Questions and Answers from the Luggate Community Information Session, 26 September 2013

Most of these questions were asked by residents during the evening, with some emailed subsequently. The answers have been provided by staff from QLDC, ORC and Fulton Hogan (FH), and the origin of each answer is indicated in each case. There is a list at the end of questions which require more research and which will be answered when the information has been found.

Overall concerns can be summarised as:

1. The facility will devalue Luggate properties
2. Luggate shouldn't be the dumping ground for another community's waste
3. There will be health issues with wind-blown material once it's spread onto land
4. There will be a smell from the plant

The Plant

Q: Can the scheme cope with spikes in volume related to holidays / events?
A: Yes, the operation of the WendeWolf machine and its ability to be programmed or adjusted to the demands of varying inwards sludge tonnages at any one time plus the size of the drying hall enables the system to cope with holiday or event peak demands.
The amount of sludge that will be sent to the drying hall will be dependent on what is happening at the Project Pure treatment plant. (FH)

Q: Will there be a smell from the plant?
A: If managed properly, with the sludge drying process containing and treating odour, there should not be any odour detected outside the boundary of the facility. If the community identifies ongoing odour issues ORC will require the plant operator to comply with the condition of the consent. ORC has a strong track record on enforcing compliance, so one of the options for ORC will be to shut the facility down. (ORC)

Q: Will there be any noise eg from generators running the fans, or the fans themselves?
A: The fans are very quiet when operating. While FH staff were in Australia looking at their plants they struggled to hear the fans operating. The same make and style of fan will be installed in the Luggate drying hall operation.
The current electrical network near McKay's Road is going to be upgraded by Delta and we will be hooking into that expanded network which will do away with the need to operate a generator. However a connection will be allowed for in the switch board to hook a portable generator into the electrical system in the event of a prolonged network supply failure. (FH)

Q: Can it be seen from the road?
A: FH has suggested in the proposed resource consent application that a planted bund be constructed in the clearing between the boundary tree lines close to where the Luggate Community currently stockpile their green waste so that the travelling public cannot see into that corner of the quarry when travelling along SH8A. People travelling on SH6 heading toward Luggate may be able to see a glimpse of the plant if they are looking in the right direction. As part of the quarry consent conditions the boundary has been planted out and is irrigated to encourage plant growth which is well established and growing. In addition to this it may be helpful for residents to go on-site. To that end FH has offered to set up a site meeting and tour. (FH)

Q: What are the consent conditions that currently pertain to the land and are they being met?
A: FH currently holds a consent from QLDC to operate its quarry on the site and carry out gravel extraction, stockpile, process and grade gravel. There have been no breaches of the consent and inspections since 2009 have been satisfactory. (QLDC)

Q: Will there be any lights or noise after dark?
A: FH doesn't intend to undertake any operational work during the hours of darkness, however an urgent breakdown or something of that nature may require some work to be undertaken outside normal operating hours. (FH)

The Dry Matter

Q: What are some examples of this kind of material being used for fertiliser?
A: The New Plymouth town sewage solids are dried by gas heating and converted into pellets and sold to local non-dairy farmers and other land users. The Living Earth is also understood to have been producing compost materials incorporating sewage sludge. Nelson town sludge has been spread on Rabbit Island in a forestry block. In Waikato consents have been granted to land apply sludge for beneficial use. Selva Selvarajah of ORC has contacted the Waikato Regional Council seeking information on the extent of sludge application to land in Waikato. Any information received will be provided to Luggate residents. (ORC)

Q: Why can't the dry material be used as fertiliser for home gardens?
A: Once it's been treated it will be free of pathogens. Therefore it can be used in home gardens. The material will contain zinc and copper, both of which are essential plant elements, as well as nitrogen, phosphorous and potassium, which are essential nutrients for plant growth. The material is full of organic carbon, which would benefit the local soils to boost soil conditions, microbial activity and moisture holding capacity.
However, application of the material will require consent from ORC because of current restrictions in ORC plans. This is likely to change in the new generation plan. Any consent to spread the dry matter would include conditions on the application rate and how often it could be spread in a particular area.
Note that although crops fertilised with this type of material can be fed to most kinds of livestock, Fonterra doesn't permit it for its dairy herds because of "market perceptions". (ORC)

