer waste acceptor. There are water effluent ponds on site, sumps and associated treatment systems in place. The primary onsite treatment system is a series of four rotating water and solid waste screens. Solid waste is pumped into three holding chambers and removed by septic truck to Sea Soil, a commercial fertilizer provider.

Solid Waste:

There are no dumps or landfills on or near the property. The quantity of solid and liquid waste generated at the facility is not known and is beyond the scope of this ESA. Solid waste is transported to a commercial facility in Campbell River, BC. There is documentation regarding the management and removal of solid wastes from the property via purchase orders and receipts. There is no evidence of uncontrolled dumping on the property.

Chemical and Hazardous Waste:

There are no fuel or chemical wastes generated on this site.

Heritage Resources:

The author of this report was verbally provided information from the plant manager, John Burton that an archaeology study was completed on the site and lot in the planning stages of development and prior to construction. Artifacts found on the sites adjacent areas have been primarily in the form of lithic scatter.

Housekeeping Items Noted:

1) Several of the pipes that lead to the 3 in ground cone filters are exposed at ground level adjacent to the septic cone system(s). They should be repaired.
2) Some larger non-used tanks and fiberglass containment ponds are scattered along the roadside leading up to the plant site. These should be disposed of and the site tidied up.
3) Open ground filtration pits are appropriately sloped but could be fenced to prevent entry.

Conclusion:

The Kuterra Fish Plant Facility appears to be well run, clean and biosecure. The AST has a spill kit and is built on a concrete pad with no containment berm. All waste generated at the facility is contained in appropriate systems. ie. Fish metabolic, harvest blood and human waste goes into three separate septic systems designed to handle the associated type of waste. Water effluent is discharged into filtration ponds and solids are removed by commercial means with chain of custody provisions implemented. The site is located approximately 800 metres from the Nimpkish River. Ground water filtration flow is said to flow west to east taking effluent in a direction away from the Nimpkish River.

Chemicals and caustic soda used to regulate fish plant water pH levels are stored inside in a secure room. Other chemicals such as ammonium bleach are in secured and labeled bins. The facility has only residential levels of oil and lubricants for machinery located in secured bottles. Hydraulic fluid for the plants main pumps and machinery is plant based specifically to avoid harming the biotic environment and contamination issues if, by accident, they were to arise.

In general, the facility is well run and has appropriate safeguards in place. Being a newer facility all construction materials and building practices appear to meet the various building, electrical and septic codes in place during the construction timeframe of 2011-2013.

Please refer to the appendix for photos taken on December 14, 2016.

Sincerely,
Terra-First Solutions Ltd.

Christopher Pretty, RPF
On behalf of BC Ecosphere Management Ltd.

cc. (via email)
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Plant Location Map