

#	Comments By	Comment	Response
1	<b>Doig River First Nation</b>	Questions on Economic Opportunities for the Doig River First Nation.	DRE's mission is to produce jobs and economic opportunities for the Doig River First Nation Members. Several contractors for the construction of this site are companies owned by Doig River First Nation community Members.
2	<b>Doig River First Nation</b>	Questions on training for Doig River First Nation Community Members	DRE will work with Doig River First Nation to develop this site for the Training of Doig River First Nation Community Members.
3	<b>Doig River First Nation, Saulteau First Nation, West Moberly First Nation, Treaty 8 Tribal Association</b>	Questions on Fencing of the proposed site.	DRE has designed the fencing system based on the input from Doig River First Nation Elders.
4	<b>Doig River First Nation</b>	Questions on environmental clean up	DRE will work closely with Doig River First Nations to assist in the remediation of the landbase traditionally used by the Doig River First Nation
5	<b>Doig River First Nation</b>	Questions on the containment of contaminants on the site.	Through consultation including maps, diagrams, and 3D models, DRE and its Engineering Consultants have explained the monitoring/protection systems of the landfill to the satisfaction of the Doig River First Nation Community Members and Elders.
6	<b>Doig River First Nation</b>	Aesthetics and visibility of the proposed site	DRE will leave a natural visual/sound barrier between the site and the existing roadway.

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7	Doig River First Nation, Saulteau First Nation, West Moberly First Nation, Ft. Nelson First Nation, Treaty 8 Tribal Association	Question on archaeological resources identified in the Project area	An onsite archaeological investigation was preformed by Landsong Heritage Consulting LTD. A copy of this report has been submitted to all concerned parties.
8	Arms Services	Question on marketable lumber on proposed site.	A "Timber walk" has been preformed by a Regestered Professional Forester to determine the ammount of salvageable timber on the proposed site.
9	Doig River First Nation, Treaty 8 Tribal Association.	Question on acceptance of NORM's at the proposed site.	Electronic moniters will be set up at the scale house to monitor each load for NORM's. Any material containing NORM's will not be accepted.
10	Treaty 8 Tribal Association	Question on wildlife monitering	Motion activated cameras will be set up to moniter any animal activity along the perimeter of the proposed site. All wildlife activity will be recorded and logged.
11	West Moberly First Nation, Ft. Nelson First Nation, Treaty 8 Tribal Association,	Question on landfarming	DRE has agreed to set aside an area of the proposed site for the development of environmentally sound remesdiation practices.
12	Doig River First Nation, Treaty 8 Tribal Association, West Moberly First Nation	Questions on final closure of site.	Through discussions with Engineers, DRE staff, and regulatory authorities, DRE belives that the closure design of the site has been explained to the satisfaction of the concerned parties.

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13	<b>Doig River First Nation, West Moberly First Nation, Treaty 8 Tribal Association</b>	Questions on the Site Closure bond	Closure bond will be determined by the British Columbia MOE upon submission of finalized Engineered design plans.
14	<b>Dept. of Agriculture, British Columbia MOE</b>	Question on Vegetation control on site	Vegetation within the Site boundaries will be controlled to minimize the potential for fire and weed propagation. The vegetation control plan will consist of a combination of mowing and the use of environmentally low impact approved chemicals.
15	<b>Doig River First Nation, West Moberly First Nation, Treaty 8 Tribal Association, Ft. Nelson First Nation</b>	Question on acceptance of waste at the proposed facility	A comprehensive procedure will be developed for screening and acceptance of waste into the facility. The procedure will require that a representative of the waste generator submit chemical analysis of the waste as supplied by an accredited laboratory and submit an application to have the waste accepted into the facility. The chemical analysis will be compared to parameter concentrations mandated by the BC MOE in the permit. Should a single parameter be found in a concentration greater than acceptable concentrations, the waste will be refused for acceptance at the facility.
16	<b>Peace River Regional District, Integrated Land Management Bureau</b>	Question on material accepted at site	Materials approved for acceptance into the landfill will consist of soil contaminated with typical process or production byproducts of the upstream (unrefined) oil and gas industry. Typical contaminants would include crude oil, produced (salt) water, methanol, and relatively low levels of metal ions in soil. Less common wastes from the area may include sulphur by-products.
17	<b>Doig River First Nation, West Moberly First Nation, Treaty 8 Tribal Association</b>	Question on road construction	Site is located next to an existing all-season roadway. New road construction will consist of on-site roadways only.