In Australia you can buy a product from Australian Natural Landscapes called "Nitro-Humus a soil conditioner made from 100% composted sewage sludge & composted green waste by the bag, trailer load or have it delivered. (FH)

Q: Where is the microbiological research on how bacteria, cysts and pathogens are removed from the sludge?
A: ESR (a Crown Research in NZ) and many international researchers have conducted research on pathogens in sludge. Such information can be obtained from internet. (ORC)

Q: Who will monitor the cysts and organisms?
A: ORC will make it a requirement as part of the consent conditions to screen for pathogens. (ORC)

The Disposal process

Q: Will there be a smell from the properties where the material is ploughed in? (both as it's applied to land and afterwards?)

A: If there is a smell, the consent conditions would stipulate that it not be noticeable outside the property boundary. However, Once the bio solids have reached the optimum (dry) moisture content it will have little or no odour. In general most dry substances have little odour (QLDC)

Q: Will the material rehydrate once it's spread onto land and gets wet? And if so, will the leachate get into the groundwater?
A: The material can be rehydrated. Nutrients in the material such as nitrogen will be released slowly compared to conventional fertilisers. If crops or plants and the rate of application are managed appropriately there will be minimal leaching of nitrogen (ie nitrate) into the groundwater. (ORC)

Q: Won't the prevailing winds blow the soil / dust towards the town?
A: The prevailing winds are along the course of the river rather than across the river, ie the application to land sites are not upwind of the township. Dust suppression is a common requirement for all farms, earthworks, building sites, etc. The bio-solid application will condition and greatly improve the quality of the soils. Well-conditioned soils promote and sustain plant growth, and will naturally inhibit the production of dust. It is likely that a consent condition would limit wind strengths at the time of bio-solid application. (QLDC) also see FH options for land application below.

Q: Where will it go when the two farms have reached capacity to accept it?
A: Between the current two farms and FH's quarry land approx 450ha is available to apply dried sludge onto. As other farmers realise the benefits of the dried sludge, public perception and understanding of the process changes, the land area where dried sludge is applied will be expanded under a controlled consented process. (FH)

Climate

Q: It's very windy at Luggate so won't the dry matter blow away?
A: Only if thrown in the air on a windy day. The consent should include criteria for suitable atmospheric conditions while application of the bio solid is being undertaken. (QLDC)

Q: Is the plant and the system suitable for this climate?
A: Yes, the plant and operating system is very suitable for the Luggate climate. New Zealand sits mid-way between the world temperature extremes of very hot to very cold and we know that Luggate is very dry and hot over the summer months with long sunshine hours that will create the heating and evaporation that is required for the system to operate at a high level of efficiently. The WendeWolf system is used in 80 locations across the world and there are 115 individual machines in operation – some plants have multiple drying halls / machines in operation. (FH)

Q: There will be times of the year when conditions are unsuitable for applying the material to land – what happens then?
A: There's space to store the dried material within the facility if conditions aren't suitable to remove it or plough it in. This is one of the many design features of the WendeWolf system: at the outward end of the drying hall the product can be stored up to 500mm in depth until conditions are suitable. There are two ways to apply the dried sludge to land: -

- *Up until now we have only considered spreading the dried sludge using the same type of spreading equipment currently used for fertiliser spreading.*
- *Worth considering but will incur extra costs would be to turn the dried sludge into a slurry that can be injected into either worked or unworked soil using equipment that is currently used on dairy farms in Southland and encouraged by Fonterra. (FH)*

The Location

Q: Why choose Luggate?
A: Because that's where FH has a suitable site (QLDC)

