



April 10, 2019

Via Email: northdale@sios.ca

Norman G. Ryder
Box 52048
Beacon Ave RPO
Sidney V8L 5V9

RE: Freedom Mobile Site BVI070A – 7217 Lochside Drive, Central Saanich, BC

Dear Mr. Ryder,

Thank you for providing us your comments in your letter dated February 25, 2019 regarding the proposed wireless communications facility at 7212 Lochside Drive in Central Saanich, BC.

We apologize in the delay getting back to you. We required some additional time to collect specific information. Freedom Mobile understands that not all community members share the need for wireless services that support mobile phones. That said, most households have come to expect wireless service as a basic utility within the communities they live and travel as a way to stay connected with friends and family, to conduct business and most importantly in times of emergencies. When a telecommunications carrier is planning a wireless network, it must consider key constraints when locating and designing individual wireless installations. Some of the considerations include frequency of operation, local topography, patterns of wireless users, building heights, road patterns, availability of land and existing structures.

Below is a list of your questions, and answers to the best of our ability:

1. What frequencies will the four (4) flush mounted antennas and two (2) microwave antennas operate on?

Freedom Mobile Frequencies:

<i>Service</i>	<i>TX (Transmit) Frequency (MHz)</i>	<i>RX (Receive) Frequency (MHz)</i>
<i>UMTS-2100</i>	<i>2130-2140</i>	<i>1730-1740</i>
<i>LTE 2100</i>	<i>2155-2170</i>	<i>1755-1770</i>
<i>LTE 700</i>	<i>746-751</i>	<i>777-782</i>

Microwave Frequencies:

TX: 39025 MHz

RX: 39725 MHz

2. What is the power each of the 6 antennas will radiate?

Service	EIRP (dBm)
UMTS-2100	69.3
LTE 2100	69.3
LTE 700	65.7

3. What pulse rate and frequency modulation will be used?

For UMTS will be 3.84 Mcps and 110 Mbps for LTE. Both services use with QPSK or QAM modulation.

4. Can output controlled remotely?

Yes, it can be controlled remotely.

5. How many channels each of the 6 antennas?

3 channels on each of 4 antennas.

6. What is the band width of each of channel?

Service	Bandwidth (MHz)
UMTS-2100	10
LTE 2100	15
LTE 700	5

7. What is the licensed maximum power in total for all antennas and channels?

69.3 dBm

8. Will a full public consultation be done if the configuration of the tower is changes such as more antennas, antennas of a different design such as bean forming, the total number of antennas changed, the number of channels be changes or other frequencies be radiated form the tower?

The pubic consultation is required to construct the initial tower. If Freedom needs to add additional equipment at a later date, they can do so without another full public consultation.

9. Will the site be used for "5G" or future generations of systems without a full public consultation process?

In all likelihood, Freedom Mobile will eventually deploy 5G on this tower; additional public consultation would not be required.

10. Has the landowner and municipality been advised they may be found liable if the radiation from the tower causes harm?

Please know Freedom Mobile relies on government experts to set standards for safety. In Canada, Health Canada has established Safety Code 6 to ensure public safety. The limits specified in Health Canada's SC6 exposure guidelines are based upon review of thousands of peer-reviewed scientific studies of the health impacts of RF energy. SC6 take into consideration the existing EMF energy and the calculations are cumulative to include all surrounding local sites. Should you have further questions regarding the research behind Safety Code 6 regulation or the regulation itself, we encourage those in the community to contact Health Canada at: ccrpb-pcrpcc@hc-sc.gc.ca. Freedom Mobile will be in compliance with these standards at all times.

11. What is the diameter of the boundary between the near field and intermediate zones as well as the distance to the far field for each antenna?

*For technical calculations please refer to Safety Code 6:
https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/ewh-semt/alt_formats/pdf/consult/_2014/safety_code_6-code_securite_6/final-finale-eng.pdf*

12. How will interference from the tower antennas and other known local sources of radiation affect the propagation pattern and are the peaks and valley of the radiation patterns possible to predict a to location and combined intensities?

Freedom Mobile operates on their own dedicated frequency, so there will not be interference.

13. What is the total anticipated levels of radiation at the boundary of each of these fields (in microwatts/sq cm)? What are the sizes or diameter of each antenna?

With respect to the micro-wave antenna, it is clear that its contribution will not exceed 1.4% of the Safety Code 6 uncontrolled limit directly in its main beam from the antenna to 24.2 m in front of it. Hence this antenna needs no further evaluation.

The analysis shows that at 2m above ground, the RF signal doesn't exceed 1% of the uncontrolled environment limit.

The analysis shows that at 2m above nearby buildings (12 m AGL), the RF signal doesn't exceed 1% of the uncontrolled environment limit.

The site is compliant with the maximum exposure limits established in Health Canada's Safety Code 6 for uncontrolled environment.

Furthermore, all our results are expressed as a percentage of Safety Code 6 limits, which is the usual representation for multi-frequency environments. In this representation, all values below 100% represent exposures compliant with Safety Code 6 limits while values above 100% represent exposures exceeding those limits.

The size of the antennas is: 1807x648x194mm(height/width/depth)

14. What is the anticipated total radiation from all sources for all of the antennas measured in the maximum zones at distances .5km, 1km, 2 km and 3km?

See response to question 13

15. There has been considerable concern expressed about the use of Huawei equipment or its subsidiaries with respect to our national security and privacy. Our "5 EYES" partners such as the US are banning their equipment. Will Huawei equipment be used in this installation or will connected at some downstream/upstream Huawei equipment?