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18	Prophet River First Nation	What type of wildlife and habitat studies are going to be done if needed?	<ul style="list-style-type: none"> <li>• A field investigation was carried out in August of 2006 with Elders from the Doig River First Nation observations were made of wildlife signs (i.e., tracks and scat) and the identification of suitable wildlife habitat for key species. Mammal signs observed during the investigation included Red Squirrel, Snowshoe Hare, moose and coyote. There was no sign of bear dens in the area nor was it an area that would be habituated by bears. The Elders concluded that there was no unique animal life or vegetation in the area that would be impacted by the Project.</li> <li>• Impacts to wildlife are expected to be minimal based on the relatively small footprint and pre-existing main access road that experiences significant traffic volumes on an intermittent basis.</li> <li>• The Project site will be fenced with chain link fence topped with multiple strands of barbed wire. Potential impacts associated with fencing may include interruption of migratory paths, habitat loss or alteration and direct animal mortality. Since the Project site is located adjacent to large tracts of relatively undisturbed forested land that will continue to provide movement and habitat opportunities for native birds and wildlife and since the Project has a relative</li>   <li>• Mitigation of potential effects associated with fencing will include selection of mesh sizing to prevent injury, entrapment and mortal injury to smaller native species. A second row of perimeter fencing of alternate design may be considered as a deterrent to animals that possess significant abilities to jump over tall objects.</li> <li>• DRE Will keep an area cleared between the perimeter of the site and the fence (projected to be approx. 10 meters – final determination to be done by design engineers). This area will be monitored by motion activated cameras to record any wildlife activity at or near the fence. Records of this ,plus any other activity observed by onsite personal, will be available for review by interested parties.</li> </ul>

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19	Prophet River First Nation	How will the ongoing environmental monitoring take place and by whom?	<ul style="list-style-type: none"> <li>• The proponent, Doig River Environmental Limited Partnership, and its consultants have conducted all environmental studying done to date and will be responsible for all monitoring required during operation, closure and post-closure of the Project as a condition of their permit from the Ministry of Environment.</li> <li>• Monitoring of the proposed site has been on-going since the summer of 2006. This monitoring has consisted of hydrological studies, geotechnical studies, and physical inspection of the site. The monitoring has been carried out by Oakridge Environmental Engineering, Worley Parsons Komax, and DRE staff. Monitoring will continue through the lifespan of the project – to a minimum of 25 years after closure.</li> </ul>
20	Prophet River First Nation	Who will be responsible for the costs of the studies and ongoing monitoring?	<ul style="list-style-type: none"> <li>• The proponent will pay all costs associated with the studies done to date and all monitoring required during operation, closure and post-closure of the Project.</li> <li>• All costs incurred for the studies and ongoing monitoring have been and will continue to be the responsibility of Doig River Environmental.</li> </ul>