Q: Has QLDC / FH considered locating the plant somewhere else?
A: FH owns the land at Luggate. We thought that it would be an advantage to the QLDC rate payers to have a plant located on private land under a commercial operation agreement – no land purchase or ongoing land upkeep costs to the rate payers. (FH)

Q: Could the plant be closer to Wanaka, or nearer Project Pure?
A: Designated land for waste water purposes would be the first place to start looking for an appropriate place to locate the drying process. The application to land is a different issue, the bio-solid could still end up being applied to land near Luggate or any other township. (QLDC)

Q: Does FH own land anywhere else that could be used for the plant?
A: FH owns two parcels of land in the QLDC Wanaka area – an operations yard in Gordon Rd and the Luggate Quarry (FH)

Q: Could QLDC buy land elsewhere and get FH to run the plant there?
A: Transports costs will have an effect on the viability of the project. In addition the application land needs to be easily accessible by a top dressing truck, ie it is not viable or practicable to use very remote areas. (QLDC)

Q: Could the material be spread on farms elsewhere?
A: Yes this is the long term plan to expand the amount of land that is available to benefit from the application of dried sludge as a soil enhancement agent. As public perception and understanding of the process changes, this would be a natural controlled and consented process. (FH)

Q: Will you be able to see the building or any reflection from it from SH8a from the section where it comes over the hill from Tarras 6.2km from the turnoff at the red bridge towards Tarras and from the house at Rapid No 618 Luggate – Tarras Road?
A: Like any building in the country it will have some degree of visibility from the top of the hill travelling along SH8A. A condition of FH's quarry resource consent is that the boundaries are planted and irrigated, which they are with well-established plantings that will over time screen out the quarry completely except for those viewing from a height.
The drying hall will not be visible from the Red Bridge. I have been unable to find #618 Luggate Tarras Road on Google maps and can only guess that this property is located further along the road past the Kane property. The plant will not be visible from any properties along SH8A past the Kane property due to trees and the elevated contour of the land. (FH)

The Resource Consent Process

Q: Have the resource consent applications been lodged already?
A: No. The resource consent application to build and operate the plant has been completed in draft form and will not be submitted until the Luggate community has a clear understanding of the proposed operation. (FH)

Q: Will the applications be notified?
A: The notification is subject to type of proposal and the quality of information provided in the application. If ORC is not satisfied with odour control measures proposed or if there is concern on adverse effects the application will be notified. (ORC)

Q: Will there be any more consultation and what opportunities are there for the community to influence the process?
A: Yes, there will be more discussion with the community. If a formal consultation process is required, that is defined by the Resource Management Act. This is a new proposal for the District and potential further opportunities exist for solar drying in Queenstown so we want to work with the community to help everyone understand the process and address any concerns. (QLDC)

Q: Are we really going to have a say on this or are you going to build it anyway?
A: The community will have a say, starting with this discussion but not limited to this. (QLDC)

Q: How quickly could you build it?
A: It could be operating in six months. Once an order has been placed for the WendeWolf machine and the building, the construction of the drying hall and the associated infrastructure can all be completed prior to the WendeWolf machine arriving from Germany. Installing and commissioning the machine takes two week's then the first delivery of sludge from Project Pure can be accepted into the drying hall.

Health Concerns

There were several questions about possible health impacts. These are listed at the end, as more information is being sought.