Freedom Mobile uses NOKIA equipment.

16. What is the propagation pattern for each of the antennas?

FM cellular antennas cover around 65 degrees each.

17. Is it correct to state, that the human body is an electrical conductor, and when exposed to electromagnetic fields, the human body acts like an antenna being able to receive a broad range of frequencies and that humans exposed to electromagnetic radiation will result in increased body voltage?

No.

18. How long is the lease contract with the property owner, if there is no contract yet, how long does Freedom Mobile plan the contract?

The contract is a long-term agreement, specifics are confidential between both parties.

19. How would Freedom Mobile respond if the neighboring individuals/residents/workers near the tower will accuse Freedom Mobile of private nuisance due to the sight of the tower, EMR transmission's trespass etc.

See response to question 10.

20. Do you agree that humans are controlled by electricity-human bodies are made up of a vast network of interactive electrical components that surely surpass in intricacy those of any super computer?

No.

21. Does external electromagnetic radiation include changes in cellular functions in human bodies? If yes, please explain briefly. If not, please provide peer reviewed studies.

No, please refer to Safety Code 6 references on page 15:

https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/ewh-semt/alt_formats/pdf/consult/_2014/safety_code_6-code_securite_6/final-finale-eng.pdf

22. Please state the recommended threshold of induced AV body-voltage for humans and cite for reference.

Safety Code 6 does not reference AV body-voltage.

23. Please state the minimum radio wave/microwave electromagnetic energy exposure in u Watts/cm²) at which excitable human biological tissue can be stimulated.

Despite the advent of numerous additional research studies on RF fields and health, the only established adverse health effects associated with RF field exposures in the frequency range from 3 kHz to 300 GHz relate to the occurrence of tissue heating and nerve stimulation (NS) from short-term (acute) exposures. At present, there is no scientific basis for the occurrence of acute, chronic and/or cumulative adverse health risks from RF field exposure at levels below the limits outlined in Safety Code 6.

24. Please provide the guideline/value for the recommended maximum allowable

Basic restrictions have been specified in this safety code for RF field exposures in the 100 kHz to 6 GHz frequency range, in terms of maximum whole-body SAR (averaged over the whole-body) and peak spatially-averaged SAR, (averaged over a small cubical volume). For frequencies above 6 GHz, RF energy absorption occurs predominantly in surface tissues (e.g. upper layers of skin) and the use of maximum SAR limits, either whole-body or averaged over a cubical volume, is not appropriate. In lieu of basic restrictions, reference levels are specified for maximum unperturbed, externally applied electric- and magnetic-field strengths and in terms of power density, for the avoidance of thermal effects

25. What is your position regarding the radio wave/microwave Class 2B possible carcinogen classification in the Work Safe B.C., Workers Compensation Act Occupational Health and Safety Regulation 5.57(1) which says: " If a substance identified as any of the following is present in the workplace, the employer must replace it, if practicable, with material which reduces the risk of workers: (a)...2B carcinogens."

We do not have a position.

26. How does the Class 2B carcinogen classification of radio wave/microwave differ from the classification given to DDT, lead, diesel, fumes, etc.?

It is not the same classification.

27. Are you aware that Sweden electro-hyper-sensitivity (EHS) is an officially recognized functional impairment; that in the U.S., EHS afflicted people are protected under the U.S. Disability Act, and that Canada EHS afflicted people are recognized by the Canadian Human Rights Commission?

No, we are not aware. Please know Health Canada is the regulator of EMF exposure in Canada.

28. Please inform whether any damages/harm or any negative effect whatsoever resulting from wireless electromagnetic radiation emanating from, beaming to, the tower's transmitted and/or receivers are insurance/liability covered.

If so, please provide details

If not, please provide reasons why not available to protect.

Health Canada is the regulator of EMF exposure in Canada. We are not aware of any insurance/liability implications.

29. Has the municipality and landowner been advised there is no insurance available to protect from liability caused by radiation – even Lloyd's of London and Swiss Re insurance (Swiss Re Group) will not protect them from damages?

Health Canada is the regulator of EMF exposure in Canada. We are not aware of any insurance/liability implications.

30. On what basis does Freedom Mobile expect to be allowed to put something that is emitting a Class 2B possible carcinogen on/into building, be it residential homes, public facilities (hospitals, schools, nursing homes) and working places?

Wireless installations are often found on the rooftops of multi-resident buildings, public facilities, hospitals, schools and nursing homes.

31. What is the least minimum power level still required to cell phone/ I-pod communication? Please cite your references for the minimum power levels.

Every device operates on different power levels.

32. Are you aware qualified doctors and scientists around the globe are calling for stricter regulation and/or moratorium on wireless technology? Why should their concern's and warnings be disregarded?

No, we are not aware.

Freedom Mobile has emerged as Canada's fourth national carrier and is actively planning its network build for the launch of Freedom wireless services in the south Vancouver Island and greater Victoria area. Freedom Mobile's network launch gives the local communities families, students and small businesses customers the opportunity to have lower rates for wireless services and more choice for citizens to meet their business, travel, emergency response, and personal communications wireless needs. Your feedback will be shared with the District of Central Saanich prior to Council consideration.

Sincerely,

A handwritten signature in blue ink that reads "Tawny Verigin". The signature is fluid and cursive, with the first name "Tawny" and last name "Verigin" clearly legible.

Tawny Verigin

Municipal Affairs Specialist

Cypress Land Services Inc.

Agents to Freedom Mobile

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