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21	Prophet River First Nation	How will the groundwater monitoring take place?	<ul style="list-style-type: none"> <li>• Ground water monitoring has been in place since the spring of 2007. Monitoring will continue throughout the project as directed by regulatory authorities and outlined in the operations manual (currently being developed by Worley Parsons Komax)</li> <li>• The Ministry of Environment (Environmental Protection Division) has indicated that the following requirements must be met with respect to groundwater monitoring under Hazardous Waste Regulation Section 26 (2): <ul style="list-style-type: none"> <li>The owner of a secure landfill shall carry out an approved monitoring program by <ul style="list-style-type: none"> <li>(a) establishing a groundwater monitoring system with a sufficient number of wells, installed at appropriate locations (upgradient and downgradient) and depths to yield from the uppermost aquifer groundwater samples that <ul style="list-style-type: none"> <li>(i) represent the quality of groundwater that would not be affected by any leakage from a secure landfill facility, and</li> <li>(ii) represent the quality of groundwater that would be affected by leachate, if any, from the secure landfill,</li> </ul> </li> <li>(b) ensuring the quality of groundwater monitoring data by <ul style="list-style-type: none"> <li>(i) casing sampling wells with appropriate materials to ensure the integrity of the boreholes,</li> <li>(ii) preventing contamination <ul style="list-style-type: none"> <li>(A) of any part of the well during construction, and</li> <li>(B) from the surface during operation, and</li> </ul> </li> <li>(iii) implementing procedures for <ul style="list-style-type: none"> <li>(A) decontamination of sampling equipment,</li> <li>(B) sample collection,</li> <li>(C) sample preservation and shipment,</li> <li>(D) sample custody, and</li> <li>(E) analytical procedures and quality assurance,</li> </ul> </li> </ul> </li> <li>(c) selecting indicator parameters (e.g. specific conductance, pH, total organic carbon) and chemical constituents for analysis of groundwater that <ul style="list-style-type: none"> <li>(i) provide a reliable indication of the quality of groundwater below the secure landfill from the perspective of human health hazards and environmental quality,</li> <li>(ii) reflect the physical and chemical characteristics of the waste in the secure landfill, and</li> <li>(iii) provide a reliable indication of movement of any contaminant with groundwater flow,</li> </ul> </li> <li>(d) sampling groundwater sufficiently often to provide data that is representative of varying groundwater flow conditions, but in any case no less frequently than once every 3 months,</li> <li>(e) measuring the groundwater surface elevation each time the groundwater is sampled,</li> <li>(f) measuring volumes, sampling and analyzing any leachate collected by the leachate collection system,</li> <li>(g) ensuring detection of any liquid leaking into the space between the 2 liners, and</li> <li>(h) reporting monitoring results at intervals specified by a director.</li> </ul> </li> </ul> </li> </ul>

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22	Prophet River First Nation	Are the landfills all new cut, and if so, have archaeology studies been done?	<ul style="list-style-type: none"><li>• This proposed Project is located on a new site on Crown Land. An archaeological impact assessment study was conducted by Landsong Heritage Consulting under Permit # 2007-040 for the Environmental Assessment Application (See Appendix 10).</li><li>• The Archaeology Branch concurred with Landsong's findings that the probability of identifying an archaeological site during Project construction was low and that no additional archaeological work was required.</li><li>• In the unlikely event that unexpected archaeological features are encountered during Project development activities, the Proponent has committed to contacting the Archaeological Branch immediately.</li></ul> <p>A Copy of the Archeological report was included with the application.</p>

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23	Peace River Regional District	First Nation Consultation	<p>All eight Treaty 8 First Nations were invited by the EAO to participate in the EA Review of the Peejay Secure Landfill Project. The Fort Nelson, Prophet River, Blueberry River, Halfway River, Doig River, West Moberly and Saulteau First Nations chose to participate in the review; the McLeod Lake Indian Band declined. To date, contact through phone conversations, email, and/or scheduled meetings to Band Chief's and Council have been made with the following First Nation Communities:</p> <ul style="list-style-type: none"> <li>Doig River First</li> <li>Blueberry River First Nation</li> <li>Saulteau First Nation</li> <li>Halfway River First Nation</li> <li>Prophet River First Nation</li> <li>West Moberly First Nation</li> <li>Ft. Nelson First Nation</li> <li>McLeod Lake First Nation</li> <li>The Treaty 8 Tribal Association</li> </ul> <p>Copies of the Project Description, Approved Terms of Reference, Pamphlets, and other literature have been delivered to The Treaty 8 Tribal association for review and distribution among any interested Member. Gary Oker, Larry Neufeld and Albert Cook will lead the continued consultation process with all First Nation Communities that have an interest in this project, or have the potential to be impacted by this project. Consultation will continue until completion of construction. It is the goal of Doig River Environmental to ensure complete understanding of this project to all individuals involved, and to maintain communication and involvement with First Nation Communities.</p>