General

Q: Where can we find the results of trials using similar systems?
A: Generally such information can be found on the internet. An example is being circulated along with these Q&As. In general, Australia and other countries are more accepting than NZ of the concept of using this kind of waste. Yet NZ is leading the research – the results are benefitting countries overseas. There's more community resistance to it here and ESR is undertaking some social research to find out why that is. (ORC)

Q: What's in it for Luggate?
A; As a community being part of the first solar drying facility in New Zealand, showing to others that there is an environmentally friendly, common sense solution to a sludge disposal problem. As a community Luggate has a chance to embrace this new technology, be involved with setting acceptable ground / operating rules by working through the resource consent process. Luggate can be one of the pioneers for New Zealand which will put them on the map as being environmentally aware of an ever expanding issue with waste disposal, their courage to embrace the concept and technology will bring international recognition as contributing to our clean green image. FH is open to working with the Community Association on providing some public benefit/support for helping promote the solar drying in the community. (FH)

Q: What testing will be done?
A: ORC will impose limits on the amount of Nitrogen and Phosphorus that can be spread, and also on the application rate and the return period. The limits will be set considering soils, proposed crop types and whether there's any irrigation. (ORC)

In Australia, the material is tested before it leaves the plant, it's tested on arrival at the farm, the location where it's spread is recorded using GPS and all of those records are kept for 12 years. This is all detailed in: -

- *"Guidelines for the Safe Application of Biosolids to land in New Zealand, Volume:1 Guidelines" August 2003 NZWWA*
- *Another good guide is: "Australian & New Zealand Biosolids Partnership, Review of Biosolids Guidelines" December 2009 (FH)*

Q: If this is successful, what's to stop QLDC trucking sludge from Project Shotover to Luggate as well?
A: Transport costs would reduce the viability of such an undertaking. It may be that Project Shotover sludge is processed in a similar way and applied to land on the Wakatipu side. Dry bio solid would be more viable to transport and could be transported to other areas for use. (QLDC)

Q: In order to gauge the credibility of the project partners, please advise whether Project Pure was completed on time and to budget and whether it is performing as per contract particularly in relation to sludge levels
A: Project Pure runs well, the bio sludge it produces is very consistent in quality. (QLDC)

Q: Given that QLDC will be both the regulatory authority and a participant, how can we be assured that any consent conditions will be strictly adhered to and if they are not and cannot be practically remedied, that the project will be shut down?
A: ORC will be the regulatory authority so there will not be any conflict of interest. (QLDC)

Questions awaiting more information, (some partial answers below)

Q: Is this sludge different to what was used in the WormWorks trial that killed all the worms?
A: The sludge is the same, but the way it's handled is completely different. We are checking the files to find out what QLDC knows about the WormWorks trials, but they were not monitored or sanctioned by QLDC so there is likely to be limited information. (QLDC)

Q: Why doesn't Beef & Lamb NZ mind crops fertilised with this material being used for stock food when Fonterra won't allow it?

Q: Where will the prevailing winds take the dust, or any smell from the farms where the material is spread?

Q: Can we have a say on what farms it's spread onto?

Q: Can QLDC provide any "neutral" information on the impact on communities in proximity to similar plants? Eg feedback from residents
A: A similar plant (using solar drying, though not the same Wendewolf technology) has recently started operating at Rolleston in the Selwyn District. We're seeking information about how the local community has found the plant. Efforts to get useful information from the two local authorities in Australia have so far been unsuccessful but we're still trying (QLDC)

Q: What about the wind-blown particles causing health problems?
A: *Offsite migration of the biosolid materials will be restricted under ORC consent conditions. Weather conditions have to be considered carefully before, during and after the application of the biosolids. Therefore such an approach will be required by ORC in the ORC consent. Once incorporated*

into soil and under regular irrigated system it is highly unlikely for soil particles to be wind-blown. However, it is not clear at this stage whether the land will be under irrigation (ORC). We are seeking an independent response to this question.

Q: If you breathe the dust, is it harmful?
A: *We are seeking an independent response to this question.*

Q: Can we get Legionnaires' disease from inhaling the dust?
A: *Our indications are this is not the case but we are seeking an independent response to this question.*

Q: Have anyone considered the research from the University of Georgia about the impacts of dried sludge on human health? http://www.sciencedaily.com/releases/2002/07/020730075144.htm
A:*The research in the question does not apply to the proposal because the proposal will be dealing with Class A biosolids and the research referred to was on an inferior B Class biosolids.*