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24	Peace River Regional District	Consultation with Federal, Provincial, and Local Government Agencies	<p>The following regulatory agencies have been notified of the proposed Facility:</p> <ul style="list-style-type: none"> <li>The B.C. Environmental Assessment Office</li> <li>The B.C. Ministry of Environment</li> <li>The B.C. Integrated Land Management Bureau</li> <li>The B.C. Oil &amp; Gas Commission</li> <li>Front Desk B.C.</li> <li>Fisheries &amp; Ocean Canada</li> <li>The Canadian Environmental Assessment Agency</li> <li>The Peace River Regional District</li> <li>The Peace River Regional District (Area B)</li> <li>The B.C. Ministry of Northern Health</li> <li>The B.C. Ministry of Energy, Mines, &amp; Petroleum Resources</li> <li>The B.C. Ministry of Agriculture &amp; Lands</li> <li>The B.C. Ministry of Community Services</li> <li>The B.C. Ministry of Small Business &amp; Revenue</li> <li>The B.C. Ministry of Tourism, Sport &amp; Art</li> <li>The B.C. Provincial Archaeological Department</li> <li>The B.C. Ministry of Forestry</li> </ul> <p>Doig River Environmental has assured that all agencies with potential input to the project have been informed Via information packages, or through meetings arranged by Doig River Environmental and the Environmental Assessment Office.</p>

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25	Peace River Regional District	Public Notice and Consultation	<p>As part of the Environmental Assessment process, consultation has consisted of a published Public announcement (Alaska Highway News, July 2/2007 &amp; July 9/2007) extending an invitation to a public open house information session held at Arms Services Open Camp in PeeJay on July 20, 2007. The public open house and information session provided local citizens that may be directly impacted by the project an opportunity for direct contact with DRE Project Managers as well as members of the Environmental Assessment office. The session included a presentation of the project detailing the overall project with direct opportunity for rebuttal and clarification by the public as required. In addition, and prior to the open house, a door to door information session was conducted on May, 2007 with all rural citizens within a 50km radius of the project site in which Albert Cook, Larry Neufeld, and Amanda Gauthier visited with each home and business located between the Doig River First Nation and the proposed landfill site. An individual presentation was made to each of these residents and their questions were addressed. Literature and information on the project was provided to the residents as well as a verbal notification of the pending public open house. This consultation will continue through completion of the construction phase of the project.</p> <p>Meetings were held with the Jim Eglinski (Mayor of Fort St. John) and with Jay Hill (local Member of Parliament) to ensure that they were informed of the project. Each of the two public officials was furnished with an information package detailing the project. A contact list was provided so that any questions addressed to them by the public could be forwarded to Doig River Environmental.</p> <p>As part of the Environmental Assessment process, consultation has consisted of a published Public announcement (Alaska Highway News, July 2/2007 &amp; July 9/2007) extending an invitation to a public open house information session held at Arms Services Open Camp in PeeJay on July 20, 2007. The public open house and information session provided local citizens that may be directly impacted by the project an opportunity for direct contact with DRE Project Managers as well as members of the Environmental Assessment office. The session included a presentation of the project detailing the overall project with direct opportunity for rebuttal and clarification by the public as required. In addition, and prior to the open house, a door to door information session was conducted on May, 2007 with all rural citizens within a 50km radius of the project site in which Albert Cook, Larry Neufeld, and Amanda Gauthier visited with each home and business located between the Doig River First Nation and the proposed landfill site. An individual presentation was made to each of these residents and their questions were addressed. Literature and information on the project was provided to the residents as well as a verbal notification of the pending public open house. This consultation will continue through completion of the construction phase of the project.</p> <p>Meetings were held with the Jim Eglinski (Mayor of Fort St. John) and with Jay Hill (local Member of Parliament) to ensure that they were informed of the project. Each of the two public officials was furnished with an information package detailing the project. A contact list was provided so that any questions addressed to them by the public could be forwarded to Doig River Environmental.</p>

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26	Peace River Regional District	Potential Chemical Reaction of Landfill Wastes	<p>The risk potential chemical reaction due the combination of various contaminants present in landfilled soil is deemed to be low. Direct contact of high concentrations of obviously chemically dissimilar materials within the landfill cell(s) will be avoided. The majority of material accepted into the facility for disposal will consist of contaminants historically common to the upstream oil and gas industry and will be contained within physically similar material (soil). Free liquids will not be accepted at this site, although stackable soil inherently contains moisture. All material will undergo laboratory analysis before acceptance at this site and will undergo random sampling to ensure the effectiveness of field sampling procedures conducted by independent third parties.</p> <p>The final design process will incorporate knowledge and experience of liner manufacturers, engineering design firms and experienced industry professionals in the selection of liner materials. The liner design incorporated into this facility will include the use of two chemically inert layers of high density polyethylene liner material, underlain by a third engineered compacted clay liner.</p> <p>While indications of potential chemical reactions within oilfield waste will be monitored on an ongoing basis at all steps of acceptance, placing and monitoring of waste, industry experience has been such that negative chemical reactions have not been noted at similar facilities.</p> <p>The waste accepted and the operating procedures proposed for this facility will follow the precedent established by oilfield waste landfills North East British Columbia, two of which have historically and are currently accepting oilfield waste for landfill disposal.</p> <p>A great breadth of industry experience in land filling of oilfield solid wastes has been gained in western Canada. Industry experience relative to logistical operation, potential chemical interactions, daily operation, acceptance protocols, practicalities and technology around leachate generation, collection and treatment have been gained and refined for over a decade at numerous facilities in the 4 most western provinces of Canada. Doig River Environmental has chosen its consultants and contractors in part for their past experience in dealing with and managing these aspects of design and operation of oilfield landfills.</p>

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27	Peace River Regional District	Possibility of land treatment	<p>The upstream oil and gas exploration and production industry has historically produced a wide variety of waste materials. Historical operations have resulted in various forms and concentrations of contaminants that are currently in the environment exposed to wildlife and potentially interacting with surface and shallow groundwater regimes. This facility will provide a secure and effective method by which certain wastes can be removed from the environment and potential interaction with humans, wildlife and various ecosystems.</p> <p>While land treatment is a preferred method for many types of contaminants in the upstream oil and gas industry, much of the soil proposed for acceptance into this facility is of low suitability for land treatment. The draft air emission standards proposed by BCMoE may also potentially impact the viability of land treatment of certain wastes that have historically been treated by land treatment. The nature of the contaminants in a soil mixture, (salt in clay based soils, specific types of hydrocarbon contamination, the presence of polycyclic aromatic hydrocarbons "PAH", inhibitors, biocides and other elevated Extractable organic halides "EOX") are not always conducive to the microbial processes involved in the land treatment process. This facility will provide a secure means by which these wastes may be handled and stored over a nearly indefinite period, thus removing the current interaction with the environment.</p>
28	Peace River Regional District	Estimated time for the chemicals to break down	<p>While many studies have been completed and models constructed to date relative to fate and transport aspects of historical large scale municipal landfills ('garbage dumps'), the historical operation of oilfield landfills has occurred over a much smaller timeframe. A cursory review of available scientific literature conducted in August 2007 did not provide case studies or long term models relative to landfills containing oilfield waste. Based on the available scientific literature, it is unknown at this point the amount of time required for contaminants in soil contained within a secure landfill to decompose into inert material. It is important to note that the contaminants are already located uncontrolled in the surrounding areas. This facility will ensure the monitoring of this contaminated soil and the prevention of further leaching into the environment.</p>

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29	Peace River Regional District	Is an adequate, significant bond in place to protect the taxpayers of BC from any future problems with reclamation or malfunction of the storage cells etc.	<p>The dollar amount and length of time a bond is held in trust is a decision made by the British Columbia Ministry of Environment and is controlled by regulation. This will be determined during the application process for an operating permit. While not tested in a court of law to date, there is several layers of protection for the taxpayers in the event of premature closure, long-term closure monitoring or an unlikely accidental release;</p> <p>An environmental levy fee collected from the soil generator at time of disposal and held in trust (Bond)  Doig River Environmental's General Public Liability Insurance  Doig River Environmental's Pollution Insurance  Professional Errors &amp; Omissions insurance held by Worley Parsons Komex  Doig River Environmental's assets  Doig River Resources Assets – the parent company of Doig River Environmental  The soil generators (Oil Company) Insurance  The soil generators (Oil Company) assets</p>
30	Peace River Regional District	Leachate collection system at the bottom of the landfill	<p>While the design of the leachate collection and treatment system is yet to be finalized, collection, holding and treatment will follow all applicable regulations, standards and industry best practices. A Leachate collection system is being incorporated into the engineered design of the secure landfill. Leachate generated as a result of contaminated soil compression will be collected and transferred to an engineered holding pond or tank system and then transferred to a suitable treatment facility. There are several owned by Oil Companies located in the surrounding areas in which this recovered material can be reclaimed. Transportation of this material would not require use of public roads.</p>
31	Peace River Regional District	Bermed , lined storage ponds	<p>Berms will be used to control surface water run-on and run-off. Any free water collecting on the site will be directed to collection ponds where it will undergo laboratory analysis and be either released assuming acceptable quality, or transferred to a water treatment facility. The final design and operating procedure is currently being developed by Worley Parsons Komex utilizing the information gathered by their hydrological and geotechnical studies of the site and surrounding areas.</p>

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32	Peace River Regional District	Hydrology (Surface Water)	<p>The existing surface water regime is currently being studied by professional Engineers from Worley Parsons, Komex (Vancouver &amp; Calgary branches). The conclusions from these studies will be incorporated in the final engineered design of the berms, leachate collection systems, and membrane selection and design.</p> <p>The site will be regularly monitored for contaminants escaping into the environment. This detection will be accomplished by a series of pipes located below each protective layer of the bottom liner and by a series of groundwater monitoring wells surrounding the area. Air quality will also be monitored. The overall Facility monitoring system will undergo internal and external audits to ensure the effectiveness of the system.</p> <p>It is important to note that there are currently a large number of heavily contaminated sites in the surrounding oilfield areas. The contamination at these sites is uncontrolled with many in areas with a shallow ground water level. Rain fall and spring melt contribute to a negative impact on regional shallow ground water quality.</p> <p>The engineered design of this secure landfill will provide the contaminated soil generators with a secure, monitored facility in which to store this material until technology is available to remediate it in an effective manner with little impact on the surrounding environment.</p>
33	Peace River Regional District	Emergency response	<p>The Emergency Response Plan is being developed by Messier &amp; Associates (Calgary) in conjunction with the operating procedures being produced by the design Engineers (Worly Parsons Komax – Vancouver/Calgary). These plans and procedures will be finalized following completion of the engineered design.</p>

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34	Ministry of Agriculture and Lands	Control of spread of Noxious weeds	Trucks traveling to the landfill from an area with a know weed infestation will be questioned as to the cleaning history of the truck. The landfill manager will retain the right to enforce a requirement to wash the truck to prevent the transmission of noxious weeds. In order to ensure this policy is feasible, a wash pad has been incorporated into the overall design of the PeeJay Secure Landfill
35	Oil and Gas Commission	Comments from Oil and Gas Commission on the rationale for the project:	There has been a long history of oil and gas activity in the Peejay area and consequently there are substantial environmental liabilities associated with many sites in this area. The proposed peejay site is very central to this area of intense development for oil and gas exploration and production. The way the regulations are currently...for operators, it is often much more attractive financially to pay a couple thousand dollars a year and put off remediation than to spend hundreds of thousands to mitigate those liabilities. Trucking costs are a very large portion of a typical remediation and having a landfill proximate to the peejay area will significantly reduce remediation costs for a large number of sites. While at the end of the day, essentially the same amount of land will need remediation, operators will be able to do more work within their remediation budgets and hence the liabilities should be resolved in a more timely manner if this landfill were in operation. There are currently hundreds of sites in the immediate area that are expected to require remediation and this location would serve a large area extending from the doig all the way up the milligan and fontas roads that is currently very remote from existing landfill facilities. This facility would provide an efficient cost-effective means of dealing with environmental liabilities in this area.

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36	Comments from Northern Health on Application	<p><b>Landfill specific comments</b></p> <p>With respect to the overall Project, the main concern is regarding drinking water and the effect that the landfill could have on surface and groundwater. Water could have a far reaching impact because it travels and affects downstream users or because of a long retention time in an aquifer. Some contaminates could be very difficult to remediate. Otherwise, due to the remoteness of the site and potential monitoring requirements described in the application, public health concerns such as noise pollution and air quality will likely have minimal impacts. Ultimately, as the intent of a landfill is to permanently hold the waste isolated from the environment, we will rely on the Ministry of Environment's regulations and requirements for the secure landfill to do so.</p> <p>Regardless, there could be an effect on human health, particularly if there is a problem. Advance preparation and assessment for this purpose is necessary.</p> <p>The Drinking Water Protection Act (DWPA) is the legislation that protects the public from health hazards associated with consumption of drinking water. The Act protects a source of water from the introduction of anything into a drinking water system or source that could create a drinking water health hazard.</p> <p>The Drinking Water Protection Act [SBC 2001] Chapter 9 – section 23 (1) states:</p> <p>23 (1) Subject to subsection (3), a person must not</p> <p>(a) introduce anything or cause or allow anything to be introduced into a domestic water system, a drinking water source, a well recharge zone or an area adjacent to a drinking water source, or</p> <p>(b) do or cause any other thing to be done or to occur,</p> <p>if this will result or is likely to result in a drinking water health hazard in relation to a domestic water system.</p> <p>Contraventions of the DWPA are enforceable as offences with penalties that can range from fines to imprisonment.</p> <p>Our concern is then with those systems that may exist downstream of the site for the landfill which are outside the boundaries of the assessment, have not been entered into existing databases, or are potential future systems utilizing either surface water or groundwater that may be affected by the proposal. Any contamination which will affect the quality of this potential drinking water could fall under the provisions of the above noted section of the DWPA.</p> <p>Section 6.4.3 of the Application on Groundwater Quality for Public Health describes the baseline groundwater quality studies that are being conducted and are expected to be completed prior to final construction design development. In addition, it outlines expected parameters to be tested and that a formal monitoring plan is being developed.</p> <p>It is Northern Health's recommendation that a baseline groundwater and surface water assessment for human health risks is generated as described. Testing of the waters upstream of the site as well as downstream for relevant parameters of health concern to meet the Guidelines for Canadian Drinking Water Quality will establish a baseline prior to site construction. Prior knowledge of whether any parameters already exist as being above the Drinking Water Guidelines would be extremely important in the event of a leachate leak. In the event that contamination were to occur in the future, it would be possible to evaluate the source, risk, and remediation possibilities. At a minimum, the relevant parameters would include any normally tested for any drinking water system requiring a permit, as well as any additional parameters based on materials to be accepted by the proposed landfill.</p> <p>While the Application generally outlines what Northern Health recommends, a review of the studies and proposed monitoring and sampling plan would be preferable before a conclusion of whether the application is generally acceptable is obtained.</p>



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37	Comments from Northern Health on Application	<p>Operational comments</p> <p>In terms of construction and operations, the application outlines infrastructure that the workers in the construction and operation of the landfill will utilize, including water for domestic purposes and sewage holding facilities.</p> <p>The DWPA again applies in this circumstance. Any water system which offers or provides water for human consumption, food preparation or sanitation and is anything other than a single family residence requires a construction permit and operating permit for the water supply system. In this case, a lunchroom could conceivably offer water for sanitation of dishes as well as for a coffeemaker, thereby meeting the food preparation and sanitation requirements.</p> <p>In addition, the Health Act has the Sewerage System Regulations that regulates discharge of domestic sewage and the installation of holding tanks. A permit is required for holding tank construction and operation.</p>

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38	<b>Comments from Ministry of Environment in response to Northern Health's comments</b>	<p>Due to site design surface water will not run onto the site. Run off from the site will be collected in a lined pit, it will be tested and if it meets criteria it will be pumped off. If it does not meet criteria it will be treated or disposed of in the appropriate manner. As stated in DRE's Secure Landfill Siting investigation 1.4.1 "A search of the MOE water well database was conducted for the site and indicated that the nearest drinking water well is 21 km away (Section 2.4). Furthermore, no mapped aquifers exist in the vicinity of the Site that could be deemed prospective future drinking water sources"</p> <p>Hazardous Waste Regulation Section 26 (2) The owner of a secure landfill shall carry out an approved monitoring program by (a) establishing a groundwater monitoring system with a sufficient number of wells, installed at appropriate locations (upgradient and downgradient) and depths to yield from the uppermost aquifer groundwater samples that (i) represent the quality of groundwater that would not be affected by any leakage from a secure landfill facility, and</p> <ul style="list-style-type: none"> <li>(ii) represent the quality of groundwater that would be affected by leachate, if any, from the secure landfill,</li> <li>(b) ensuring the quality of groundwater monitoring data by <ul style="list-style-type: none"> <li>(i) casing sampling wells with appropriate materials to ensure the integrity of the boreholes,</li> <li>(ii) preventing contamination <ul style="list-style-type: none"> <li>(A) of any part of the well during construction, and</li> <li>(B) from the surface during operation, and</li> </ul> </li> <li>(iii) implementing procedures for <ul style="list-style-type: none"> <li>(A) decontamination of sampling equipment,</li> <li>(B) sample collection,</li> <li>(C) sample preservation and shipment,</li> <li>(D) sample custody, and</li> <li>(E) analytical procedures and quality assurance,</li> </ul> </li> </ul> </li> <li>(c) selecting indicator parameters (e.g. specific conductance, pH, total organic carbon) and chemical constituents for analysis of groundwater that <ul style="list-style-type: none"> <li>(i) provide a reliable indication of the quality of groundwater below the secure landfill from the perspective of human health hazards and environmental quality,</li> <li>(ii) reflect the physical and chemical characteristics of the waste in the secure landfill, and</li> <li>(iii) provide a reliable indication of movement of any contaminant with groundwater flow,</li> </ul> </li> <li>(d) sampling groundwater sufficiently often to provide data that is representative of varying groundwater flow conditions, but in any case no less frequently than once every 3 months,</li> <li>(e) measuring the groundwater surface elevation each time the groundwater is sampled,</li> <li>(f) measuring volumes, sampling and analyzing any leachate collected by the leachate collection system,</li> <li>(g) ensuring detection of any liquid leaking into the space between the 2 liners, and</li> <li>(h) reporting monitoring results at intervals specified by a director.</li> </ul>

#	Comments By	Comment
39	<b>Response from BC Environmental Assessment Office to Ministry of Environment</b>	<ul style="list-style-type: none"><li>• there are no wells or aquifers in the vicinity of the proposed Project,</li><li>• the design of the proposed Peejay Secure Landfill will provide protection of groundwater quality;</li><li>• MOE provides the details of a proposed groundwater monitoring program for the Project that is acceptable to the Ministry of Environment and that will be required as part of the Ministry's regulatory authorization of the Project should it receive an Environmental Assessment Certificate.</li></ul>